UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF FLORIDA

MIAMI DIVISION

CASE NO. 26-cv-23083-RAR
(CONSOLIDATED WITH 26-cv-23084 AND 26-cv-23086)

SHARKNINJA OPERATING LLC, and
SHARKNINJA SALES COMPANY,

Plaintiffs,

v.

THE INDIVIDUALS, CORPORATIONS, LIMITED LIABILITY COMPANIES, PARTNERSHIPS, AND UNINCORPORATED ASSOCIATIONS IDENTIFIED ON SCHEDULE A,

Defendants.
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PLAINTIFFS' MOTION FOR ENTRY OF PRELIMINARY INJUNCTION AND MEMORANDUM OF LAW IN SUPPORT THEREOF

Plaintiffs SharkNinja Operating LLC and SharkNinja Sales Company (collectively, "SharkNinja" or "Plaintiffs") respectfully move the Court to enter a preliminary injunction against the entities identified on Schedule A [ECF No. 10-41] (collectively, "Defendants") pursuant to 35 U.S.C. § 283, Fed. R. Civ. P. 65, the All Writs Act, 28 U.S.C. § 1651(a), and the Court's inherent authority. SharkNinja further requests a hearing on the requested injunctive relief pursuant to Local Rule 7.1(b)(2) and Federal Rule of Civil Procedure 65(b)(3).

MEMORANDUM OF LAW

I. INTRODUCTION

Plaintiffs seek this injunction to stop a large and growing number of e-commerce operators from exploiting Plaintiffs' intellectual property by importing and selling products that infringe Plaintiffs' U.S. Patent No. 12,593,855 (the "'855 Patent" or the "Asserted Patent"), pending a final

determination on the merits. SharkNinja spent many months developing the first compact, at-home slush machine that delivers consistent texture without pre-frozen ice to serve an unmet need in the market—the SLUSHi. Unlike prior home appliances that required ice or ice-and-salt chambers, the SLUSHi defines a new product category without requiring ice and still fitting on a residential countertop beneath cabinets—bringing commercial-grade performance to consumers' kitchens.[1]

The '855 Patent (Exhibit 1) claims a frozen drink machine with a cam feature controlling the coupling of the mixing vessel and the upper housing of machine, allowing for a horizontal-loaded mixing vessel and a compact size. Plaintiffs are the owner and exclusive licensee of the '855 Patent.

The SLUSHi's July 2024 launch was an instant, viral, and widespread success such that the SLUSHi has become synonymous with at-home slush makers and drove a standout 2024 holiday season.[2] After the SLUSHi's unprecedented success, a tsunami of knockoffs appeared that infringe the Asserted Patent, forcing SharkNinja to compete against its own technology. These knockoffs target U.S. consumers, including those in this District, through transient on-line listings on e-Retailer sites like Amazon.

Plaintiffs' efforts in enforcing their intellectual property rights, while initially effective, continue to be quickly counteracted by more transient listings marketing essentially the same knockoff products under new trade names and model names. Already, the uniqueness of the SLUSHi as a product category is beginning to dissipate. Unlike SharkNinja's other viral success stories—like the CREAMi, which was not beset by a wave of cheap knockoffs and thus enjoys

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[1] The SLUSHi practices the '855 Patent, and each SLUSHi box is marked with a patent notice citing to https://sharkninja.com/patents/ which lists the '855 Patent, among others.

[2] SLUSHi XL and Max models with larger mixing vessels were later introduced as well.

strong brand recognition and goodwill—the Ninja SLUSHi is becoming commoditized. Another year and a half of rampant infringement during this case will dilute the brand entirely, beyond recovery. SharkNinja employee Stephanie Cugini (Exhibit 2, "Cugini Decl.") explains this unique and irreparable injury. This Whack-A-Mole situation needs stopping now to prevent irreparable harm, particularly before the upcoming summer months, an important period for frozen-drink machine products like SLUSHi. Defendants' continued unlawful activity would mean diverted sales, loss of market share and price premium, and erosion of brand equity in the very market SharkNinja created, which would be irreparable.

Later-awarded money damages will not compensate for Defendants' rampant infringement and would be a pyrrhic victory, since the Defendants have no real presence or assets in the United States to enable collection of the award. Permitting these Defendants to continue to infringe through the pendency of this case will eviscerate the Ninja SLUSHi brand and SharkNinja will have no recourse. SharkNinja pleas for the Court to use its equitable powers to prevent this result.

As detailed on Schedule A, Defendants operate fully interactive commercial internet storefronts (the "Internet Stores") through various online marketplace accounts to make, use, sell, offer for sale, or import products that infringe the Asserted Patent (the "Infringing Products") throughout the United States, including in this District. Each Infringing Product infringes the '855 Patent. Defendants purposefully direct these activities into this District and transact business with Florida consumers through their Internet Stores, establishing personal jurisdiction and venue.

Infringement of the '855 Patent is clear. The key feature of claims 24 and 30 — a cam feature controlling the coupling of the vessel — is visually apparent in all Defendants' accused products. Courts routinely assess and grant preliminary injunctions without full-blown discovery or claim construction. *Outside the Box Innovs., LLC v. Travel Caddy, Inc.*, 695 F.3d 1285, 1302

(Fed. Cir. 2012). Here, Mr. Michael Jobin's Declaration (Exhibit 3, the "Jobin Decl.") fully demonstrates the clear and strong evidence of infringement by the Defendants' products. The Court possesses sufficient evidence to assess whether SharkNinja is likely to prevail on the merits.

This Court previously granted Preliminary Injunction relief against numerous similarly situated imitators of the Ninja SLUSHi on a different patent. [1:25-cv-25323-RAR, ECF Nos. 261, 269] (the "261 Order" and the "269 Order" respectively). Plaintiffs respectfully request that the Court similarly grant Preliminary Injunction here pending the resolution of this case.

II. STATEMENT OF FACTS

A. SharkNinja's Patent and Products

SharkNinja is a global product design and technology leader recognized for consistently redefining consumer experiences through disruptive innovation and bold design, earning an international reputation for quality, reliability, and value. Exhibit 2, Cugini Decl., ¶ 7.

SharkNinja set out to solve an unmet need in the home appliance market for an at-home slush machine that is compact, countertop-worthy, user-friendly, and category-defining. *Id.* ¶¶ 8-12. Previous slush machines required pre-frozen ice and were typically tall, slow, cumbersome, oversized, loud, and produced inconsistent results. Notably, previous slush machines did not allow continuous topping off of liquid during use and required removal of the unit from beneath a cabinet for refilling of ingredients, and SharkNinja recognized the need for a user-friendly method for attaching the vessel to the machine and sealing it requiring minimal user effort and force. *Id*.

Starting in 2022 and over approximately 18 months, a cross-functional team of industrial designers, engineers, food scientists, and market researchers at SharkNinja devised a compact, countertop-suitable and user-friendly device that makes slush fast without ice, can be positioned under the cabinet, and is easy to maintain and operate. *Id.* ¶¶ 11–13. SharkNinja's engineers

devised and patented novel horizontal mixing vessel geometry and a cam feature controlling coupling of the housing and mixing vessel. *Id.* ¶ 13. SharkNinja Operating LLC is the owner of all rights, title, and interest in and to the '855 Patent and SharkNinja Sales Company is a licensee. *Id.* ¶ 6. SharkNinja created this new product category. SharkNinja launched the Ninja SLUSHi with a proven, high-velocity strategy designed to generate viral momentum: to define a product category and preserve the first mover brand equity which relies on a narrow, non-repeatable window during which consumers come to associate a new product category with SharkNinja as the original source. *Id.* ¶¶ 14, 24–25. This approach positioned the Ninja SLUSHi as the original in a new category, and established durable brand equity to support follow-on sales. *Id.*, ¶¶ 24–25.

B. Defendants' Unlawful Activities

Following the successful launch of the Ninja SLUSHi, SharkNinja's proactive intellectual property protection sweeps uncovered a proliferation of online sellers offering knockoff slush machines that infringe SharkNinja's patented advancements, including those listed on Schedule A that infringe the '855 Patent notwithstanding SharkNinja's previous enforcement actions related to other SharkNinja patents. *Id.* ¶¶ 14–18.

Even though this Court granted a Preliminary Injunction against numerous imitators including Defendants Syintao, Fohere, and Wizaura (the 261 and 269 Orders) and entered default for others including Defendants Bizaura and Relexnow, [1:25-cv-25323-RAR, ECF No. 288], more offerings from the same sellers and from other sellers have quickly risen in their place under different trade names or model numbers, or with only superficial design changes. The Accused Products appropriate the very innovations that SharkNinja developed and patented while attempting to pass as legitimate alternatives to the SLUSHi. *Id.* ¶¶ 17–18. The Jobin Declaration shows that each Accused Product includes a cam feature that controls coupling the mixing vessel

to the upper housing section – the key feature in the '855 Patent. The Jobin Declaration further demonstrates in detail that each of the identified Accused Products infringes at least claims 24 (and in some cases 30) of the '855 Patent. Ex. 3; *see also* ECF Nos. 10-1 to 10-40.

The inclusion of the cam feature is no coincidence. The cam feature drives consumer demand by enabling horizontal coupling and a horizontal geometry of the mixing vessel, allowing top openings for continuous topping off as well as easy installation and cleaning. Consumer reviews reflect that the horizontal coupling and decoupling and the horizontal geometry of the mixing vessel enables easy set up and cleaning while fitting on the countertop, which lead to positive consumer feedback and consumer demand. Cugini Decl., ¶ 12 and Exs. 4-7 thereto ("Easy to assemble, easy to use, easy to clean"; "Very easy to set up, very easy to clean! I love the sleek look and it fits perfectly on my counter"; "So easy to put together"; "The whole thing comes apart and goes back together REALLY easily for easy cleaning...").

Defendants are neither authorized resellers nor licensees of any SharkNinja intellectual property, including the Asserted Patent. Cugini Decl. ¶ 20. By infringing the Asserted Patent, Defendants divert sales that would otherwise accrue to SharkNinja, dilute SharkNinja's hard-earned market share, undermine the premium associated with its innovation, increase the risk of inferior product quality in the marketplace, and erode consumer trust. *Id.*, ¶ 21. Investigations further show that Defendants target U.S. consumers, including within this Judicial District: each Internet Store accepted payment in U.S. dollars and shipped into the Southern District of Florida. Screenshots and records evidencing sale and shipment into Florida are compiled in Exhibit 4, Brzozowski Declaration, and ECF No. 10-43, Cheek Declaration. In spite of SharkNinja's prior enforcement efforts, Defendants are launching and relaunching Internet Stores at a volume and pace that far exceeds ordinary market activity. *Id.* ¶ 17.

In short, Defendants have been selling Infringing Products and leveraging SharkNinja's time- and capital-intensive innovations to field knockoffs that trade on the brand equity and consumer demand generated by SLUSHi's viral success. *Id.* ¶ 25.

III. PROCEDURAL BACKGROUND

On April 30, 2026, Plaintiffs filed their Complaint [ECF No. 1] in each of three related cases against three sets of Defendants for patent infringement pursuant to 35 U.S.C. § 271 (1:26-cv-23083-RAR, 1:26-cv-23084-RAR, and 1:26-cv-23086-RAR). SharkNinja brought this case as soon as possible after the issuance of the '855 Patent on April 7, 2026. Plaintiffs filed a Consolidated Complaint on May 7, 2026 [ECF No. 9] ("Compl.") as ordered by the Court [ECF No. 8]. Previously on November 14, 2025, Plaintiffs filed an enforcement action against certain imitation products' sellers for infringement of two other SharkNinja Patents in this Court (1:25-cv-25323-RAR). Several Defendants overlap. The Court granted a Preliminary Injunction against Defendants Syintao, Fohere, and Wizaura and entered default for Defendants Bizaura and Relexnow [1:25-cv-25323-RAR, ECF Nos. 261, 269, 288].

IV. ARGUMENT

A. A Preliminary Injunction is Essential to Prevent Irreparable Injury

Rule 65(a)(1) of the Federal Rules of Civil Procedure provides that a Court may issue a preliminary injunction on notice to the adverse party. Fed. R. Civ. P. 65(a)(1). Plaintiffs thus are concurrently filing a Motion for Alternative Service for this motion with the Court. This Court has personal jurisdiction over each Defendant. *Louis Vuitton* Malletier*, S.A. v. Mosseri*, 736 F.3d 1339, 1354 (11th Cir. 2013) (the S.D. Fla. regularly exercises personal jurisdiction over websites selling infringing merchandise sold without authorization to Florida residents over the internet). The Court agreed in the prior proceeding that, at least for preliminary injunction purposes,

Defendants whose products were actually transacted for from Florida and shipped into the forum are subject to this Court's personal jurisdiction. 269 Order at 9–10. Each Defendant's Internet Store offers for sale and each has actually sold and shipped Infringing Products into the District. Brzozowski Declaration (Exhibit 4) and Exhibits 1–750 thereto, Complaint [ECF No. 9] ¶¶ 11–15, Cheek Declaration and Exhibits A–NN thereto [ECF Nos. 10-43 through 10-83]. These exhibits provide vendor-by-vendor and product-by-product order records and photographs from each Internet Store demonstrating that each of the Infringing Products can be and ***has been purchased and shipped into the District***. This sufficiently shows that each Defendant is subject to this Court's jurisdiction pursuant to Florida Statutes § 48.193(1)(a)(1)–(2) and § 48.193(1)(a)(6). This Court also has original subject matter jurisdiction over patent claims pursuant to 35 U.S.C. § 1 *et seq*., 28 U.S.C. §§ 1331, 1338(a)–(b). Venue is proper in this Court pursuant to 28 U.S.C. §§ 1391, 1400.

This Court recognized that the knock-off sellers' rampant infringement of SharkNinja's intellectual property rights constitutes irreparable harm and authorized injunctive relief in the previous case involving the same facts (though on a different patent). 261 Order at 35; 269 Order at 32. Specifically, the Court recognized that price erosion, loss of goodwill, damage to reputation, and loss of business opportunities are all valid grounds for finding irreparable harm and did find that SharkNinja's loss of market share in the market SLUSHi pioneered can sufficiently demonstrate irreparable harm. 261 Order at 28–30; 269 Order at 29–30.

As the Court previously found, Defendants' ongoing infringement inflicts immediate, irreparable, and indivisible harm to Plaintiffs that warrants the Court's preliminary injunction relief. Each Defendant here unlawfully makes, uses, sells, offers for sale, or imports goods that infringe the Asserted Patent via the Internet Stores. By their actions, Defendants are eroding

consumer confidence, depleting SharkNinja's hard-earned brand equity, and diluting SharkNinja's market share. The number of Defendants in conjunction with their anonymity renders individual enforcement efforts impractical and ineffective. Furthermore, the similarity in Defendants' conduct and product offerings indicates a single, interconnected scheme that inflicts individual, concurrent, and indivisible injury on SharkNinja. *See, e.g.*, Compl., ¶49.

The upcoming summer months — including the upcoming Amazon Prime Day, predicted to be near the end of June — are a critical commercial window for SharkNinja's products. Cugini Decl. ¶¶ 24–26. SharkNinja's launches rely on fleeting, non-repeatable viral windows when consumer attention, brand equity, and first-mover recognition peak. *Id.* Allowing Defendants' infringement to continue through this period would siphon network effects, erode price integrity, and permanently dilute the goodwill and market position SharkNinja has built. *Id.* Proliferation of Defendants' Infringing Products also causes market share loss and price depression, diminished brand equity, and erosion of its position as the original source of this category defining product. *Id*., ¶¶ 21-25. The Court's injunctive relief effectively alleviates the immediate irreparable harm from knock offs. Cugini Decl., ¶¶ 27–28. Without the relief requested herein, Defendants' infringing activities will continue unabated, nullifying the protection afforded by Plaintiffs' prior efforts and inflicting harm that cannot be compensated by monetary damage alone.

B. The Four Factors All Favor Entry of a Preliminary Injunction

To obtain a preliminary injunction, a party must establish: "(1) a substantial likelihood of success on the merits; (2) that irreparable injury will be suffered if the relief is not granted; (3) that the threatened injury outweighs the harm the relief would inflict on the non-movant; and (4) that entry of the relief would serve the public interest." *Schiavo ex rel. Schindler v. Schiavo*, 403 F.3d 1223, 1225–26 (11th Cir. 2005). All of these factors strongly favor an injunction here against all

Defendants, as the Court already recognized in the previous cases involving the same underlying market facts, though a different patent. 261 and 269 Orders.

1. SharkNinja Is Likely to Succeed on the Merits

SharkNinja will likely succeed on its patent infringement claims. A plaintiff must show that an asserted patent would "more likely than not" withstand a validity challenge and that the patent is infringed to obtain preliminary relief. *Doubleday Acquisitions LLC v. Envirotainer AB*, No. 1:21-CV-03749-SCJ, 2022 WL 2784800, at *3 (N.D. Ga. May 31, 2022); *Titan Tire Corp. v. Case New Holland, Inc.*, 566 F.3d 1372, 1376–80 (Fed. Cir. 2009). "Each issued patent carries with it a presumption of validity under 35 U.S.C. § 282" sufficient to establish a likelihood of success on the validity issue. *Tinnus Enters., LLC v. Telebrands Corp.*, 846 F.3d 1190, 1205 (Fed. Cir. 2017); *Doubleday Acquisitions*, 2022 WL 2784800, at *3. The '855 Patent is valid, enforceable, and in force. Compl., ¶ 2. Thus, Defendants face the statutory presumption of validity, and nothing before the Court undermines that presumption at this stage. *Tinnus*, 846 F.3d at 1205. Plaintiffs have not licensed or authorized Defendants to practice the Asserted Patent. Compl., ¶ 43; Cugini Decl., ¶ 20.

For patent infringement, courts first construe the patent claim and compare it to the accused product or method. *Columbia Sportswear N. Am., Inc. v. Seirus Innovative Accessories, Inc.*, 80 F.4th 1363, 1376 n. 7 (Fed. Cir. 2023). Patent claims can be "literally" infringed, such that every claim element is present in the accused device, or infringed under the doctrine of equivalents. *Bristol-Myers Squibb Co. v. Andrx Pharms., Inc.*, 343 F. Supp. 2d 1124, 1133–34 (S.D. Fla. 2004).

The Jobin Declaration and Complaint painstakingly correlates ***each of the Accused Products*** (through photographs of physical samples purchased in preparation of this case) with each limitation of claim 24 (and some Accused Products to claim 30 as well). Exhibit 3; Compl., ¶ 63 and ECF Nos. 10-1 to 10-40. As demonstrated by his declaration and the evidence he relies

on, each of the Accused Products infringe at least Claim 24 (and in some cases 30) of the '855 Patent. *See* Jobin Decl. Central to the infringement analysis, each of the Infringing Products includes the claimed cam feature. *See* Jobin Decl. ¶¶ 58–101; Compl., ¶ 49. This is not rocket science and can be verified by plain visual inspection. The purpose of a dial or lever located on the side of each Accused Product to be moved between two positions – one that couples the mixing vessel to the housing and one that decouples the mixing vessel to the housing. The cam mechanism allows that coupling and decoupling to be performed with very little force by the user.

2. SharkNinja Will Suffer Irreparable Harm in the Absence of Preliminary Injunction

Defendants' ongoing sale of Infringing Products is causing SharkNinja brand equity depletion, loss of market share, price depression, and loss of exclusivity in the very market it created. Cugini Decl. ¶¶ 20–27. A patent confers "the right to exclude others from using his property." *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 392 (2006) (citing *Fox Film Corp. v. Doyal*, 286 U.S. 123, 127 (1932)) (internal citation omitted). Violation of a patent owner's "right to exclude" renders monetary remedies inadequate in circumstances where exclusivity, market position, and brand equity are actively depleted. *Id.*; Compl. ¶¶ 58-61; Cugini Decl. ¶¶ 22–29. This Court recognized that "[p]rice erosion, loss of goodwill, damage to reputation, and loss of business opportunities are all valid grounds for finding irreparable harm." 269 Order at 30 (citing *Celsis In Vitro, Inc. v. Cellzdirect, Inc.*, 664 F.3d 922, 930 (Fed. Cir. 2012)). "Direct competition in the same market is certainly one factor suggesting strongly the potential for irreparable harm without enforcement of the right to exclude." *Id.* at 29 (citing *Presidio Components, Inc. v. Am. Tech. Ceramics Corp.*, 702 F.3d 1351, 1363 (Fed. Cir. 2012)).

This Court further recognized that "there is no effective way to measure the loss of sales or potential growth—to ascertain the people who do not knock on the door or to identify the

specific persons who do not reorder because of the existence of the infringer." 261 Order at 28 (quoting *Celsis In Vitro, Inc*., 664 F.3d at 930). Claims for "[l]oss of goodwill may include a change in the marketplace resulting from customers establishing relationships with low-cost infringers." 261 Order at 28 (quoting *QBAS Co. v. C Walters Intercoastal Corp.*, 2010 WL 7785955, at *12 (C.D. Cal Dec. 16, 2010) (citing *Polymer Techs. v. Bridwell*, 103 F.3d 970, 975 (Fed. Cir. 1996))). Price erosion naturally follows, as "[t]he customers may then refuse to pay higher prices for a product 'after years of paying lower prices to infringers.'" 261 Order at 28 (quoting *QBAS Co.*, 2010 WL 7785955, at *12 (quoting *Polymer Techs*. 103 F.3d at 975)). The harm Defendants' activity is causing SharkNinja is therefore irreparable.

a) SharkNinja Suffers from Irreparable Harm to Its Business And Brand

SharkNinja is suffering actual market dilution, price erosion, loss of virality and brand loyalty, and forced competition with its own inventions to which it has exclusive rights, because of the copycats as evidenced by comparing SLUSHi to past category-defining products like CREAMi. Cugini Decl., ¶ 26. This actual harm is not merely speculation. "Price erosion, loss of goodwill, damage to reputation, and loss of business opportunities are all valid grounds for finding irreparable harm." *Celsis In Vitro,* 664 F.3d at 930. SharkNinja's showing of loss of market share is sufficient to show irreparable harm. 261 Order at 28–30; 269 Order at 29–30.

Ms. Cugini's Declaration illustrates the gravity of the harm suffered by SharkNinja that is being caused by knock-offs. In 2024, when the Ninja SLUSHi product was launched, SLUSHi was the clear first mover and captured approximately 96% of the market, and there were no known competitors of this new category-defining product at launch. Cugini Decl., ¶ 14. The launch was viral, and "Ninja SLUSHi" became synonymous with this category of at-home slush machines. *Id.*

The overwhelming success brought the emergence of a large number of knockoffs onto the market. *Id.*, ¶ 15. SharkNinja's business intelligence team actively monitor the market and have identified the Defendants as making, using, offering for sale, selling, and importing unauthorized products that infringe SharkNinja's '855 Patent. Cugini Decl., ¶¶ 16–17. While the countertop slush machine category was only recently invented and introduced to the market by SharkNinja in 2024, the proliferation of knockoffs is rapid. The market segment keeps growing over time, but the Defendants' sales of infringing products derailed SLUSHi's dominant trajectory as predicted by past viral product launches such as CREAMi, eating a significant segment of the market's growth. Cugini Decl., ¶26. SharkNinja has had to conduct price discounts from time to time to maintain market share, a result of being forced to compete with the misappropriated technology SharkNinja itself invented. *Id.*, ¶18.

Since the Defendants began selling their infringing products, SharkNinja has suffered from decreased consumer confidence, brand equity depletion, and market status dilution—ongoing harm that cannot be adequately remedied by money damages. *Id.* ¶¶ 21–25. Defendants are free-riding on SharkNinja's time- and capital-intensive inventions, capturing sales that would otherwise accrue to SharkNinja, diluting market share, eroding price premium, and increasing the risk of poor product quality. *Id.* SharkNinja, through its SLUSHi, has become synonymous with being the innovator in the counter-top, at-home slush machine market, and the proliferation of infringers leveraging SharkNinja's patented features without its quality controls further injures SharkNinja's reputation and consumer trust in the brand, particularly given SharkNinja's social media-driven emphasis on groundbreaking design, ease of use, and cleaning. Cugini Decl. ¶¶ 22–28. Indeed, 2025 and early 2026 sales show the SLUSHi is at risk of underperforming relative to

prior category-defining launches of SharkNinja products. *Id*. This market data suggests ongoing diversion and brand dilution. *Id*.

Effective protection of SharkNinja's intellectual property right from rampant infringement requires more than one-off enforcement actions. Although SharkNinja successfully obtained Preliminary Injunction relief and default judgment against certain knockoff sellers in this District [1:25-cv-25323-RAR, ECF Nos. 261, 269, 288], Defendants have continued to establish these Internet Stores and engage in ongoing sales of the Infringing Products, often engaging in offering essentially the same products masked under different trade names or model numbers, or switching surface-level features. *Id.*, ¶ 17. Numbers show that the Court's injunctive relief effectively alleviates the immediate irreparable harm from a set of knock-offs. *Id.*, ¶ 27. Defendants defy SharkNinja's enforcement by quickly re-launching new offerings. For example, Defendants Relexnow and Bizaura, having not responded to SharkNinja's previous Complaint, simply listed similar knock-off products under various ASINs. Similarly, Defendants Syintao, Fohere, and Wizaura, while under a preliminary injunction which took their previous offerings of the infringing products off the market, also listed similar products under new ASINs.

3. The Harm to SharkNinja Is Irreparable Because Monetary Judgment Will Be Uncollectible

Irreparable harm warranting issuance of a Preliminary Injunction is also appropriate where "Defendants' business operations are geographically 'far-flung,' making the enforcement of a money judgment 'exceedingly difficult.'" *Canon, Inc. v. GCC Int'l Ltd*., 263 F. App'x 57, 62 (Fed. Cir. 2008) (affirming grant of preliminary injunction against a foreign company). As discussed, Defendants have no or few U.S. assets, including those associated with their storefronts.

The shifty nature of Defendants' business model prevents any meaningful collection of any monetary judgment award against them. This fact alone makes the harm caused by Defendants

irreparable. The fact that a defendant is a foreign entity "alone is sufficient to show that [the plaintiff] will likely be irreparably harmed." *Aevoe Corp. v. Shenzhen Membrane Precise Electron Ltd.*, 2012 WL 1532308, at *5 (D. Nev. May 1, 2012). Courts have indeed consistently found insufficiency of monetary damages where Defendants in a patent infringement case are foreign entities with no U.S. assets. *See Bushnell, Inc. v. Brunton Co.*, 673 F. Supp. 2d 1241, 1263 (D. Kan. 2009) (finding that "the prospect of collecting money damages from a foreign defendant with few to no assets in the United States tips in favor of a finding of irreparable harm."); *Shu v. Di*, 2025 WL 1483497, at *4 (W.D. Pa. Apr. 11, 2025) (granting Preliminary Injunction against foreign infringers, noting that "Defendants are foreign corporations that allegedly continuously hide or change their identities, providing little assurance that Plaintiff could collect monetary damages.").

Here, in view of the fact that Defendants are all foreign companies with no U.S. presence or assets, any judgment at the conclusion of a trial on the merits will be virtually meaningless to SharkNinja. The damage will have been done, and SharkNinja will have no recourse to compensate for that damage.

4. The Irreparable Harm Is Being Caused By Defendants' Infringing Acts

The irreparable harm being suffered by SharkNinja is directly caused by Defendants' infringement. "[A]lthough the irreparable harm and the causal nexus inquiries may be separated for the ease of analysis, they are inextricably related concepts." *Apple Inc. v. Samsung Elecs. Co.*, 695 F.3d 1370, 1374 (Fed. Cir. 2012). The design of the mixing vessel and the cam feature of the SLUSHi "embody a substantial part of the patented feature and not much else," and that "Plaintiffs have become the market leader suggests that they possess a superior technology, the technology of the [] patent." *LifeScan, Inc. v. Shasta Techs., LLC*, 933 F. Supp. 2d 1243, 1262 (N.D. Cal.) (refusing to extend *Apple v. Samsung* causal nexus analysis to a blood glucose testing strip product), rev'd and remanded sub nom. *LifeScan Scotland, Ltd. v. Shasta Techs., LLC*, 734 F.3d

1361 (Fed. Cir. 2013) on other grounds. "Where two companies are in competition against one another, the patentee suffers the harm—often irreparable—of being forced to compete against products that incorporate and infringe its own patented inventions." 261 Order at 30–31 (quoting *Douglas Dynamics, LLC v. Buyers Prod. Co.*, 717 F.3d 1336, 1346 (Fed. Cir. 2013)).

SharkNinja has not only proven that SharkNinja created a new market segment of under-cabinet and countertop home-use slush machine and became the pioneer and market leader, but also that the Defendants replicated one of the most important features enabling a slush machine to be under-cabinet and countertop covered by the Asserted Patent. Thus, the causal nexus between the irreparable harm and Defendant's infringement is strongly supported. Injunctive relief is essential to prevent further loss of market share and brand equity during a critical commercial period. Continued infringement will irreversibly erode network effects and first-mover recognition that cannot be restored after trial. Cugini Decl. ¶¶ 23–28.

Plaintiffs initially filed three separate cases against three groups of Defendants, grouped by apparent similarities of their Infringing Products. The Court noted that the "three cases allege common issues of law and fact" and exercised its discretion to consolidate. [ECF No. 7]. Rule 20(a)(2)(A) permits defendants to be "joined in one action . . . if any right to relief is asserted against them . . . with respect to or arising out of the same transaction, occurrence, or series of transactions or occurrences." While each individual Defendant's actions, alone, cause Plaintiffs irreparable harm, the sheer number of Internet Stores is a force multiplier of those individual harms that creates a massive single reputational harm to Plaintiffs. SharkNinja faces significant economic and logistical challenges in enforcing its intellectual property rights against each Internet Store individually. Single Defendant enforcement in the face of the overwhelming infringement points of sale made possible by the unregulated and anonymous nature of the internet is impractical,

ineffective, and does not remedy the actual harm to SharkNinja caused by the combined effect of all of Defendants' simultaneous infringing operations. Defendants Syintao, Fohere, Wizaura, Bizaura and Relexnow simply offered similar products under new ASINs after SharkNinja's previous enforcement action. The imitators' launching and re-launching of infringing Products are at a pace far exceeding ordinary market activity. Cugini Decl., ¶ 17. The collective harm shown by SharkNinja's loss of market share is significant and "well exceeds" any "incremental" harm by any individual Defendant. 269 Order at 31.

The anonymity and mass-reach the internet provides makes identifying the full extent and scope of the Defendants' infringing operations nearly impossible. Defendants, each of whom is likely aware of the existence of the illegal marketplace and the activities of the others to perpetuate the same, are combining the force of their actions to cause individual, concurrent, and indivisible harm to Plaintiffs and consumers. The striking similarities of the Defendants' products strongly suggest that the Defendants' infringing products were manufactured by the same entity from the same infringing industrial design, and their infringing activities are concerted. Defendants' activities are all logically part of the same occurrence and each is therefore properly joined in this action under Fed. R. Civ. P. 20. *See Bose Corp. v. The P'ships and Unincorporated Ass'ns Identified on Schedule "A,"* 334 F.R.D. 511 (N.D. Ill. Feb. 19, 2020).

Immediate injunctive relief is essential to prevent further loss of market share and brand equity during a critical commercial period. Continued infringement will irreversibly erode network effects and first-mover recognition that cannot be restored. Cugini Decl. ¶¶ 24–28.

5. The Balance of Hardship Tips Sharply in SharkNinja's Favor

The balance of equities strongly favors immediate injunctive relief because the concrete, ongoing harm to SharkNinja from direct copying and loss of control over its patented product and brand vastly outweighs any claimed burden on Defendants, who have no lawful entitlement to

profits from their continued infringement. *See Schiavo*, 403 F.3d at 1225–26. As this Court has already found, SharkNinja's significant loss of market share for SLUSHi due to competition with its own technology suffices to favor preliminary injunction. 269 Order at 31.

SharkNinja is suffering present hardship "from loss of sales and its inability to control its reputation" because of Defendants' infringement. *See Daka Rsch., Inc. v. Individuals*, No. 22-cv-60246, 2023 WL 5310240, at *4 (S.D. Fla. July 14, 2023), *aff'd and adopted*, 2023 WL 5289258, at *1 (S.D. Fla. Aug. 17, 2023). SharkNinja's brand and reputation are harmed when the innovations protected by the Asserted Patent are incorporated into goods not authorized, produced, or manufactured by SharkNinja. Cugini Decl. ¶¶ 21–26. Defendants' infringing conduct strips SharkNinja of control over the quality of products embodying its patented design and technology and over its reputation that is not measurable or compensable with money damages. *Id.*, ¶ 21. This is particularly damaging because SharkNinja's social media strategy depends on consumer trust in authentic products, their ease of use and cleaning, and clear source identification. Defendants' infringing conduct undermines consumer confidence in SharkNinja's brand—market data shows that the SLUSHi may be underperforming relative to SharkNinja's previous category-defining product launches and risks losing its status as the at-home slush maker. *Id.* ¶¶ 25–26. Furthermore, Defendants' Internet Stores target U.S. consumers, accept U.S. dollars, and ship into the District. Compl. ¶¶ 12–15; Cheek Decl. [ECF No. 10-43]. Absent the requested injunctive relief, Defendants' actions will continue to divert demand from SharkNinja.

By contrast, being ordered to stop infringing patents they have no right to practice in the first place poses no hardship on Defendants. *See Daka Rsch.*, 2023 WL 5310240, at *4. Any harm Defendants claim is self-inflicted because they chose to build and sell Infringing Products. *C.B. Fleet Co., Inc. v. Unico Holdings, Inc.*, 510 F. Supp. 2d 1078, 1083 (S.D. Fla. 2007) ("[A] company

cannot build a business on infringements and then argue that enforcing the law will cripple that business."). The equities therefore weigh decisively in favor of an injunction.

6. Issuance of the Injunction is in the Public Interest

An injunction here serves the public interest by protecting consumers and safeguarding the patent system from ongoing harm. *See Daka Rsch.*, 2023 WL 5310240, at *4; *Apple Inc. v. Samsung Elecs. Co., Ltd.*, 809 F.3d 633, 647 (Fed. Cir. 2015) (public interest favors an injunction when the patentee practices his invention). Enjoining the ongoing online sale of infringing slush machines protects consumers from being misled by Infringing Products that trade on the Asserted Patent. *Daka Rsch.*, 2023 WL 5310240, at *4. An injunction will ensure that consumers have a smooth and reliable experience with their slush machine as designed by SharkNinja and will prevent consumers from associating inferior products with SharkNinja. Injunctive relief would also advance the public's interest in technological progress and innovation. *Apple*, 809 F.3d at 647. "While the general public certainly enjoys lower prices, cheap copies of patented inventions have the effect of inhibiting innovation and incentive." 261 Order at 33–34 (citing *Douglas Dynamics*, 717 F.3d at 1346). "This detrimental effect, coupled with the public's general interest in the judicial protection of property rights in inventive technology, outweighs any interest the public has in purchasing cheaper infringing products." *Id.* "In sum, the public has a greater interest in acquiring new technology through the protections provided by the Patent Act than it has in buying 'cheaper knock-offs.'" *Id*.

C. The Equitable Relief Sought is Appropriate

The Patent Act authorizes courts to issue injunctive relief "in accordance with the principles of equity to prevent the violation of any right secured by patent, on such terms as the court deems reasonable." 35 U.S.C. § 283. Furthermore, F.R.C.P. 65(b) provides that a court may issue a preliminary injunction upon notice. The facts in this case warrant such relief.

Plaintiffs request that the Court issue a preliminary injunction that requires Defendants to cease manufacturing, importing, advertising, promoting, offering to sell, selling, distributing, or transferring any products infringing the Asserted Patent, including the products identified on Schedule A. SharkNinja is experiencing ongoing irreparable harm—including reduced consumer trust, brand equity depletion, and market status dilution—because of Defendants' ongoing infringement. This relief is essential to continue to prevent erosion of market share and brand equity while this case is pending for final adjudication. This Court has authorized injunctive relief previously involving the similar knock-off sellers of the Ninja SLUSHi engaging in the unauthorized and unlawful infringement of Plaintiffs' Patents. 261 and 269 Orders. The Court should reach a similar conclusion here. Plaintiffs do not seek an asset freeze.

D. A Posted Bond is Sufficient to Secure the Injunction

The posting of security upon issuance of a preliminary injunction is vested in the Court's sound discretion. Fed. R. Civ. P. 65(c). Because of the strong and unequivocal nature of SharkNinja's counterfeiting evidence against Defendants, SharkNinja respectfully consents to post a bond up to one hundred thousand dollars ($100,000.00) at the Court's discretion.

E. Request for Hearing

Under Local Rule 7.1(b)(2) and F.R.C.P. 65(b)(3), SharkNinja respectfully requests a hearing on its Motion. SharkNinja estimates the time required will be approximately one day.

V. CONCLUSION

SharkNinja respectfully requests that this Court schedule a hearing on SharkNinja's Motion for Preliminary Injunction pursuant to Local Rule 7.1(b)(2) and F.R.C.P. 65(b)(3)and issue a preliminary injunction as to Defendants in the form SharkNinja will submit to the Court prior to the hearing.

Dated: May 8, 2026.

Respectfully submitted,

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EXHIBIT “1”

US012593855B2

(12) **United States Patent**
Roberts et al.

(10) **Patent No.: US 12,593,855 B2**
(45) **Date of Patent: *Apr. 7, 2026**

(54) **DRINK MAKER WITH DETACHABLY CONNECTABLE MIXING VESSEL**

(71) Applicant: **SharkNinja Operating LLC**, Needham, MA (US)

(72) Inventors: **Matthew Roberts**, Needham, MA (US); **Michael Lerman**, Providence, RI (US); **Macrae Benziger**, Dedham, MA (US); **Alexander Mularski**, Auburn, MA (US); **Joyce Tu**, Melrose, MA (US); **Cameron John Auger**, Watertown, MA (US)

(73) Assignee: **SharkNinja Operating LLC**, Needham, MA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **18/423,894**

(22) Filed: **Jan. 26, 2024**

(65) **Prior Publication Data**

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Related U.S. Application Data

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(51) **Int. Cl.**
A23G 9/22 (2006.01)
A23G 9/04 (2006.01)

(52) **U.S. Cl.**
CPC ***A23G 9/22*** (2013.01); ***A23G 9/045*** (2013.01)

(58) **Field of Classification Search**
CPC A23G 9/045; A23G 9/06; A23G 9/08
See application file for complete search history.

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Primary Examiner — Claire X Wang
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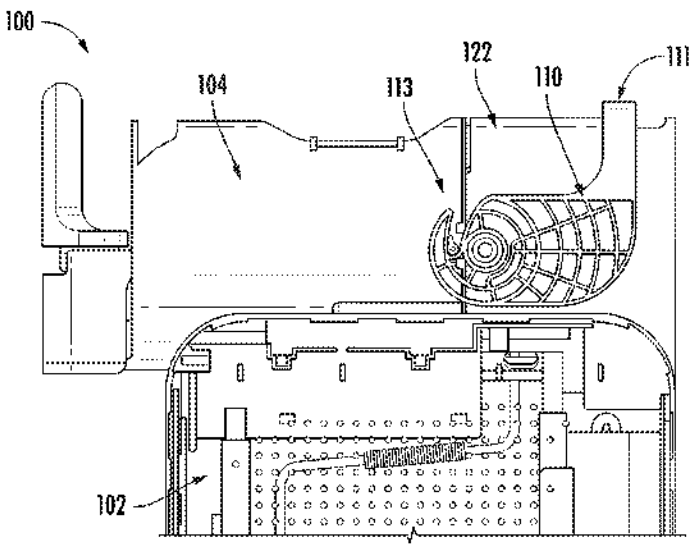
(57) **ABSTRACT**

A frozen drink maker is described that includes a housing, a mixing vessel to mix a drink product, and a flexible seal. The housing includes an upper housing section and a lever moveable relative to the upper housing section between a coupled position and an uncoupled position. The flexible seal is between the upper housing section and the mixing vessel. The lever couples the mixing vessel to the upper housing section when in the coupled position and uncouples the mixing vessel from the upper housing section when in the uncoupled position. When the lever is in the coupled position, the mixing vessel is sealed against the upper housing section by the flexible seal.

32 Claims, 45 Drawing Sheets



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Answer and Counterclaims, *SharkNinja Operating LLC* v. *RJ Brands, LLC*, No. 1:25-cv-05650 (D.N.J. Aug. 11, 2025) 37 pages.

Complaint for Declaratory Judgment, *Shenzhen SaLilan Technology Co., Ltd et al* v. *SharkNinja Operating LLC*, 2025, pp. 1-11, No. 1:25-cv-12447-WGY.

Complaint SharkNinja Operating LLC et al. v. *The Individuals, Corporations, Limited Liability Companies, Partnerships, And Unincorporated Associations* Identified on Schedule A, 2025, pp. 1-29, No. 1:25-cv-25323-RAR.

Exhibit Claim 1 Analysis, *SharkNinja Operating LLC et al.* v. *The Individuals, Corporations, Limited Liability Companies, Partnerships, And Unicorporated Associations* Identified on Schedule A, 2025, pp. 1-7, No. 1:25-cv-25323-RAR.

Expedited Motion to Dissolve Temporary Restraining Order And Deny Preliminary Injunction, *SharkNinja Operating LLC et al.* v. *The Individuals, Corporations, Limited Liability Companies, Partnerships, And Unicorporated Associations* Identified on Schedule A, 2025, pp. 1-20, No. 1:25-cv-25323-RAR.

Limited Opposition to Plaintiffs' Motion for Entry or Preliminary Injuction, *SharkNinja Operating LLC et al.* v. *The Individuals, Corporations, Limited Liability Companies, Partnerships, And Unicorporated Associations* Identified on Schedule A, 2025, pp. 1-12, No. 1:25-cv-25323-RAR.

Motion to Dissolve Ex Parte Tro And Opposition To Plaintiffs' Motion For Entry Of Preliminary Injunction, *SharkNinja Operating LLC et al.* v. *The Individuals, Corporations, Limited Liability Companies, Partnerships, And Unicorporated Associations* Identified on Schedule A, 2025, pp. 1-13, No. 1:25-cv-25323-RAR.

Answer and Counterclaims to Plaintiffs' Second Amended Complaint, *SharkNinja Operating LLC et al.* v. *RJ Brands, LLC*, No. 1:25-cv-05650, 2025, 242 pages.

Defendants' Opposition to Plaintiffs' Motion for Entry of Preliminary Injunction, *SharkNinja Operating LLC et al.* v. *The Individuals, Corporations, Limited Liability Companies, Partnerships, And Unicorporated Associations* Identified on Schedule A, 2025, pp. 1-21, No. 1:25-cv-25323-RAR.

Amended Complaint for Declaratory Judgment, *Shenzhen SaLilan Technology Co., Ltd et al* v.*SharkNinja Operating LLC*, 2025, pp. 1-20, No. 1:25-cv-12447-WGY.

Omnibus Reply in Support of the Motion for Entry of Preliminary Injunction, *SharkNinja Operating LLC et al.* v. *The Individuals, Corporations, Limited Liability Companies, Partnerships, And Unicorporated Associations* Identified on Schedule A, 2025, 44 pages, No. 1:25-cv-25323-RAR.

Order Dissolvng Temporary Restraining Order and Referring Case to Magistrate Judge, *SharkNinja Operating LLC et al.* v. *The Individuals, Corporations, Limited Liability Companies, Partnerships, And Unicorporated Associations* Identified on Schedule A, 2025, pp. 1-4, No. 1:25-cv-25323-RAR.

Shenzen Fengkai E-commerce Co., Ltd. and Hong Kong Huayun Economic & Trade c., Ltd. Defendents' Opposition to Plaintiffs' Motion for Entry of Preliminary Injunction, *SharkNinja Operating LLC et al.* v. *The Individuals, Corporations, Limited Liability Companies, Partnerships, And Unicorporated Associations* Identified on Schedule A, 2025, pp. 1-18, No. 1:25-cv-25323-RAR.

Xu Defendants' Opposition to Plaintiffs' Motion for Preliminary Injunction, *SharkNinja Operating LLC et al.* v. *The Individuals, Corporations, Limited Liability Companies, Partnerships, And Unicorporated Associations* Identified on Schedule A, 2025, 19 pages, No. 1:25-cv-25323-RAR.

Defendants answer to complaint and counterclaims, *Sharkninja Operating LLC*, v *The Individuals, Corporation, Limited liability companies, partnerships and unincorporated associations* identified on schedule A, Case No. 1:25-cv-25323, Doc. 239, Jan. 28, 2026.

Exhibit I to Glacier Parties' Opposition To Plaintiff's Motion For Preliminary Injunction, *SharkNinja Operating LLC et al.*v. *The Individuals, Corporations, Limited Liability Companies, Partnership, And Unincorporated Associations* Identified on Schedule A, Jan. 15, 2026, No. 1:25-cv-25323-RAR, 73 pages.

Exhibit I to Glacier Parties' Opposition To Plaintiff's Motion For Preliminary Injunction, *SharkNinja Operating LLC et al.*v. *The Individuals, Corporations, Limited Liability Companies, Partnership, And Unincorporated Associations* Identified on Schedule A, Jan. 15, 2026, No. 1:25-cv-25323-RAR, 57 pages.

Exhibit I to Glacier Parties' Opposition To Plaintiff's Motion For Preliminary Injunction, *SharkNinja Operating LLC et al.*v. *The Individuals, Corporations, Limited Liability Companies, Partnership, And Unincorporated Associations* Identified on Schedule A, Jan. 15, 2026, No. 1:25-cv-25323-RAR, 47 pages.

Glacier Parties' Opposition To Plaintiff's Motion For Preliminary Injunction, *SharkNinja Operating LLC et al.*v. *The Individuals, Corporations, Limited Liability Companies, Partnership, And Unincorporated Associations* Identified on Schedule A, Jan. 15, 2026, No. 1:25-cv-25323-RAR, 37 pages.

* cited by examiner

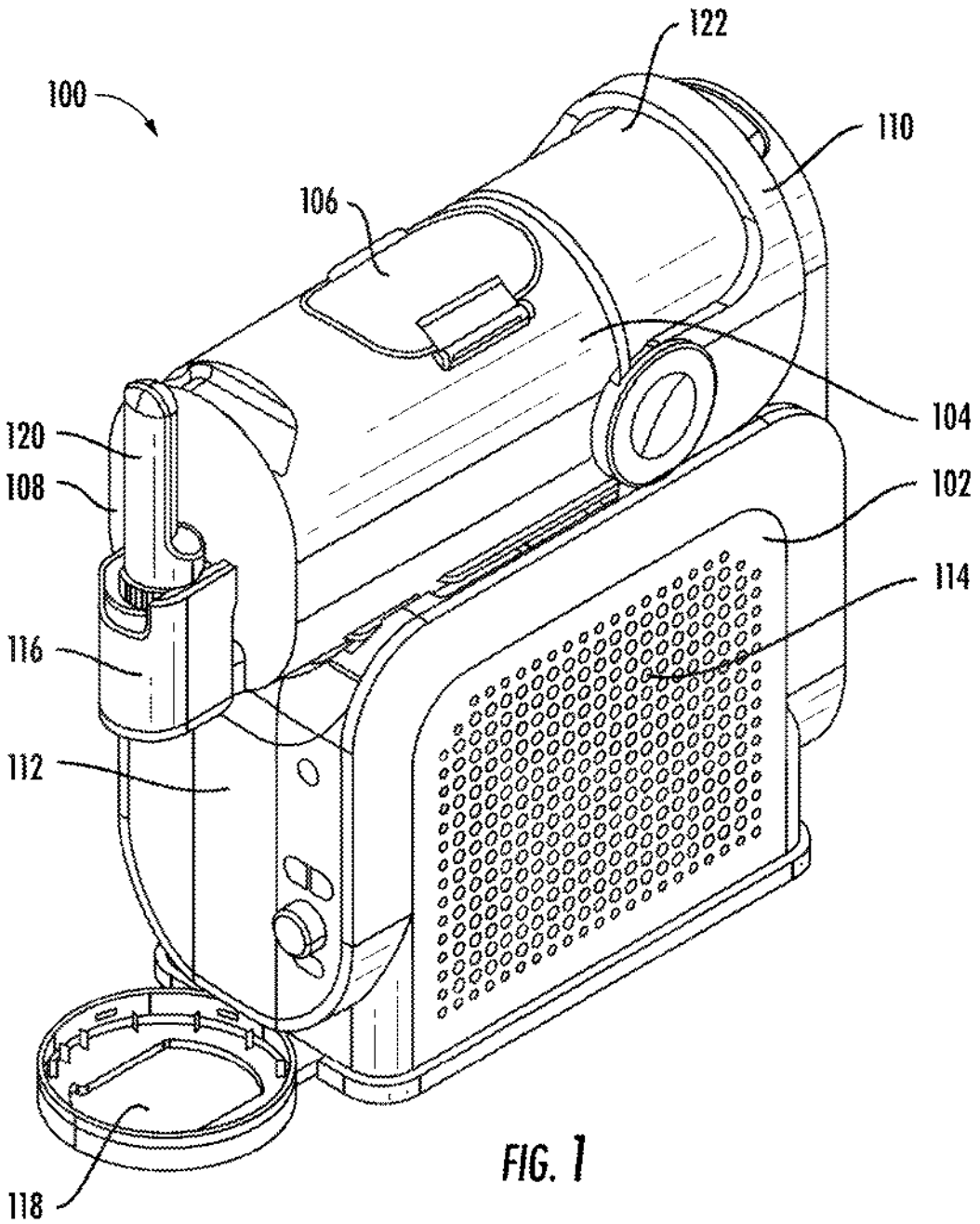


FIG. 1

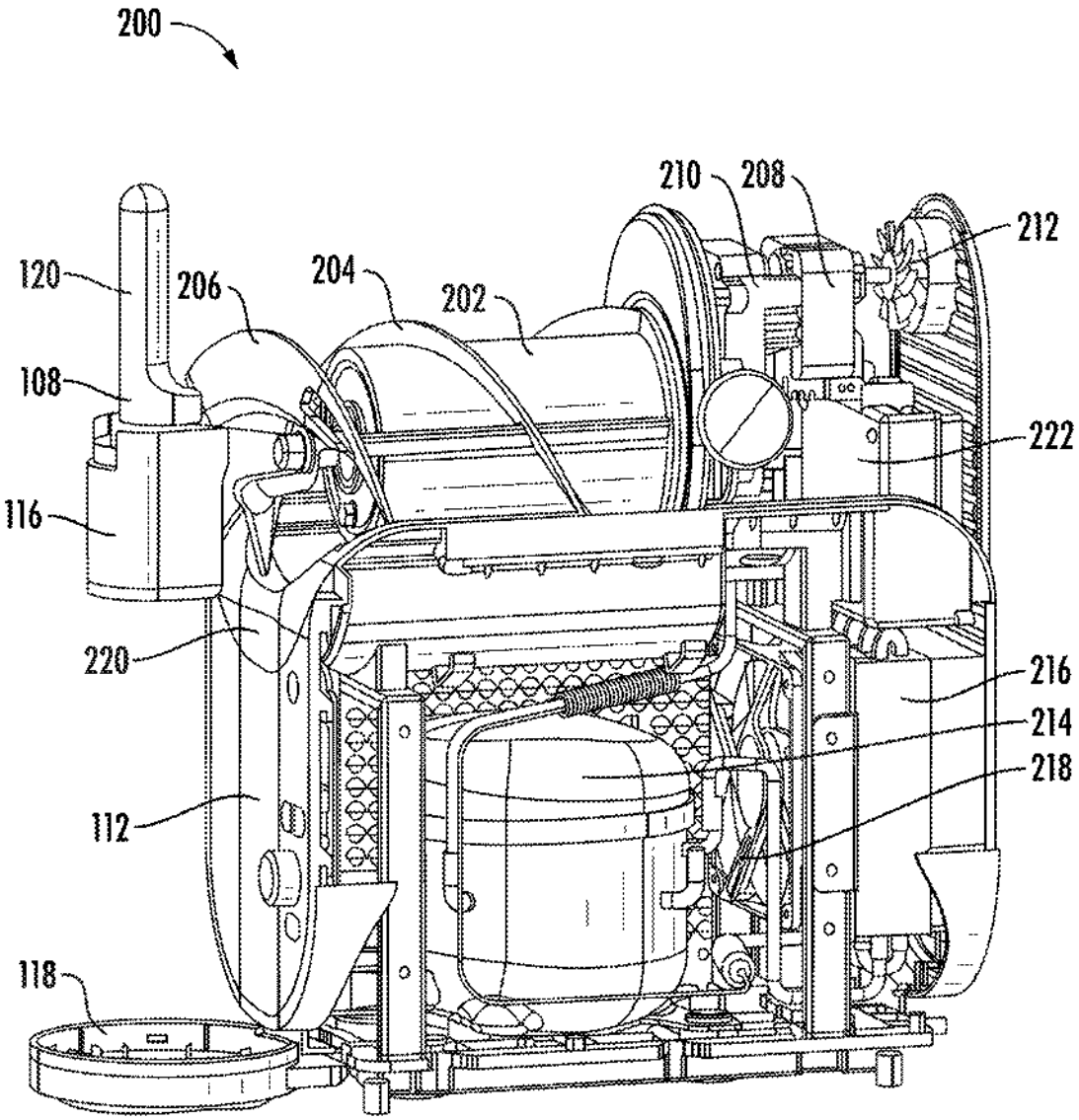

200
210
208
212
120
206
204
202
108
222
116
220
216
214
218
112
118

FIG. 2

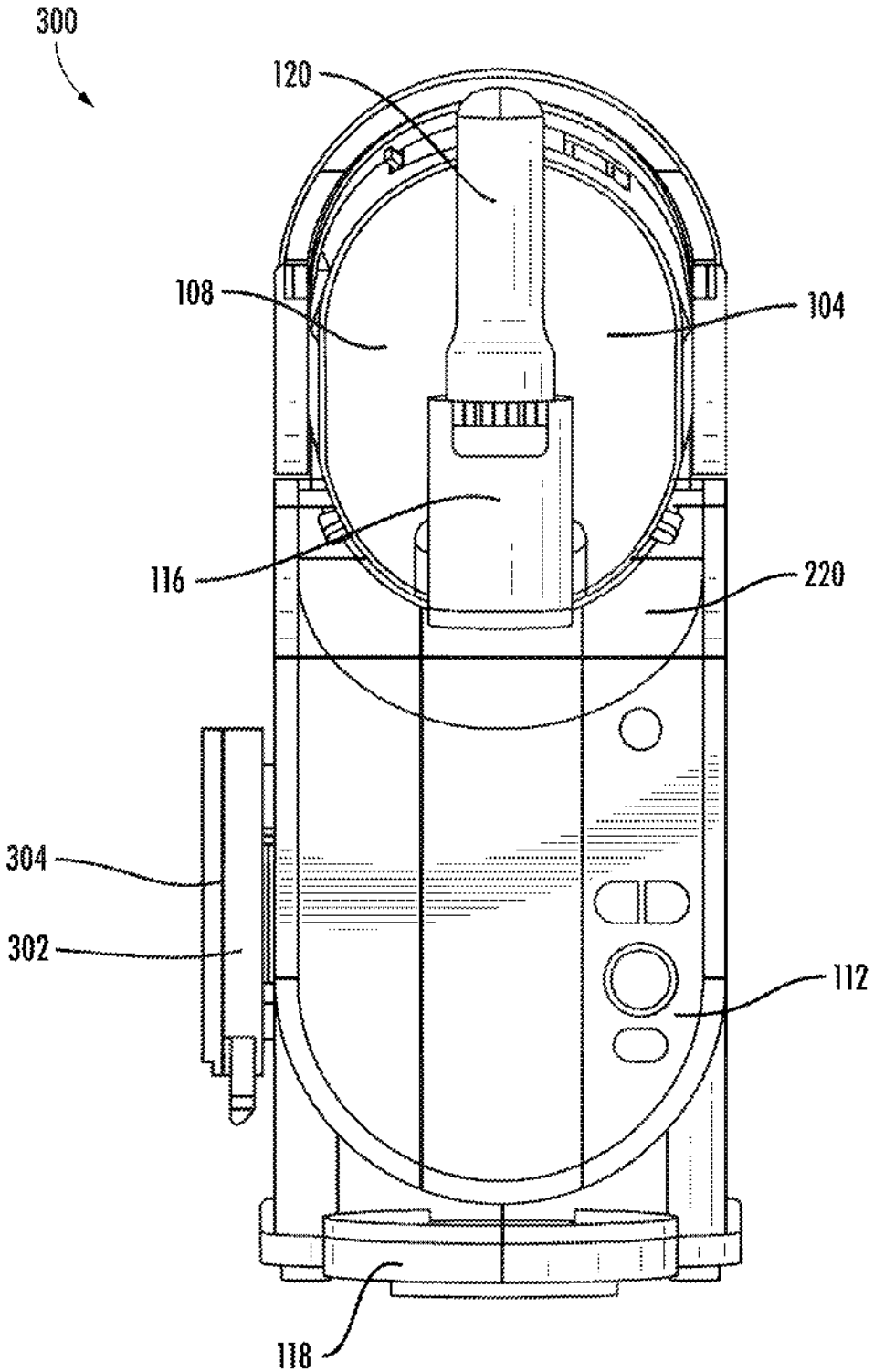


FIG. 3

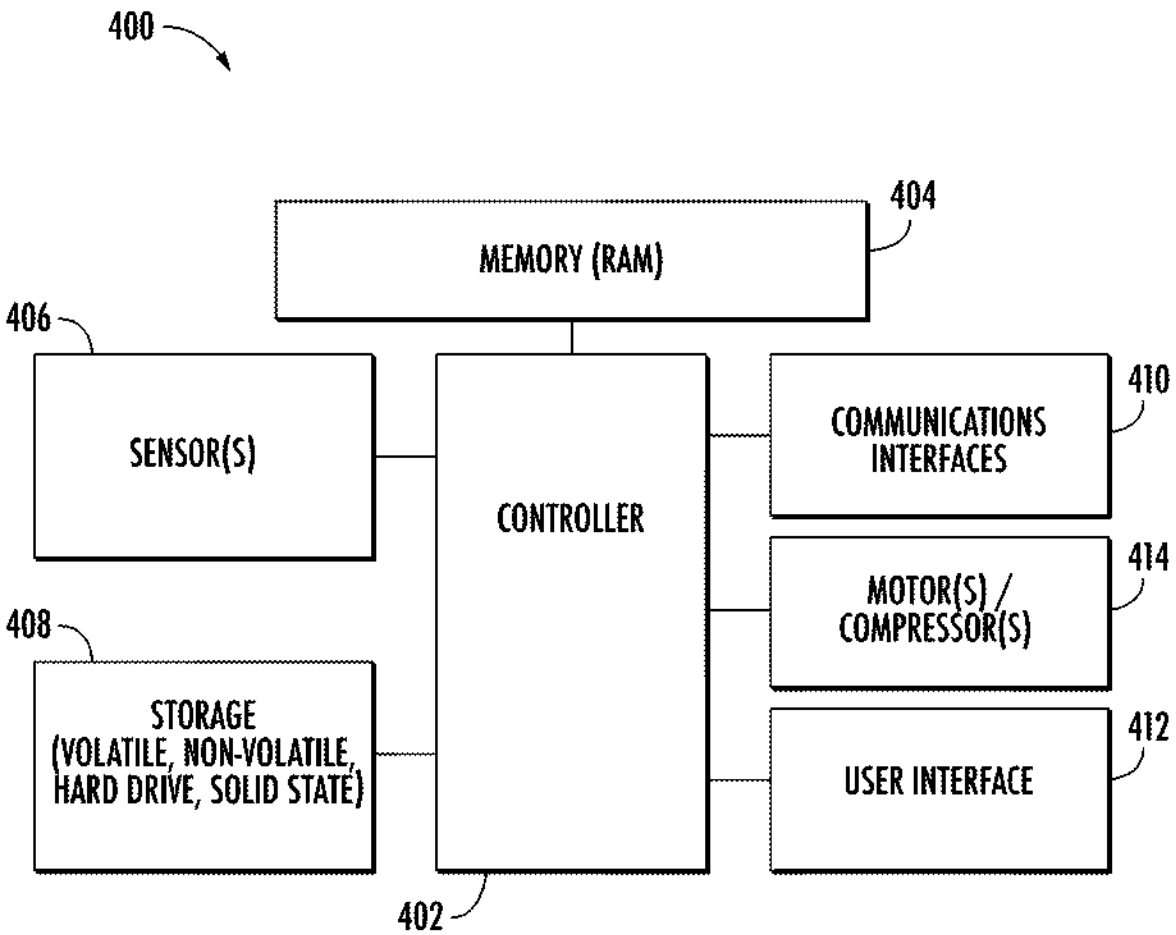

400
404
MEMORY (RAM)
406
SENSOR(S)
CONTROLLER
410
COMMUNICATIONS INTERFACES
414
MOTOR(S) / COMPRESSOR(S)
408
STORAGE (VOLATILE, NON-VOLATILE, HARD DRIVE, SOLID STATE)
412
USER INTERFACE
402

FIG. 4

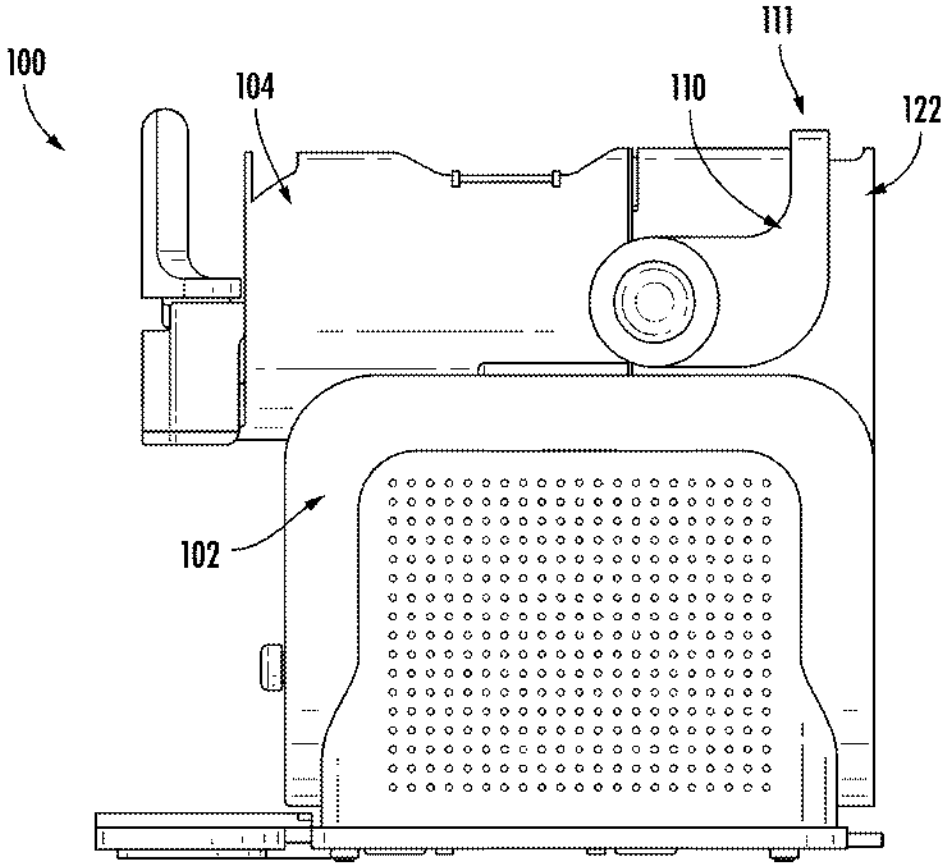


FIG. 5A

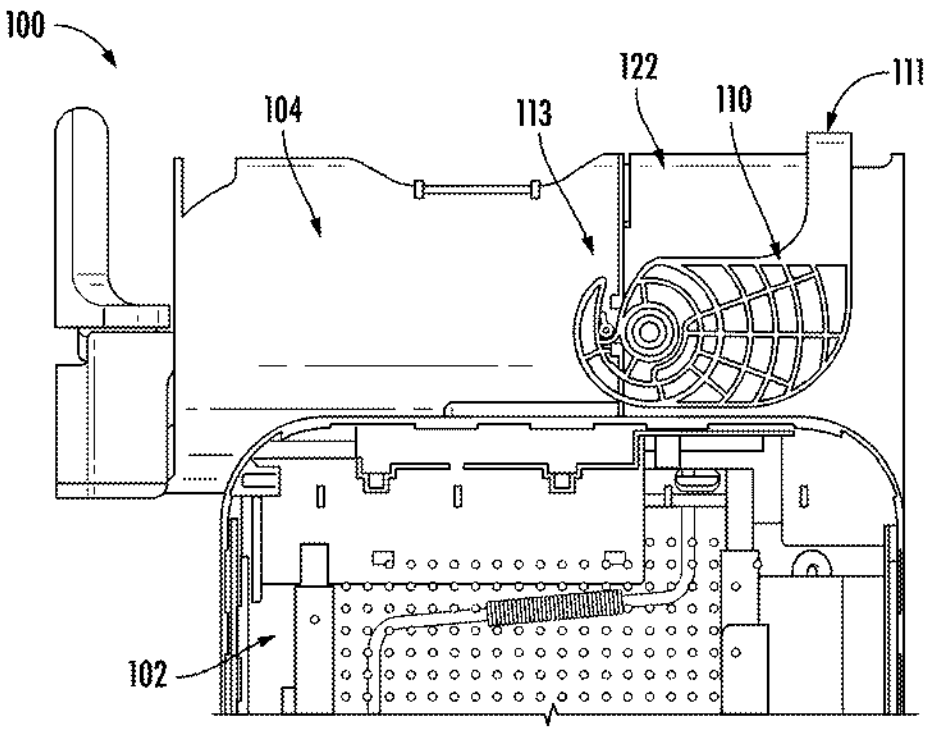


FIG. 5B

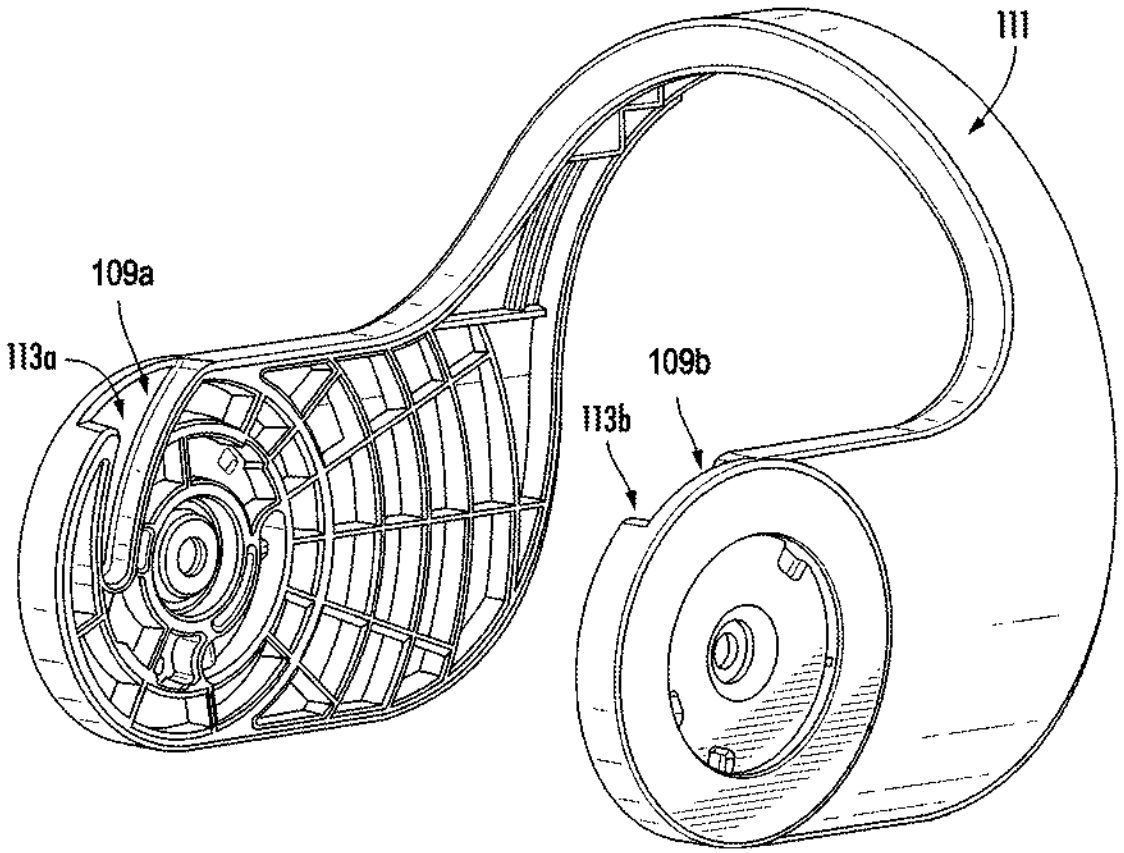


FIG. 6

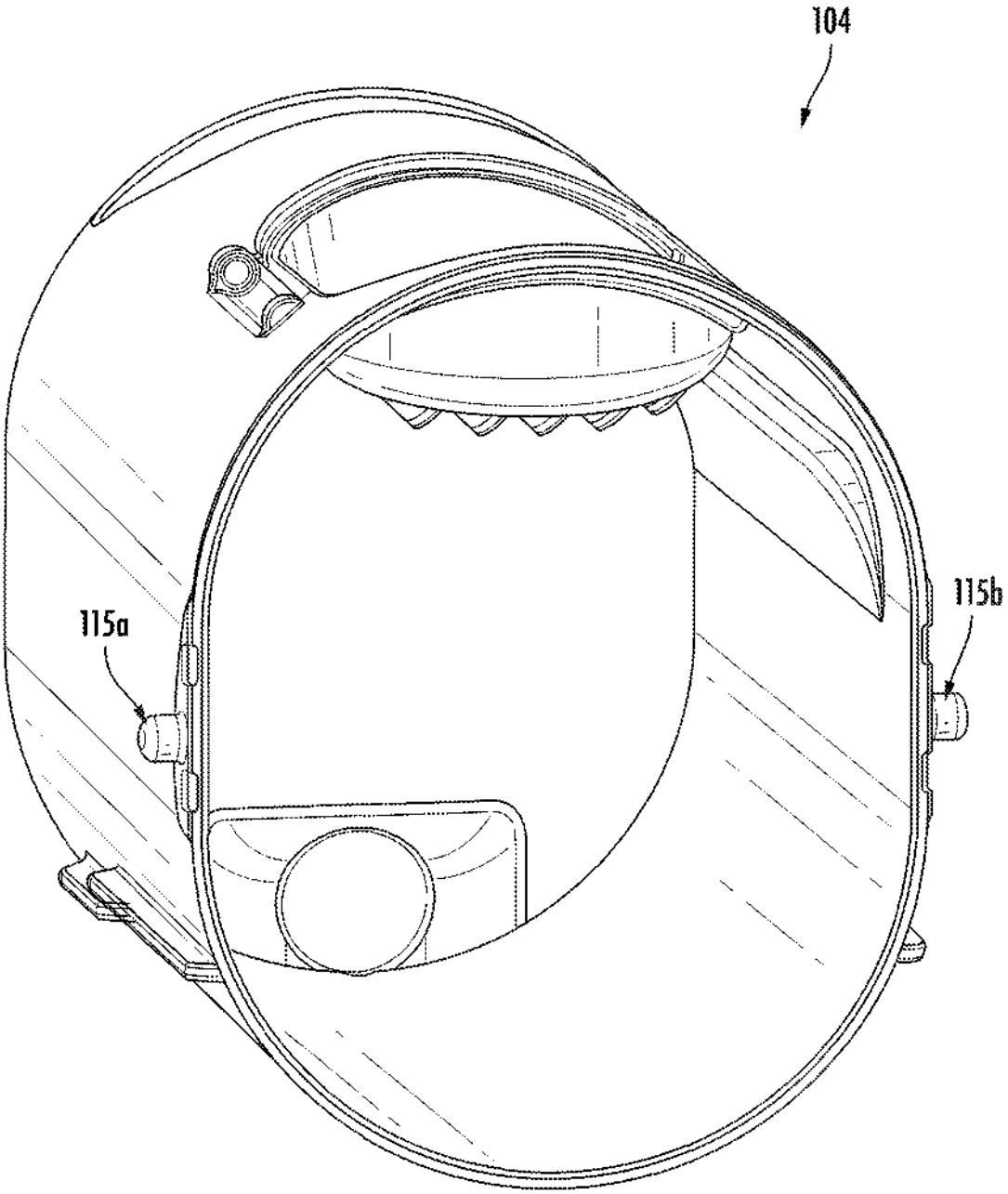


FIG. 7A

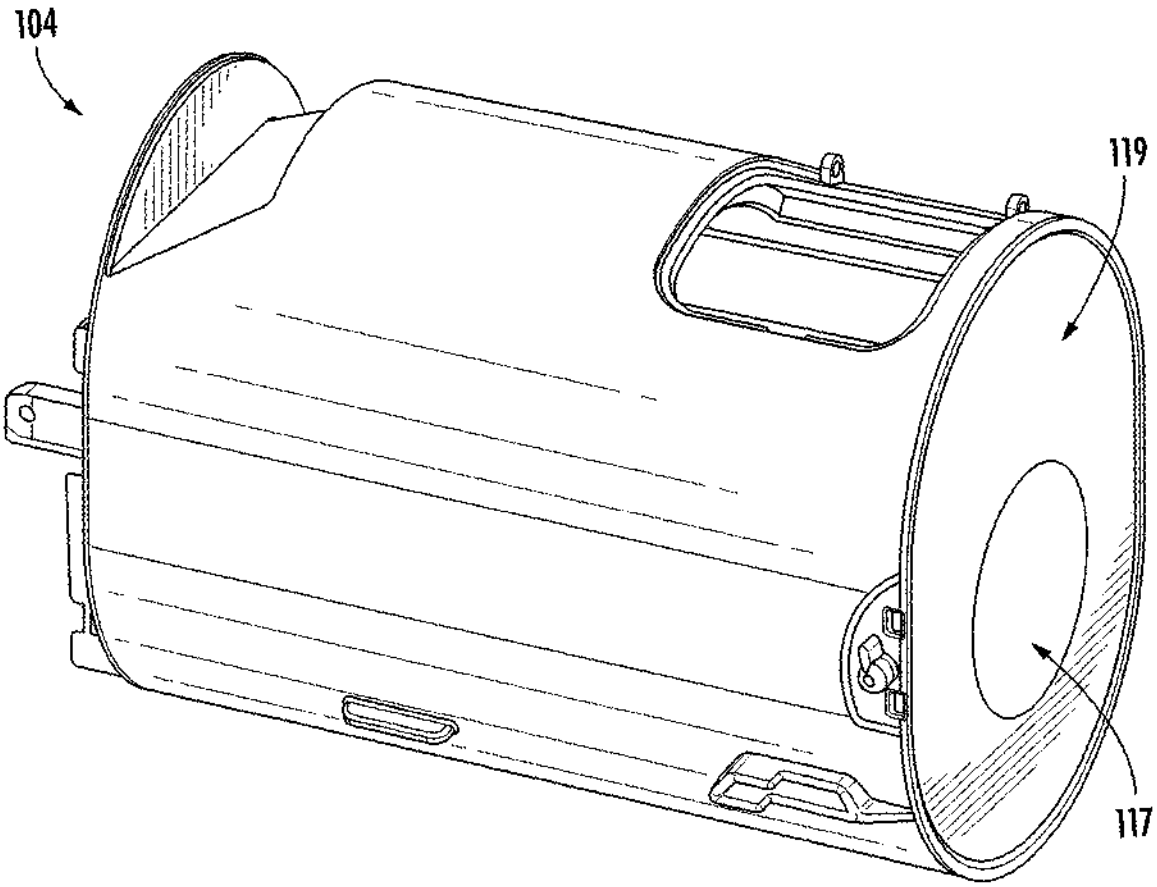


FIG. 7B

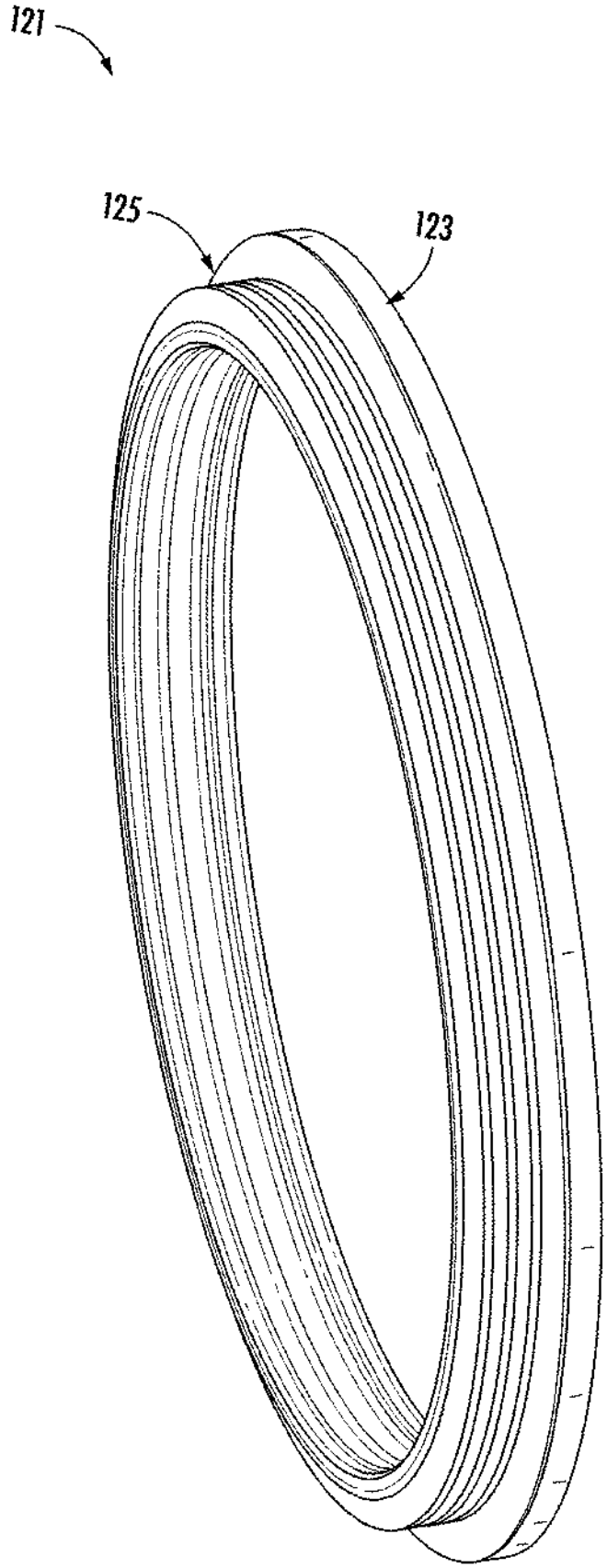


FIG. 8

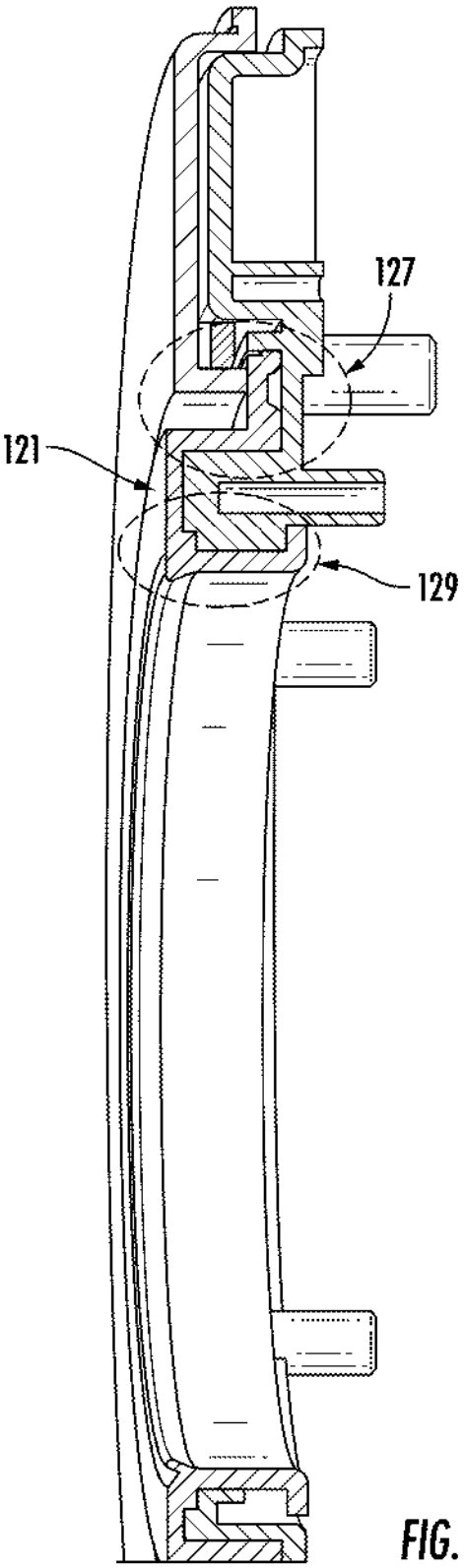


FIG. 9

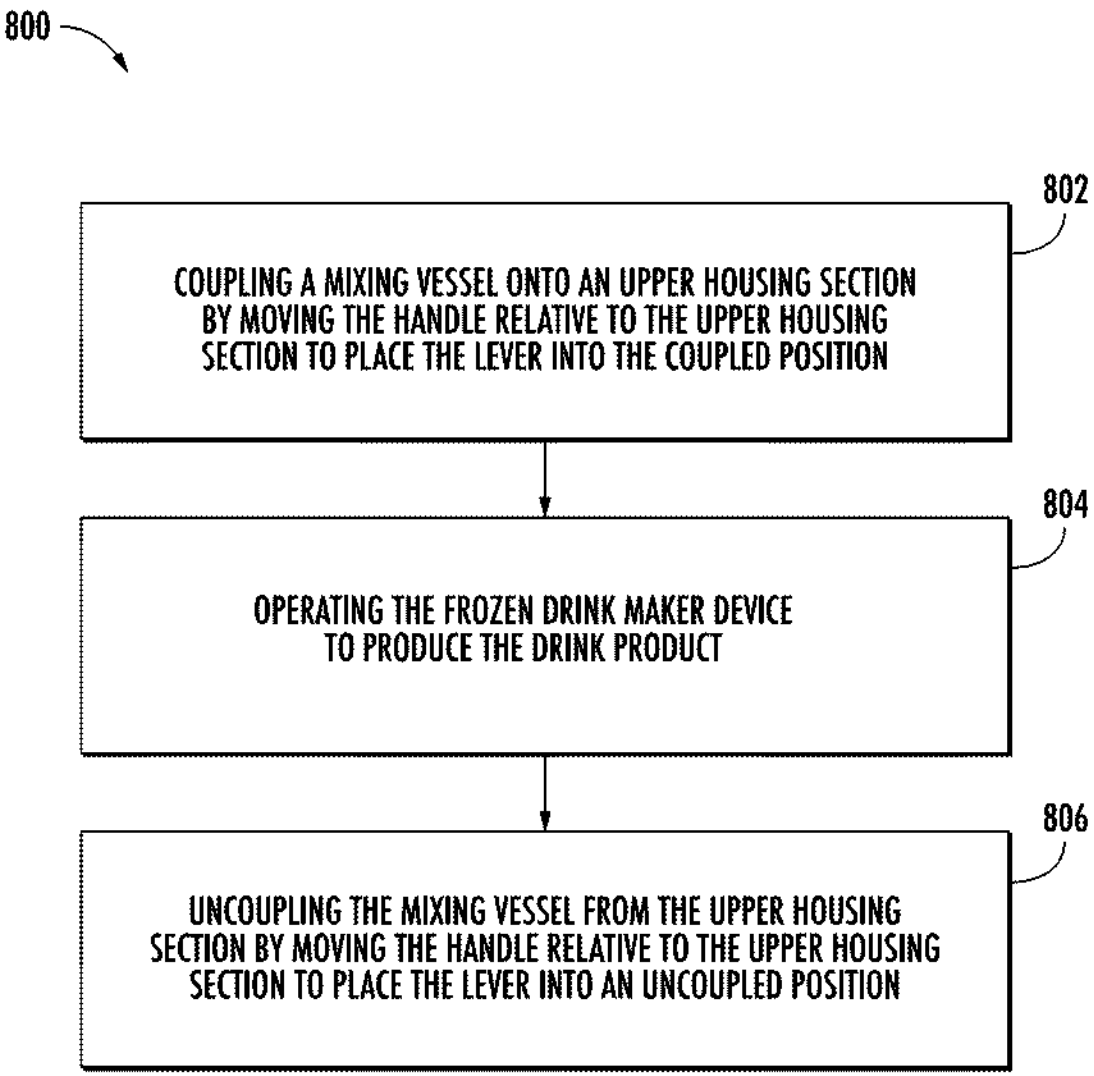

800
802
COUPLING A MIXING VESSEL ONTO AN UPPER HOUSING SECTION BY MOVING THE HANDLE RELATIVE TO THE UPPER HOUSING SECTION TO PLACE THE LEVER INTO THE COUPLED POSITION
804
OPERATING THE FROZEN DRINK MAKER DEVICE TO PRODUCE THE DRINK PRODUCT
806
UNCOUPLING THE MIXING VESSEL FROM THE UPPER HOUSING SECTION BY MOVING THE HANDLE RELATIVE TO THE UPPER HOUSING SECTION TO PLACE THE LEVER INTO AN UNCOUPLED POSITION

FIG. 10

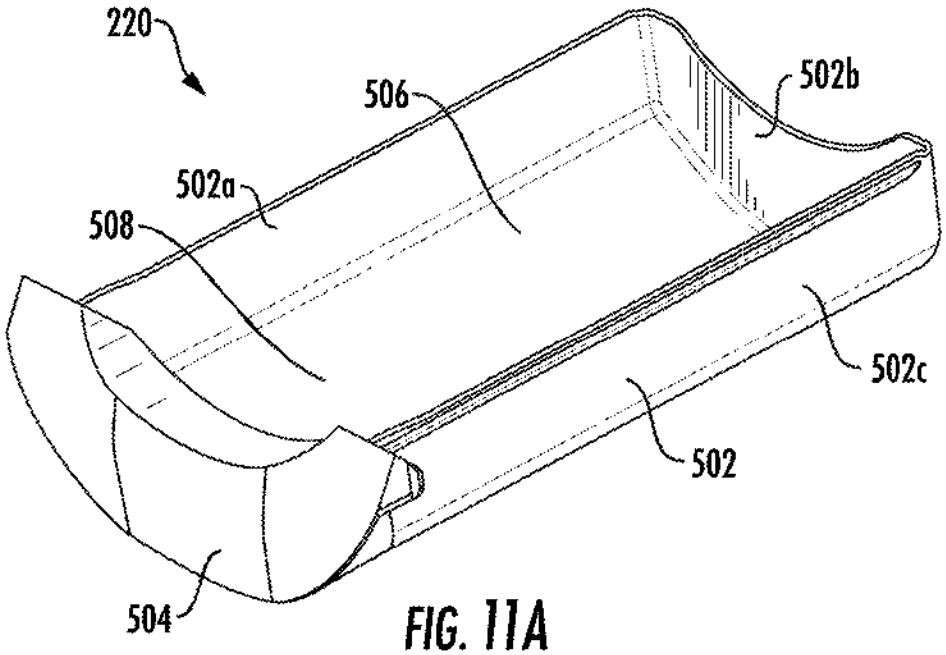


FIG. 11A

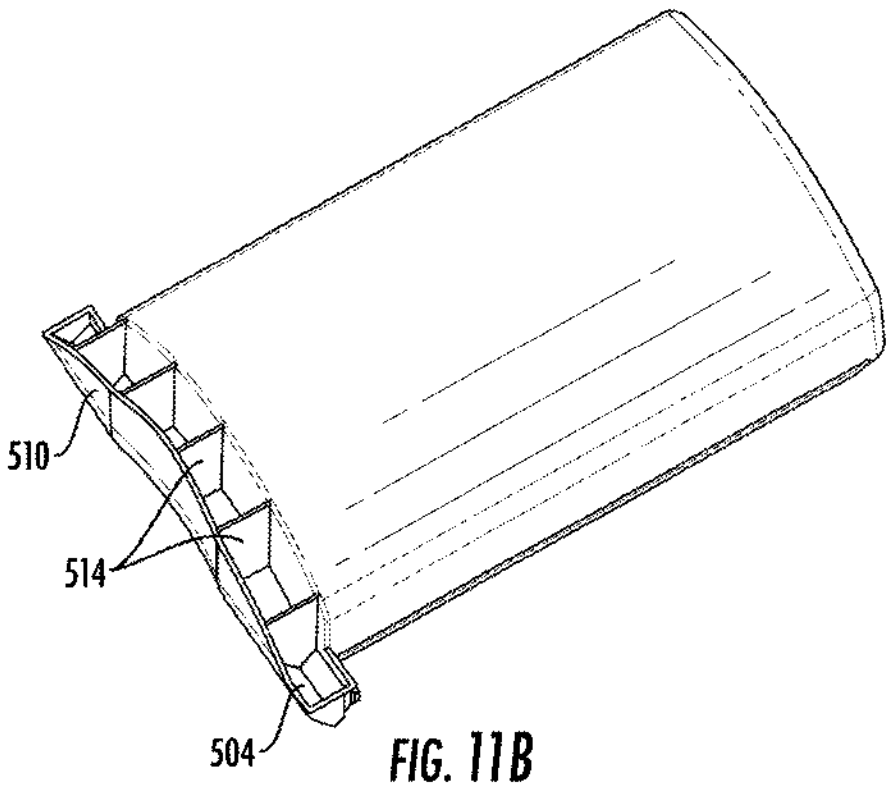


FIG. 11B

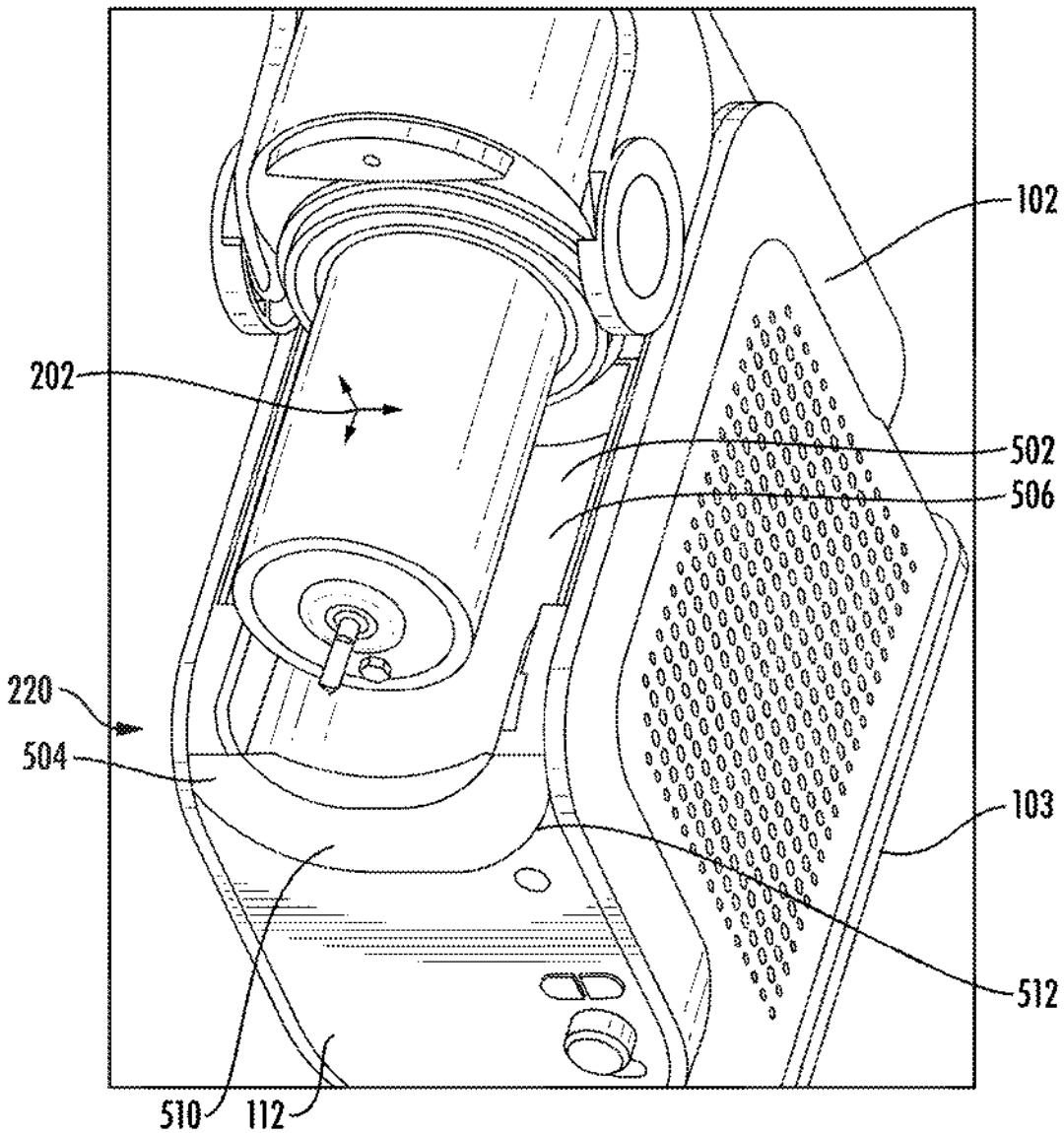


FIG. 11C

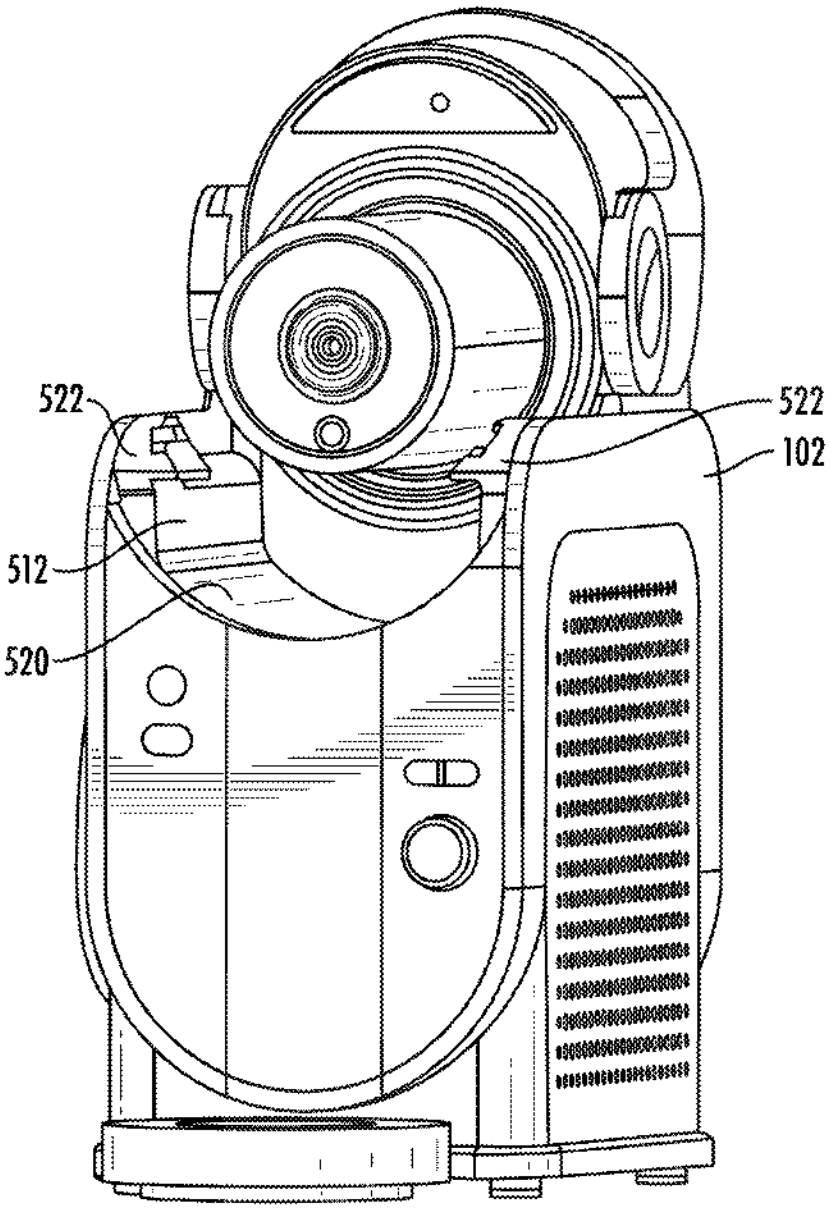


FIG. 11D

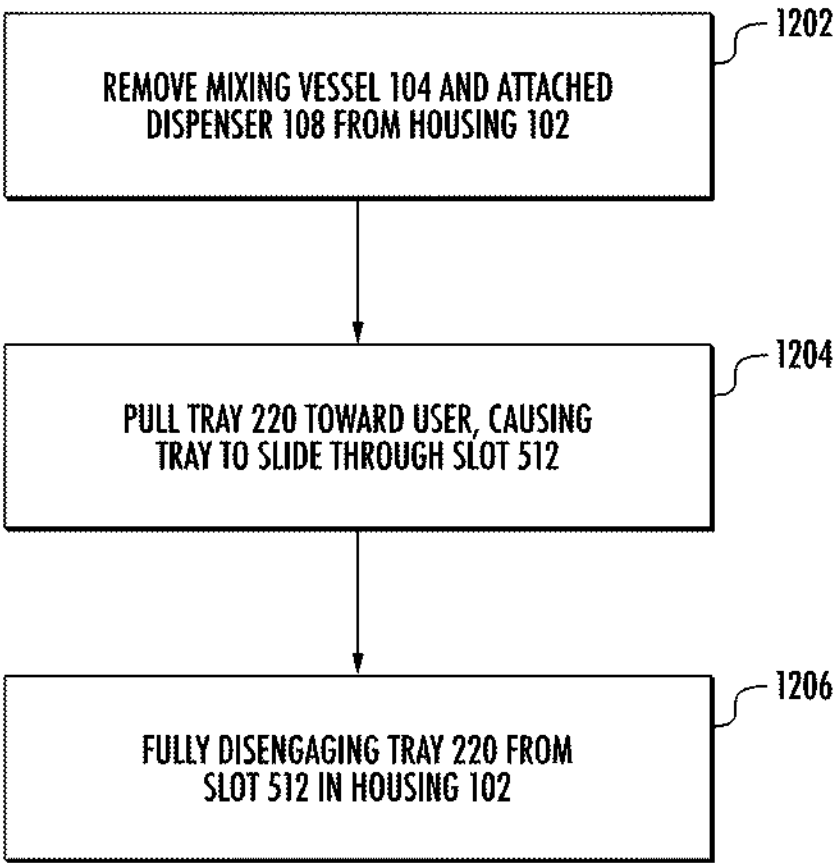

1202
REMOVE MIXING VESSEL 104 AND ATTACHED DISPENSER 108 FROM HOUSING 102
1204
PULL TRAY 220 TOWARD USER, CAUSING TRAY TO SLIDE THROUGH SLOT 512
1206
FULLY DISENGAGING TRAY 220 FROM SLOT 512 IN HOUSING 102

FIG. 12

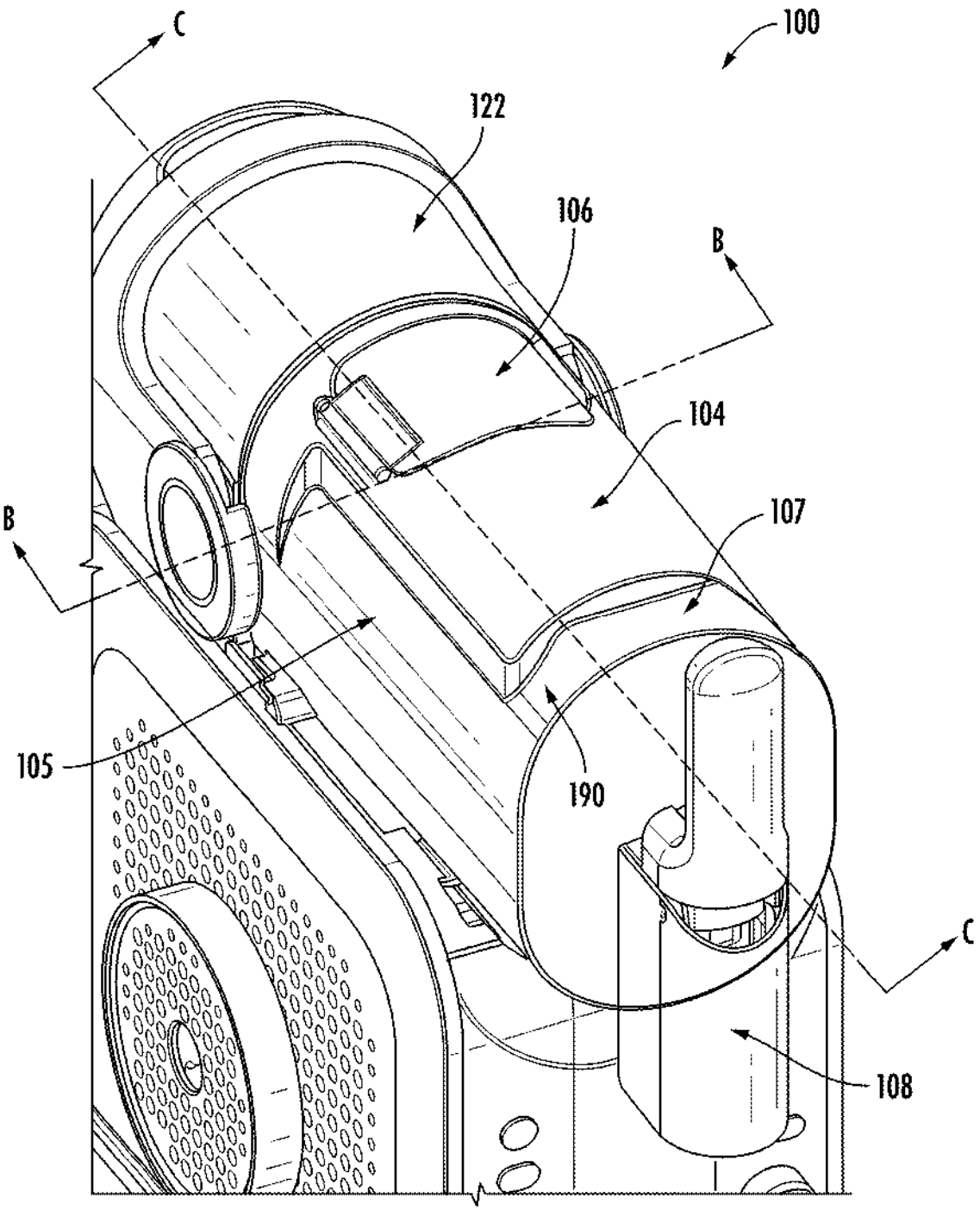


FIG. 13A

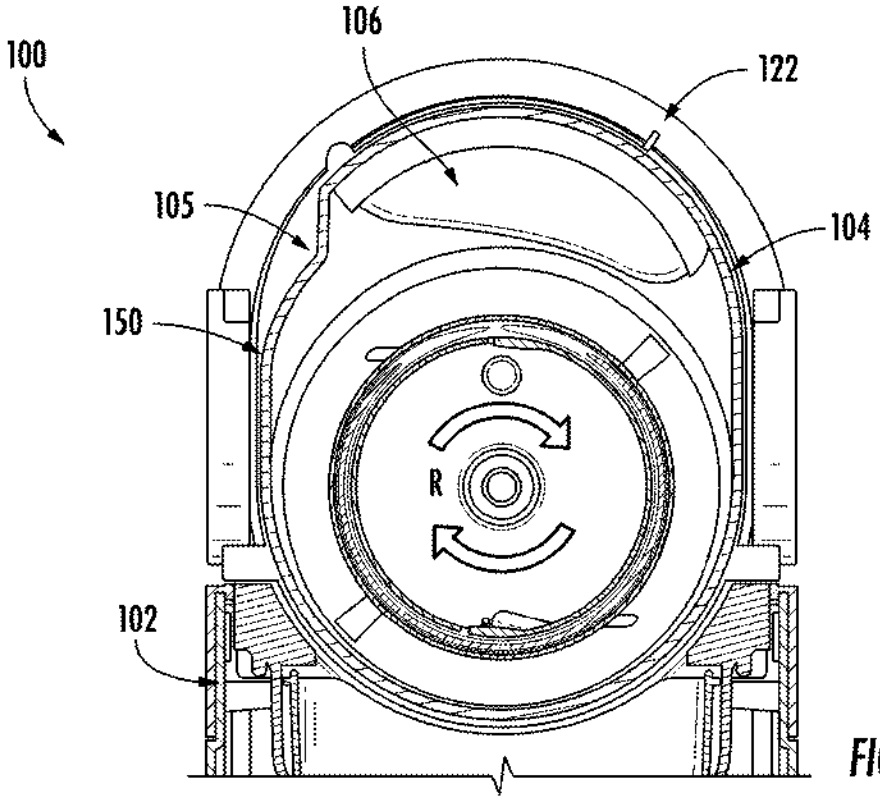


FIG. 13B

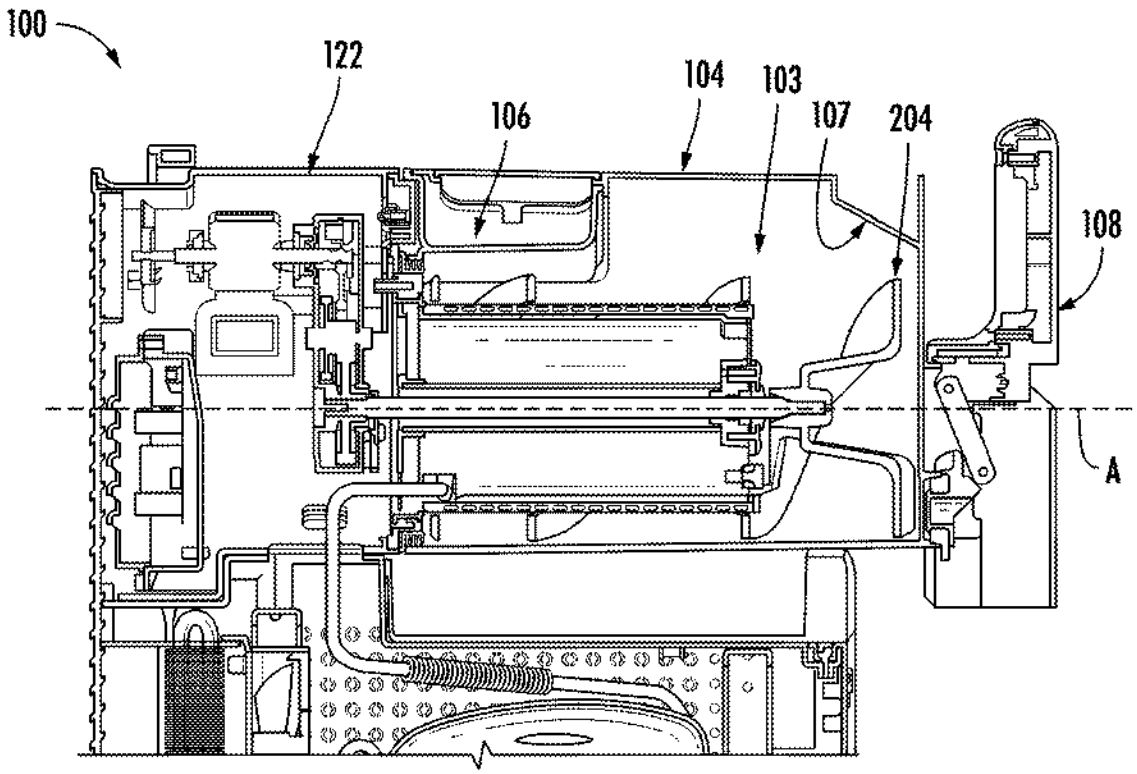


FIG. 13C

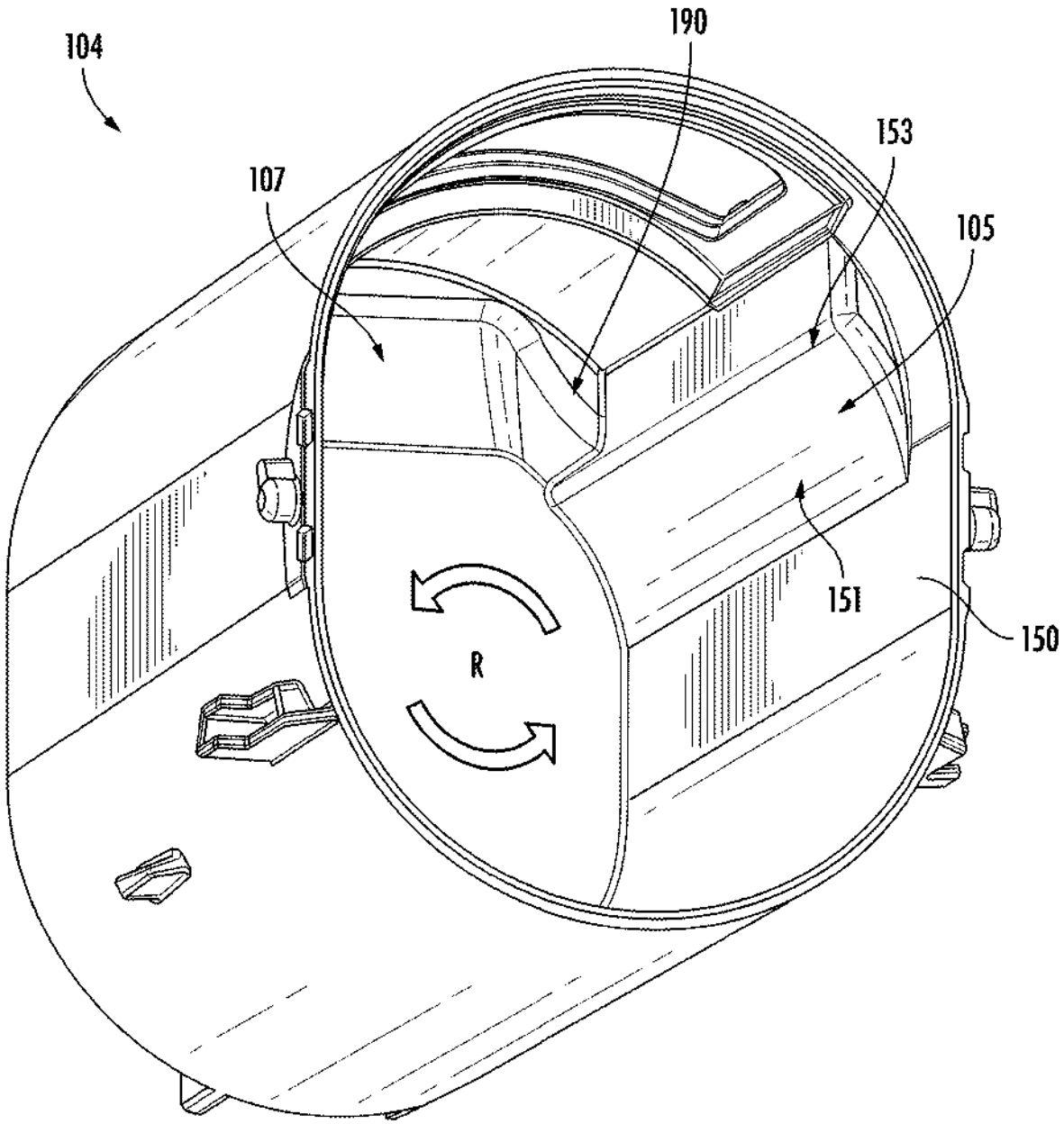


FIG. 14A

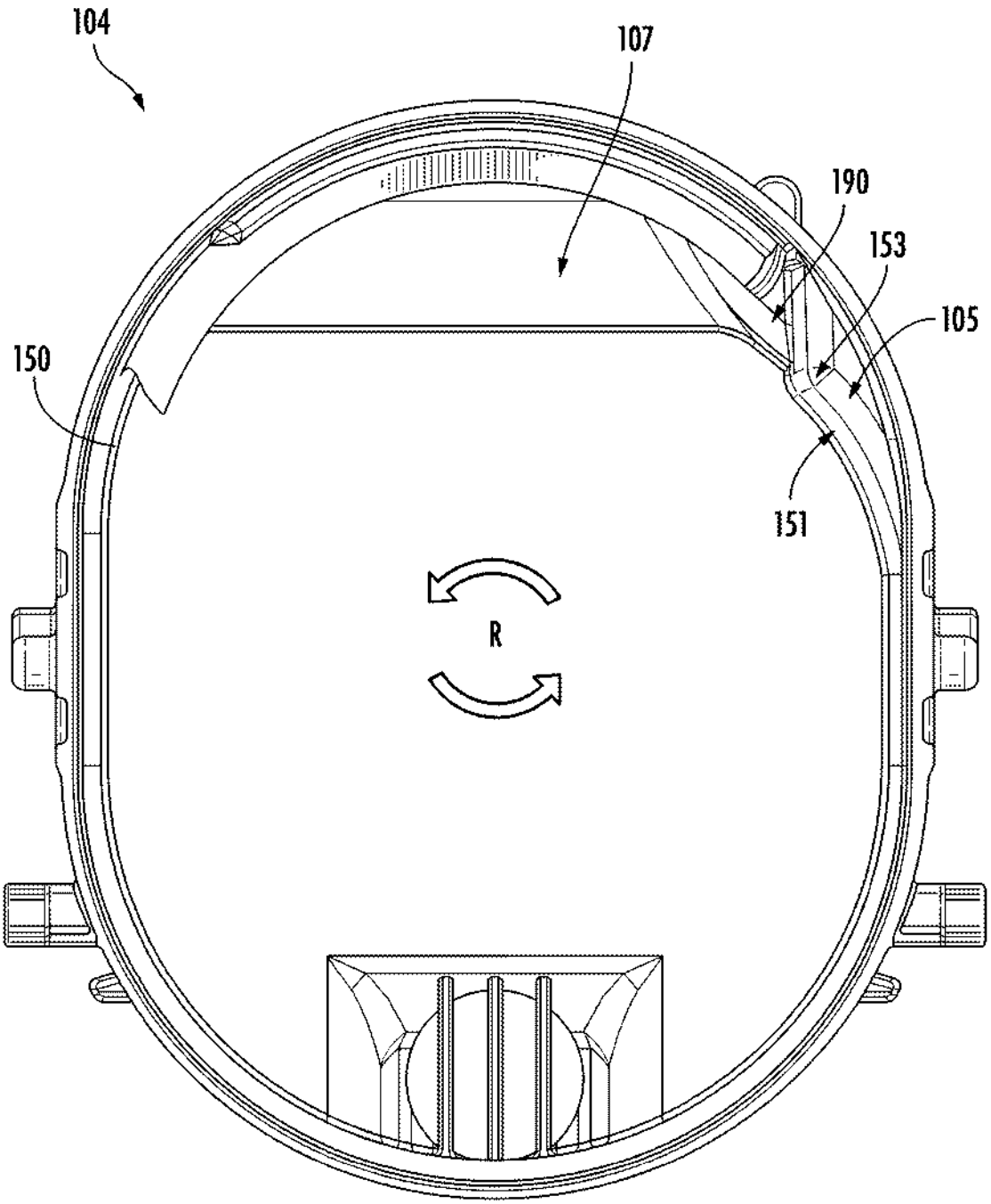


FIG. 14B

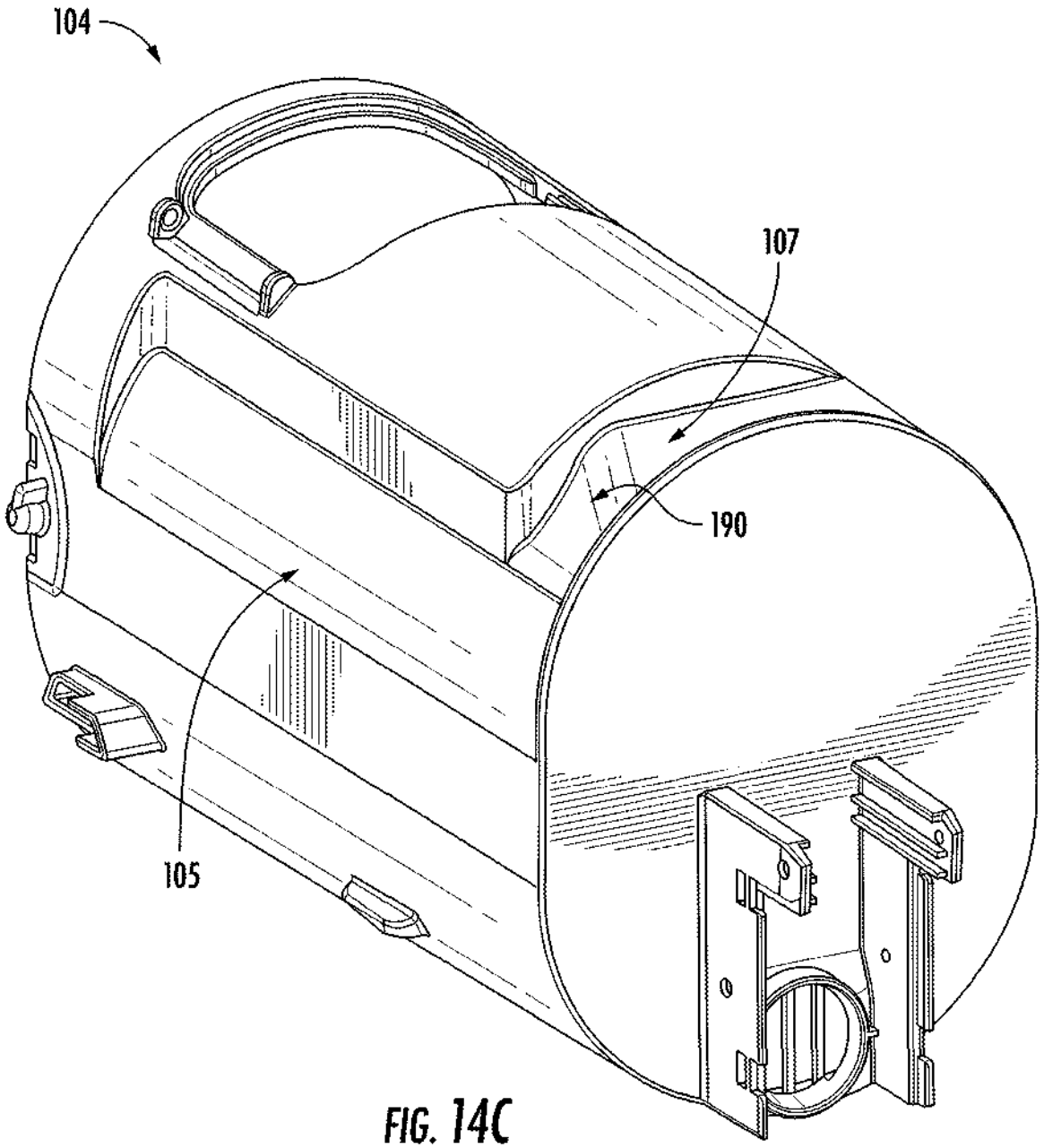


FIG. 14C

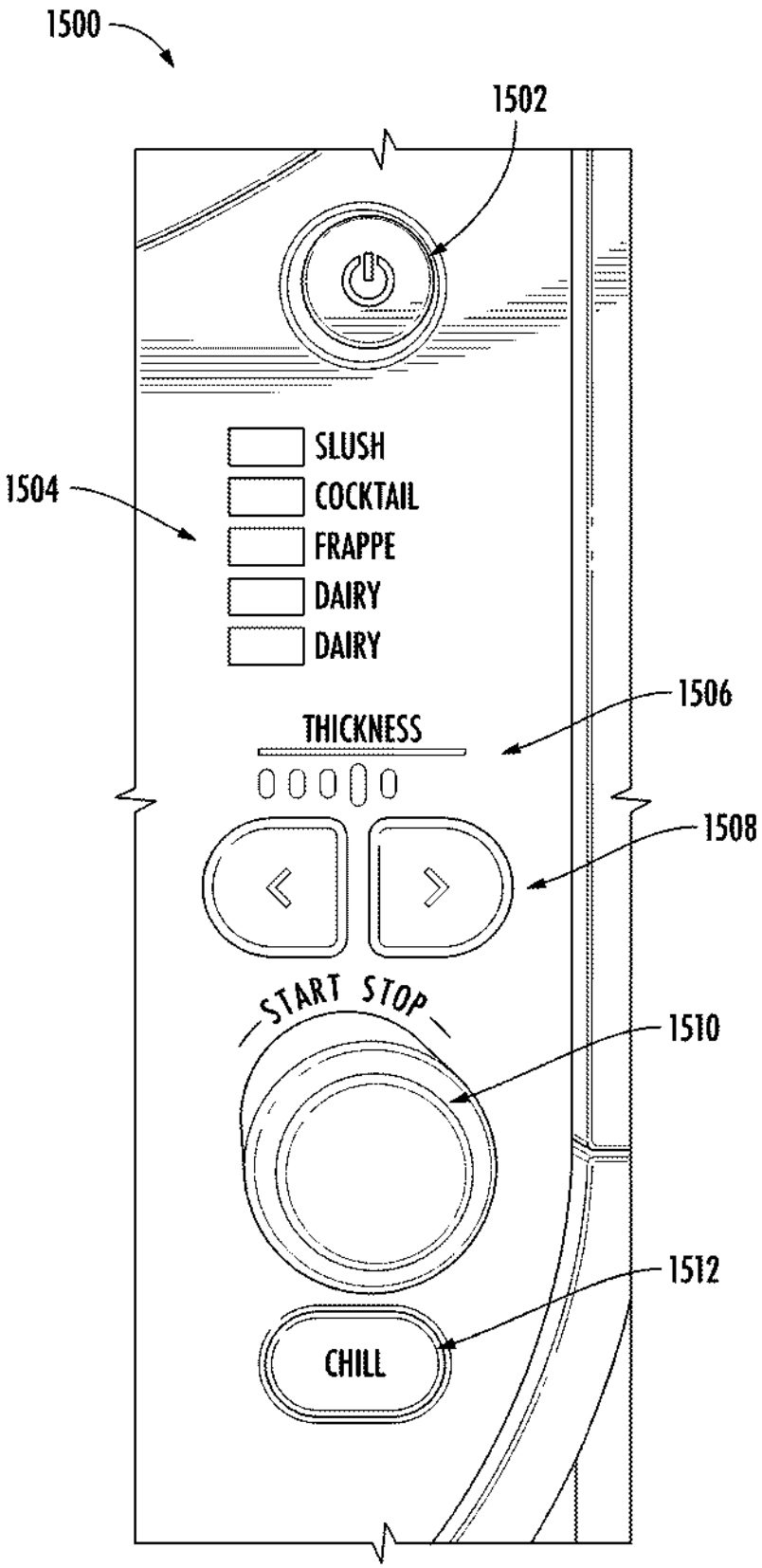

1500
1502
1504
SLUSH
COCKTAIL
FRAPPE
DAIRY
DAIRY
1506
THICKNESS
1508
START STOP
1510
1512
CHILL

FIG. 15

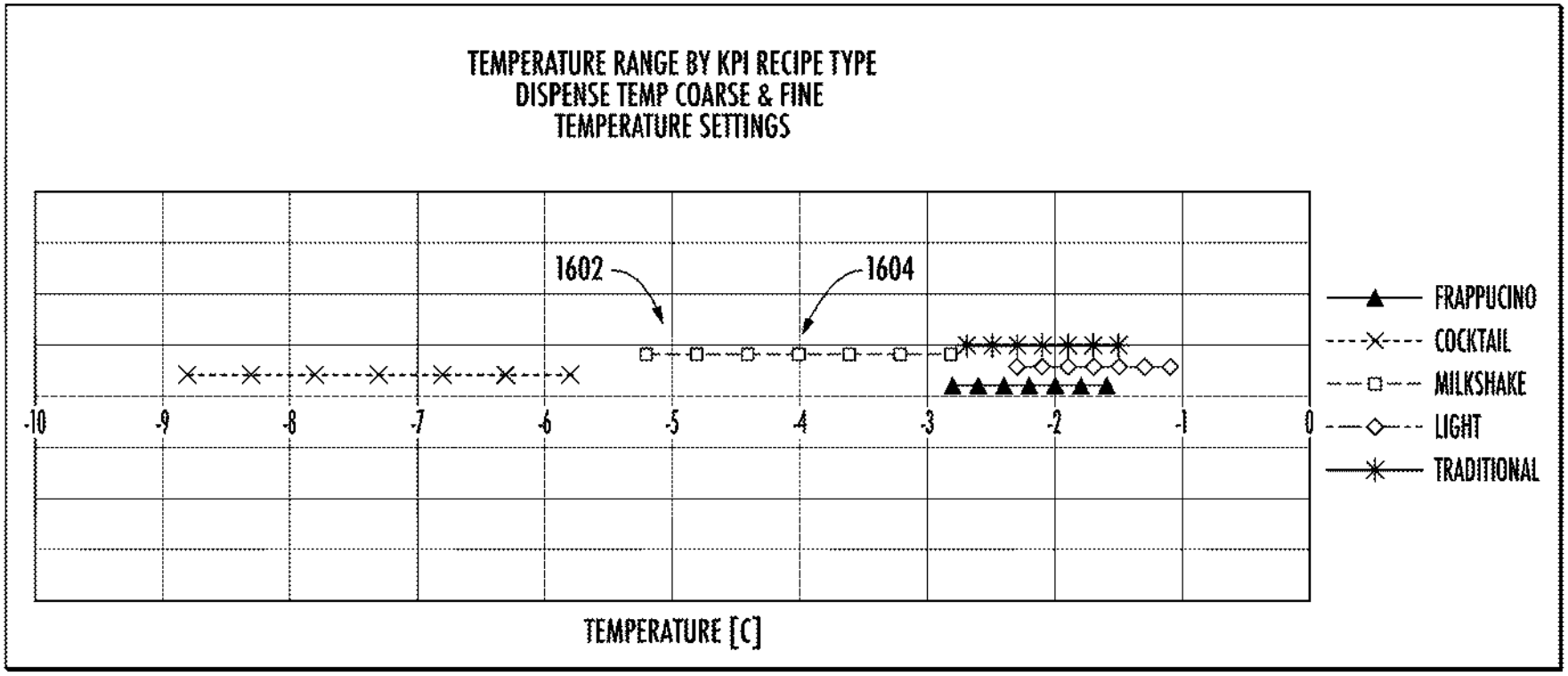

1600
TEMPERATURE RANGE BY KPI RECIPE TYPE
DISPENSE TEMP COARSE & FINE
TEMPERATURE SETTINGS
1602
1604
-10
-9
-8
-7
-6
-5
-4
-3
-2
-1
0
FRAPPUCINO
COCKTAIL
MILKSHAKE
LIGHT
TRADITIONAL
TEMPERATURE [C]

FIG. 16

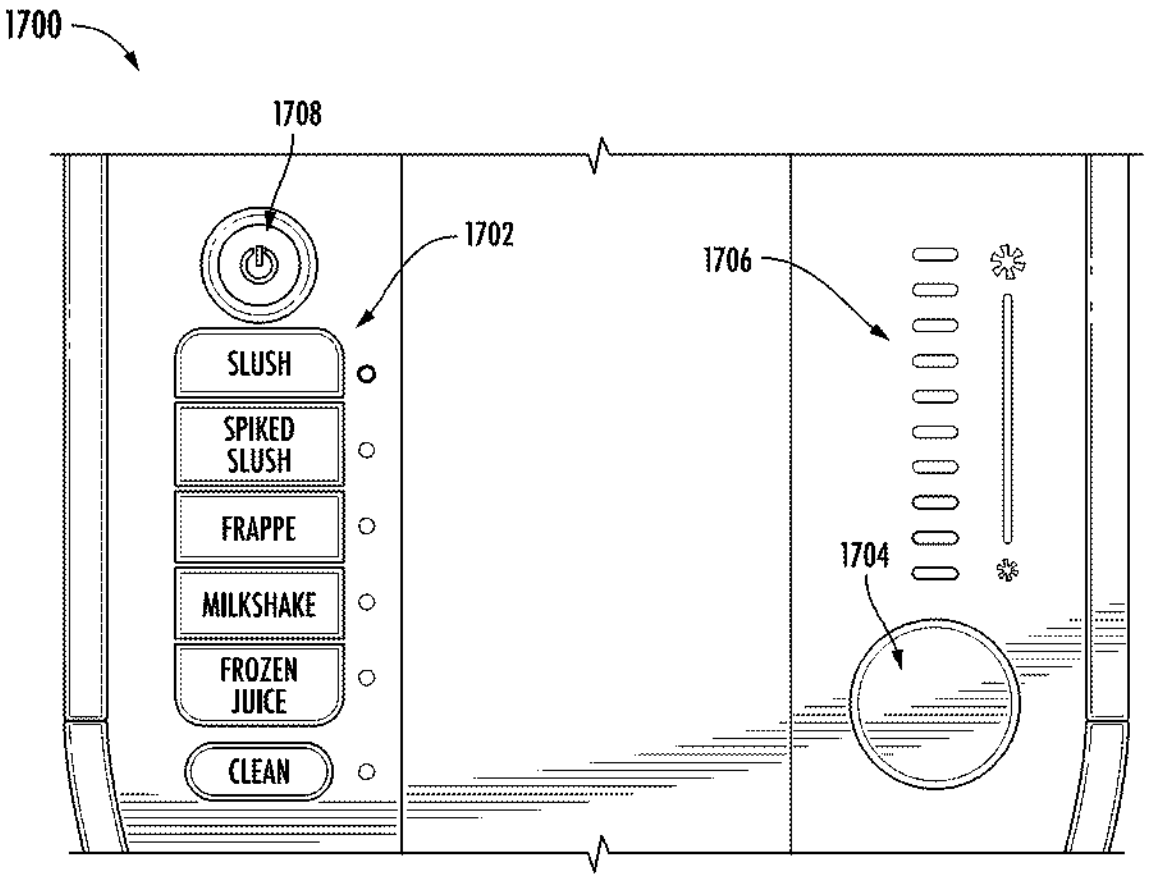

1700
1708
1702
1706
SLUSH
SPIKED SLUSH
FRAPPE
MILKSHAKE
FROZEN JUICE
CLEAN
1704

FIG. 17

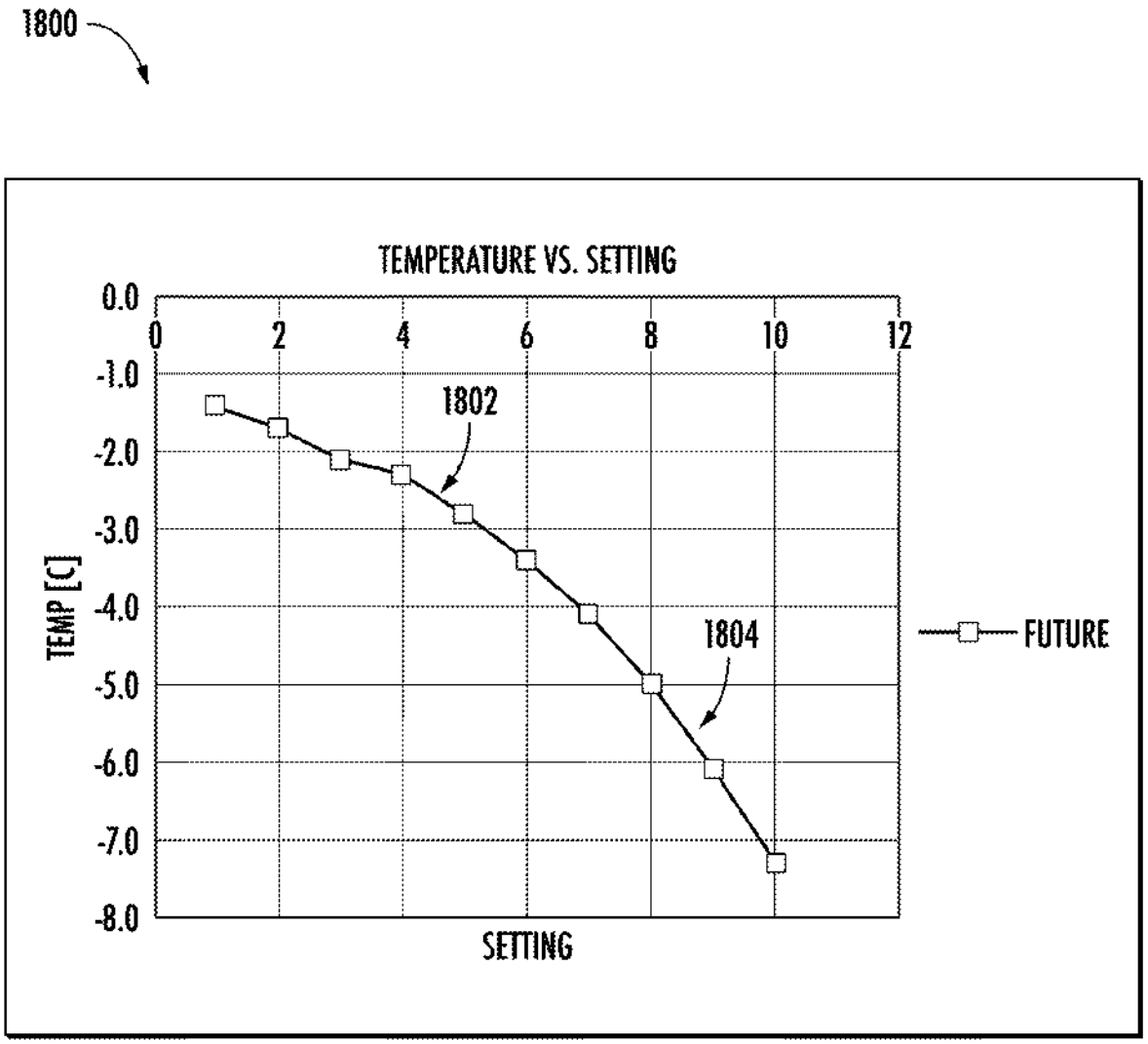
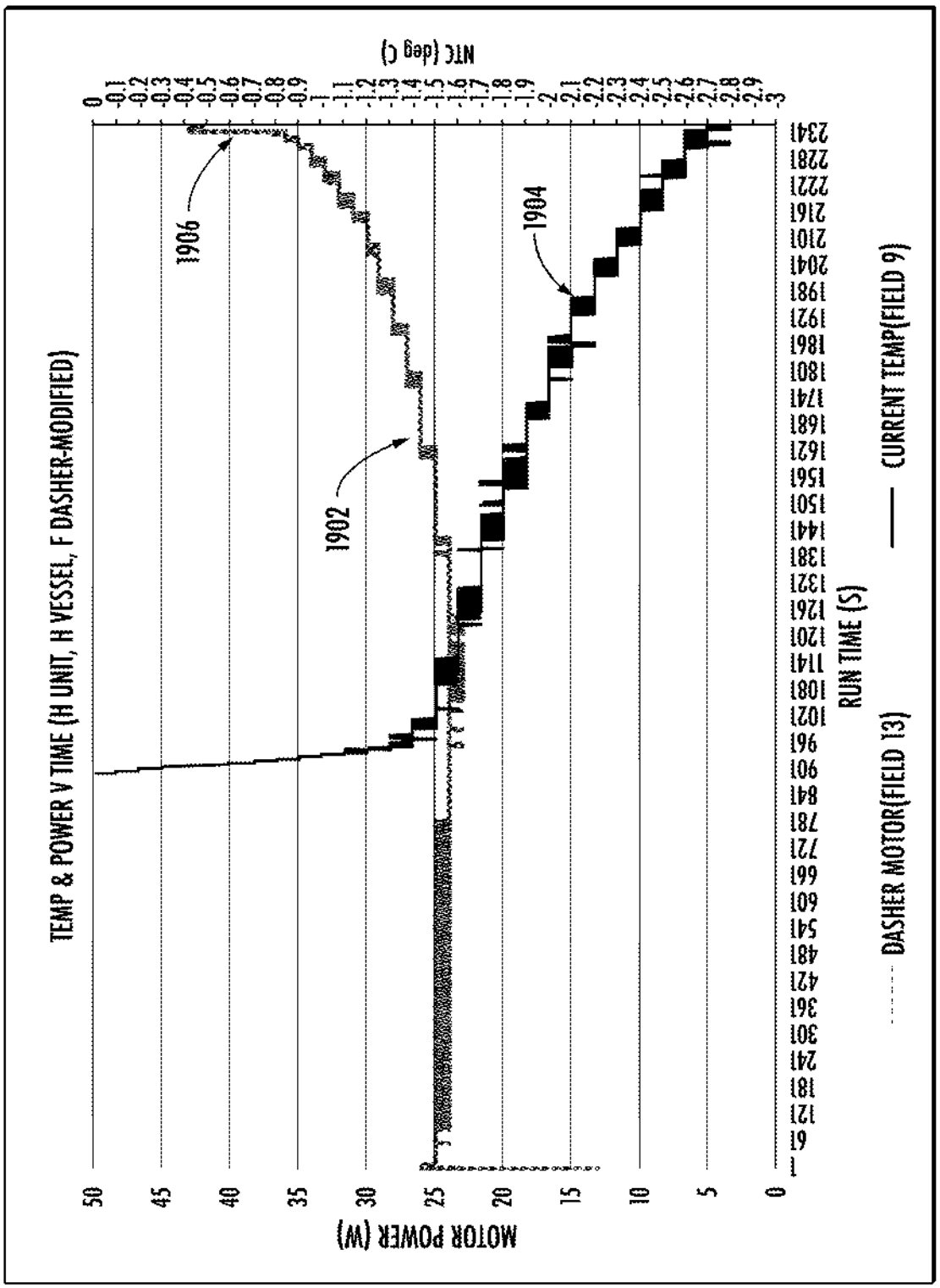

1800
TEMPERATURE VS. SETTING
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
-6.0
-7.0
-8.0
TEMP [C]
0
2
4
6
8
10
12
SETTING
1802
1804
FUTURE

FIG. 18

FIG. 19


TEMP & POWER V TIME (H UNIT, H VESSEL, F DASHER-MODIFIED)
NTC (deg C)
MOTOR POWER (W)
RUN TIME (S)
CURRENT TEMP(FIELD 9)
DASHER MOTOR(FIELD 13)
1902
1904
1906
1900

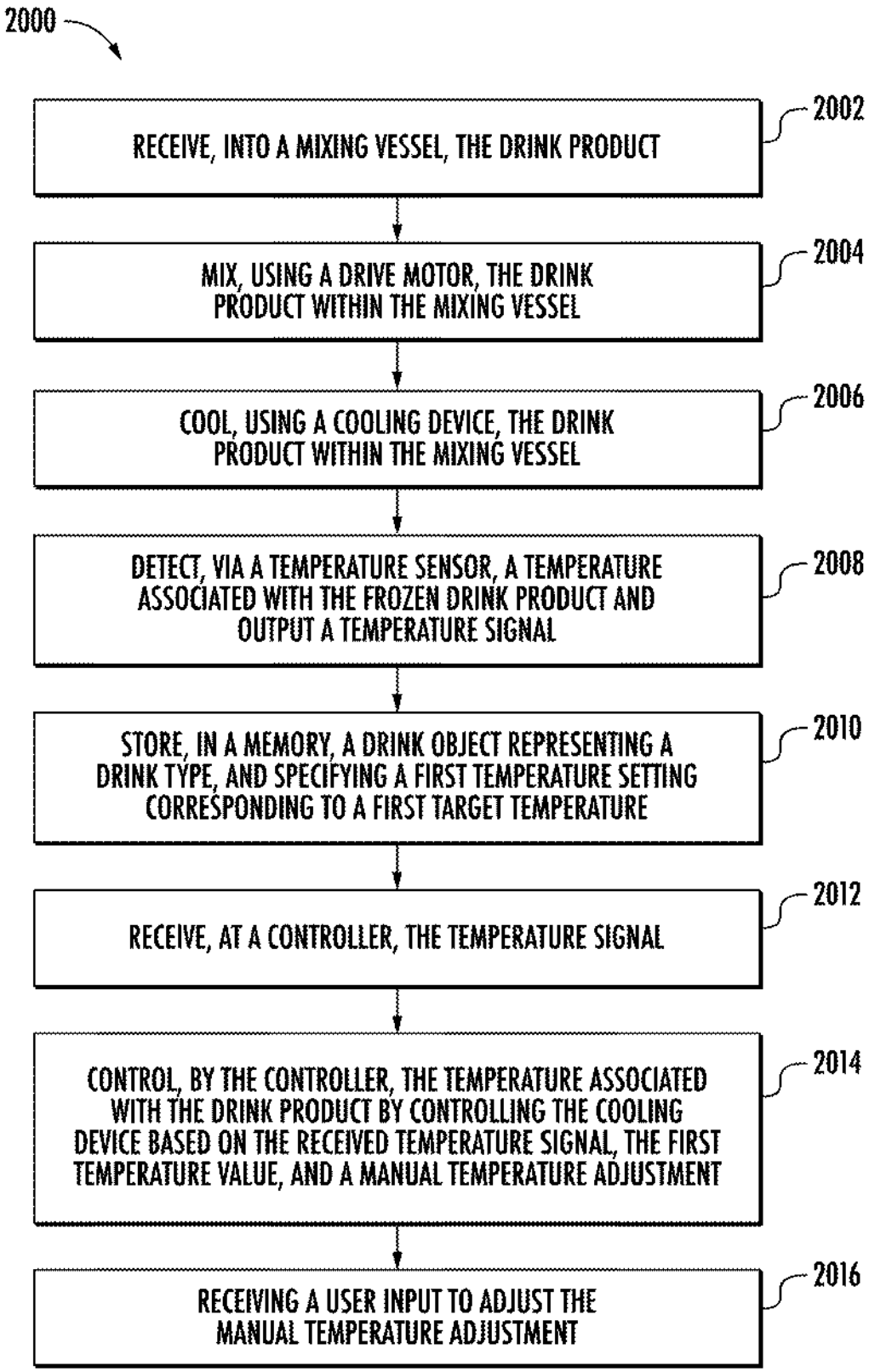

2000
RECEIVE, INTO A MIXING VESSEL, THE DRINK PRODUCT
2002
MIX, USING A DRIVE MOTOR, THE DRINK PRODUCT WITHIN THE MIXING VESSEL
2004
COOL, USING A COOLING DEVICE, THE DRINK PRODUCT WITHIN THE MIXING VESSEL
2006
DETECT, VIA A TEMPERATURE SENSOR, A TEMPERATURE ASSOCIATED WITH THE FROZEN DRINK PRODUCT AND OUTPUT A TEMPERATURE SIGNAL
2008
STORE, IN A MEMORY, A DRINK OBJECT REPRESENTING A DRINK TYPE, AND SPECIFYING A FIRST TEMPERATURE SETTING CORRESPONDING TO A FIRST TARGET TEMPERATURE
2010
RECEIVE, AT A CONTROLLER, THE TEMPERATURE SIGNAL
2012
CONTROL, BY THE CONTROLLER, THE TEMPERATURE ASSOCIATED WITH THE DRINK PRODUCT BY CONTROLLING THE COOLING DEVICE BASED ON THE RECEIVED TEMPERATURE SIGNAL, THE FIRST TEMPERATURE VALUE, AND A MANUAL TEMPERATURE ADJUSTMENT
2014
RECEIVING A USER INPUT TO ADJUST THE MANUAL TEMPERATURE ADJUSTMENT
2016

FIG. 20

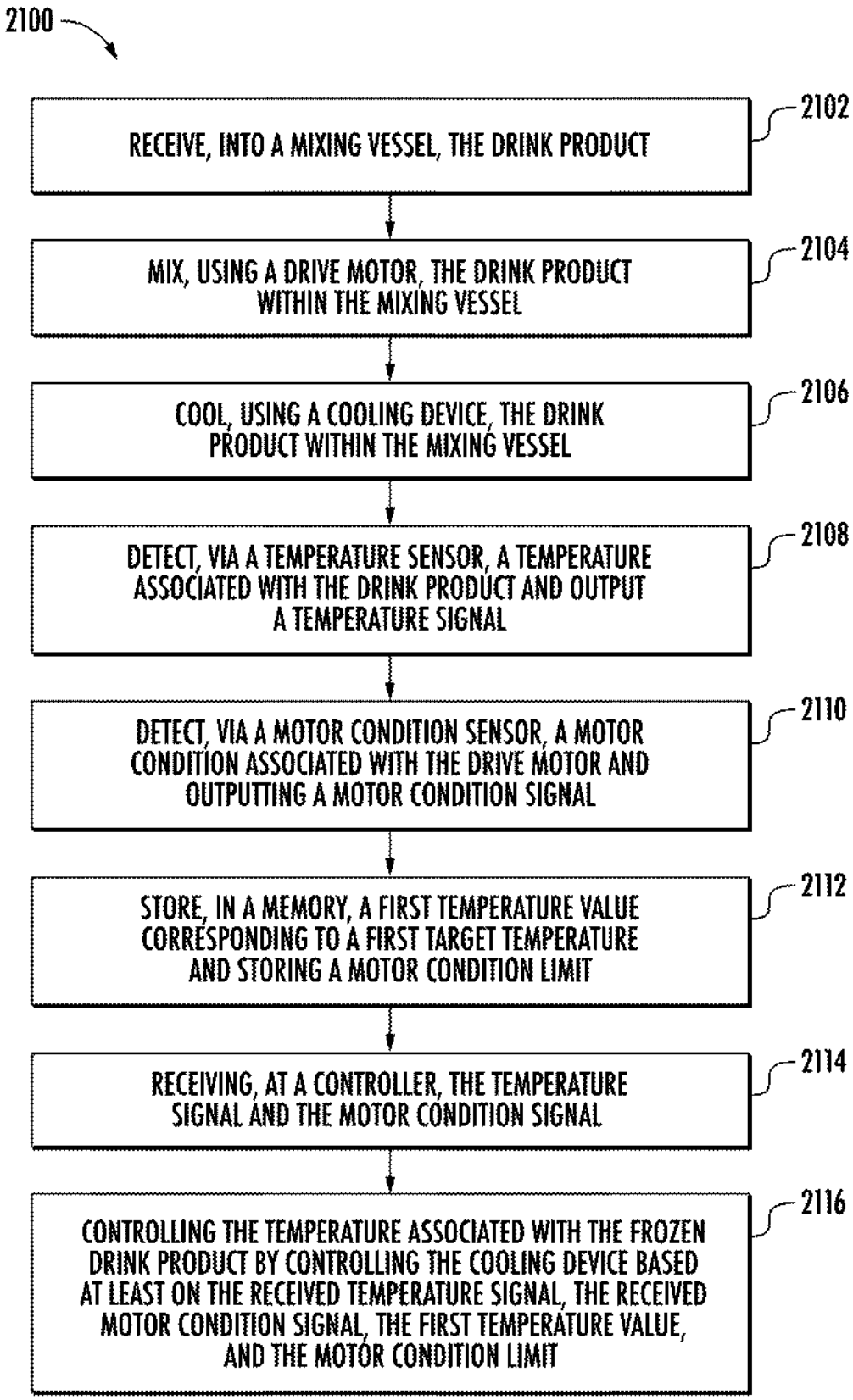

2100
RECEIVE, INTO A MIXING VESSEL, THE DRINK PRODUCT
2102
MIX, USING A DRIVE MOTOR, THE DRINK PRODUCT WITHIN THE MIXING VESSEL
2104
COOL, USING A COOLING DEVICE, THE DRINK PRODUCT WITHIN THE MIXING VESSEL
2106
DETECT, VIA A TEMPERATURE SENSOR, A TEMPERATURE ASSOCIATED WITH THE DRINK PRODUCT AND OUTPUT A TEMPERATURE SIGNAL
2108
DETECT, VIA A MOTOR CONDITION SENSOR, A MOTOR CONDITION ASSOCIATED WITH THE DRIVE MOTOR AND OUTPUTTING A MOTOR CONDITION SIGNAL
2110
STORE, IN A MEMORY, A FIRST TEMPERATURE VALUE CORRESPONDING TO A FIRST TARGET TEMPERATURE AND STORING A MOTOR CONDITION LIMIT
2112
RECEIVING, AT A CONTROLLER, THE TEMPERATURE SIGNAL AND THE MOTOR CONDITION SIGNAL
2114
CONTROLLING THE TEMPERATURE ASSOCIATED WITH THE FROZEN DRINK PRODUCT BY CONTROLLING THE COOLING DEVICE BASED AT LEAST ON THE RECEIVED TEMPERATURE SIGNAL, THE RECEIVED MOTOR CONDITION SIGNAL, THE FIRST TEMPERATURE VALUE, AND THE MOTOR CONDITION LIMIT
2116

FIG. 21

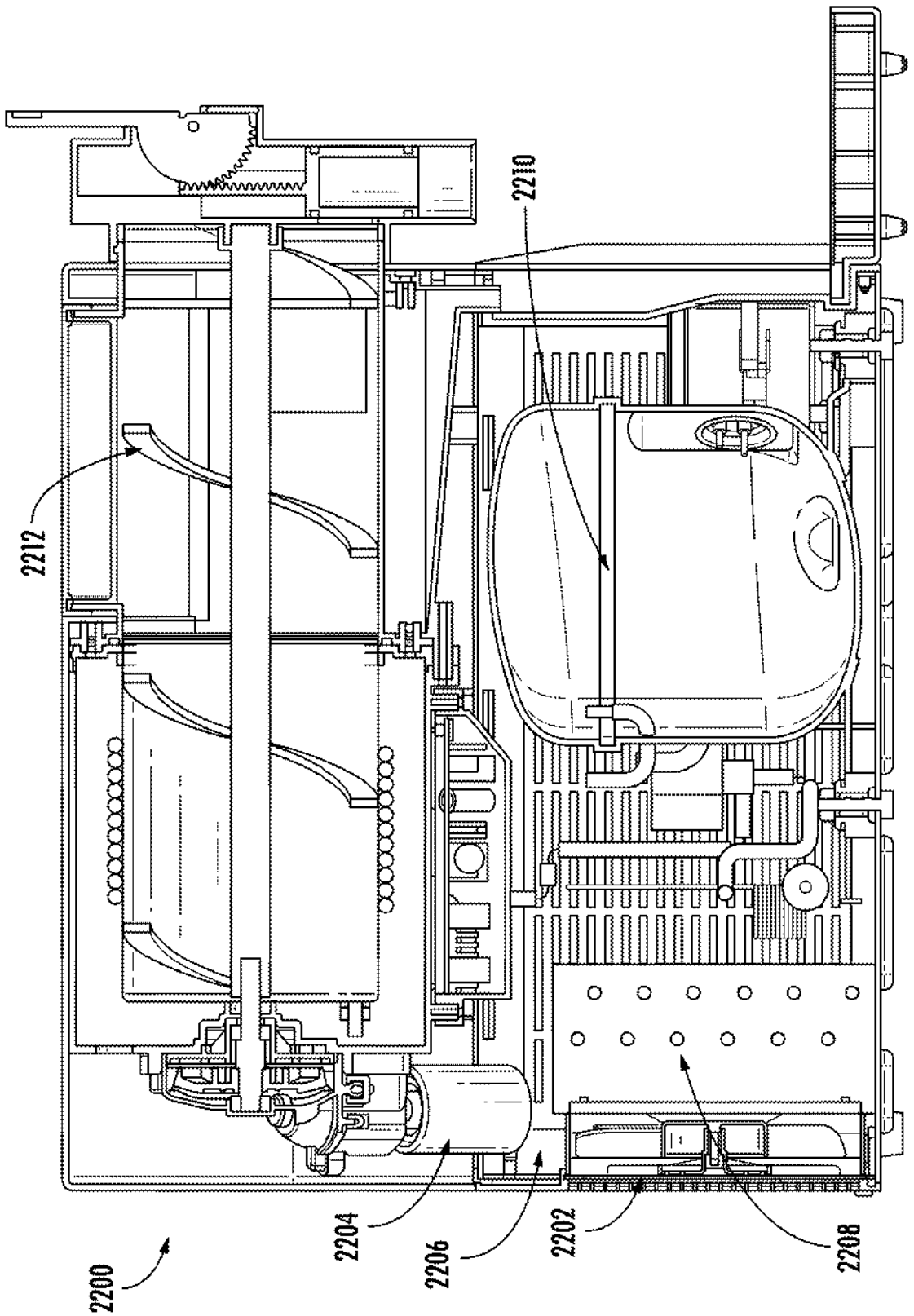


FIG. 22A

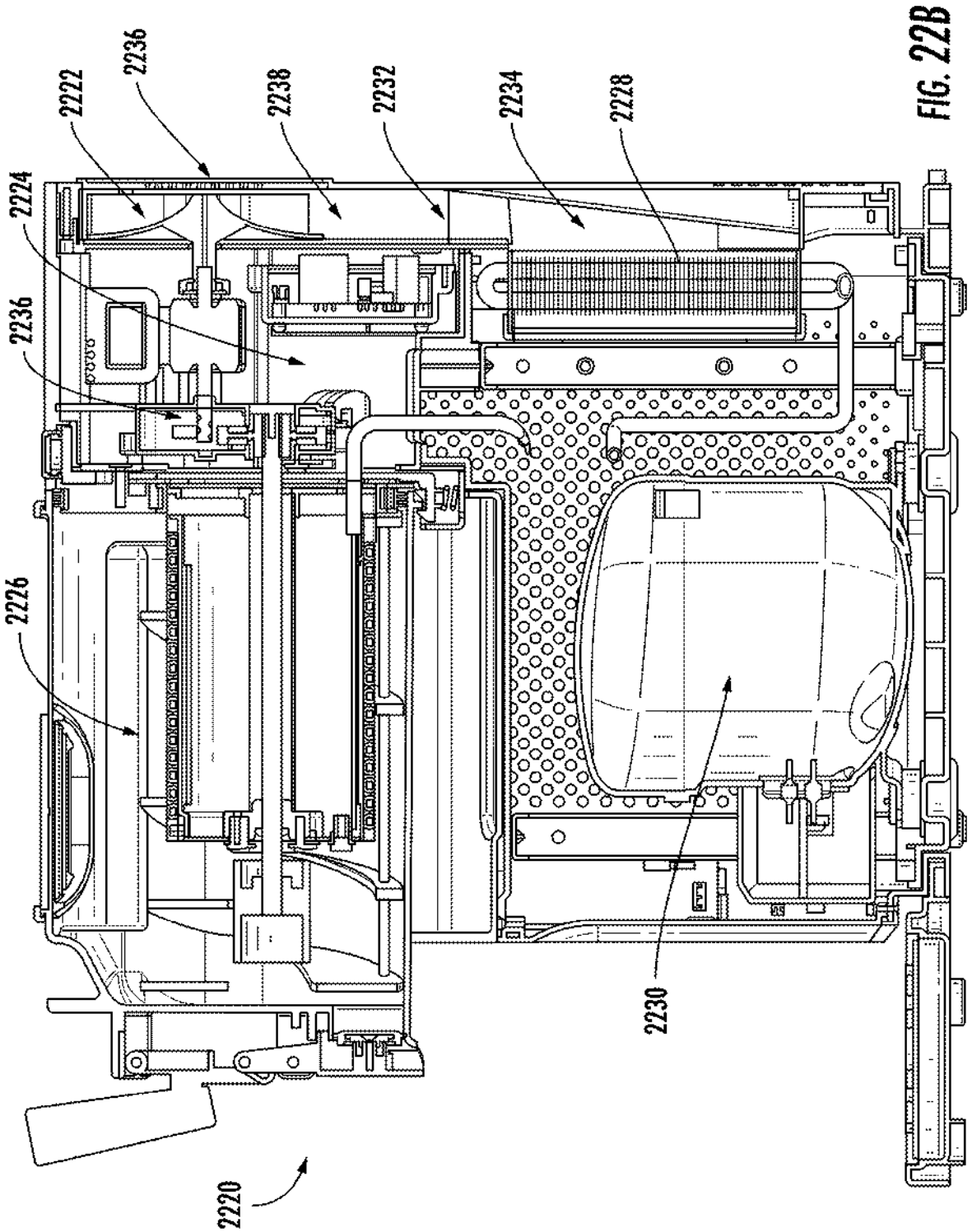


FIG. 22B

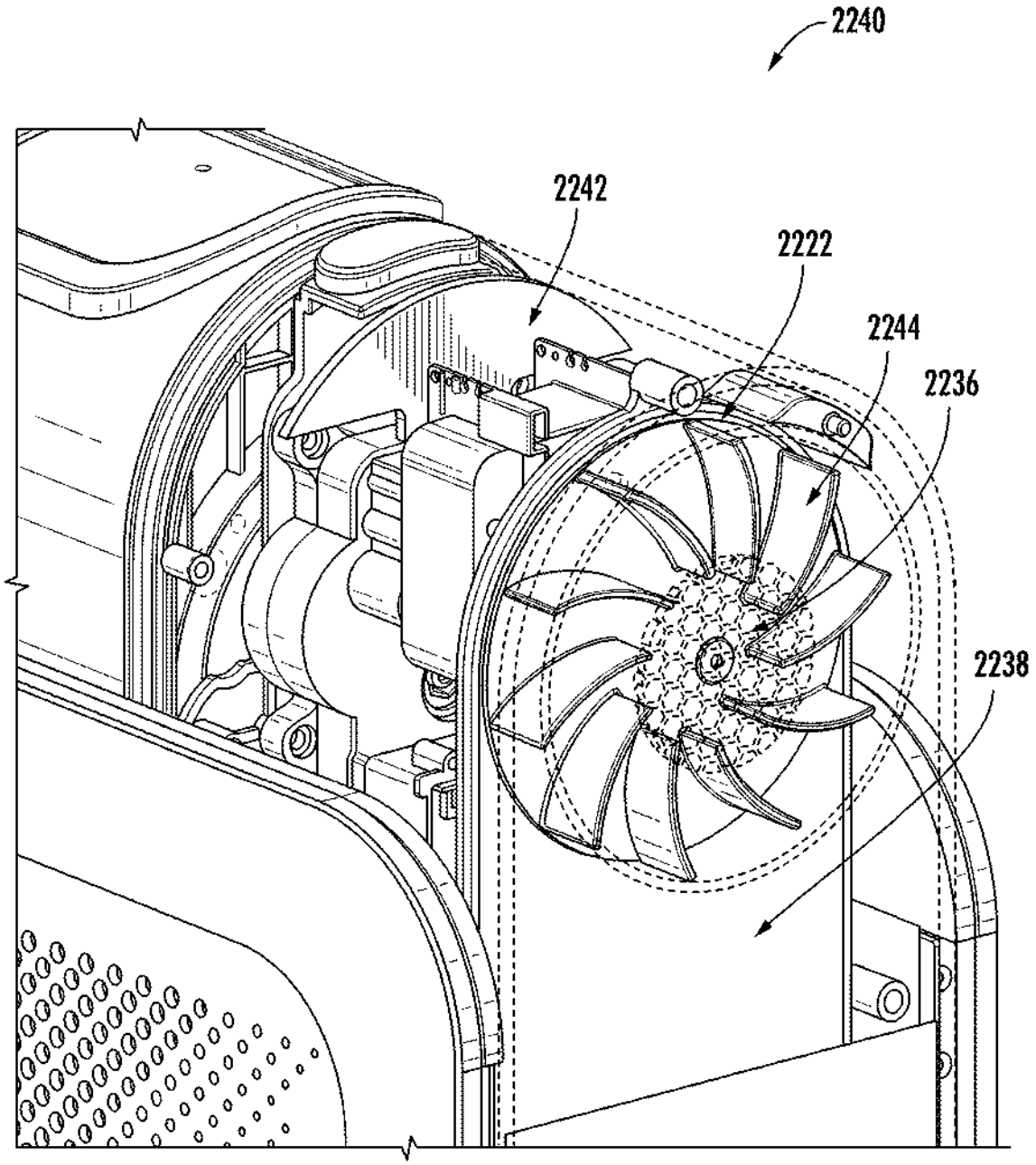


FIG. 22C

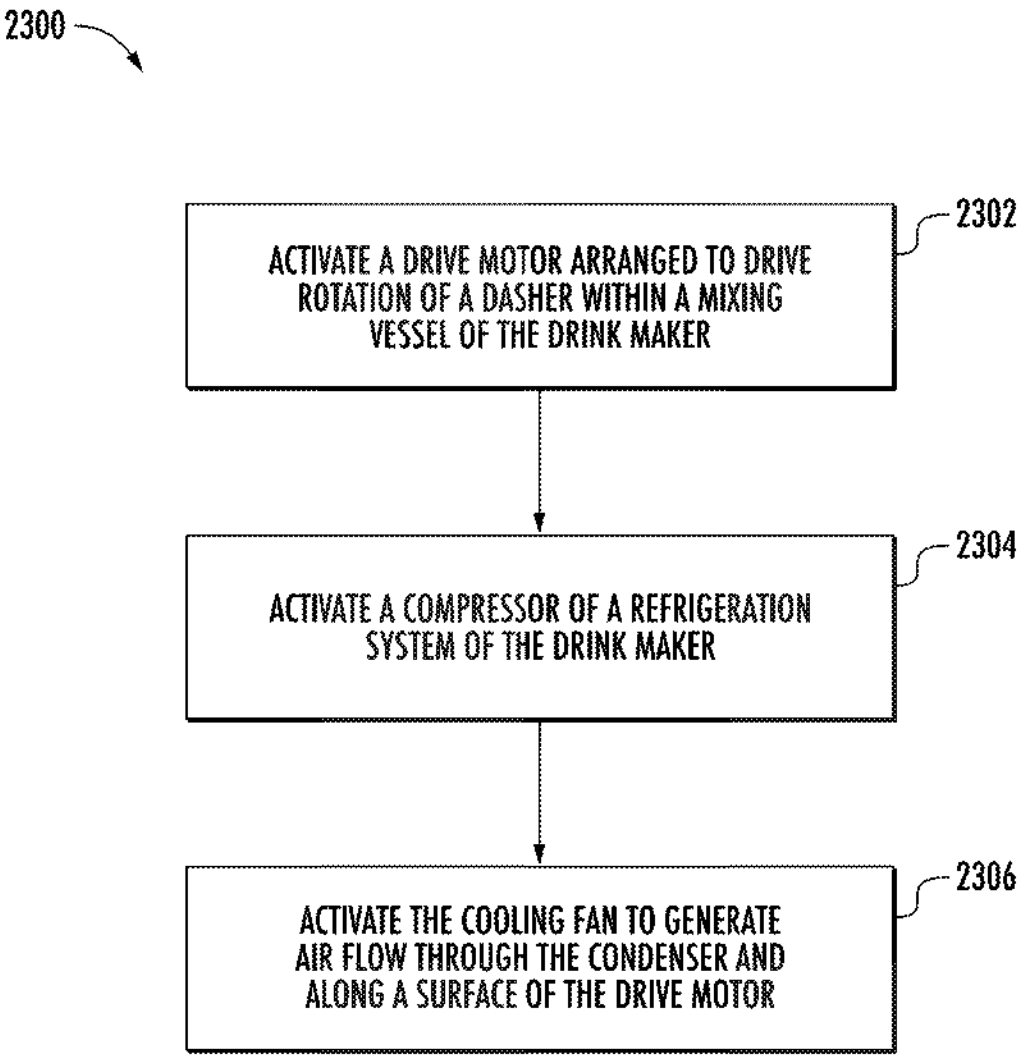

2300
ACTIVATE A DRIVE MOTOR ARRANGED TO DRIVE ROTATION OF A DASHER WITHIN A MIXING VESSEL OF THE DRINK MAKER
2302
ACTIVATE A COMPRESSOR OF A REFRIGERATION SYSTEM OF THE DRINK MAKER
2304
ACTIVATE THE COOLING FAN TO GENERATE AIR FLOW THROUGH THE CONDENSER AND ALONG A SURFACE OF THE DRIVE MOTOR
2306

FIG. 23

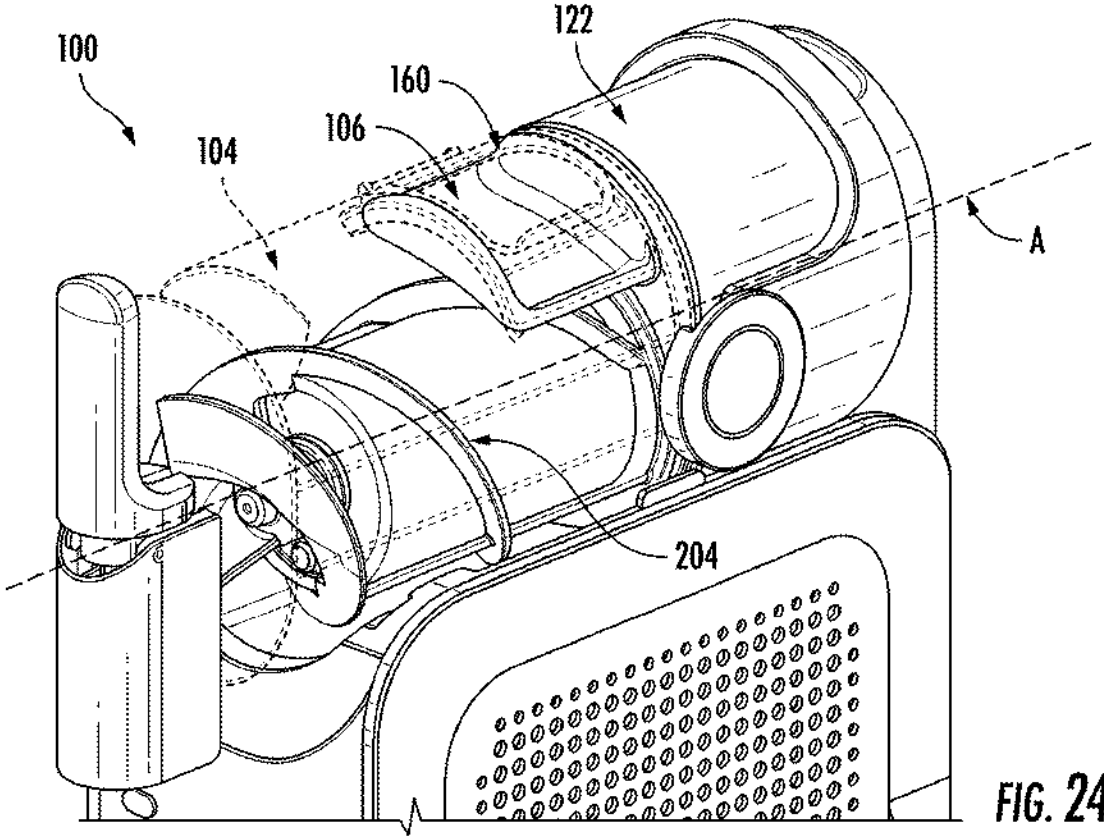


FIG. 24A

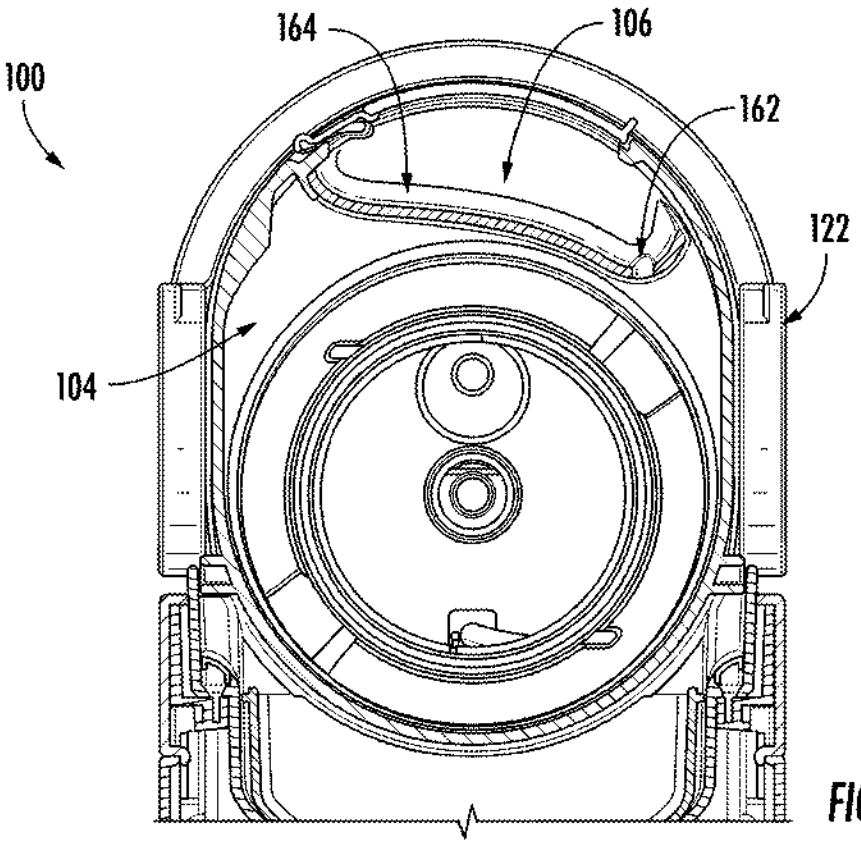


FIG. 24B

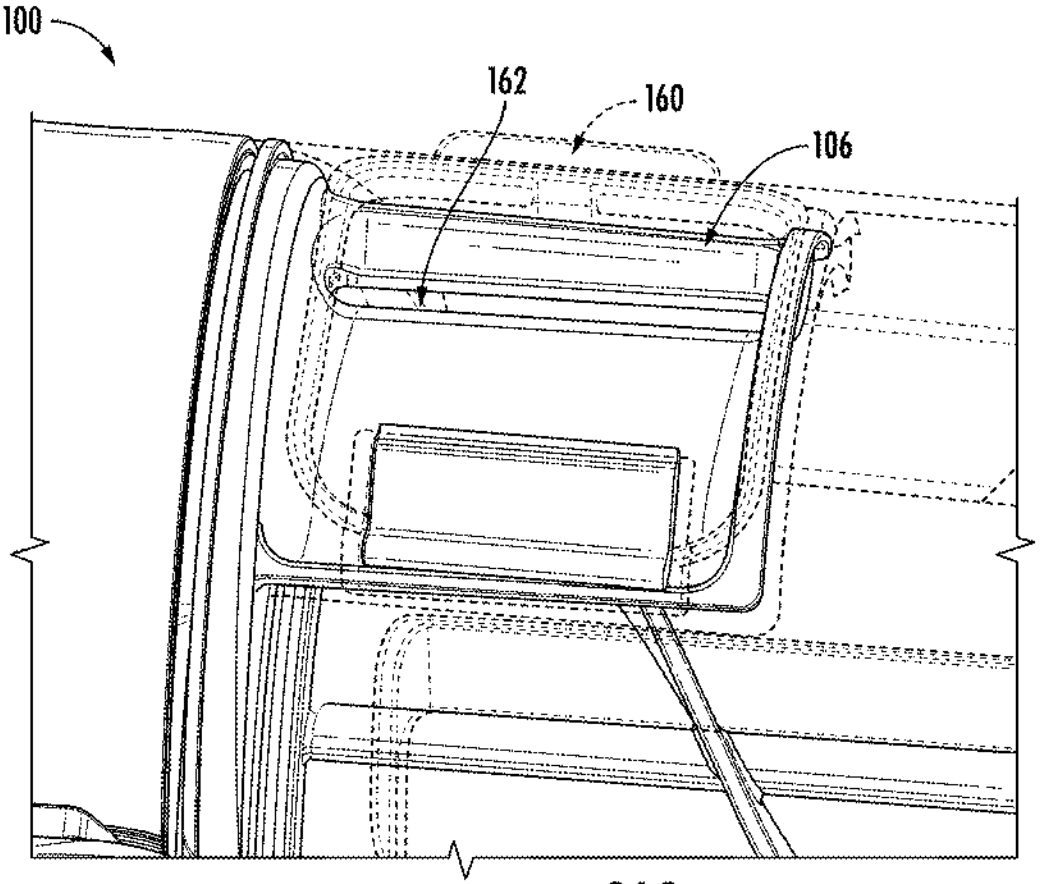


FIG. 24C

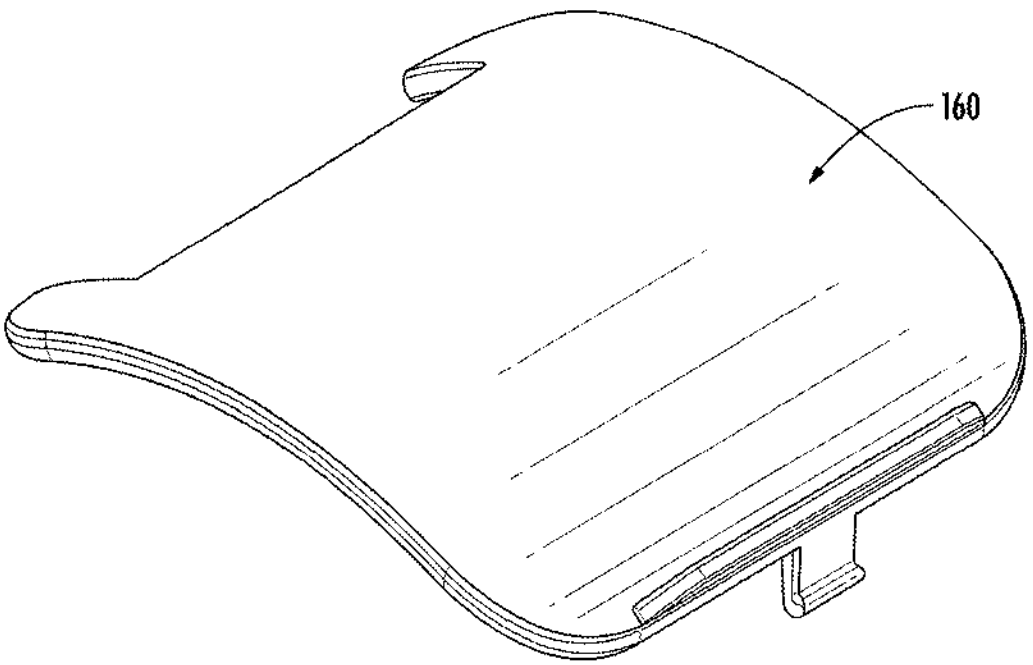


FIG. 25

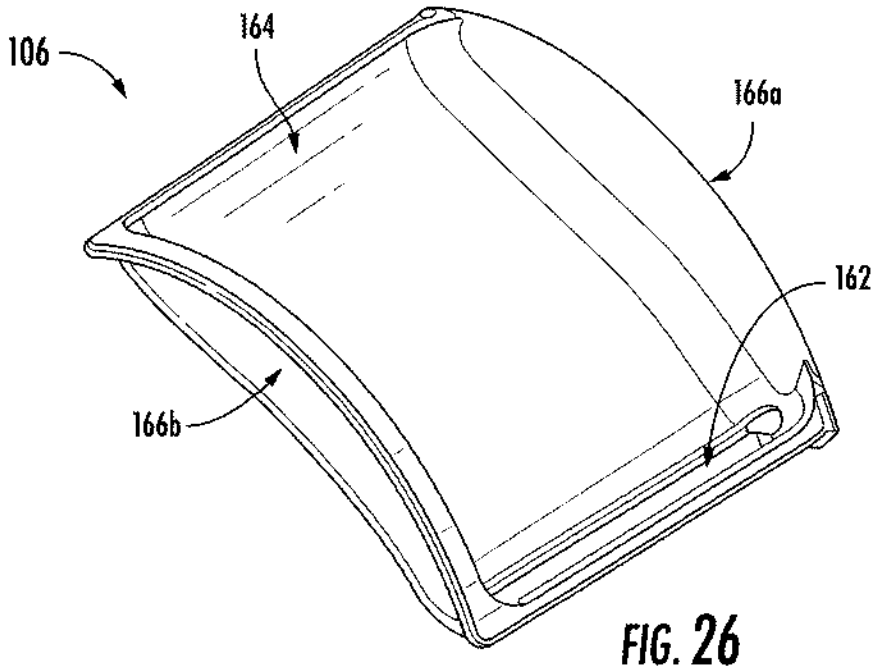


FIG. 26

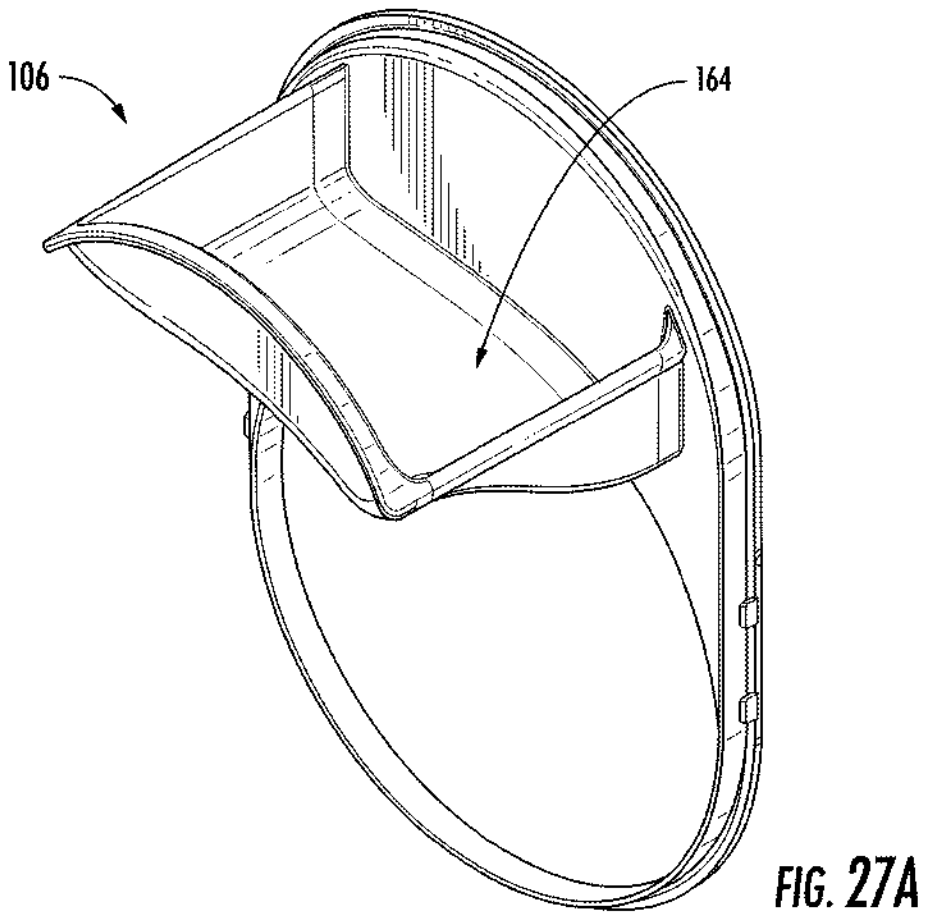


FIG. 27A

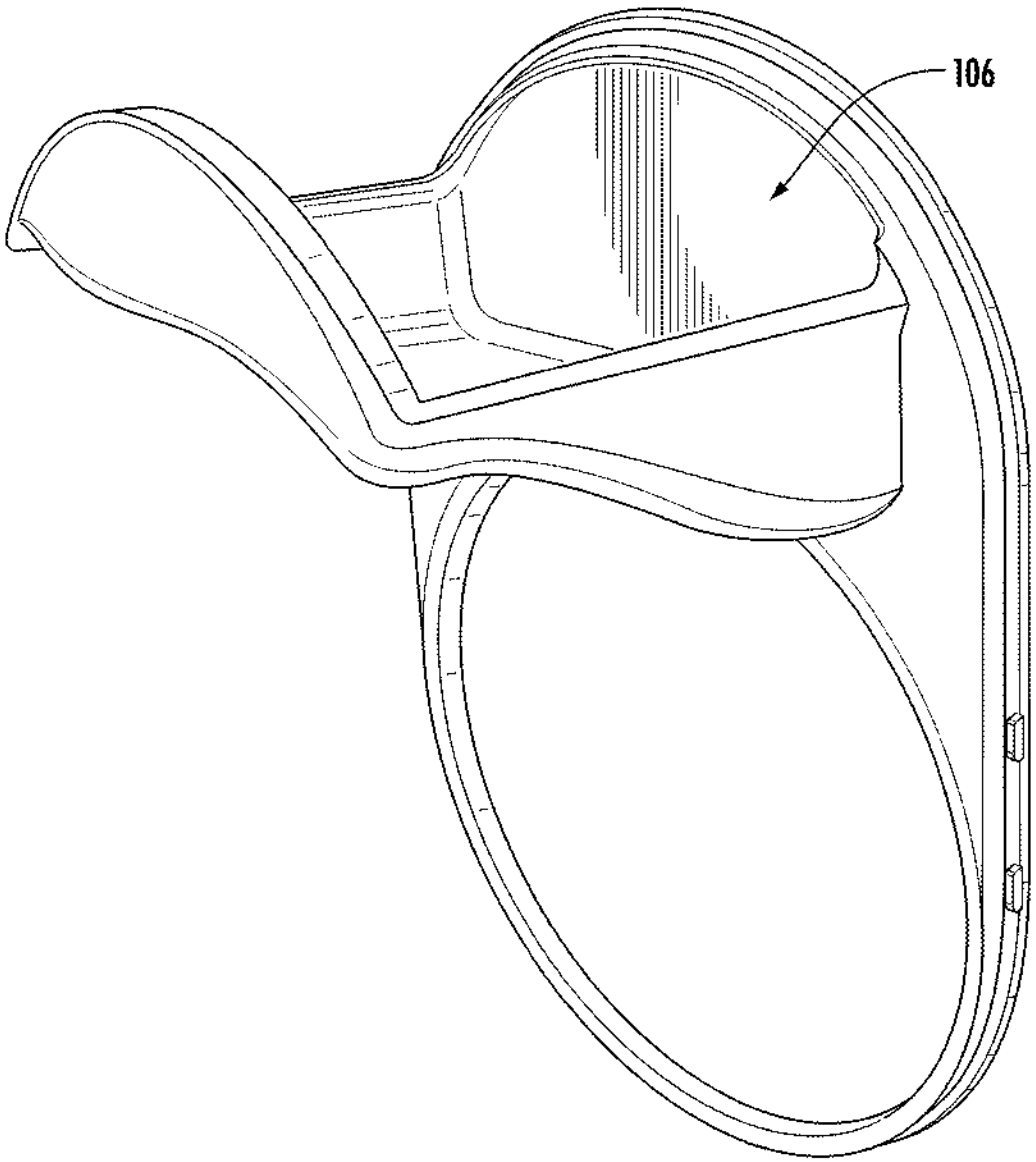


FIG. 27B

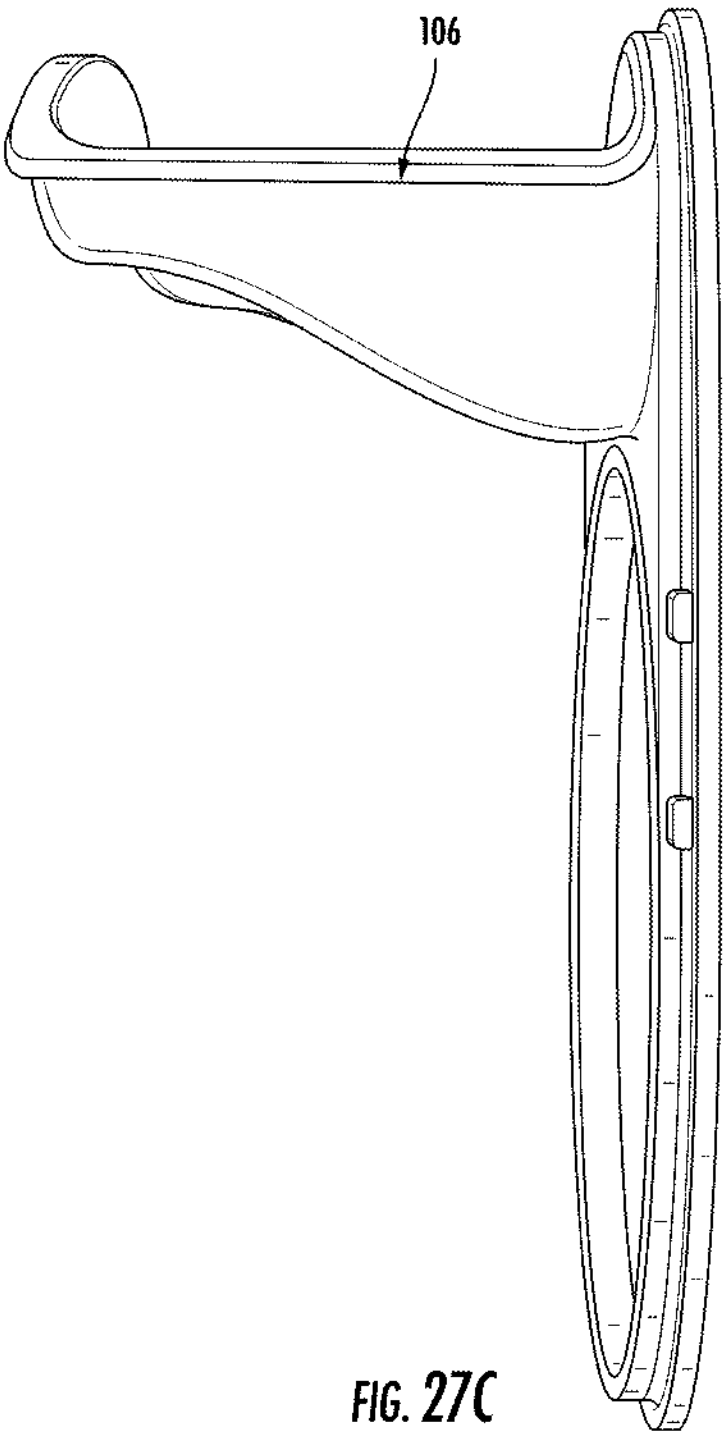


FIG. 27C

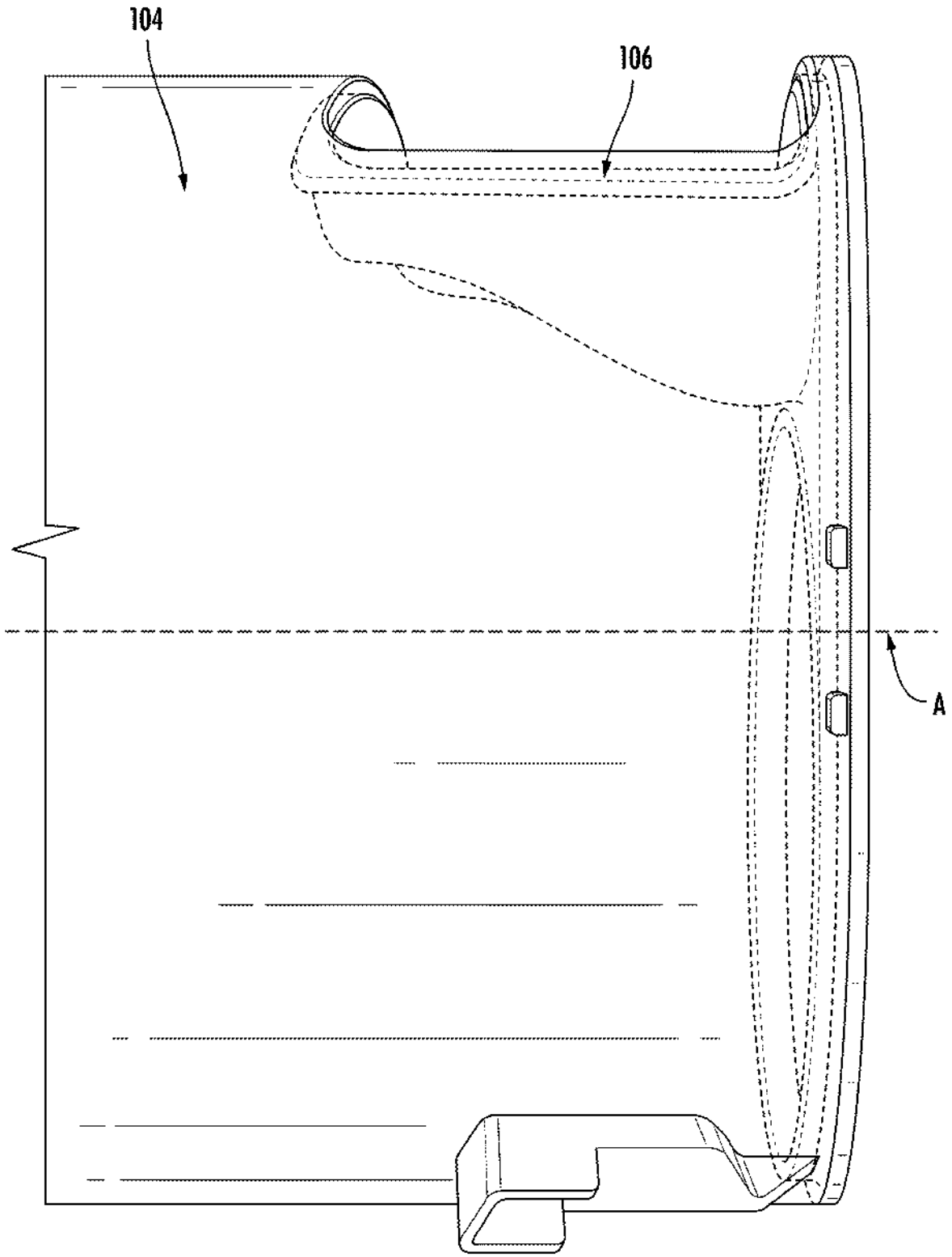


FIG. 27D

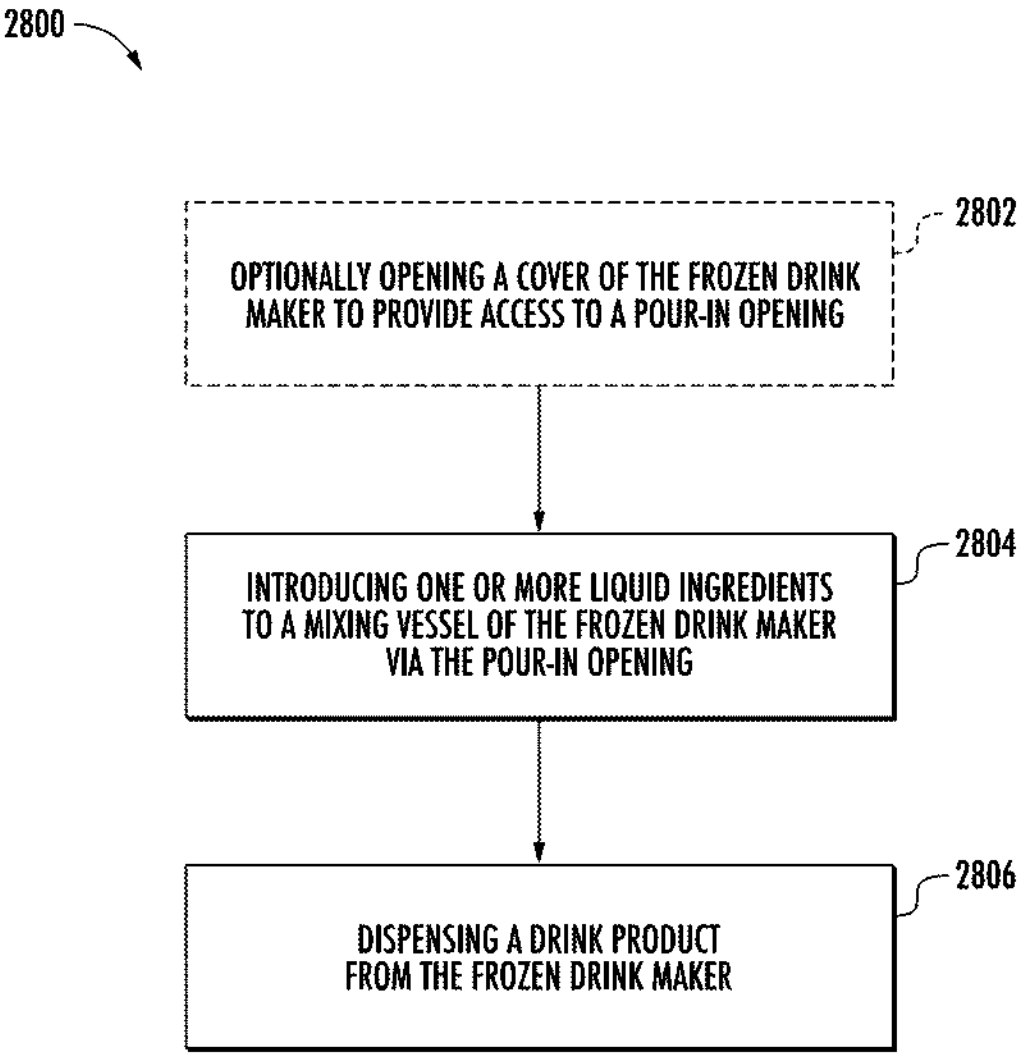

2800
2802
OPTIONALLY OPENING A COVER OF THE FROZEN DRINK MAKER TO PROVIDE ACCESS TO A POUR-IN OPENING
2804
INTRODUCING ONE OR MORE LIQUID INGREDIENTS TO A MIXING VESSEL OF THE FROZEN DRINK MAKER VIA THE POUR-IN OPENING
2806
DISPENSING A DRINK PRODUCT FROM THE FROZEN DRINK MAKER

FIG. 28

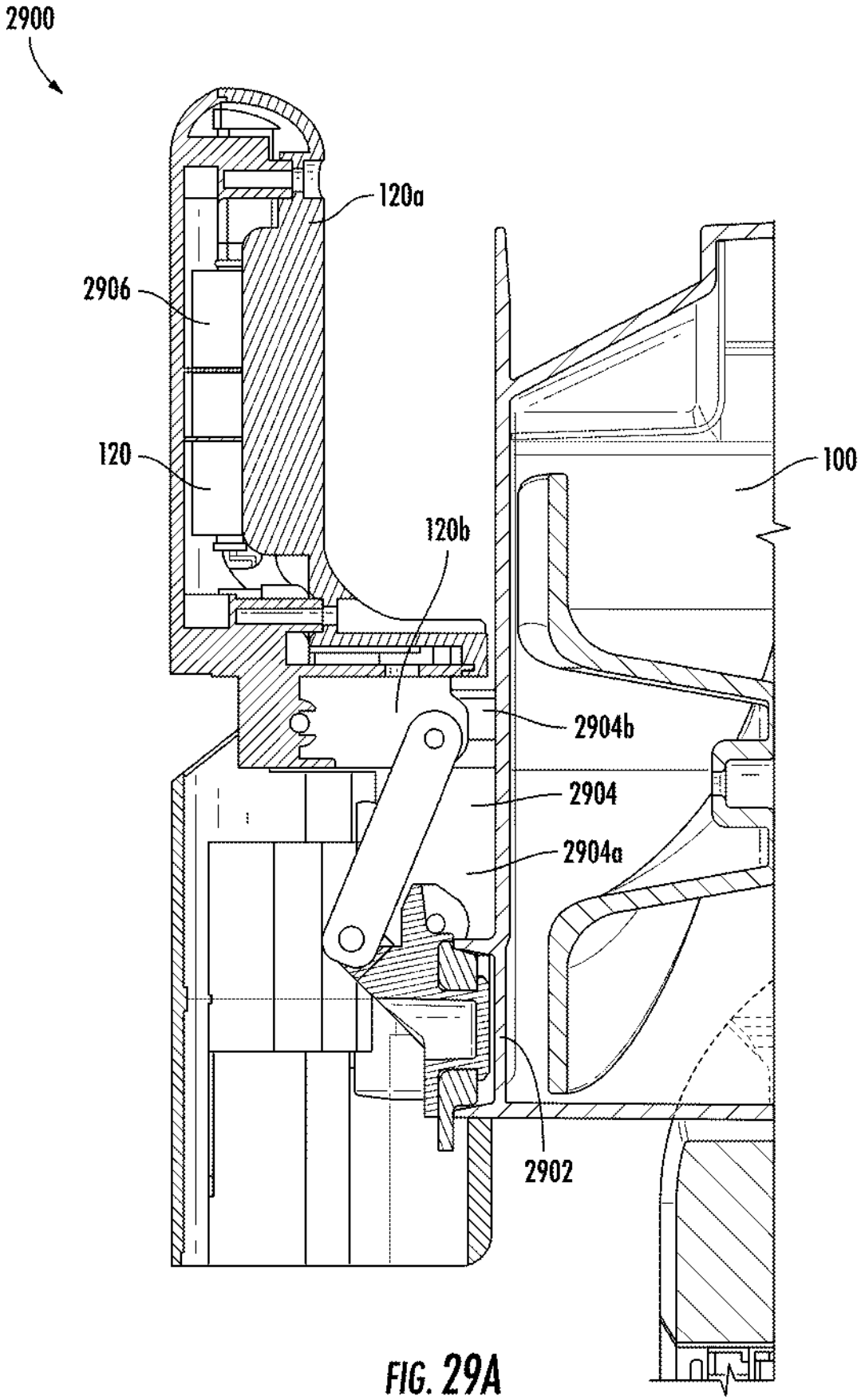


FIG. 29A

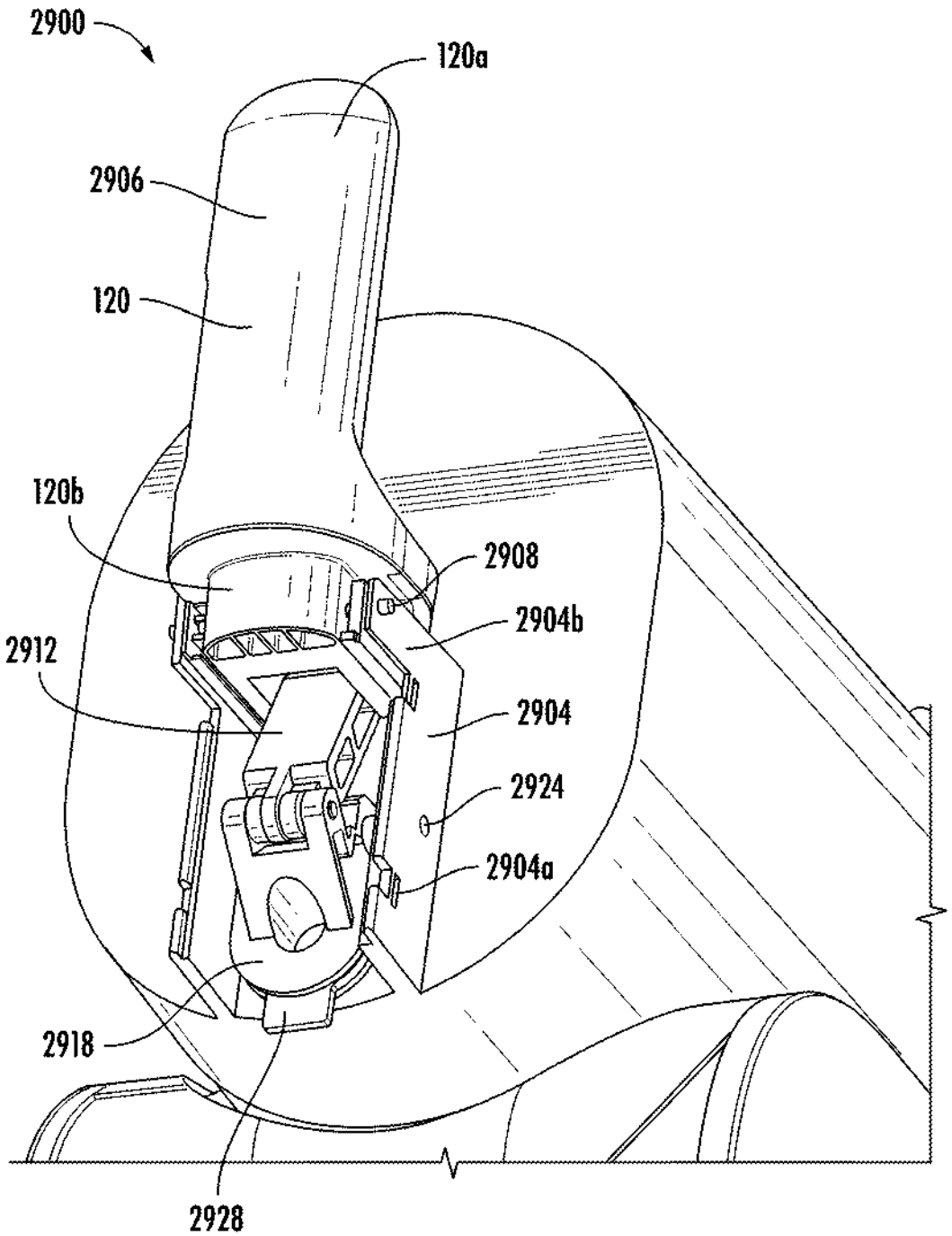

2900
120a
2906
120
120b
2908
2904b
2912
2904
2924
2904a
2918
2928

FIG. 29B

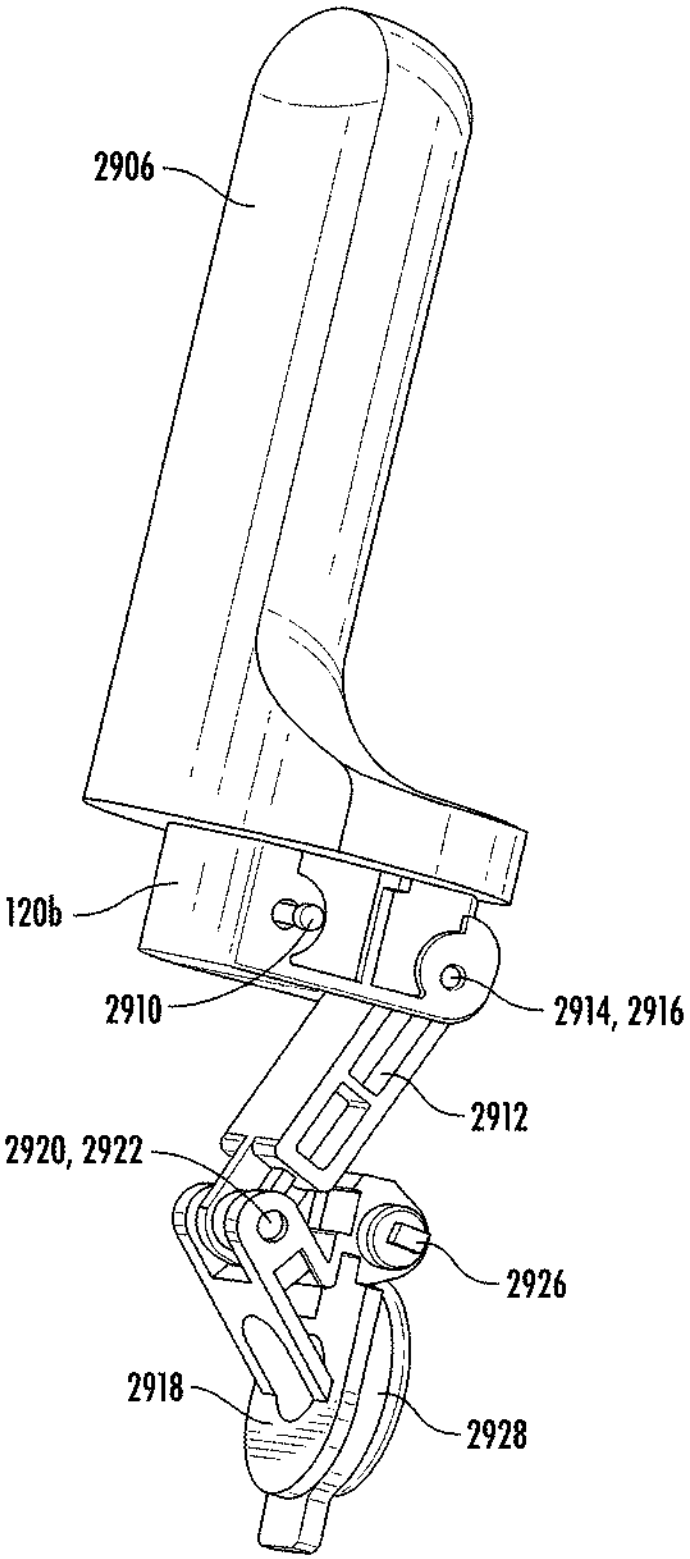


FIG. 29C

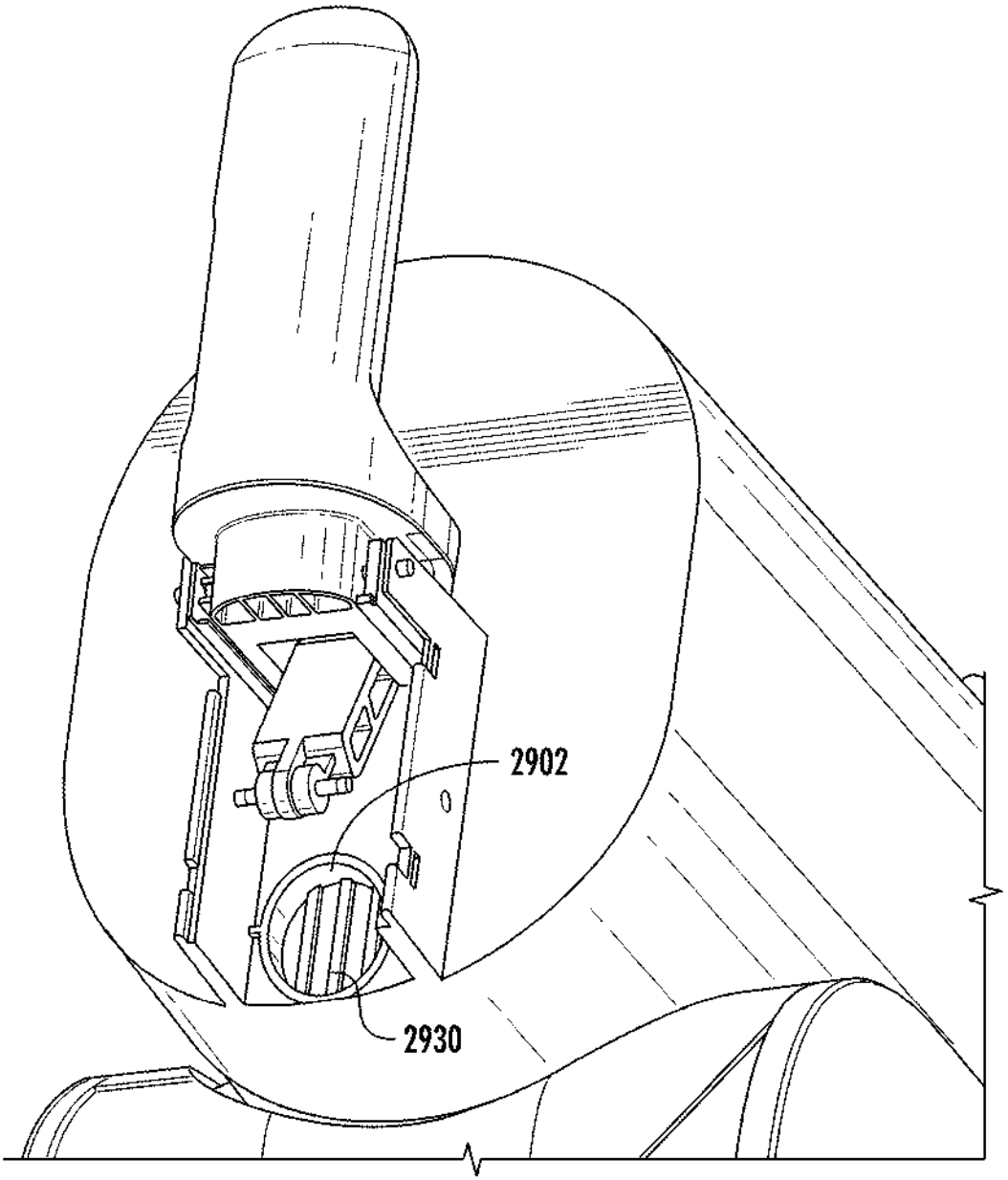


FIG. 29D

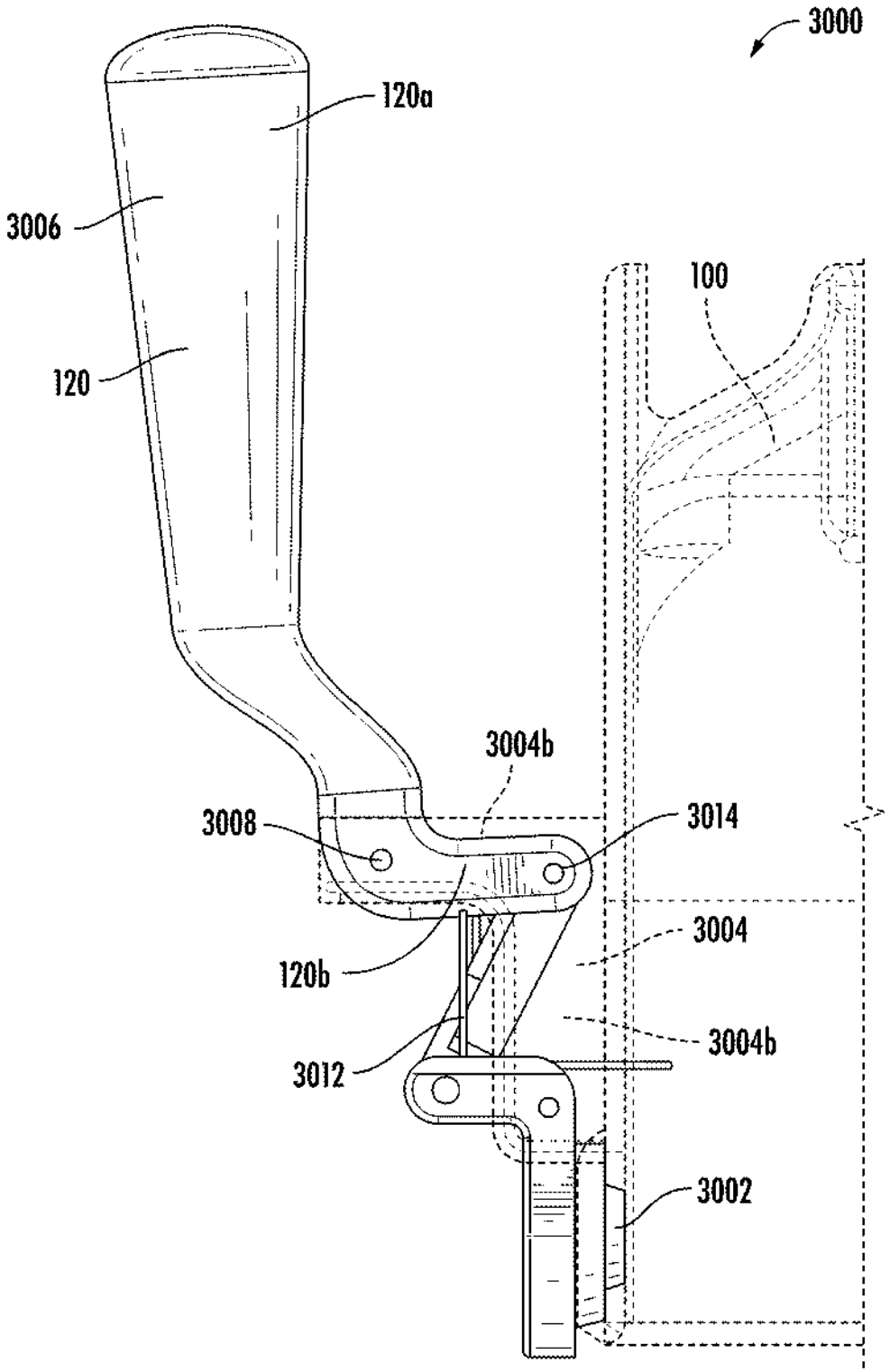

3000
120a
3006
120
100
3004b
3008
3014
3004
120b
3004b
3012
3002

FIG. 30A

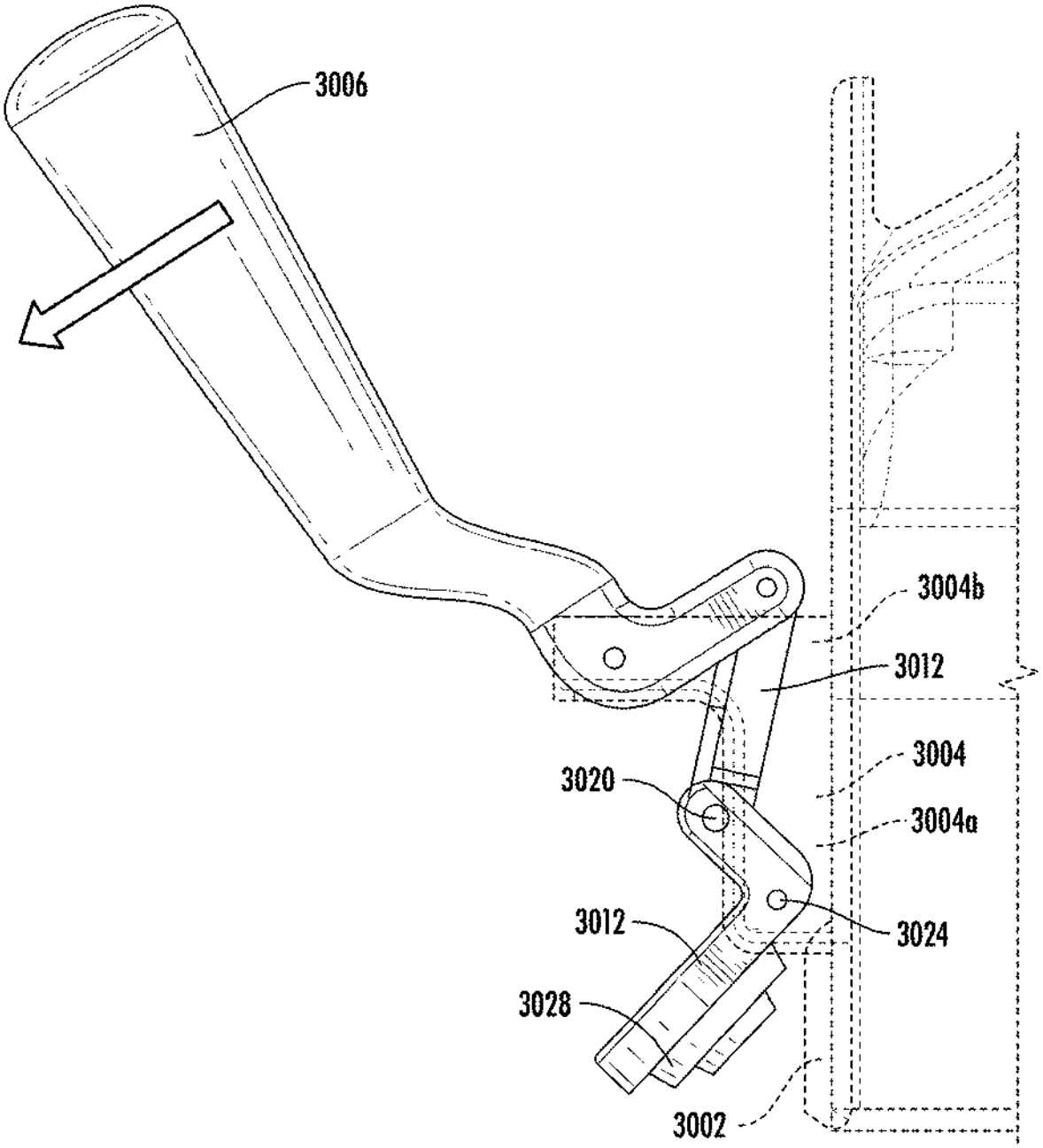


FIG. 30B

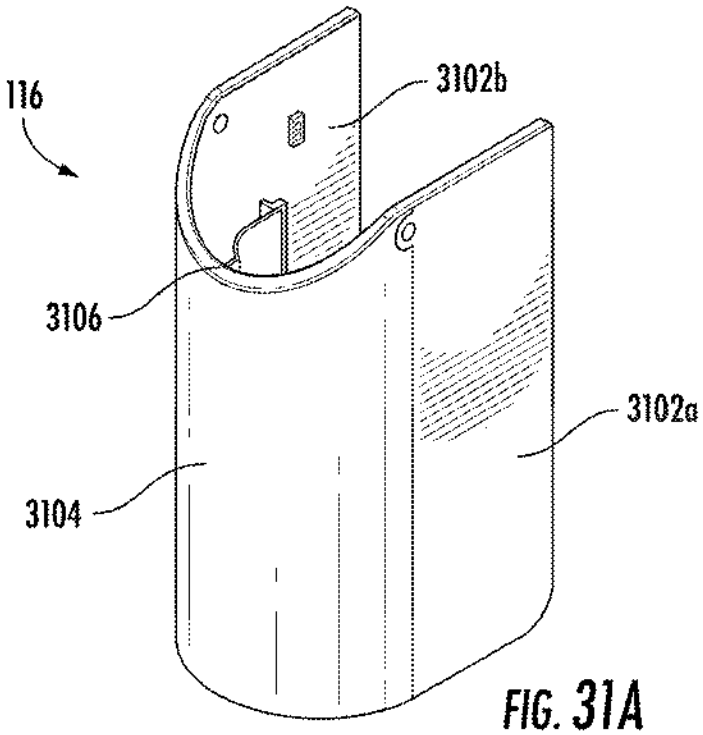


FIG. 31A

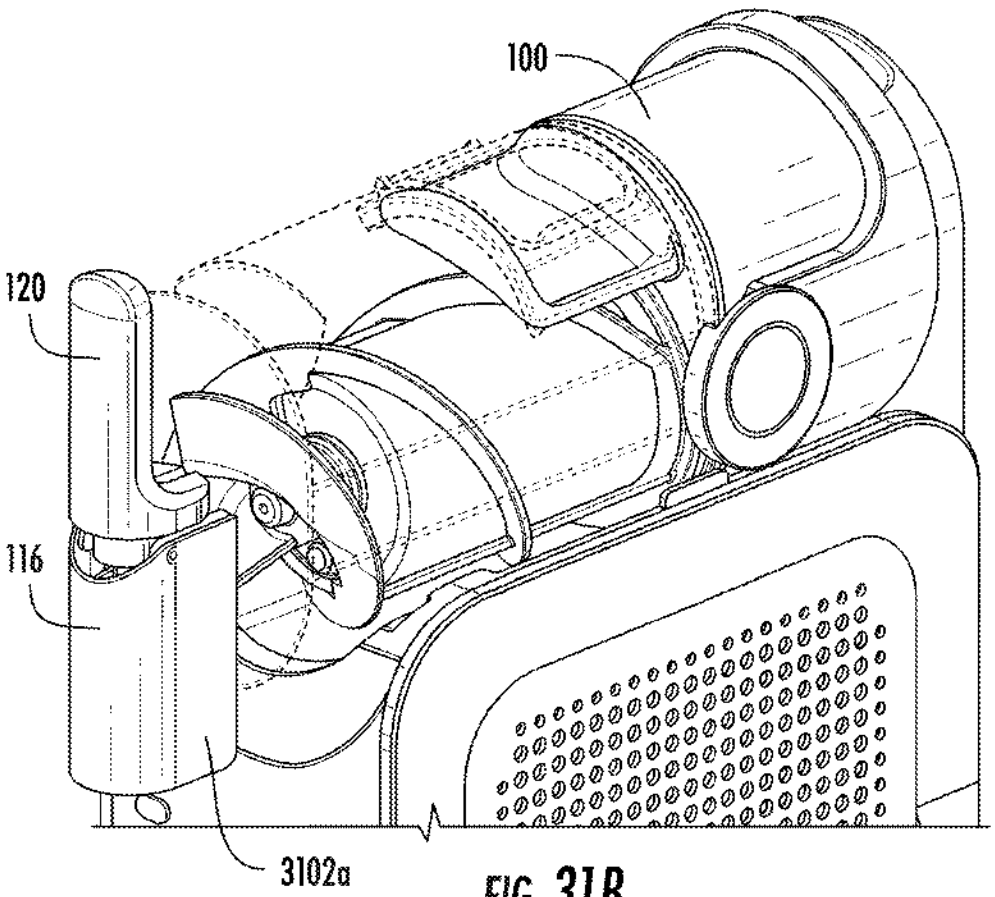


FIG. 31B

DRINK MAKER WITH DETACHABLY CONNECTABLE MIXING VESSEL

REFERENCE TO RELATED APPLICATIONS

This application is a continuation-in-part of U.S. patent application Ser. No. 18/415,817, filed on Jan. 18, 2024, the entire contents of which are incorporated herein by reference.

TECHNICAL FIELD

The present disclosure relates to a drink maker and, more particularly, to a frozen drink maker including a detachably connectable mixing vessel configured to be easily installed and uninstalled from the frozen drink maker with minimal user effort.

BACKGROUND

Frozen drink makers, which may also be referred to as semi-frozen beverage makers, or crushed-ice drink makers typically include a transparent tank or mixing vessel in which a drink product is received and processed, including being cooled, often transforming the drink product from a pure liquid (or a combination of a liquid and portions of ice) to a frozen or semi-frozen product, such as, for example, a granita, slush drink, smoothie, ice cream, or other frozen or semi-frozen product, which is then dispensed. The cooled product is typically dispensed through a tap, spigot or dispenser located at the front and near the bottom of the vessel. Thus, the term "frozen drink maker" as used herein is not limited to a device that only makes drinks or frozen drinks, but includes devices that cool received drink products to produce cooled outputs in any of a variety of frozen and semi-frozen forms. A drink product typically consists of a mixture of water or milk, a syrup flavoring powders, or other additives that give the drink product the desired taste and color.

Some existing frozen drink makers include a mixing system within the mixing vessel having a mixing blade or auger that is rotated by a motor via a drive shaft and drive assembly. Some existing frozen drink makers include a refrigeration system having a compressor, a condenser and an evaporator (i.e., chiller) for receiving refrigerant from the compressor where the evaporator is located adjacent to or within the mixing vessel to cool the drink product during processing.

Some existing frozen drink makers include a controller that controls operations of the frozen drink maker related to making drink products, including the temperature of frozen food products during processing.

SUMMARY

The application, in various implementations, addresses deficiencies associated with prior frozen drink makers, including commercial slush machine vessels, such as reducing the force required to install and uninstall a mixing vessel from the device. A unique lever is described that provides helpful mechanical advantages, allowing a user to easily and securely couple the mixing vessel onto an upper housing of the frozen drink maker with just one hand, if desired. The lever is configured to move relative to the upper housing between an uncoupled position and a coupled position. When the lever is in the coupled position, the mixing vessel is sealed against the upper housing section by a flexible seal. The flexible seal may include a face seal that interfaces a vertically aligned surface of the upper housing section to a vertically aligned side of the mixing vessel. The flexible seal may include a vessel seal portion configured to create a watertight seal between the mixing vessel and the upper housing section, and an evaporator seal portion configured to seal an evaporator within the mixing vessel. When the lever is moved to the uncoupled position, the lever uncouples the mixing vessel from the upper housing section. The lever can include a cam feature, which provides significant compression. This application describes illustrative systems, methods, and devices that permit a mixing vessel to be easily installed and uninstalled from a frozen drink maker in a more adaptive and user-friendly manner.

In some aspects, a frozen drink maker is described. The frozen drink maker includes a housing, a mixing vessel to mix a drink product, and a flexible seal. The housing includes an upper housing section and a lever moveable relative to the upper housing section between a coupled position and an uncoupled position. The flexible seal is between the upper housing section and the mixing vessel. The lever couples the mixing vessel to the upper housing section when in the coupled position and uncouples the mixing vessel from the upper housing section when in the uncoupled position. When the lever is in the coupled position, the mixing vessel is sealed against the upper housing section by the flexible seal.

In select implementations, the mixing vessel has a substantially cylindrical shape with a base having an opening formed therein, and the opening is sealed by the flexible seal when the lever is in the coupled position. In these and other implementations, the opening is substantially circular. The opening may be positioned to face horizontally when the lever is in the coupled position. The flexible seal may include a face seal that interfaces a vertically aligned surface of the upper housing section to a vertically aligned side of the mixing vessel. In select implementations, the lever includes a handle enabling a user to move the lever between the coupled position and the uncoupled position. In these and other implementations, the handle is positioned closer to the upper housing section when in the coupled position than when in the uncoupled position. In some such implementations, when moving between the coupled position and the uncoupled position, the handle moves less than 90° relative to the upper housing section. In select implementations, movement of the handle to move the lever into the coupled position activates a cam in the upper housing section that engages mating features on the mixing vessel to secure the mixing vessel to the upper housing section. In these and other implementations, the cam also includes an ejection feature to apply an ejection force to the mixing vessel when the lever is moved from the coupled position to the uncoupled position. In select implementations, the frozen drink maker also includes a drive motor and an interlock switch positioned within the upper housing section and configured to be activated and permit action of the drive motor when the mixing vessel is coupled onto the housing. In various implementations, the lever is rotatably coupled to the upper housing section.

In some aspects, methods of producing a frozen drink using a frozen drink maker device are described. The frozen drink maker device includes a housing, a mixing vessel, and a flexible seal. The housing includes an upper housing section and a lever moveable relative to the upper housing section between a coupled position and an uncoupled position. The mixing vessel is arranged to couple to the upper housing section. The flexible seal is positioned between the

upper housing section and the mixing vessel. The lever includes a handle that is moveable to place the lever into the coupled position and/or the uncoupled position. When the lever is in the coupled position, the mixing vessel is sealed against the upper housing section by the flexible seal. The methods include coupling the mixing vessel onto the upper housing section by moving the handle relative to the upper housing section to place the lever into the coupled position, operating the frozen drink maker device to produce the frozen drink, uncoupling the mixing vessel from the upper housing section by moving the handle relative to the upper housing section to place the lever into the uncoupled position.

In some implementations, coupling the mixing vessel onto the upper housing section involves moving the handle toward the upper housing section. In these and other implementations, uncoupling the mixing vessel from the upper housing section involves moving the handle away from the upper housing section and/or toward a front of the housing. In some implementations, moving the handle relative to the upper housing section to place the lever into the coupled position is accomplished with only one hand. In these and other implementations, moving the handle relative to the upper housing section to place the lever into the uncoupled position is accomplished with only one hand.

In yet another aspect, a frozen drink maker is described that includes a housing, a mixing vessel to mix a drink product, and a flexible seal. The housing includes an upper housing section and a coupling mechanism moveable relative to the upper housing section between a coupled position and an uncoupled position. The flexible seal is positioned between the upper housing section and the mixing vessel. The coupling mechanism couples the mixing vessel to the upper housing section when in the coupled position and uncouples the mixing vessel from the upper housing section when in the uncoupled position. When the coupling mechanism is in the coupled position, the mixing vessel is sealed against the upper portion of the housing by the flexible seal.

One of ordinary skill will recognize that the systems, methods, and devices described herein may apply to other types of food products such as to the making and/or processing of, without limitation, ice cream, frozen yogurt, other creams, and the like. While the present disclosure describes examples of a drink maker processing various frozen and/or semi-frozen drink products, the systems, devices, and methods described herein are not limited to such drink products and are capable of processing and/or making other types of drink products such as cooled drink products and/or chilled drink products. The terms "mix," "mixed" or "mixing" as used herein are not limited to combining multiple ingredients together, but also include mixing a drink product or liquid having a single or no added ingredients. For example, a drink product may consist of only water that is mixed by a dasher during processing, i.e., portions of the water are churned and/or intermingled as the dasher rotates. This may, for example, advantageously enable a more uniform temperature of the water and/or liquid as a whole within the mixing vessel by intermingling portions of the water and/or liquid having different temperatures.

A reading of the following detailed description and a review of the associated drawings will make apparent the advantages of these and other structures. Both the foregoing general description and the following detailed description serve as an explanation only and do not restrict aspects of the disclosure as claimed.

BRIEF DESCRIPTION OF THE DRAWINGS

Reference to the detailed description, combined with the following figures, will make the disclosure more fully understood, wherein:

FIG. **1** shows a perspective view of a frozen drink maker according to an implementation of the disclosure;

FIG. **2** shows a view of various internal components within the housing and mixing vessel of the frozen drink maker of FIG. **1** according to an implementation of the disclosure;

FIG. **3** shows a front view of the frozen drink maker of FIG. **1**, according to some implementations of the disclosure;

FIG. **4** is a block diagram of an example of a control system of the frozen drink maker of FIG. **1**, according to some implementations of the disclosure;

FIG. **5**A illustrates a side view of the frozen drink maker of FIG. **1** with the mixing vessel in a coupled position relative to the upper housing section, according to some implementations of the disclosure;

FIG. **5**B illustrates a side view of the frozen drink maker illustrated in FIG. **5**A with some features of the housing and the lever shown in partial cross-section, according to some implementations of the disclosure;

FIG. **6** shows a detailed view of a lever with cams for coupling a mixing vessel to the housing of a frozen drink maker, according to some implementations of the disclosure;

FIG. **7**A shows a rear view of a mixing vessel, according to some implementations of the disclosure;

FIG. **7**B shows a perspective view of the rear of a mixing vessel, according to some implementations of the disclosure;

FIG. **8** shows a perspective view of a flexible seal, according to some implementations of the disclosure;

FIG. **9** shows a cross-sectional view of a flexible seal, according to some implementations of the disclosure;

FIG. **10** illustrates a flow diagram for a method of using the disclosed frozen drink maker, according to some implementations of the disclosure;

FIGS. **11**A and **11**B show perspective views of a condensation collection tray of the frozen drink maker of FIG. **1** according to an implementation of the disclosure;

FIG. **11**C shows the collection tray of FIGS. **11**A and **11**B inserted into the frozen drink maker of FIG. **1** according to an implementation of the disclosure;

FIG. **11**D shows the frozen drink maker of FIG. **1** with the collection tray removed according to an implementation of the disclosure;

FIG. **12** is a flow chart illustrating a method of removing the collection tray of FIGS. **11**A and **11**B from the frozen drink maker of FIG. **1** according to an implementation of the disclosure;

FIG. **13**A shows an isometric view of the frozen drink maker with a mixing vessel having at least one internal baffle, in accordance with some implementations of the disclosure;

FIG. **13**B shows a cross-sectional view of the frozen drink maker shown in FIG. **13**A, taken along line B-B;

FIG. **13**C shows a cross-sectional view of the frozen drink maker shown in FIG. **13**A, taken along line C-C;

FIG. **14**A shows a rear isometric view of a mixing vessel for a frozen drink maker with three internal baffles, in accordance with some implementations of the disclosure;

FIG. **14**B shows a rear view of the mixing vessel shown in FIG. **14**A;

FIG. **14**C shows a front isometric view of the mixing vessel shown in FIG. **14**A;

FIG. **15** is a close-up view of a user interface according to an implementation of the disclosure;

FIG. **16** is a graph of coarse and fine temperature settings according to an implementation of the disclosure;

FIG. **17** is a close-up view of another user interface according to an implementation of the disclosure;

FIG. **18** is a graph of temperature values associated with automatic recipe temperature target temperatures and manual temperature adjustments;

FIG. **19** is a graph of drive motor current and temperature vs. time as a drink product being processing by the frozen drink maker of FIG. **1**;

FIG. **20** is a flow diagram of a process for making a cooled drink product using a food type for initial or coarse temperature and/or texture control and then using a user input to subsequently fine tune the temperature and/or texture of the drink product;

FIG. **21** is a flow diagram of a process for automatically detecting when drive motor current is too high and/or a drink product is too thick and, in response, adjusting the temperature of the drink product to reduce drive motor current and/or to increase the temperature of the drink product to reduce a thickness of the drink product;

FIG. **22**A shows an implementation of a dual-use cooling fan within the housing of a drink maker;

FIG. **22**B shows another implementation of a dual-use cooling fan within the housing of a drink maker;

FIG. **22**C shows a perspective view of the dual-use cooling fan of FIG. **22**B;

FIG. **23** is a flow diagram of a process for operating the dual-use fan;

FIG. **24**A shows a perspective view of a sample pour-in opening for a frozen drink maker, according to some implementations of the disclosure;

FIG. **24**B shows a front view of the pour-in opening shown in FIG. **24**A;

FIG. **24**C shows a left perspective view of the pour-in opening shown in FIG. **24**A;

FIG. **25** shows a perspective view of a sample cover for a pour-in opening, according to some implementations of the disclosure;

FIG. **26** shows a perspective view of a sample pour-in opening, according to some implementations of the disclosure;

FIG. **27**A shows a perspective view of a sample pour-in opening, according to some implementations of the disclosure;

FIG. **27**B shows an isometric view of a protype of the pour-in opening of FIG. **27**A;

FIG. **27**C shows a side view of the pour-in opening protype of in FIG. **27**B;

FIG. **27**D shows a photograph of the pour-in opening protype shown in FIG. **27**B affixed to a mixing vessel, according to some implementations of the disclosure;

FIG. **28** shows a sample method of using a pour-in opening, according to some implementations of the disclosure;

FIGS. **29**A-**29**D show a dispensing assembly for dispensing a drink product from the frozen drink maker according to an implementation of the disclosure;

FIGS. **30**A-**30**B show a dispensing assembly for dispensing a drink product from the frozen drink maker according to another implementation of the disclosure; and

FIGS. **31**A and **31**B show a shroud for covering the dispensing assembly of FIGS. **29**A-**29**D and FIGS. **30**A-**30**B according to an implementation of the disclosure.

DETAILED DESCRIPTION

In the following description, like components have the same reference numerals, regardless of different illustrated implementations. To illustrate implementations clearly and concisely, the drawings may not necessarily reflect appropriate scale and may have certain structures shown in somewhat schematic form. The disclosure may describe and/or illustrate structures in one implementation, and in the same way or in a similar way in one or more other implementations, and/or combined with or instead of the structures of the other implementations.

In the specification and claims, for the purposes of describing and defining the invention, the terms "about" and "substantially" represent the inherent degree of uncertainty attributed to any quantitative comparison, value, measurement, or other representation. The terms "about" and "substantially" moreover represent the degree by which a quantitative representation may vary from a stated reference without resulting in a change in the basic function of the subject matter at issue. Open-ended terms, such as "comprise," "include," and/or plural forms of each, include the listed parts and can include additional parts not listed, while terms such as "and/or" include one or more of the listed parts and combinations of the listed parts. Use of the terms "top," "bottom," "above," "below" and the like helps only in the clear description of the disclosure and does not limit the structure, positioning and/or operation of the disclosure in any manner.

The application, in various implementations, addresses deficiencies associated with prior commercial slush machines. Unfortunately, the architecture of prior commercial slush machines usually requires a significant amount of force to seat the vessel over a large radial seal, making it challenging for a user to install and uninstall the vessel from the device. In many prior commercial slush machines, the vessel is installed by engaging a catch to retain the vessel, which strains the plastic to properly position the vessel and requires significant user effort. Accordingly, there is a need for a more user-friendly architecture to install and uninstall the vessel of a frozen drink maker, such as, for example, a lever that can be used to couple and decouple the vessel to a housing of the frozen drink maker with minimal force and/or that only requires one hand to use.

FIG. **1** shows a perspective view of a frozen drink maker **100** according to an illustrative implementation of the disclosure. The frozen drink maker **100** includes a housing **102** and mixing vessel **104**. The housing **102** may include user interface **112** for receiving user inputs to control frozen drink maker **100** and/or to output or display information. User interface **112** may include one or more buttons, dials, switches, touchscreens, indicators, LEDs, and the like. User interface **112** may display status information including for example, a temperature of a drink product within mixing vessel **104**, an indicator of a recipe and/or program currently being implemented, a timer associated with the progress of a recipe and/or program in progress and/or currently being implemented. User interface **112** may provide indicators and/or warnings to users regarding, for example, when a recipe is complete or when a user is expected to perform an action associated with processing a drink product. User interface **112** may include a selectable menu of drink types (e.g., recipes) and/or programs for different types of drink products such as, without limitation, granita, smoothie, margarita, daiquiri, pina colada, slushi, cocktail, frappe, juice, diary, milk shake, cool drink, semi-frozen drink, frozen drink, and the like.

Housing **102** may include a panel (e.g., a removable panel) **114** along a side of the housing **102**. Panel **114** may include a plurality of openings that facilitate air flow to aid in cooling components within housing **102**. Housing **102** may include upper housing section **122** that is arranged to couple with a rear end of mixing vessel **104** when mixing vessel **104** is attached to housing **102**. Mixing vessel **104** may include walls, or a portion thereof, that are transparent to enable a viewer to see a drink product within mixing vessel **104** during processing. Mixing vessel **104** may include pour-in opening **106** whereby mixing vessel **104** can receive ingredients for processing a drink product within mixing vessel **104**. FIG. **1** shows pour-in opening **106** in a closed configuration with a cover sealing the pour-in opening **106**. The cover may be detachably removable or moveable to open or close opening **106**. Pour-in opening **106** may include a grate to inhibit a user from reaching into mixing vessel **104** when pour-in opening **106** is open, i.e., the cover is not installed. Mixing vessel **104** may include a dispenser assembly **108** having a user handle **120**, a spout (not shown), and a spout shroud and/or cover **116**. Dispenser assembly **108** enables a user, by pulling down on handle **120**, to open a spout, connected to a wall of mixing vessel **104**, to dispense a processed (e.g., cooled) drink product from mixing vessel **104**. The user can close the spout by pushing handle **120** back to its upright position (shown in FIG. **1**) and, thereby, stop the dispensing of the processed drink product.

Frozen drink maker **100** may include a coupling mechanism that enables a secure coupling of mixing vessel **104** to housing **102**, including upper housing section **122**. In some implementations, the coupling mechanism is a lever **110** rotatably coupled to the upper housing section **122**. FIG. **1** shows lever **110** in the coupled, locked, and/or closed position whereby mixing vessel **104** is coupled to (e.g., attached to, latched to, and/or locked to) housing **102** and upper housing section **122**. In the coupled position, lever **110** ensures that there is a water-tight seal to prevent leakage of drink product from mixing vessel **104**. Lever **110** may be placed in the coupled position by sliding mixing vessel **104** against upper housing section **122** and then rotating lever **110** in a clockwise direction until its handle rests on or about the top surface of upper housing section **122**. Mixing vessel **104** can be disengaged and/or decoupled from housing **102** and upper housing section **122** by pulling and/or rotating lever **110** in a counter-clockwise direction (from the perspective of FIG. **1**) toward the front of mixing vessel **104**, which causes lever **110** to release mixing vessel **104**. Once released and/or decoupled, mixing vessel **104** may slide in a forward direction (away from upper housing section **122**) to be fully detached and/or removed from housing **102**.

A flexible seal (illustrated in FIG. **8**) may be positioned between the mixing vessel **104** and the upper housing section **122**. The flexible seal may include a face seal portion and/or a radial seal portion. If present, the face seal portion may provide an improved seal based on compression provided by lever **110** pushing mixing vessel **104** laterally against a wall of upper housing section **122**. The mixing vessel **104** may have a substantially cylindrical shape with a base having an opening formed therein, and the opening is sealed by the flexible seal when the lever **110** is in the coupled position. An interlock switch may be implemented at the upper housing section **122** that is activated when mixing vessel **104** is coupled to upper housing section **122** that prevents activation of drive motor **208** unless vessel **104** is coupled to upper housing section **122**. This ensures that a user is not exposed to a moving dasher **204**. Frozen drink maker **100** may also include drip tray **118** being positioned below dispenser assembly **108** and arranged to collect any drink product that is not properly dispensed from mixing vessel **104** to, for example, a user cup. Drip tray **118** may be attachably removable from its operational position shown in FIG. **1**. For example, water tray **118** may mounted and/or stored on a side panel of housing **102** as illustrated in FIG. **3** as water tray **304**.

FIG. **2** shows a view **200** of various internal components within housing **102** and mixing vessel **104** of frozen drink maker **100** of FIG. **1**. Frozen drink maker **100** includes a cylindrical evaporator **202** that is surrounded by an auger and/or dasher **204**. Dasher **204** may include one or more mixing blades and/or protrusions that extend helically around evaporator and/or chiller **202**. Dasher **204** may be driven to rotate by a central drive shaft (not shown) within mixing vessel **104**. The drive shaft may be surrounded by evaporator **202**. However, in various implementations, evaporator **202** does not rotate. The drive shaft may be coupled via a gear assembly **210** to a drive motor **208**. In some implementations, drive motor **208** is an AC motor, but another type of motor may be used such as, without limitation, a DC motor. Drive motor **208** may include a motor fan **212** arranged to provide air cooling for motor **208**. While FIG. **2** shows an implementation where drive motor **208** is not coaxially aligned with the drive shaft used to rotate dasher **204**, in other implementations, motor **208** can be aligned coaxially with the drive shaft. During processing of a drink product, motor **208** may be continuously operated at a one or more speeds to drive continuous rotation of dasher **204** and, thereby, provide continuous mixing of the drink product within mixing vessel **104**. In some implementations, the rotation of the dasher **204** causes the helically arranged blades to push the cooling drink product to the front of the mixing vessel **104**. During the processing, portions of the drink product may freeze against the surface of the evaporator as a result of being cooled by the evaporator. In some implementations, the blades of the rotating dasher **204** scrape frozen portions of the drink product from the surface the evaporator while concurrently mixing and pushing the cooling drink product towards the front of the mixing vessel **104**.

Frozen drink maker **100** may include a refrigeration circuit and/or system to provide cooling of a drink product and/or to control the temperature of a drink product within mixing vessel **104**. The refrigeration circuit may include a compressor **214**, an evaporator **202**, a condenser **216**, a condenser fan **218**, a bypass valve, and conduit that carries refrigerant in a closed loop among the refrigeration circuit components to facilitate cooling and/or temperature control of a drink product in mixing vessel **104**. Operations of the refrigeration circuit may be controlled by a controller, such as controller **402**, as described further with respect to FIG. **4** later herein. Frozen drink maker **100** may also include a condensation collection tray **220** arranged to collect any liquid condensation caused by cooling from evaporator **202**. FIG. **2** shows tray **220** in the inserted position. Tray **220** may be insertably removable from a slot within housing **102** to enable collection of condensed liquid when inserted into the slot and then efficient removal to empty tray **220**, and then re-insertion into the slot for subsequent liquid collection.

FIG. **3** shows a front view **300** of frozen drink maker **100** of FIG. **1**. Frozen drink maker **100** may include user interface **112** on a front surface of housing **102**. In other implementations, user interface **112** may be located on a side, top, or back of housing **102**. Frozen drink maker may include a mount **302** on a side of housing **102** where drip tray

118 can be mounted when not in use (shown as drip tray 304 in FIG. 3) such as during transport of frozen drink maker 100. Frozen drink maker 100 may include a power interface arranged to receive AC power from a power outlet (not shown). In some implementations, frozen drink maker 100 may include one or more batteries housed within housing 102 and arranged to provide power to various components of frozen drink maker 100. Frozen drink maker 100 may also include a printed circuit board assembly (PCBA) 222 within housing 102. As will be explained with respect to FIG. 4, PCBA 222 may include a control system 400 arranged to automatically control certain operations of frozen drink maker 100.

FIG. 4 is a block diagram illustrating an example of a control system 400 of frozen drink maker 100 according to some implementations of the disclosure. Control system 400 may include a microcontroller, a processor, a system-on-a-chip (SoC), a client device, and/or a physical computing device and may include hardware and/or virtual processor(s). In some implementations, control system 400 and its elements as shown in FIG. 4 each relate to physical hardware, while in some implementations one, more, or all of the elements could be implemented using emulators or virtual machines. Regardless, electronic control system 400 may be implemented on physical hardware, such as in frozen drink maker 100.

As also shown in FIG. 4, control system 400 may include a user interface 212 and/or 112, having, for example, a keyboard, keypad, one or more buttons, dials, touchpad, or sensor readout (e.g., biometric scanner) and one or more output devices, such as displays, speakers for audio, LED indicators, and/or light indicators. Control system 400 may also include communications interfaces 410, such as a network communication unit that could include a wired communication component and/or a wireless communications component, which may be communicatively coupled to controller and/or processor 402. The network communication unit may utilize any of a variety of proprietary or standardized network protocols, such as Ethernet, TCP/IP, to name a few of many protocols, to effect communications between processor 402 and another device, network, or system. Network communication units may also comprise one or more transceivers that utilize the Ethernet, power line communication (PLC), Wi-Fi, cellular, and/or other communication methods. For example, control system 400 may send one or more communications associated with a status of frozen drink maker 100 to a mobile device of a user, e.g., send an alert to the mobile device when a recipe is complete and/or a drink product is ready for dispensing, or to indicate that the mixing vessel is low or out of a drink product.

Control system 400 may include a processing element, such as controller and/or processor 402, that contains one or more hardware processors, where each hardware processor may have a single or multiple processor cores. In one implementation, the processor 402 includes at least one shared cache that stores data (e.g., computing instructions) that are utilized by one or more other components of processor 402. For example, the shared cache may be a locally cached data stored in a memory for faster access by components of the processing elements that make up processor 402. Examples of processors include but are not limited to a central processing unit (CPU) and/or microprocessor. Controller and/or processor 402 may utilize a computer architecture base on, without limitation, the Intel® 8051 architecture, Motorola® 68HCX, Intel® 80X86, and the like. The processor 402 may include, without limitation, an 8-bit, 12-bit, 16-bit, 32-bit, or 64-bit architecture. Although not illustrated in FIG. 4, the processing elements that make up processor 402 may also include one or more other types of hardware processing components, such as graphics processing units (GPUs), application specific integrated circuits (ASICs), field-programmable gate arrays (FPGAs), and/or digital signal processors (DSPs).

FIG. 4 also illustrates that memory 404 may be operatively and communicatively coupled to controller 402. Memory 404 may be a non-transitory medium configured to store various types of data. For example, memory 404 may include one or more storage devices 408 that include a non-volatile storage device and/or volatile memory. Volatile memory, such as random-access memory (RAM), can be any suitable non-permanent storage device. The non-volatile storage devices 408 may include one or more disk drives, optical drives, solid-state drives (SSDs), tape drives, flash memory, read-only memory (ROM), and/or any other type of memory designed to maintain data for a duration time after a power loss or shut down operation. In certain configurations, the non-volatile storage devices 408 may be used to store overflow data if allocated RAM is not large enough to hold all working data. The non-volatile storage devices 408 may also be used to store programs that are loaded into the RAM when such programs are selected for execution. Data store and/or storage devices 408 may be arranged to store a plurality of drink product making and/or processing instruction programs associated with a plurality of drink product processing sequences, i.e., recipes. Such drink product making and/or processing instruction programs may include instruction for controller and/or processor 402 to: start or stop one or motors and/or compressors 414 (e.g., such as motor 208 and/or compressor 214), start or stop compressor 214 to regulate a temperature of a drink product being processed within mixing vessel 104, operate the one or more motors 414 (e.g., motor 208 and/or compressor 214) at certain periods during a particular drink product processing sequence, operate motor 208 at certain speeds during certain periods of time of a recipe, issue one or more cue instructions to user interface 412 and/or 112 that are output to a user to illicit a response, action, and/or input from the user.

Persons of ordinary skill in the art are aware that software programs may be developed, encoded, and compiled in a variety of computing languages for a variety of software platforms and/or operating systems and subsequently loaded and executed by processor 402. In one implementation, the compiling process of the software program may transform program code written in a programming language to another computer language such that the processor 402 is able to execute the programming code. For example, the compiling process of the software program may generate an executable program that provides encoded instructions (e.g., machine code instructions) for processor 402 to accomplish specific, non-generic, particular computing functions.

After the compiling process, the encoded instructions may be loaded as computer executable instructions or process steps to processor 402 from storage 408, from memory 404, and/or embedded within processor 402 (e.g., via a cache or on-board ROM). Processor 402 may be configured to execute the stored instructions or process steps in order to perform instructions or process steps to transform the electronic control system 400 into a non-generic, particular, specially programmed machine or apparatus. Stored data, e.g., data stored by a data store and/or storage device 408, may be accessed by processor 402 during the execution of computer executable instructions or process steps to instruct one or more components within control system 400 and/or

other components or devices external to system **400**. For example, the recipes may be arranged in a lookup table and/or database within data store **408** and be accessed by processor **402** when executing a particular recipe selected by a user via user interface **412** and/or **112**.

User interface **412** and/or **112** can include a display, positional input device (such as a mouse, touchpad, touchscreen, or the like), keyboard, keypad, one or more buttons, one or more dials, a microphone, speaker, or other forms of user input and output devices. The user interface components may be communicatively coupled to processor **402**. When the user interface output device is or includes a display, the display can be implemented in various ways, including by a liquid crystal display (LCD) or a cathode-ray tube (CRT) or light emitting diode (LED) display, such as an OLED display.

Sensors **406** may include one or more sensors that detect and/or monitor conditions of a drink product within mixing vessel **104**, conditions associated with a component of the frozen drink maker **100**, and/or conditions of a refrigerant within the refrigeration system. Conditions may include, without limitation, rotation, speed of rotation, and/or movement of a device or component (e.g., a motor), rate of such movement, frequency of such movement, direction of such movements, motor current, motor voltage, motor power, motor torque, temperature, pressure, fluid level in vessel **104**, position of a device or component (e.g., whether pour-in opening **106** is open or closed), and/or the presence of a device or component (e.g., whether shroud **116** is installed or not). Types of sensors may include, for example, electrical metering chips, Hall sensors, pressure sensors, temperature sensors, optical sensors, current sensors, torque sensors, voltage sensors, cameras, other types of sensors, or any suitable combination of the foregoing. Frozen drink maker **100** may include one or more temperature sensors positioned in various locations within mixing vessel **104** such as, for example, on or about the lower front area within mixing vessel **104**, on or about the upper front area within mixing vessel **104**, on or about the upper rear area within vessel **104**, within one or more coils of evaporator **202**, and/or within housing **102**.

Sensors **406** may also include one or more safety and/or interlock switches that prevent or enable operation of certain components, e.g., a motor, when certain conditions are met (e.g., enabling activation of motor **208** and/or **414** when a lid or cover for opening **106** is attached or closed and/or when a sufficient level of drink product is in vessel **104**). Persons of ordinary skill in the art are aware that electronic control system **400** may include other components well known in the art, such as power sources and/or analog-to-digital converters, not explicitly shown in FIG. **4**.

In some implementations, control system **400** and/or processor **402** includes an SoC having multiple hardware components, including but not limited to: a microcontroller, microprocessor or digital signal processor (DSP) core and/or multiprocessor SoCs (MPSoC) having more than one processor cores; memory blocks including a selection of read-only memory (ROM), random access memory (RAM), electronically erasable programmable read-only memory (EEPROM) and flash memory; timing sources including oscillators and phase-docked loops; peripherals including counter-timers, real-time timers and power-on reset generators; external interfaces, including industry standards such as universal serial bus (USB), Fire Wire, Ethernet, universal synchronous/asynchronous receiver/transmitter (USART), serial peripheral interface (SPI); analog interfaces including analog-to-digital converters (ADCs) and digital-to-analog converters (DACs); and voltage regulators and power management circuits.

A SoC includes both the hardware, described above, and software controlling the microcontroller, microprocessor and/or DSP cores, peripherals and interfaces. Most SoCs are developed from pre-qualified hardware blocks for the hardware elements (e.g., referred to as modules or components which represent an IP core or IP block), together with software drivers that control their operation. The above listing of hardware elements is not exhaustive. A SoC may include protocol stacks that drive industry-standard interfaces like a universal serial bus (USB).

Once the overall architecture of the SoC has been defined, individual hardware elements may be described in an abstract language called RTL which stands for register-transfer level. RTL is used to define the circuit behavior. Hardware elements are connected together in the same RTL language to create the full SoC design. In digital circuit design, RTL is a design abstraction which models a synchronous digital circuit in terms of the flow of digital signals (data) between hardware registers, and the logical operations performed on those signals. RTL abstraction is used in hardware description languages (HDLs) like Verilog and VHDL to create high-level representations of a circuit, from which lower-level representations and ultimately actual wiring can be derived. Design at the RTL level is typical practice in modern digital design. Verilog is standardized as Institute of Electrical and Electronic Engineers (IEEE) 1364 and is an HDL used to model electronic systems. Verilog is most commonly used in the design and verification of digital circuits at the RTL level of abstraction. Verilog may also be used in the verification of analog circuits and mixed-signal circuits, as well as in the design of genetic circuits. In some implementations, various components of control system **400** are implemented on a PCB such as PCB **222**.

In operation in certain implementations, a user fills mixing vessel **104** via pour-in opening **106** with ingredients associated with a drink product. The user selects the type of drink product to be processed via user interface **112**, e.g., the user selects the recipe for "margarita." In some implementations, the user selects the product type and/or recipe before filling the mixing vessel **104** and the user interface **112** provides one or more indicators or queues (visible and/or audible) that instruct the user to add ingredients to mixing vessel **104**. Mixing vessel **104** may include one or more fill sensors that detect when a sufficient amount or level of ingredients and/or fluid is within mixing vessel **104**. The one or more fill sensors may provide a signal to processor **402** that indicates when vessel **104** is sufficiently filled or not filled. Processor **402** may prevent operations of the frozen drink maker **100** (e.g., prevent activation of motor **208** and/or other components) if the fill sensor(s) **406** indicate that vessel **104** is not sufficiently filled. A lid sensor may be associated with opening **106** whereby the lid sensor sends an open and/or closed signal to processor **402** that indicates whether opening **106** is open or closed. Processor **402** may prevent operations of the frozen drink maker **100** if the lid sensor indicates that opening **106** is open and/or not closed. Depending on the sensed condition, user interface **112** may provide an indication regarding the condition, e.g., that vessel **104** is sufficiently filled or not sufficiently filled and/or that opening **106** is not closed, to enable a user to take appropriate action(s).

Once mixing vessel **104** is filled with ingredients, the user may provide an input, e.g., a button press, to start processing of the drink product based on the selected recipe. Processing

may include activation of motor **208** to drive rotation of dasher **204** and/or blade **206** to effect mixing of the ingredients of the drink product. Processing may also include activation of the refrigeration system including activation of compressor **214** and condenser fan **218**. The compressor **214** facilitates refrigerant flow through one or more coils of evaporator **202** and through condenser **216** to provide cooling and/or temperature control of the drink product within mixing vessel **104**. Processor **402** may control operations of various components such as motor **208** and compressor **214**. To regulate temperature at a particular setting associated with a recipe, processor **402** may activate/start and/or deactivate/stop compressor **214** to start and/or stop refrigerant flow through the coil(s) of evaporator **202** and, thereby, start or stop cooling of the drink product within mixing vessel **104**.

By cooling a drink product to a particular temperature, slush and/or ice particles may be formed within the drink product. Typically, the amount of particles and/or texture of a drink product corresponds to a temperature of the drink product, i.e., the cooler the temperature—the larger the amount of particles (and/or the larger the size of particles) and/or the more slushi the drink product. User interface **112** may enable a user to fine tune and/or adjust a preset temperature associated with a recipe to enable a user to adjust the temperature and/or texture of a drink product to a more desirable temperature and/or texture.

Processor **402** may perform processing of the drink product for a set period of time in one or more phases and/or until a desired temperature and/or texture is determined. Processor **402** may receive one or more temperature signals from one or more temperature sensors **408** within mixing vessel **104** to determine the temperature of the drink product. Processor **402** may determine the temperature of the drink product by determining an average temperature among temperatures detected by multiple temperature sensors **408**. Processor **402** may determine the temperature of the drink product based on the detected temperature from one sensor **408** within mixing vessel **104** and/or based on a temperature of the refrigerant detected by a refrigerant temperature sensor **408**. Once a phase and/or sequence of a recipe is determined to be completed by processor **402**, processor **402** may, via user interface **116**, provide a visual and/or audio indication that the recipe is complete and ready for dispensing. In response, a user may place a cup or container below dispenser assembly **108** and pull handle **120** rotationally downward towards the user to open a spout located at the lower front wall of mixing vessel **104**, resulting in dispensing of the drink product into the cup or container. Once filled, the user can close the spout by pushing handle **120** back rotationally upward away from the user to its upright position shown in FIG. **2**. In implementations where handle **120** is spring-biased to the closed position, the user can release their hold of handle **120** and, thereby, allow a spring force to move handle **120** back rotational upward away from the user to the upright and closed position.

As previously mentioned, the frozen drink maker **100** includes an upper housing section **122** arranged to couple with a rear end of the mixing vessel **104** when the mixing vessel **104** is attached to the housing **102**. The frozen drink maker **100** also includes a lever **110** that enables the mixing vessel **104** to be coupled (e.g., locked, attached to, and/or affixed to) to the housing **102** (i.e., the upper housing section **122**). The lever **110** also enables the mixing vessel **104** to be unlocked and decoupled from the housing **102** (i.e., the upper housing section **122**). Features of the lever **110** are shown in FIGS. **5**A and **5**B. FIG. **5**A illustrates a side view of the frozen drink maker **100**, with the mixing vessel **104** in a coupled position relative to the upper housing section **122**. FIG. **5**B illustrates a side view of the frozen drink maker **100** illustrated in FIG. **5**A, with some features of the housing **102** and the lever **110** shown in partial cross-section.

As shown in FIGS. **5**A and **5**B, the lever **110** includes a handle **111** that can be gripped by a user and moved relative to the upper housing section **122**. The handle **111** can be moved into the position shown in FIGS. **5**A and **5**B to couple the mixing vessel **104** into place on the frozen drink maker **100** and can be moved away from the upper housing section **122** and/or toward a front of the housing **102** to decouple the mixing vessel **104** from the frozen drink maker **100**. When the handle **111** is moved relative to the upper housing section **122**, it activates a cam **113**, which engages mating features on the mixing vessel **104** to either couple or uncouple the mixing vessel **104** relative to the upper housing section **122**. In some implementations, the handle **111** moves less than 90° relative to the upper housing section **122** when moving between the coupled position and the uncoupled position.

FIG. **6** shows a detailed view of a handle **111** with two cams **113***a*, **113***b* positioned on opposing sides. The handle **111** may include one, two, three, four, or more cams **113**, if desired. As the handle **111** is moved, the cams **113**, **113***b* rotate with respect to the upper housing section **122**. FIG. **7**A shows a rear view of a mixing vessel **104**. The mixing vessel **104** includes protrusions **115***a*, **115***b* on opposing outer sides, near the rear bottom of the mixing vessel **104**. The protrusions **115***a*, **115***b* are shaped and positioned to engage with the cams **113***a*, **113***b* on the handle **111**. In particular, the cams **113***a* and **113***b* have channels and/or cam paths **109***a* and **109***b* through which the protrusions **115***a* and **115** slide respectively. As the cams **113***a* and **113***b* rotate toward the back of the housing **102**, the protrusions **115***a* and **115***b* slide along cam paths **109***a* and **109***b* and are pulled toward the upper housing section **122** and the rear of the housing **102**, causing the mixing vessel **104** to press against the upper housing section **122** and form a water-tight seal with the housing **102**. When the cams **113***a*, **113***b* are rotated toward the front of the frozen drink maker **100**, the protrusions **115***a*, **115***b* are pushed away from the upper housing section **122**, causing the mixing vessel **104** to be decoupled from contact with the upper housing section **122**.

The cam **113** may be an over-center cam, as shown in FIG. **5**B and FIG. **6**, or the cam **113** may have alternative geometry. In the disclosed frozen drink maker **100**, the cam **113** retains the mixing vessel **104** on the housing **102** when the lever **110** is in the coupled position. As previously discussed, the mixing vessel **104** may have an overall cylindrical or approximately cylindrical shape and may include an opening **117** (shown in FIG. **7**B) at its rear end that couples to the upper housing section **122**. As shown in FIG. **7**B, the opening may be in a rear panel **119** of the mixing vessel **104**. The opening **117** may be positioned to face horizontally when the mixing vessel **104** is in the coupled position on the upper housing section **122**.

To move the lever **110** into a coupled position, the handle **111** is moved toward the upper housing section **122**. When the mixing vessel **104** is in a coupled position on the upper housing section **122**, the lever **110**, in cooperation with a flexible seal **121**, seals the opening **117**. FIG. **8** shows a flexible seal **121** configured in accordance with an implementation of the present disclosure. The flexible seal **121** may be formed of any elastomeric material, such as natural or synthetic rubber, silicone, neoprene, chloroprene, polyisoprene, polybutadiene, or combinations thereof. The flexible seal **121** may be independent of the housing **102**. If

desired, the flexible seal **121** may be affixed to the upper housing section **122**. The flexible seal **121** may be a single member including a face seal portion **123** and/or a radial seal portion **125**, as shown in FIG. **8**. However, in other embodiments, the face seal portion **123** and the radial seal portion **125** may be implemented with distinct flexible seals **121**.

The face seal portion **123** has an annular shape with a primary dimension that is vertically aligned to form a vertically aligned seal between a horizontal face of the upper housing section **122** and a horizontal edge of the mixing vessel **104**. When in the coupled position, the face seal portion **125** interfaces a vertically aligned surface of the upper housing section **122** to a vertically aligned side of the mixing vessel **104**. The radial seal portion **125** includes multiple flexible annular ribs, as shown in FIG. **8**. The radial seal portion **125** forms a radial seal relative to the horizontal axis of the vessel **104**, sealing against an inside (i.e., cylindrical) surface of the vessel **104**. The flexible seal **121** may include at least one of a radial seal portion **125** and a face seal portion **123**.

Previously known frozen drink makers do not include both a face seal and a radial seal for a mixing vessel. If present, the face seal portion **123** of the flexible seal **121** may provide an improved seal based on compression provided by the handle **111** pushing the mixing vessel **104** laterally against a wall of upper housing section **122**. The cam **113** also allows high force on the face seal portion **123** to be easily achieved and maintained. Since the face seal portion **123** serves as the primary seal in some implementations, the radial seal portion **125** size can be reduced, thereby lowering the mixing vessel's resistance to seating and improving ease of use.

In some implementations, the flexible seal **121** may serve as the seal for the vessel **104** and/or the evaporator **202**. For example, FIG. **9** shows a cross-sectional view of a sample flexible seal **121** having a vessel seal portion **127** and an evaporator seal portion **129**. The vessel seal portion **127** of the flexible seal **121** creates a watertight seal between the mixing vessel **104** and the upper housing section **122**. The evaporator seal portion **129** of the flexible seal **121** seals the evaporator **202** within the mixing vessel **104**.

To move the lever **110** from a coupled position to an uncoupled position, the handle **111** is moved away from the upper housing section **122** and/or toward a front of the housing **102**, which causes the mixing vessel **104** to slide in a forward direction (away from upper housing section **122**) to be fully detached and/or removed from the housing **102**. If desired, the cam **113** may include an ejection feature to apply an ejection force to the mixing vessel **104** to eject past the radial seal portion **125**.

In other aspects, methods of using a frozen drink maker **100** as disclosed here are described. FIG. **10** illustrates a method **800** of producing a frozen drink using a frozen drink maker device. The frozen drink maker device includes a housing having an upper housing section and a lever configured to move relative to the upper housing section between a coupled position and an uncoupled position, and a mixing vessel arranged to couple to the upper housing section. The lever includes a handle that is moveable to place the lever into the coupled position and/or the uncoupled position. As shown in FIG. **10**, method **800** includes coupling the mixing vessel onto the upper housing section by moving the handle relative to the upper housing section to place the lever into the coupled position (block **802**). When in the coupled position, at least one of a face seal and a radial seal are formed between the mixing vessel and the upper housing section. Method **800** also includes operating the frozen drink maker device to produce the frozen drink (block **804**). Method **800** further includes uncoupling the mixing vessel from the upper housing section by moving the handle relative to the upper housing section to place the lever into an uncoupled position (block **806**).

In some implementations, coupling the mixing vessel onto the upper housing section involves moving the handle toward the upper housing section. In these and other implementations, uncoupling the mixing vessel from the upper housing section involves moving the handle away from the upper housing section and/or toward a front of the housing. Moving the handle relative to the upper housing section to place the lever into the coupled position may be accomplished by a user with only one hand. In these and other implementations, moving the handle relative to the upper housing section to place the lever into the uncoupled position may be accomplished by a user with only one hand. In select implementations, moving the handle relative to the upper housing section to position the lever from the coupled position to the uncoupled position requires moving the handle less than 90° relative to the upper housing section.

FIGS. **11**A and **11**B show perspective views of the collection tray **220** according to an illustrative implementation of the disclosure. The collection tray **220** may generally comprise a collection portion **502** and a handle **504** that may be used to insert the tray **220** into and remove the tray **220** from the housing **102**. The collection portion **502** may comprise three walls **502***a,b,c* extending generally upwards from an evaporator-facing surface **506**. Together with the handle **504**, the walls **502***a,b,c* and the surface **506** may define a chamber **508** for collecting liquid, including condensation falling from the evaporator **202**, spills, and water poured into the mixing vessel **104** to clean the inside of the mixing vessel **104**. A shape of the collection portion **502**, including the evaporator-facing surface **506**, may correspond to an outer shape of the evaporator **202**. For example, the shape of the evaporator-facing surface **506** may be semi-cylindrical to correspond to the cylindrical shape of the evaporator **202**, as shown in FIG. **11**A. However, the disclosure contemplates other suitable shapes, such as rectangular, of the collection portion **502**. The chamber **508** may have a liquid volume capacity of about 16 ounces. However, the disclosure contemplates a liquid volume capacity of more or fewer than 16 ounces. As shown in FIG. **11**B, an underside of the handle **504** may define one or more ribs **514** for adding structural integrity between a user-facing surface **510** of the handle **504** and the main body of the tray **220**. The tray **220** may be made from dishwasher-safe materials for easy cleaning.

FIG. **11**C shows the collection tray **220** inserted into the housing **102** of the frozen drink maker **100** according to an illustrative implementation of the disclosure. For ease of illustration, the housing **102** is shown with the mixing vessel **104** and attached dispenser assembly **108** removed. When fully inserted, the user-facing surface **510** of the handle **504** may sit flush with the user interface **112** of the housing **102**. In the inserted position, the tray **220** may be spaced vertically above a bottom side **103** of the housing **102**. Once liquid is collected in the chamber **508**, the user may remove the tray **220** for disposal of the collected liquid and cleaning of the tray **220**.

FIG. **11**D shows the housing **102** with the collection tray **220** removed according to an implementation of the disclosure. As shown in FIG. **11**D, the housing **102** may include a top surface **520** for supporting the collection tray **220** when the tray **220** is inserted into the housing **102**. A shape of the top surface **520** may be semi-cylindrical to correspond to the

semi-cylindrical shape of the evaporator-facing surface **506**. The housing **102** may also include one or more rails **522** defining one or more slots **512** between the rails **522** and the top surface **520**. The rails **522** may help guide the user in inserting the tray **220** into the slots **512** when installing the tray **220** to the housing **102**.

In some implementations, to remove the collection tray **220** (e.g., for emptying and/or cleaning the tray **220**), the user must first remove the mixing vessel **104** and the attached dispenser **108** (FIG. **1**). The user may then remove the collection tray **220** by pulling the collection tray **220** toward the user. This movement may cause the collection tray **220** to slide along the slots **512** until it is completely disengaged from the housing **102**. Conversely, to insert the collection tray **220** into the housing **102**, the user may insert the tray **220** into the housing **102** by inserting the collection portion **502** into the slots **512** underneath the evaporator **202** (FIG. **2**) such that the evaporator-facing surface **506** faces the evaporator **202**. In some implementations, after the collection tray **220** has been inserted into the housing **102**, the mixing vessel **104** with the attached dispenser **108** may be inserted onto the housing **102** and fastened and sealed against the housing **102**. FIG. **12** is a flow chart illustrating a method of removing the collection tray **220** from the housing **102** as described above. FIG. **12** includes removing the mixing vessel **104** and attached dispenser **108** from the housing **102** (block **1202**), pulling the tray **220** toward the user, causing the tray to slide through slot **512** (block **1204**), and fully disengaging the tray **220** from the slot **512** in housing **102** (block **1206**).

FIGS. **13A-13C** show a sample frozen drink maker **100** with a mixing vessel **104** coupled to a housing **102** (specifically, the upper housing section **122**) and a dispenser assembly **108**, according to some implementations. The mixing vessel **104** has a curved sidewall defining a substantially cylindrical chamber within. In select implementations, the mixing vessel **104** is shaped as an ovoid or approximately as an ovoid (i.e., a cylinder with an ovular cross-section), or as an elliptic cylinder (i.e., a cylinder with an elliptic cross-section), or an approximate elliptic cylinder. When coupled to the housing **102**, the front of the mixing vessel **104** contacts the dispenser assembly **108** and the rear of the mixing vessel **104** abuts the upper housing section **122**. Within the mixing vessel **104**, the front face of the chamber may have a substantially ovular shape or a substantially circular shape. The rear of the mixing vessel **104** chamber may include an opening configured to form a seal with the upper housing section **122**. The opening at the rear of the mixing vessel **104** may have a substantially circular shape or a substantially ovular shape. The mixing vessel **104** is sized to accommodate a dasher **204** that rotates about a center axis (shown as center axis "A" in FIG. **13C**). FIG. **13B** shows a possible direction of dasher **204** rotation ("R"). The mixing vessel **104** may be shaped such that a distance from the center axis (A) of the dasher **204** to the top of the vessel chamber is less than 6 inches, less than 8 inches, less than 10 inches, less than 12 inches, less than 14 inches, or less than 16 inches.

FIGS. **14A-14C** show an example of the mixing vessel **104** with at least one internal baffle configured to control slush flow within the mixing vessel **104**. As shown in FIGS. **13A**, **13B**, and **14A-14B**, the mixing vessel **104** includes a side baffle **105** extending laterally along a sidewall **150** of the vessel chamber. In some implementations, the side baffle **105** extends from the front of the vessel chamber (or approximate thereto) to the rear of the vessel chamber (or approximate thereto). In some implementations, the side baffle **105** extends along the chamber sidewall in a direction parallel to the center axis (A) of the dasher **204**. In some implementations, the side baffle **105** is positioned on a left side (when viewed from the front) of the chamber sidewall (e.g., in embodiments in which the dasher rotates in a clockwise direction). FIGS. **14A** and **14C** illustrate a clockwise direction of dasher rotation (R) when viewed from the front. The side baffle **105** may be positioned slightly above the center axis (A) of the dasher **204**, in some implementations.

The side baffle **105** may include a curved surface **151** that conforms to the pathway of the dasher **204**, as shown in FIGS. **14A** and **14B**. For example, when viewed along the center axis (A) of the dasher, the side baffle **105** may protrude inwardly relative the ovular (e.g., elliptical) cross-section of the chamber sidewall **150**, where, starting from a bottom end of the side baffle **105** at which the curved surface **151** of the side baffle **105** is vertical or substantially vertical, the curved surface **151** may slope gradually inward until reaching an inflection point **153**. After reaching the inflection point **153**, the curved surface **151** may slope more sharply vertically until the top end of the side baffle **105** is reached and, thereafter, the curved surface **151** of the side baffle **105** returns to a curvature in conformance with the ovular cross-section of the chamber sidewall **150**. The radial direction of the curved surface **151** of the side baffle **105** from its bottom to the inflection point **153** is generally aligned with the radial movement of the dasher **204** and thus the contents of the vessel chamber **104**. The cross-sectional geometry of the side baffle **105** described above directs the contents of the vessel away from a top of the vessel chamber (i.e., at a lower radial trajectory than if the side baffle **105** was not present, such as the right side of the vessel chamber as shown in FIG. **13B**). If the side baffle **105** was not present, contents of the vessel chamber could flow unimpeded up the sidewall **150** to a top interior surface of the vessel chamber, which would leave these contents excluded from mixing and/or allow them to escape from the mixing vessel **104**. The side baffle **105** thus reduces the amount of frozen material that could otherwise form on the top interior surface of the mixing vessel **104** as a result of its contents being rotated upwards.

As shown in FIGS. **13B**, **13C**, and **14A-14C**, the mixing vessel **104** may include a front baffle **107**. If present, the front baffle **107** may be positioned at a front top portion of the vessel chamber **103** (illustrated in FIG. **13B**). In some implementations, the front baffle **107** extends along the front face of the vessel chamber between the right sidewall and the left sidewall of the vessel chamber. The rotation of the dasher **204** pushes vessel contents towards the front of the vessel chamber, where, if left unchecked, contents could build up near the top front, perhaps even creating a frozen mass detrimental to the mixing process. Viewing from the cross-section of FIG. **13C**, the front baffle **107** may form an angle relative the front face of the vessel chamber (e.g., 100°-150°, 100°-125°, or 105°-120°), which redirects vessel contents that have been forced into the top front of the mixing vessel **104** towards the rear of the vessel chamber. In some implementations, the front baffle **107** may include a curved surface extending upwardly from the front face of the vessel chamber toward a top of the vessel chamber. In some such implementations, the angle the front baffle **107** forms relative to the front face of the vessel chamber varies from a lower angle (e.g., 5°-20°) at a section of front baffle **107** proximate to the front face of the vessel chamber to a higher angle (e.g., 75°-90°) at a section of front baffle proximate to the top of the vessel chamber.

The front baffle **107** is configured to urge contents away from the top surface of the vessel chamber to avoid buildup and overflow on the top of the mixing vessel **104**. The front baffle **107** thus reduces the amount of frozen material that could otherwise form on the top front interior surface of the mixing vessel **104** as a result of the action of the dasher **204**.

As shown in FIGS. **13**C and **14**A-**14**C, the mixing vessel **104** may include a corner baffle **190**. The corner baffle **190** may be positioned at a front top side of the vessel chamber. The corner baffle **190** joins or connects the side baffle **105** and the front baffle **107**. Thus, if the side baffle **105**, front baffle **107**, and corner baffle **190** are each present, the corner baffle **190** physically joins the side baffle **105** to the front baffle **107**. As shown in FIGS. **14**A-**14**B, the side baffle **105** and the front baffle **107** are orthogonal to each other and if these baffles terminated in a hard corner without a corner baffle **190**, slush may not be properly directed. Connecting the side baffle **105** and the front baffle **107** with a corner baffle **190** allows slush to easily flow out of the corner between the side baffle **105** and the front baffle **107**.

The corner baffle **190** has a curved surface **155** that extends from the side baffle **105** to the front baffle **107**. The curved surface **155** may be convex, as shown in FIG. **14**A. Along its length, the corner baffle **190** extends into the vessel chamber at a relatively constant distance. In other words, the depth of the corner baffle **190** may be relatively constant along the length of the corner baffle **190**. The side of the vessel chamber in which the corner baffle **190** is positioned (e.g., the left side or the right side) can be selected based on the direction in which the dasher **204** rotates within the mixing vessel **104**. In particular, the corner baffle **190** may be positioned such that the dasher **204** is directed toward the corner baffle **190** while moving upwardly within the vessel chamber. For example, in select implementations, the corner baffle **190** is positioned at the left top front of the vessel chamber when the dasher is arranged to rotate in a clockwise direction. This positioning may advantageously force slush downward toward the dasher **204** when it contacts the corner baffle **190** as the slush moves upwardly with the dasher **204**, thereby reducing slush buildup on the sidewall and the top of the mixing vessel **104**.

It should be understood that, in some implementations, the disclosed mixing vessel **104** includes one, two, three, or more internal baffles positioned within the vessel chamber. In other words, the mixing vessel **104** may include the side baffle **105**, the front baffle **107**, and/or the corner baffle **190**. The side baffle **105**, front baffle **107**, and/or corner baffle **190** can reduce slush buildup on the sidewalls and top of the vessel chamber, which is important for commercial frozen drink makers as well as household frozen drink makers with significantly less headspace than commercial units.

FIG. **15** is a close-up view **1500** of a user interface such as user interface **112**. According to view **1500**, user interface **112** may include a power button **1502**, drink type indicator panel **1504**, manual temperature adjustment and/or temperature offset indicator **1506**, a manual temperature adjustment interface **1508**, a drink type control dial **1510**, and a chill button **1512**. A user may turn frozen drink maker **100** on or off using power button **1502**. A user may select a drink type to process a type of drink product by turning dial **1510** until a selected drink type is indicated via panel **1504**. The user may select, for example, a slushi, cocktail, a frappe, a juice, or a dairy/milkshake drink type. Dial **1510** may also include a push button feature that enables a user to start or stop processing of a drink type by pressing dial **1510**. Manual temperature adjustment interface **1508** may include left and right buttons that enable a user to adjust a temperature within a temperature offset band such as temperature offset band **1602** of FIG. **16** for a milkshake recipe. A user may select chill button **1512** to initiate a chill program and/or recipe whereby drink maker **100** and/or controller **402** maintains the drink product within mixing vessel **104** at a cool temperature without forming a frozen or semi-frozen drink product. In some implementations, the same cool temperature is maintained for any drink type. For example, the controller **402** may receive a signal indicative of the selection of the chill button **1512**, and reduce the temperature to, and maintain the temperature at or near, a predefined temperature (e.g., in a range) that should not result in any drink type freezing. In another embodiment, the controller **402** may receive a signal indicative of the selection of the chill button **1512** and a selection of a drink type from drink type control dial **1510**, and reduce the temperature to, and maintain the temperature at or near, a predefined temperature (e.g., in a range) defined for that particular drink type (e.g., as specified by a drink type object in memory) that should not result in that drink type freezing.

FIG. **16** is a graph **1600** of coarse and fine temperature settings associated with processing a drink product, where such temperature settings may be stored as temperature values in memory, as described elsewhere herein. For example, when a user selects a dairy and/or milkshake recipe and starts a frozen drink processing sequence and/or recipe using dial **1510**, controller **402** will control processes of the dairy/milkshake recipe to adjust the temperature of the drink product to a coarse temperature setting **1604** at −4 degrees Celsius in graph **1600**. A user before, during, or after the coarse temperature setting **1604** is reached, may fine tune or adjust the coarse target temperature of the drink type by setting a temperature offset using manual temperature adjustment interface **1508**. The user may push the left arrow button to decrease the recipe target temperature in increments of about 0.4 degrees Celsius to about −5.2 degrees Celsius. As the temperature decreases, the thickness and/or amount of frozen drink particles increases. Hence, the manual temperature adjustment indicator **1506** may include a "thickness" label. But different labels may be used such as "temperature offset" or "temperature adjust", and the like.

The user may push the right arrow button to increase the recipe target temperature in increments of about 0.4 degrees Celsius to about −2.8 degrees Celsius. As the temperature increases, the thickness and/or amount of frozen drink particles decreases. The manual temperature adjustment indicator **1506** may include one or more light indicators that are illuminated in a configuration corresponding to the selected temperature offset. For example, the manual temperature adjustment indicator **1506** may have a center light indicator that indicates that a 0 degree Celsius offset is selected (i.e., no offset). The offset indicator **1506** may include light indicators corresponding to each increment of offset selected above or below the coarse setting (e.g., the 0 degree Celsius offset point). FIG. **16** also shows temperature offset and/or manual adjustment bands associated with various types of drink products, such as Milkshake, Frappuccino, Cocktail, Light, and Traditional. Each of the temperature bands may include a center, coarse, and/or target drink type temperature and user-selectable fine tune offset temperatures above and below the drink type target temperature. In some implementations, the temperature offset band associated with one recipe is different than that temperature offset band of a different recipe, resulting in the temperature offset increments being different between the different recipes.

FIG. **17** is a close-up view **1700** of another user interface according to an implementation of the disclosure. According to view **1700**, user interface **112** may include a power button **1708**, drink type selector/indicator panel **1702**, manual temperature adjustment and/or temperature offset indicator **1706**, and a manual temperature adjustment dial **1704**. A user may turn drink maker **100** on or off using power button **1708**. A user may select a drink type to process a type of drink product by pressing a button associated with a selected drink type, e.g., SLUSHI. The selection of a particular drink type may be indicated by illumination of a light indicator associated with the selected drink type button. For example, FIG. **17** shows that the SLUSHI drink type has been selected by illumination of the white LED indicator next to the SLUSHI button. The user may select, for example, a slush drink, spiked slushi or cocktail, a frappe, a frozen juice, or a dairy/milkshake drink type. Manual temperature adjustment dial **1704** may be rotated clockwise or counter-clockwise to set the temperature value and/or target temperature setting within a universal range of drink product temperature values. For example, manual temperature adjustment indicator **1706** may include 10 temperature values or settings corresponding to target temperatures such as illustrated in FIG. **18**.

FIG. **18** is a graph **1800** of temperature values associated with automatic recipe temperature target temperatures and manual temperature adjustments. Graph **1800** shows temperature values 1 through 10 where setting #1 is at −1.3 degrees Celsius and setting #10 is at −7.2 degree Celsius. The ten temperature settings of graph **1800** correspond to the ten light indicators of manual temperature adjustment indicator **1706**. In operation, when a user selects a drink type, e.g., a MILKSHAKE, by pressing the corresponding button in drink type selector/indicator panel **1702**, the button's adjacent indicator illuminates. Also, if the coarse or automatic temperature value associated with a milkshake is about −4.0 degrees Celsius, which corresponds the setting #7 in graph **1800**, then seven indicators (i.e., light bars) will be illuminated in manual adjustment indicator **1706**. The light bars may be dimmed or flash periodically until the target temperature is reached and/or detected by controller **402**. Interface **112** may emit an audible sound, e.g., a beep or beep sequence when a target temperature is reached. A dimmed or flashing illumination may be changed to a brighter and/or steady illumination when a target temperature is reached. In some implementations, once a target temperature is reached, controller **402** will cycle compressor **214** on and off to keep a temperature of the drink product within a target temperature range above and/or below the target temperature. For example, the range may be greater than or equal to about 0.2, 0.3, 0.5, or 1.0 degrees Celsius above and below the drink product target temperature. As long as the temperature remains within the target temperature range, controller **402** will not initiate an alert (e.g., audible output) or change in status of any indicators of indicator **1706**.

If the user wants to further decrease the target temperature and/or increase the target thickness of the milkshake to setting #10 of FIG. **18**, the user can turn dial **1704** until all 10 light indicators are illuminated. If the user wants to increase the target temperature to setting #3 of FIG. **18** and/or reduce the target thickness of the milkshake, the user can turn dial **1704** until three indicators bars of indicator **1706** are illuminated as illustrated in FIG. **17**. While FIG. **17** shows an interface using a dial **1704** to manually adjust temperature, other types of interfaces may be used such as, without limitation, up/down buttons, a touch screen, or a slider switch.

FIG. **18** also illustrates how each increment of temperature change between each of the temperature settings #1 to #10 may be nonlinear to account for adequate changes in thickness of a cooled or frozen drink product. As temperature decreases, it requires a larger change in temperature to cause a material or proportional change in the amount of frozen drink particles within or the thickness of a drink product. For example, temperature increment **1802** (between settings #4 and #5) is about 0.6 degrees Celsius, while temperature increment **1804** (between setting #8 and #9), in a lower temperature range, is about −1.0 degrees Celsius. In other implementations, the increment of temperature change between settings may be constant, resulting a linear temperature range. While a range including 10 temperature values or settings is illustrated in FIGS. **17** and **18**, any number of settings and/or temperature ranges may be implemented.

FIG. **19** is a graph **1900** of drive motor **208** current and temperature of a drink product vs. time as the drink product is being processed by frozen drink maker **100** of FIG. **1**. Graph **1900** shows changes in drive motor current **1902** and corresponding drink product temperatures **1904** over time as a drink product is being made. Graph **1900** illustrates how the current **1902** applied to drive motor **208** increases as the temperature **1904** decreases, causing the thickness of the drink product to increase, which results in an increased resistance of the drink product to the rotation of the dasher **204** which, in turn, requires increased motor power and/or current **1902** to drive dasher **204** against the resistance. When the current **1902**, or power, or torque, reaches or exceeds a threshold or motor condition limit **1906**, e.g., about 40 Watts and/or about 0.3 amps current, controller **402** may deactivate the cooling circuit, i.e., stop coolant and/or refrigerant flow to evaporator **202**, to allow the temperature **1904** to increase and, thereby reduce the thickness of the drink product to reduce the current **1902** of drive motor **208** to below the motor condition limit **1906**. Controller **402** may automatically adjust the temperature setting associated with a particular drink type, which may have been fine-tuned by a user selection of a manual temperature adjustment and/or temperature offset, to a new temperature setting corresponding to a second target temperature, where the magnitude of the motor current **1902** is lower than the motor condition limit **1906**. The second target temperature may set to be, for example, 0.25, 0.5, 0.75, 1, 1.25, 1.5, or 2.0 degrees Celsius above (by a relatively small offset) the initial and/or first target temperature. In this way, controller **402** prevents an overcurrent condition and possible damage to drive motor **208**. This may also enable operation of drink maker **100** and dasher **204** to continue by preventing excessive buildup of ice within mixing vessel **104**, i.e., prevents drive motor **208** from stalling. Otherwise, drive motor **208** would stall and drink maker **100** would be jammed up, blocking slush output from mixing vessel **104** and requiring a user to defrost and/or unblock mixing vessel **104** before normal operations can be resumed. Hence, this stall preventions enables drink maker **100** to provide some slush output. Further, an excessive current or power condition of drive motor **208** caused by an object blocking rotations of dasher **204** can also be prevented. Controller **402** may perform actions in addition to stopping drive motor **208**, such as shutting down compressor **214**. Graph **1900** also shows how controller **402** may continuously and/or periodically monitor temperature associated with a drink product within mixing vessel **104** via

temperature sensor(s) **406** to enable continuously control of components such as compressor **214**, and other components, of frozen drink maker **100** to enable automatic control of the temperature of a drink product.

FIG. **20** is a flow diagram of a process **2000** for making a cooled drink product using a recipe for initial or coarse temperature and/or texture control and then using a user input to fine tune the temperature and/or texture of the drink product. In certain implementations, process **2000** includes: receiving, into mixing vessel **104**, a drink product (Step **2002**); mixing, using a mixer and/or dasher **204** driven by drive motor **208**, the drink product within mixing vessel **104** (Step **2004**); cooling, using a cooling circuit such as a refrigeration circuit including evaporator **202**, the drink product within mixing vessel **104** (Step **2006**); detecting, via temperature sensor(s) **406**, a temperature associated with the drink product and outputting a temperature signal (Step **2008**); storing, in a memory **408**, a drink object representing a drink type, the drink object specifying a first temperature value and/or setting corresponding to a first target temperature (Step **2010**); receiving, at controller **402**, the temperature signal (Step **2012**); controlling, by controller **402**, the temperature associated with the drink product by controlling the cooling circuit, e.g., by activating or deactivating compressor **214** to initiate or stop refrigerant flow through evaporator **202**, based on the received temperature signal, the first temperature value, and/or a manual temperature adjustment (Step **2014**); and receiving a user input to adjust the manual temperature adjustment (Step **2016**). The user input may be indicative of a desired thickness corresponding to the manual temperature adjustment. In some implementations, the manual adjustment may be customized per drink type. In certain implementations, the manual adjustment is universal for all drink types. In some implementations, the manual adjustment is finer and/or for a smaller range specific to a drink type (e.g., corresponding to FIG. **16**) and in other implementations coarser and/or for a larger range not specific to a drink type—i.e., spanning multiple (e.g., all) drink types, thereby enabling a user greater latitude in adjusting thickness and/or temperature.

FIG. **21** is a flow diagram of a process **2100** for automatically detecting when drive motor current is too high and/or a drink product is too thick and, in response, adjusting the temperature of the drink product to reduce drive motor current and/or to increase the temperature of the drink product to reduce a thickness of the drink product. In certain implementations, process **2100** includes: receiving, in mixing vessel **104**, the drink product (Step **2102**); mixing, using a mixer and/or dasher **204** driven by drive motor **208**, the drink product within mixing vessel **104** (Step **2104**); cooling, using a cooling circuit such as evaporator **202**, the drink product within mixing vessel **104** (Step **2106**); measuring, via temperature sensor(s) **406**, a temperature associated with the drink product and outputting a temperature signal (Step **2108**); measuring, via motor condition sensor(s) **406**, a motor condition associated with drive motor **208** and outputting a motor condition signal (Step **2110**); storing, in memory **408**, a first temperature value corresponding to a first target temperature and storing a motor condition limit (Step **2112**); receiving, at controller **402**, the temperature signal and the motor condition signal (Step **2114**); and controlling the temperature associated with the drink product by controlling the cooling circuit, e.g., by activating or deactivating compressor **214** to initiate or stop the refrigerant flow through evaporator **202**, based at least on the received temperature signal, the received motor condition signal, the first temperature setting, and the motor condition limit (Step **2116**).

In some implementations, controller **402** may stop and/or deactivate drive motor **208** to stop rotation of dasher **204** when the motor condition signal exceeds a motor knockdown threshold, i.e., the motor current or power is too high and/or high enough to damage drive motor **208**, which may be caused by an excessive buildup of ice within mixing vessel **104**. Excessive ice build up may be caused, for example, by filling mixing vessel with only water or a liquid predominantly consisting of water. Shutdown of drive motor **208** may also prevent damage to dasher **204** caused by excessive buildup hard ice. Controller **402** may perform other actions in additional to deactivating drive motor **208** or alternatively such as issuing an alert, via user interface **112**, to a user to add more ingredients such as sugar or alcohol to the drink product or issuing an alert to the user to turn off drink maker **100**. A different motor shutdown threshold for motor **208** may be set higher than the motor knockdown threshold limit. In this way, controller **104** may attempt to increase temperature in mixing vessel **104** when a motor knockdown threshold limit is reached, but only shut down and/or stop drive motor **208** when a motor shutdown threshold is reached to prevent damage to drive motor **208**. Controller **104** may take action based on determining whether the motor knockdown threshold limit or the motor shutdown limit has been reached or exceeded for a period of time, e.g., 0.5, 1.0, 1.5, 2.0, 5 seconds or more. By observing motor current and/or power for a period of time, a false positive and/or reading of current and/or power may be eliminated.

FIG. **22A** shows a dual-use cooling fan **2202** within a housing of a drink maker **2200** including a refrigeration system having a condenser **2208** and compressor **2210**. Drink maker **2200** also includes a drive motor **2204** configured to drive rotation of dasher **2212** during processing of a drink product. Dual-use cooling fan **2202** draws an air flow through condenser **2208** and directs the air flow, via an air channel **2206**, toward drive motor **2204**. The air flow passes over and adjacent to condenser coils as it passes through condenser **2208** to cool the refrigerant passing through condenser **2208** within a closed loop refrigeration system. The air flow also passes along a surface and/or surfaces of drive motor **2204** to effect cooling of drive motor **2204**. While FIG. **22A** shows a configuration where drive motor **2204** and condenser **2208** are positioned at about right angles with respect to dual-use cooling fan **2202**, other configurations, arrangements, or orientations may be implemented such that dual-use cooling fan **2202** provides a cooling air flow to condenser **2208** and drive motor **2204**.

In some implementations, a drink maker, such as drink maker **2200**, includes a mixing vessel, like mixing vessel **104**, arranged to receive a drink product. The drink maker **2200** includes a mixing component such as dasher **2212** or another type of mixing component, driven by drive motor **2212**, that is arranged to mix the drink product within the mixing vessel **104**. A refrigeration system is arranged to cool the drink product within mixing vessel **104** that includes a condenser, such as condenser **2208**. Cooling fan **2202**, i.e., a dual-use cooling fan, is configured to concurrently cool the drive motor **2204** and the condenser **2208**. Cooling fan **2202** may provide air flow through condenser **2208** to cool refrigerant flowing through condenser **2208**. Cooling fan **2202** may provide air flow along a surface of drive motor **2204** to cool the drive motor **2204**. Cooling fan **2202**, drive motor **2204**, and condenser **2208** may be positioned such

that air generated by cooling fan **2202** passes serially through condenser **2208** and along a surface of the drive motor **2204**.

A first portion of air generated by cooling fan **2202** may cool condenser **2208** and a second portion of air generated by cooling fan **2202** may cool drive motor **2204**. Condenser **2208** may include a plurality of coils that carry coolant and/or refrigerant within a closed loop of the refrigeration circuit. When cooling fan **2202** provides air flow through condenser **2208** to cool refrigerant flowing through condenser **2208**, the air flow may travel adjacent to and/or around the plurality of coils. A cooling channel **2206** may extend between cooling fan **2202** and drive motor **2204** where cooling channel **2206** provides cooling air flow between cooling fan **2202** and drive motor **2204**. Cooling channel **2206** may be at least partially formed by a duct and/or ducting. The ducting may include plastic, metals, composite materials, and the like. A cooling channel may extend between cooling fan **2202** and condenser **2208**, where the cooling channel provides cooling air flow between cooling fan **2202** and condenser **2208**. The cooling channel may be at least partially formed by a duct. Cooling fan **2202** and **2222** may include a centrifugal fan, a cross-flow fan, a tangential fan, a volute fan, a backward curved fan, a forward curved fan, a blower fan, a squirrel-cage fan, and/or an axial fan.

In some implementations, a cooling fan, such as cooling fan **2202**, is configured for cooling a drive motor, such as drive motor **2204**, and a condenser, such as condenser **2208**, within a housing of a drink maker. Cooling fan **2202** may include an air inlet configured to receive an air flow, an impeller configured to generate the air flow; and an air outlet configured to output the air flow through condenser **2208** and along a surface of the drive motor **2204**.

FIG. **22**B shows another implementation of a dual-use cooling fan **2222** within the housing of a drink maker **2220** including a drive motor **2224**, a dasher **2226**, a compressor **2230**, and a condenser **2228**. The drive motor **2224** is coupled to and drives rotation of the dasher and also drives rotation of the cooling fan **2222** via gears **2236**. Cooling fan **2222** includes an air outlet **2238** that directs air flow from cooling fan **2222** through air channel **2232** which may include ducting **2234** that directs air flow through condenser **2228** to cool refrigerant flowing through condenser **2238**.

FIG. **22**C shows a perspective view **2240** of the dual-use cooling fan **2222** within housing **2242** of drink maker **2220**. Cooling fan **2222** may be a centrifugal fan and/or another type of fan as described herein. Cooling fan **2222** may include an impeller **2244** that draws air flow into cooling fan **2222** via inlet **2236** and then expels air downward at about a right angle via outlet **2238** with respect to inlet **2236**. The air flow exiting outlet **2238** flows downward past drive motor **2224**, including along a surface of drive motor **2224**, and through air channel **2232**, which may include ducting **2234** that directs the air flow through condenser **2228** (adjacent to and/or around coils of condenser **2228**) to effect cooling of refrigerant passing through the coils.

FIG. **23** is a flow diagram of a process **2300** for operating dual-use cooling fan **2202** or **2222** of FIGS. **22**A and **22**B respectively. Process **2300** facilitates concurrently cooling condenser **2208** (or condenser **2228**) and drive motor **2204** (or drive motor **2224**) within a housing of a drink maker using a cooling fan **2202** or **2222** respectively by: activating drive motor **2204** (or drive motor **2224**) that is arranged to drive rotation of dasher **2212** (or dasher **2226**) within a mixing vessel of a drink maker (Step **2302**); activating compressor **2208** (or compressor **2230**) of a refrigeration circuit of the drink maker (Step **2304**); and activating cooling fan **2202** (or cooling fan **2222**) to concurrently generate air flow through condenser **2208** (or condenser **2228**) and along a surface of drive motor **2204** (or drive motor **2224**) (Step **2306**).

As previously mentioned, the frozen drink maker **100** may include pour-in opening **106** through which the mixing vessel **104** can receive ingredients to be mixed to produce a drink product. An illustrative pour-in-opening **106** for a frozen drink maker **100** is shown in FIGS. **24**A-**24**C. The frozen drink maker **100** includes a mixing vessel **104** with a substantially cylindrical chamber and a housing **102** with an upper housing section **122**. FIG. **24**A shows a perspective side view of the pour-in opening **106**. FIG. **24**B shows a front view of the pour-in opening **106** of FIG. **24**A, and FIG. **24**C shows a perspective view of the pour-in opening **106** of FIG. **24**A from the left side of the mixing vessel **104** (when viewed from the front view). The pour-in opening **106** may facilitate the addition of fluids, liquids, slush, or other ingredients to the mixing vessel **104** while the dasher **204** is active as well as minimizing spillage and preventing finger insertion during use.

In some implementations, the pour-in opening **106** may include a cover **160** to seal the pour-in opening **106**, as shown in FIGS. **24**A and **24**C. A detailed perspective view of a sample cover **160** for the pour-in opening **106** is shown in FIG. **25**. If present, the cover **160** may be hingedly connect to an upper section of the mixing vessel **104**. The cover **160** may be moved between an open position in which the pour-in opening **106** is accessible to a user and a closed position in which the pour-in opening **106** is not accessible to a user. Although not illustrated in the accompanying figures, the pour-in opening **106** may also include a grate to restrict objects from entering the aperture **162**. If present, a grate may reduce the risk of solids greater than a certain size and/or having one or more certain shapes entering the mixing vessel **104**, which can cause damage.

FIG. **26** shows a perspective view of a sample pour-in opening **106**. The pour-in opening **106** includes a surface **164** that inclines radially with respect to a center axis of a dasher **204** (shown as axis "A" in FIG. **24**A). The incline **164** reduces possible splashing as the vessel is filled. The incline **164** also prevents slush contained within the mixing vessel **104** from being pushed out of the pour-in opening **106**. The surface **164** has an aperture **162**. Although FIG. **26** shows only one aperture **162**, additional apertures may also be present. The aperture **162** is in fluid communication with an interior chamber of a mixing vessel **104**. In some implementations, the aperture **162** extends laterally along the surface **164** in a direction parallel to the center axis "A" of the dasher **204**. The aperture **162** may be shaped as a slot, as shown in FIG. **26**, or may have a different shape. If shaped as a slot, the aperture **162** may be longer or wider than shown in FIGS. **24**A-**24**C and/or may have a different ratio of length to width than shown. Further, the aperture **162**, as a slot or another oblong shape, may have its major axis aligned parallel or perpendicular to the axis of the mixing vessel **104**, or at any other angle relative to the axis of the mixing vessel **104**. The aperture **162**, for example, in the form of a slot, may be sized small enough (at least in width) to not allow passage of a human finger, at least not the entire length of a human finger, to thereby prevent a user from sticking one or more fingers into mixing vessel **104**.

The pour-in opening **106** may optionally include one or more lips **166***a*, **166***b* extending up from a perimeter of the surface **164** to form a well that feeds into the aperture **162**, as shown in FIG. **26**. One or more lips **166***a*, **166***b* may

reduce overflow spill when a liquid is poured into the mixing vessel **104**. If desired, the pour-in opening **106** may also include a grate (not illustrated) covering at least a portion of the aperture **162**. For safety concerns, users should not contact the dasher **204** while it is rotating. The geometry of the pour-in opening **106** (including the aperture **162** as described above) may inhibit or prevent a user from reaching into mixing vessel **104** even when the cover **160** is in an open position and/or the dasher **204** is rotating.

The pour-in opening **106** may be positioned on a top of the mixing vessel **104**, near its rear end, as shown in FIGS. **24**A-**24**C, opposite the dispenser assembly. Positioning the pour-in opening **106** near the rear of the mixing vessel **104** avoids interference with slush circulation in the front of the frozen drink maker **100**, which can lead to waste and non-homogeneous texture. With the pour-in opening **106** positioned at the rear of the mixing vessel **104**, the front ⅔ of the vessel has a continuous and smooth internal shape to provide good slush flow and minimize migration of the slush out of the top. By positioning the pour-in opening **106** near the rear of the vessel **104**, the opening **106** is located in a position where there is less possible buildup of frozen and/or slush materials, enabling less obstructed pouring and reducing possible buildup of ice and/or slush material at the opening **106** during processing.

The surface **164** of the pour-in opening **106** is sloped to direct incoming ingredients to enter the mixing vessel **104** in an entry direction, which is the same as the direction of dasher **204** rotation. This prevents the rotating frozen mixture from exiting the vessel **104** through the pour-in opening **106**. In some implementations, when the dasher **204** is rotating in a clockwise direction when viewed from the front of the frozen drink maker **100**, the opening **106** is positioned on the right side of the vessel **104**. The aperture **162** may be positioned to extend laterally along the surface **164** in a direction parallel to the center axis (A) of the dasher **204**, whereas in other implementations, when the dasher **204** is rotating in a counter-clockwise direction when viewed from the front of the frozen drink maker **100**, the opening **106** is positioned on the left side of the vessel **104**.

FIGS. **27**A-**27**D illustrate a sample pour-in opening **106** in which the surface **164** of the pour-in opening is shaped to slope downwardly toward a rear of the mixing vessel. In some such implementations, one or more apertures **162** may be positioned at a bottom portion of surface **164**. Shaping surface **164** to include a rearward slope can increase the volume capacity of the pour-in opening **106** and reduce spillage. In implementations in which the surface **164** of the pour-in opening **106** is sloped relative to the center axis (A) of the dasher **204**, the surface **164** may be shaped such that a section of surface **164** closest to a front of the mixing vessel is positioned farther away from the center axis (A) of the dasher **204** than a section of surface **164** closest to a rear of the mixing vessel.

FIG. **28** illustrates a sample method **2800** of using a pour-in opening **106** for a frozen drink maker. As shown in FIG. **28**, method **2800** includes optionally opening a cover of the frozen drink maker to provide access to the pour-in opening (block **2802**). Method **2800** also includes introducing one or more liquid ingredients to a mixing vessel of the frozen drink maker via the pour-in opening (block **2804**). The one or more liquid ingredients may be added to the mixing vessel while the vessel is actively mixing (e.g., while the dasher is rotating). Method **2800** further includes dispensing a drink product from the frozen drink maker (block **2806**). The drink product may be dispensed while the dasher is rotating, if desired.

FIGS. **29**A-**29**D show a dispensing assembly **2900** for dispensing a drink product from the frozen drink maker **100** according to a first illustrative implementation of the disclosure. As shown in FIG. **29**A, the dispensing assembly **2900** may include a dispenser housing **2904** for housing the component parts of the dispensing assembly **2900**. The housing **2904** may have a first portion **2904***a* attached to an outer surface of the frozen drink maker **100** adjacent to a spout **2902** and a second portion **2904***b* spaced apart from the spout **2902** and extending outward from the outer surface. In some implementations, the housing **2904** may have an inverted L-shape. However, the disclosure contemplates other suitable shapes of the housing **2904**. The handle **120** of the frozen drink maker **100** may have an upper portion **120***a* in the form of a user-actuatable lever **2906** and a lower portion **120***b* attached to the second portion **2904***b* of the housing **2904**.

As shown in FIGS. **29**B and **29**C, the lever **2906** may be rotatable relative to the second portion **2904***b* of the housing **2904** about a first pivot member **2908**. In some implementations, the first pivot member **2908** may be a rod or pin **2910** extending through the second portion **2904***b* of the housing **2904** and the lower portion **120***b* of the handle **120**. However, the disclosure contemplates other suitable types of pivot members **2908**. A link member **2912** may operatively couple to the lower portion **120***b* of the handle **120**. In some implementations, the link member **2912** may be insertable into the lower portion **120***b* of the handle **120**. The link member **2912** may be rotatable relative to the lever **2906** about a second pivot member **2914**. In some implementations, the second pivot member **2914** may be a rod or pin **2916** extending through the link member **2912** and through the lower portion **120***b* of the handle **120**. However, the disclosure contemplates other suitable types of pivot members **2916**. A bracket member **2918** may operatively couple to the link member **2912** and may be attached to the first portion **2904***a* of the housing **2904**. In some implementations, the link member **2912** may be insertable into a portion bracket member **2918**. The bracket member **2918** may be rotatable relative to the link member **2912** about a third pivot member **2920**. In some implementations, the third pivot member **2920** may be a rod or pin **2922** extending through the bracket member **2918** and the link member **2912**. However, the disclosure contemplates other suitable types of pivot members **2920**. The bracket member **2918** may also be rotatable relative to the first portion **2904***a* of the housing **2904** about a fourth pivot member **2924**. In some implementations, the fourth pivot member **2924** may be a rod or pin **2926** extending through the first portion **2904***a* of the housing **2904** and the bracket member **2918**. However, the disclosure contemplates other suitable types of pivot members **2924**. A seal **2928** may attach to the bracket member **2918**. The seal **2928** may be configured to seal the spout **2902** to prevent inadvertent dispensing of the drink product. In some implementations, the seal **2928** may be a lip seal that covers the spout **2902**. However, other suitable types of seals **2928** are contemplated by this disclosure. For example, in some implementations, the seal **2928** may be, or may include, a plug that is made out of one or more relatively dense materials having a relatively high durometer and that extends into the spout **2902** to seal the spout **2902**. The spout **2902** may include a safety grate **2930** or other mechanism to prevent the user from inadvertently inserting his or her fingers into the spout **2902** (FIG. **29**D).

To dispense the drink product, in some implementations, actuation of the lever **2906** by the user may cause the link member **2912** to move upward relative to the housing **2904**.

Because the bracket member **2918** is attached to both the link member **2912** and to the housing **2904**, a portion of the bracket member **2918** may move upward with the link member **2912** while the remainder of the bracket member **2918** is forced to pivot about fourth pivot member **2924**. This in turn may cause the seal **2928** to move into an open position. When the seal **2928** moves into the open position, the seal **2928** may uncover the spout **2902** to dispense the drink product. Advantageously, in the open position, the seal **2928** may be angled at about 45-60 degrees with respect to the spout **2902** to direct the drink product downward toward the beverage cup. Release of the lever **2906** by the user may allow the components to return to their unactuated position, allowing the seal **2928** to again close the spout **2902**.

FIGS. **30**A and **30**B show a dispensing assembly **3000** for dispensing a drink product from the frozen drink maker **100** according to a second illustrative implementation of the disclosure. Dispensing assembly **3000** may be substantially similar to dispensing assembly **2900**. For example, as shown in FIG. **30**A, the dispensing assembly **3000** may include a dispenser housing **3004** for housing the component parts of the dispensing assembly **3000**. The housing **3004** may have a first portion **3004***a* attached to an outer surface of the frozen drink maker **100** adjacent to a spout **3002** and a second portion **3004***b* spaced apart from the spout **3002** and extending outward from the outer surface. The handle **120** may have an upper portion **120***a* in the form of a user-actuatable lever **3006** and a lower portion **120***b* attached to the second portion **3004***b* of the housing **3004**. The lever **3006** may be rotatable relative to the second portion **3004***b* of the housing **3004** about a first pivot member **3008**. A link member **3012** may operatively couple to the lower portion **120***b* of the handle **120**. The link member **3012** may be rotatable relative to the lever **3006** about a second pivot member **3014**.

As shown in FIG. **30**B, a bracket member **3018** may operatively couple to the link member **3012** and may be attached to the first portion **3004***a* of the housing **3004**. In some implementations, the bracket member **3018** may have an inverted L-shape, as shown. However, the disclosure contemplates other suitable shapes of the bracket member **3018**. The bracket member **3018** may be rotatable relative to the link member **3012** about a third pivot member **3020**. The bracket member **3018** may also be rotatable relative to the first portion **3004***a* of the housing **3004** about a fourth pivot member **3024**. A seal **3028** may attach to the bracket member **3018**. The seal **3028** may be configured to seal the spout **3002** in a closed position. In some implementations, the seal **3028** may be a lip seal that covers the spout **3002**. However, in some implementations, the seal **3028** may be, or may include, a plug that is made out of one or more relatively dense materials having a relatively high durometer and that extends into the spout **3002** to seal the spout **3002**.

To dispense the drink product, in some implementations, actuation of the lever **3006** by the user may cause the link member **3012** to move upward relative to the housing **3004**. Because the bracket member **3018** is attached to both the link member **3012** and to the housing **3004**, a portion of the bracket member **3018** may move upward with the link member **3012** while the remainder of the bracket member **3018** is forced to pivot about fourth pivot member **3024**. This in turn may cause the seal **3028** to move into an open position. When the seal **3028** moves into the open position, the seal **3028** may uncover the spout **3002** to dispense the drink product. Advantageously, in the open position, the seal **3028** may be angled at about 45-60 degrees with respect to the spout **3002** to direct the drink product downward toward the beverage cup. Release of the lever **3006** by the user may allow the components to return to their unactuated position, allowing the seal **3028** to again close the spout **3002**.

Advantageously, unlike other dispenser mechanisms, the dispensing assemblies **2900**, **3000** of this disclosure do not rely on leverage against the outer surface of the frozen drink maker **100** to open the seal **2928**, **3028**. This may reduce wear and tear of the component parts of the dispensing assembly **2900**, **3000** and on the outer surface of the frozen drink maker **100**. Furthermore, because the seal **2928**, **3028** moves both horizontally and vertically with respect to the spout **2902**, **3002** to unseal the spout **2902**, **3002**, the open position of the seal **2928**, **3028** may provide less obstruction to the flow of the drink product from the spout **2902**, **3002**.

FIGS. **31**A and **31**B illustrate in greater detail the spout cover or shroud **116** for covering a portion of the dispensing assembly **2900**, **3000** according to an illustrative implementation of the disclosure. As shown in FIG. **31**A, the shroud **116** may include a first panel section **3102***a* and a second panel section **3102** extending substantially parallel to one another. A front section **3104** may extend between the panel sections **3102***a*, **3102***b*. In some implementations, the panel sections **3102***a*, **3102***b* may be substantially flat, while the front section **3104** may be curved, as shown. In some implementations, the front section **3104** may include an arcuate upper edge **3106** configured such that actuation of the handle **120** is not impeded. However, the disclosure contemplates other suitable shapes of the upper edge **3106**, such as the rectilinear shape shown in FIG. **1**. As shown in FIG. **31**B, the panel sections **3102***a*, **3102***b* may be configured to form a removable snap fit with the dispenser housing **2904**, **3004**. A length of the shroud **116** may be selected to cover the component parts of the dispensing assemblies **2900**, **3000** other than the handle **120** to improve the aesthetic appearance of the frozen drink maker **100**. The shroud **116** may also aid in directing the drink product downward toward the beverage cup. The shroud **116** may be made of a dishwasher safe material for easy cleaning.

In some implementations, at least the front section **3104** of the shroud **116** may be vertically moveable relative to the dispensing assembly **2900**, **3000**. For example, in some implementations, the front section **3104** may be moveable relative to the first panel section **3102***a* and the second panel section **3102***b*. In some implementations, the front section **3104** may be hingedly connected to the first and second panel sections **3102***a*, **3102***b* or may be vertically slidable relative the first and second panel sections **3102***a*, **3102***b*. Such movement may be useful when dispensing a non-frozen, water-based beverage to prevent the beverage from dispensing at too lateral of a trajectory from the spout **2902**, **3002**. Such a lateral trajectory may result in at least a portion of the beverage not dispensing into a receiving vessel located below the spout **2902**, **3002**.

It should be appreciated that the various implementations described herein are not limited to making frozen or semi-frozen drinks, but may be applied to produce a cold and/or cooled drink product that is cooler than a received drink product, but not frozen or semi-frozen. For example, in some implementations, the same or similar mechanisms and/or techniques may be used as part of a cold drink machine and/or cooled drink maker to produce, maintain and dispense cold drinks.

As discussed with respect to FIG. **4**, actions associated with configuring or controlling a frozen drink maker such as frozen drink maker **100** and processes described herein can be performed by one or more programmable processors executing one or more computer programs to control or to

perform all or some of the operations described herein. All or part of the frozen drink maker **100** systems and processes can be configured or controlled by special purpose logic circuitry, such as, an FPGA and/or an ASIC or embedded microprocessor(s) localized to the instrument hardware.

Non-transitory machine-readable storage media suitable for embodying computer program instructions and data include all forms of non-volatile storage area, including by way of example, semiconductor storage area devices, such as EPROM (erasable programmable read-only memory), EEPROM (electrically erasable programmable read-only memory), and flash storage area devices; magnetic disks, such as internal hard disks or removable disks; magneto-optical disks; and CD-ROM (compact disc read-only memory) and DVD-ROM (digital versatile disc read-only memory).

Elements of different implementations described may be combined to form other implementations not specifically set forth previously. Elements may be left out of the systems described previously without adversely affecting their operation or the operation of the system in general. Furthermore, various separate elements may be combined into one or more individual elements to perform the functions described in this specification.

The disclosure describes a removeable collection tray that may be disposed within the unit underneath the vessel/evaporator. The tray may be configured to collect condensation dripping off the vessel or spills resulting from filling the vessel. The tray may also be used to collect water from cleaning between uses. The tray of this disclosure may be sized to collect up to 16 ounces of liquid. The tray may also be made of a dishwasher safe material for easy cleaning.

This application describes illustrative systems, methods, and devices that provide a removeable condensation tray below vessel to reduce cleaning concerns and increase ease of use.

In some implementations, a removeable collection tray for a frozen drink maker includes a collection chamber for receiving liquid, and a handle. The collection chamber is configured to be removably inserted into a slot in a housing of the frozen drink maker adjacent an evaporator. In some implementations, the collection chamber is vertically spaced from a bottom side of the housing when inserted into the slot. In some implementations, the collection chamber includes an evaporator-facing surface. The evaporator-facing surface has a shape corresponding to an outer surface of the evaporator. In some implementations, the shape is semi-cylindrical. In some implementations, the handle, the evaporator-facing surface, and three other side walls define the collection chamber. In some implementations, the collection chamber has a liquid volume capacity of 16 ounces. In some implementations, the removeable collection tray is made from a dishwasher-safe material. In some implementations, a user-facing surface of the handle is flush with a user interface of the housing when the collection chamber is fully inserted into the slot. In some implementations, an underside of the handle has one or more ribs for adding structural integrity between the handle and the collection chamber. In some implementations, the slot is defined between at least one rail and a top surface of the housing.

In some implementations, a method of removing a collection tray from a frozen drink maker includes removing a mixing vessel from a housing of the frozen drink maker and, after the removing of the mixing vessel from the housing, removing the collection tray from the housing. In some implementations, removing the mixing vessel from the housing includes removing the mixing vessel and an attached dispenser from the housing. In some implementations, removing the collection tray from the housing includes pulling the handle toward the user. In some implementations, pulling the handle toward the user includes sliding the collection tray along a slot in the housing toward the user. In some implementations, the method also includes fully disengaging the collection tray from the slot in the housing.

The application, in various implementations, addresses deficiencies associated with controlling slush flow within a mixing vessel of a frozen drink maker. This application describes illustrative systems, methods, and devices that use one or more internal baffles positioned within the mixing vessel to direct slush flow for thorough mixing and to prevent blockage within the mixing vessel. The one or more internal baffles control flow of contents within the mixing vessel can also reduce waste (e.g., waste caused by slush sticking to the vessel instead of dispensing through the spout).

In a first aspect, a mixing vessel for a frozen drink maker is described and the mixing vessel has at least one internal baffle. The mixing vessel includes a curved sidewall defining a substantially cylindrical vessel chamber therein. The vessel chamber includes a front, a rear, a right side, a left side, and a top. The mixing vessel also includes a corner baffle configured to control slush flow within the vessel chamber. The corner baffle is positioned at the front top of the vessel chamber on either the right side or the left side.

The mixing vessel may be configured to accommodate a dasher that rotates within the vessel chamber about a center axis and the corner baffle may be positioned such that the dasher is directed toward the corner baffle while moving upwardly within the vessel chamber. In these and other implementations, the corner baffle is positioned on the left side of the vessel chamber and the dasher is arranged to rotate in a clockwise direction. In select implementations, a distance from the center axis of the dasher to the top of the vessel chamber is less than 16 inches.

The corner baffle may extend out from the front into the vessel chamber at a relatively constant distance. In some implementations, the mixing vessel also includes a side baffle extending laterally along the vessel chamber from the front to the rear. The side baffle may include a curved surface that protrudes inwardly relative to a cross-section of the vessel chamber when viewed along a center axis of the vessel chamber. In these and other implementations, the side baffle is positioned on the left side or the right side of the vessel chamber. The side baffle and the corner baffle may both be positioned on either the left side or the right side of the vessel chamber. In some implementations, the mixing vessel also includes a front baffle positioned at the front of the vessel chamber extending across the top. In these and other implementations, the front baffle forms an angle of between 100°-150° relative the front of the vessel chamber. In various implementations in which the front baffle is present, the mixing vessel also includes a side baffle extending laterally along the vessel chamber from the front to the rear, and the corner baffle has a curved surface that extends from the side baffle to the front baffle. The substantially cylindrical vessel chamber may have an oval-shaped cross-section.

In another aspect, a mixing vessel for a frozen drink maker is described and the mixing vessel has at least three internal baffles. The mixing vessel includes a curved sidewall defining a substantially cylindrical vessel chamber therein. The vessel chamber includes a front, a rear, a right side, a left side, and a top. The mixing vessel includes a

corner baffle positioned at the front top of the vessel chamber on either the right side or the left side. The mixing vessel also includes a side baffle extending laterally along the vessel chamber from the front to the rear. The mixing vessel further includes a front baffle positioned at the front of the vessel chamber extending across the top.

In some implementations, the side baffle and the corner baffle are both positioned on either the left side or the right side of the vessel chamber. In these and other implementations, the mixing vessel is configured to accommodate a dasher that rotates within the vessel chamber about a center axis. The corner baffle and the side baffle are positioned such that the dasher is directed toward the corner baffle and the side baffle while moving upwardly within the vessel chamber. In these and other implementations, the corner baffle and the side baffle are positioned on the left side of the vessel chamber and the dasher is arranged to rotate in a clockwise direction. In select implementations, a distance from the center axis of the dasher to the top of the vessel chamber is less than 16 inches. The corner baffle may extend out from the front into the vessel chamber at a relatively constant distance.

In yet another aspect, a frozen drink maker is described. The frozen drink maker includes a mixing vessel, a housing, a dasher, and a disperser assembly. The mixing vessel has a front, a rear, and a curved sidewall defining a vessel chamber therein. The housing has an upper housing section abutting the rear of the mixing vessel. The dasher is arranged to rotate within the mixing vessel about a center axis. The disperser assembly is at the front of the mixing vessel. The mixing vessel includes at least two internal baffles configured to control slush flow within the vessel chamber.

In some implementations, the mixing vessel includes at least three internal baffles configured to control slush flow within the vessel chamber. In some such implementations, the at least three internal baffles include: (1) a corner baffle positioned at a front top of the vessel chamber on either a right side or a left side, (2) a side baffle extending laterally along the vessel chamber from the front to the rear, and (3) a front baffle positioned at the front of the vessel chamber extending across the top. In these and other implementations, the dasher rotates in a clockwise direction, and the corner baffle and the side baffle are positioned on a left side of the vessel chamber when viewed from a front of the frozen drink maker.

The application, in various implementations, addresses deficiencies associated with controlling temperatures of drink products using recipes in a more adaptive and user-specific manner.

This application describes illustrative systems, methods, and devices that enable a drink maker to automatically control a temperature of a drink product based on a preset recipe target temperature stored in memory, while further allowing a user to adjust the preset temperature via a user input to enable the frozen drink maker to more flexibly achieve desired temperatures and/or textures tailored to the preferences of different users. The application also describes illustrative systems, methods, and devices that enable a drink maker to automatically control a temperature of a drink product based on a preset recipe target temperature stored in memory, while further monitoring a condition of a drive and/or dasher motor, such as current or power, and, if the current or power is too high, increasing the temperature of the drink product to reduce the thickness of the drink product and, thereby, reduce the current and/or power used by the drive and/or dasher motor to prevent damage to the drive motor.

In one aspect, a drink maker includes a mixing vessel arranged to receive a drink product and a dasher, driven by a drive motor, that is arranged to mix the drink product within the mixing vessel. The drink maker also includes a cooling circuit and/or device arranged to cool the drink product within the mixing vessel, a temperature sensor arranged to measure a temperature associated with the drink product and output a temperature signal, and a memory arranged to store a drink object representing a drink type, the drink object specifying a first temperature value corresponding to a first target temperature. A controller, in communication with the memory, is arranged to: i) receive the temperature signal, and ii) control the temperature associated with the drink product by controlling the cooling circuit based on the received temperature signal, the first temperature value, and/or a manual temperature adjustment and/or temperature offset. The frozen drink maker also includes a user interface arranged to receive a user input to adjust the manual temperature adjustment.

The temperature associated with the drink product may include a temperature of the drink product, a temperature of a cooling element used to cool the drink product, and/or a temperature of a refrigerant used to cool the drink product. The controller may adjust the first target temperature by adding the manual temperature adjustment to the first target temperature. The manual temperature adjustment may include positive or negative temperature value. The manual temperature adjustment may include a range of temperatures at, above, and below the first target temperature. The manual temperature adjustment may be adjustable in increments of greater than or equal to 0.1, 0.2, 0.3, 0.4, 0.5, 1, and/or 2 degrees Celsius.

In some implementations, the memory includes a plurality of recipes, each of the recipes including a temperature value corresponding to a target temperature. The cooling circuit and/or device may include a refrigeration circuit including an evaporator. The evaporator may be part of the closed loop refrigeration circuit and/or system including a condenser and a compressor. The controller may be configured to control the temperature associated with the drink product by activating the compressor to circulate refrigerant through the evaporator to cool the drink product and deactivating the compressor to stop a flow of refrigerant through the evaporator to stop cooling of the drink product. The controller may control the temperature associated with the drink product by comparing the received temperature signal to the first temperature value, adjusted based on the manual temperature adjustment, and, in response, activating or deactivating the cooling circuit to match the received temperature signal to the first temperature value, adjusted by the manual temperature adjustment, and, thereby, adjust the temperature associated with the drink product to about the target temperature adjusted by the manual temperature adjustment. In some implementations, the cooling circuit includes a thermal energy cooling (TEC) system implementing, for example, the Peltier effect.

In another aspect, a method for making a drink product includes: receiving, into a mixing vessel, the drink product; mixing, using a dasher driven by a drive motor, the drink product within the mixing vessel; cooling, using a cooling circuit, the drink product within the mixing vessel; measuring, via a temperature sensor, a temperature associated with the drink product and outputting a temperature signal; storing, in a memory, a drink object representing a drink type, the drink object specifying a first temperature value corresponding to a first target temperature; receiving, at a controller, the temperature signal; controlling, by the con-

troller, the temperature associated with the drink product by controlling the cooling circuit based on the received temperature signal, the first temperature value, and a manual temperature adjustment; and receiving a user input to adjust the manual temperature adjustment.

In a further aspect, a drink maker includes a mixing vessel arranged to receive a drink product and a dasher, driven by a drive motor, arranged to mix the drink product within the mixing vessel. The drink maker also includes a cooling circuit arranged to cool the drink product within the mixing vessel, a temperature sensor arranged to measure a temperature associated with the drink product and output a temperature signal, a motor condition sensor arranged to measure a motor condition associated with the drive motor and output a motor condition signal, and a memory arranged to store a first temperature value corresponding to a first target temperature and store a motor condition limit. A controller, in communication with the memory, is arranged to: i) receive the temperature signal, ii) receive the motor condition signal, and ii) control the temperature associated with the drink product by controlling the cooling circuit based at least on the received temperature signal, the received motor condition signal, the first temperature value, and the motor condition limit.

In some implementations, the controller deactivates the cooling circuit when a magnitude (e.g., a current or power level) of the received motor condition signal is equal to or greater than the motor condition limit. The controller may determine a second temperature value corresponding to a second target temperature, where the magnitude of the received motor condition signal is lower than the motor condition limit. The controller may control the temperature associated with the drink product by controlling the cooling circuit based on the second temperature value. In some implementations, the controller deactivates the cooling circuit until when the temperature associated with the drink product is about equal to the second target temperature.

The motor condition may include current, power, torque, speed of rotation, acceleration of rotation, noise, and/or thermal output. The motor condition sensor may include a motor current sensor, motor voltage sensor, motor torque sensor, motor rotation sensor, acoustic sensor, and/or temperature sensor. A user interface may be arranged to receive a user input to adjust a manual temperature adjustment. The controller may control the temperature associated with the drink product by controlling the cooling circuit based on the received temperature signal, the received motor condition signal, the first temperature value, the motor condition limit, and/or the manual temperature adjustment. The controller may adjust the first target temperature by adding the manual temperature adjustment to the first target temperature.

In yet a further aspect, a method for making a drink product includes: receiving, in a mixing vessel, the drink product; mixing, using a dasher driven by a drive motor, the drink product within the mixing vessel; cooling, using a cooling circuit, the drink product within the mixing vessel; measuring, via a temperature sensor, a temperature associated with the drink product and output a temperature signal; measuring, via a motor condition sensor, a motor condition associated with the drive motor and outputting a motor condition signal; storing, in a memory, a first temperature value corresponding to a first target temperature and storing a motor condition limit; receiving, at a controller, the temperature signal and the motor condition signal; and controlling the temperature associated with the drink product by controlling the cooling circuit based on the received temperature signal, the received motor condition signal, the first temperature value, and/or the motor condition limit.

The application, in various implementations, addresses deficiencies associated with cooling components of a drink maker.

This application describes illustrative systems, methods, and devices whereby a dual-use cooling fan concurrently provides cooling air flow to both a drive motor used to drive rotation of a dasher and a condenser used to cool refrigerant of a refrigeration circuit and/or system of the drink maker.

In one aspect, a drink maker includes a mixing vessel arranged to receive a drink product and a dasher, driven by a drive motor, arranged to mix the drink product within the mixing vessel. A refrigeration circuit is arranged to cool the drink product within the mixing vessel including a condenser. A cooling fan is configured to concurrently cool the drive motor and the condenser. In some implementations, the cooling fan is driven by the drive motor either directly or via a gear assembly, and therefore is activated when the drive motor is activated.

The cooling fan may provide air flow through the condenser to cool refrigerant flowing through the condenser. The cooling fan may provide air flow along a surface of the drive motor to cool the drive motor. The cooling fan, drive motor, and condenser may be positioned such that air flow generated by the cooling fan passes serially through the condenser and along a surface of the drive motor. A first portion of air flow generated by the cooling fan may cool the condenser and a second portion of air flow generated by the cooling fan may cool the drive motor. In another implementation, air flow generated by the cooling fan passes in parallel through the condenser and along a surface of the drive motor such that a first portion of the air flow passes through the condenser, while a second portion of the air flow passes along a surface of the drive motor. The condenser may include one or more coils wound in a serpentine arrangement. Each of the one or more coils may include a plurality of thermal transfer fins. When the cooling fan provides air flow through the condenser to cool refrigerant flowing through the condenser, the air flow may travel adjacent to and/or around the plurality of coils.

A cooling channel may extend between the cooling fan and the drive motor, where the cooling channel provides cooling air flow between the cooling fan and the drive motor. The cooling channel may be at least partially formed by a duct. A cooling channel may extend between the cooling fan and the condenser, where the cooling channel provides cooling air flow between the cooling fan and the condenser. The cooling channel may be at least partially formed by a duct. The cooling may include a centrifugal fan, a cross-flow fan, a tangential fan, a volute fan, a backward curved fan, a forward curved fan, a blower fan, a squirrel-cage fan, and/or an axial fan.

In another aspect, a cooling fan is configured for cooling a drive motor and a condenser within a housing of a drink maker, where the drive motor is configured to drive rotation of a dasher within a mixing vessel of the drink maker and the condenser is configured to cool a refrigerant circulating within a refrigeration system of the drink maker. The cooling fan includes an air inlet configured to receive an air flow from the ambient environment, an impeller configured to generate the air flow, and an air outlet configured to output the air flow through the condenser and along a surface of the drive motor. The cooling fan may include an air channel arranged to direct the air flow through the condenser and along the surface of the drive motor. The air channel may be at least partially formed by an air duct. The cooling fan may

include a centrifugal fan, a cross-flow fan, a tangential fan, a volute fan, a backward curved fan, a forward curved fan, a blower fan, a squirrel-cage fan, and/or an axial fan.

In a further aspect, a method for concurrently cooling a condenser and a drive motor within a housing of a drink maker using a cooling fan includes: activating the drive motor that is arranged to drive rotation of a dasher within a mixing vessel of the drink maker; activating a compressor of a refrigeration system of the drink maker; and activating the cooling fan to concurrently generate air flow through the condenser and along a surface of the drive motor. In some implementations, the cooling fan is coupled to and/or driven to rotate by the drive motor. The method may include receiving a user input to activate the drive motor, compressor, and the cooling fan. The user input may initiate a recipe and/or computer program, controlled by a controller, that automatically activates the drive motor, compressor, and the cooling fan.

One of ordinary skill will recognize that the systems, methods, and devices described herein may apply to other types of food products such as to the making and/or processing of, without limitation, ice cream, frozen yogurt, other creams, and the like. While the present disclosure describes examples of a drink maker processing various frozen and/or semi-frozen drink products, the systems, devices, and methods described herein are not limited to such drink products and are capable of processing and/or making other types of drink products such as cooled drink products and/or chilled drink products. The terms "mix," "mixed" or "mixing" as used herein are not limited to combining multiple ingredients together, but also include mixing a drink product or liquid having a single or no added ingredients. For example, a drink product may consist of only water that is mixed by a dasher during processing, i.e., portions of the water are churned and/or intermingled as the dasher rotates. This may, for example, advantageously enable a more uniform temperature of the water and/or liquid as a whole within the mixing vessel by intermingling portions of the water and/or liquid having different temperatures.

The application, in various implementations, addresses deficiencies associated with fluid inlets for frozen drink makers. Previous frozen drink makers are typically sized for commercial applications. Commercial frozen drink makers have significant headspace above the slush in the vessel. In a commercial frozen drink maker, liquid ingredients can be roughly poured into an open top of the vessel without concern of losing liquids due to splashing or ingredient expansion generated by impact force.

This application describes illustrative systems, methods, and devices that address shortcomings of how liquids are added to a vessel for a frozen drink maker. In particular, a pour-in opening for a frozen drink maker is described that allows liquid ingredients to be added to the vessel in a controlled manner, thereby minimizing or preventing slush overflow. The disclosed pour-in opening can be used with both commercial frozen drink makers or residential frozen drink makers having a smaller vessel capacity and less available headspace than commercial units. The pour-in opening advantageously avoids external splatter and spillage of liquid ingredients as they are added to the vessel and prevents finger insertion (to protect users from moving componentry within the vessel). The pour-in opening also prevents slush contained within the vessel from being pushed out of the vessel.

In some aspects, a pour-in opening for a frozen drink maker is described. The frozen drink maker has a dasher configured to rotate within a mixing vessel about a center axis. The pour-in opening includes a surface that inclines radially with respect to the center axis of the dasher. The pour-in opening also includes an aperture positioned on the surface in fluid communication with an interior of the mixing vessel. The surface may be sloped to direct fluids entering the mixing vessel to enter in the direction of dasher rotation. In some implementations, the aperture extends laterally along the surface in a direction parallel to the center axis of the dasher. The aperture may be shaped as a slot. In some implementations, the surface incline directs ingredients to enter the mixing vessel in an entry direction and the entry direction is the same as a rotation direction of the dasher. In some such implementations, the rotation direction of the dasher is clockwise when viewed from a front of the frozen drink maker. In these and other implementations, the aperture is positioned on a right side of the mixing vessel when viewed from the front of the frozen drink maker. A grate may cover at least a portion of the aperture, if desired. In these and other implementations, there may also be a cover moveable between an open position in which the pour-in opening is accessible to a user and a closed position in which the pour-in opening is not accessible to the user. In select implementations, the pour-in opening may also include a lip extending up from a perimeter of the surface to form a well that feeds into the aperture. The pour-in opening may be located approximate to a rear of the mixing vessel when viewed from a front of the frozen drink maker. In these and other implementations, a rotation of the dasher moves contents of the mixing vessel from the rear of the mixing vessel to a front of the mixing vessel.

In another aspect, a vessel for a frozen drink maker is described. The vessel includes a chamber and a pour-in opening. The chamber is a substantially cylindrical chamber sized to accommodate a dasher configured to rotate within the vessel about a center axis. The pour-in opening is positioned on a top section of the vessel. The pour-in opening includes a surface and an aperture. The surface inclines radially with respect to the center axis of the dasher. The aperture is positioned on the surface in fluid communication with the chamber. In some implementations, the pour-in opening is positioned at a rear of the vessel. In these and other implementations, the surface of the pour-in opening inclines radially to direct incoming ingredients to enter the vessel in an entry direction, and the entry direction is the same as a rotation direction of the dasher. In select implementations, the rotation direction of the dasher is clockwise and the aperture is positioned on a right side of the vessel when viewed from a front of the vessel. In some implementations, the vessel also includes a cover positioned over the pour-in opening and the cover is moveable between an open position in which the pour-in opening is accessible to a user and a closed position in which the pour-in opening is not accessible to the user.

In further aspects, a frozen drink maker is described. The frozen drink maker includes a mixing vessel having a substantially cylindrical chamber, a dasher configured to rotate within the mixing vessel about a center axis, and a pour-in opening positioned on a top of the mixing vessel. The pour-in opening has a surface that inclines radially with respect to the center axis of the dasher and an aperture positioned on the surface in fluid communication with the chamber. In some implementations, the center axis of the dasher extends in a horizontal direction. In these and other implementations, the aperture extends laterally along the surface in a direction parallel to the center axis of the dasher. The surface inclines radially to direct incoming ingredients

to enter the mixing vessel in an entry direction, and the entry direction is the same as a rotation direction of the dasher. In select implementations, the rotation direction of the dasher is clockwise when viewed from a front of the frozen drink maker and the aperture is positioned on a right side of the mixing vessel when viewed from the front of the frozen drink maker.

The disclosure describes a low-maintenance dispensing system for a frozen drink maker that uses a lip seal rather than a plunger seal. The dispensing mechanism includes several pivoting linkages that operate to swing the seal up when a user actuates a dispensing lever. In the open position, the seal is angled about 45-60 degrees with respect to the spout, which helps to direct the dispensed drink product downward. The spout opening also includes a safety grate to prevent the user from inadvertently inserting his or her fingers into the spout.

This application describes illustrative systems, methods, and devices that provide a dispensing assembly for dispensing a drink product through a spout of a frozen drink maker.

In some exemplary implementations, a dispensing assembly for a frozen drink maker of this disclosure includes a housing having a first portion attached to an outer surface of the frozen drink maker adjacent to a spout, and a second portion spaced apart from the spout and extending outward from the outer surface. A lever attaches to the second portion of the housing. The lever is rotatable relative to the second portion of the housing about a first pivot member. A seal operatively couples to the lever. The seal is configured to seal the spout in a closed position. Rotation of the lever causes the seal to move into an open position to allow dispensing of a drink product through the spout.

In some implementations, a link member operatively couples to the lever. The link member is rotatable relative to the lever about a second pivot member. A bracket member operatively couples to the link member and attaches to the first portion of the housing. The bracket member is rotatable relative to the link member about a third pivot member and rotatable relative to the first portion of the housing about a fourth pivot member. The seal is attached to the bracket member.

In some implementations, the second pivot member is a pin extending through the lever and through the link member. In some implementations, the third pivot member is a pin extending through the bracket member and through the link member. In some implementations, the fourth pivot member is a pin extending through the first portion of the housing and through the bracket member. In some implementations, the seal is angled at about 45-60 degrees with respect to the spout when the seal is in the open position. In some implementations, the spout includes a grate configured to prevent a user from inserting fingers into the spout. In some implementations, the first pivot member includes a pin extending through the second portion of the housing and through the lever. In some implementations, the seal is a lip seal. In some implementations, the bracket member is L-shaped. In some implementations, the housing is L-shaped.

In some implementations, a method of dispensing a drink product through a spout of a frozen drink maker of this disclosure includes rotating a lever about a first pivot member relative to a second portion of a housing of a dispensing assembly. The housing further includes a first portion attached to an outer surface of the frozen drink maker adjacent to the spout and the second portion spaced apart from the spout and extending outward from the outer surface. Rotating the lever causes a seal operatively coupled to the lever to move into an open position to allow dispensing of the drink product through the spout. The seal is configured to seal the spout in a closed position.

In some implementations, the dispensing assembly further includes a link member operatively coupled to the lever, and rotating the lever causes the link member to rotate relative to the lever about a second pivot member. In some implementations, the dispensing assembly further includes a bracket member operatively coupled to the link member and attached to the first portion of the housing, and rotating the lever causes the bracket member to rotate relative to the link member about a third pivot member and to rotate relative to the first portion of the housing about a fourth pivot member. In some implementations, the seal is attached to the bracket member.

The disclosure describes a shroud for attaching to a dispensing assembly of a frozen drink maker. The shroud is configured to direct the drink product downward toward a beverage cup without interfering with the movement of the dispenser lever. The shroud also hides components of the dispensing assembly for a more pleasing aesthetic appearance and is removable for easy cleaning.

This application describes illustrative systems, methods, and devices that provide a shroud for attaching to a dispensing assembly for directing a drink product downward toward a beverage cup.

In some implementations, a shroud for a dispenser assembly of a frozen drink maker of this disclosure includes a first panel section and a second panel section extending substantially parallel to the first panel section. A front section extends between the first and second panel sections. The first and second panel sections are configured to form a removable snap fit with a dispenser housing of the dispenser assembly.

In some implementations, the front section is curved. In some implementations, a vertical position of at least the front section of the shroud is adjustable relative to the dispenser assembly. In some implementations, the front section defines an upper edge. A shape of the upper edge is configured to allow actuation of a handle of the dispenser assembly. In some implementations, a shape of the upper edge is arcuate. In some implementations, a shape of the upper edge is rectilinear. In some implementations, a length of the shroud is selected to cover component parts of the dispenser assembly. In some implementations, a length and shape of the shroud is selected to direct a drink product dispensed from a spout of the frozen drink maker downward. In some implementations, the shroud is made from a dishwasher safe material. In some implementations, the front section is moveable relative to the first panel section and the second panel section. In some implementations, the front section is hingedly connected to the first panel section and the second panel section. In some implementations, the front section is vertically slidable relative to the first panel section and the second panel section. In some implementations, the first panel section is flat. In some implementations, the second panel section is flat.

What is claimed is:

1. A frozen drink maker comprising:

a housing comprising an upper housing section and a lever moveable relative to the upper housing section between a coupling position and an uncoupling position;

a mixing vessel to receive a drink product, the mixing vessel having:

a first end with a first opening and a second end with a second opening configured to dispense the drink product; and

a pour-in opening located on the mixing vessel between the first end and the second end;

a dasher configured to rotate in the mixing vessel;

a motor to drive the dasher;

an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and

a flexible seal arranged proximate to the upper housing section,

wherein the lever controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position, and

wherein, when the lever is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.

2. The frozen drink maker of claim **1**, wherein the mixing vessel comprises a wall having the first opening formed therein, and the first opening is sealed against the upper housing section by the flexible seal when the lever is in the coupling position.

3. The frozen drink maker of claim **1**, wherein the mixing vessel comprises a wall having the first opening formed therein, and wherein the flexible seal comprises a face seal that interfaces a vertically aligned surface of the upper housing section to an edge of the first end of the mixing vessel.

4. The frozen drink maker of claim **1**, wherein the flexible seal comprises a vessel seal portion configured to create a watertight seal between the mixing vessel and the upper housing section, and an evaporator seal portion configured to seal the evaporator within the mixing vessel.

5. The frozen drink maker of claim **1**, wherein when moving between the coupling position and the uncoupling position, the lever rotates less than 90° relative to the upper housing section.

6. The frozen drink maker of claim **1**, further comprising an interlock switch, wherein the interlock switch is positioned within the upper housing section and configured to be activated and permit action of the motor when the mixing vessel is coupled to the housing.

7. The frozen drink maker of claim **1**, wherein the pour-in opening is on a top of the mixing vessel.

8. The frozen drink maker of claim **1**, wherein the lever comprises a handle enabling a user to move the lever between the coupling position and the uncoupling position.

9. The frozen drink maker of claim **8**, wherein an uppermost portion of the handle is positioned closer to the upper housing section when in the coupling position than when in the uncoupling position.

10. The frozen drink maker of claim **1**, wherein movement of the lever to move the lever into the coupling position activates a cam in the upper housing section that engages at least one mating feature on the mixing vessel to secure the mixing vessel to the upper housing section.

11. The frozen drink maker of claim **10**, wherein the cam further comprises an ejection feature to apply an ejection force to the mixing vessel when the lever is moved from the coupling position to the uncoupling position.

12. The frozen drink maker of claim **1**, further comprising a collection tray configured to be removably placed in or on the housing at least partly below the mixing vessel, the collection tray comprising a collection chamber for receiving liquid from an exterior surface of the mixing vessel.

13. The frozen drink maker of claim **12**, further comprising a channel formed between the exterior surface of the mixing vessel and the housing, wherein the liquid received by the collection chamber travels from the exterior surface of the mixing vessel, through the channel, and to the collection chamber.

14. The frozen drink maker of claim **12**, wherein the collection tray is configured to be removably placed at least partly in a slot of the housing positioned below the mixing vessel.

15. The frozen drink maker of claim **12**, wherein a curvature of a user-facing surface of a handle of the collection tray is configured to correspond to a curvature of a user-facing front edge of the mixing vessel.

16. The frozen drink maker of claim **12**, wherein the housing further comprises at least one rail configured to guide a placement of the collection tray when the collection tray is placed in or on the housing.

17. The frozen drink maker of claim **16**, wherein the at least one rail is further configured to guide a placement of the mixing vessel when the mixing vessel is placed on the housing for coupling to the housing.

18. A frozen drink maker comprising:

a housing comprising an upper housing section and a coupling mechanism rotatably moveable relative to the upper housing section between a coupling position and an uncoupling position, wherein the coupling mechanism comprises a lever;

a mixing vessel to receive a drink product, the mixing vessel having:

a first end with a first opening and a second end with a second opening configured to dispense the drink product; and

a pour-in opening located on the mixing vessel between the first end and the second end;

a dasher configured to rotate in the mixing vessel;

a motor to drive the dasher;

an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and

a flexible seal arranged proximate to the upper housing section,

wherein the coupling mechanism controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position, and

wherein, when the coupling mechanism is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.

19. The frozen drink maker of claim **18**, wherein the flexible seal comprises a vessel seal portion configured to create a watertight seal between the mixing vessel and the upper housing section, and an evaporator seal portion configured to seal the evaporator within the mixing vessel.

20. The frozen drink maker of claim **18**, wherein the housing further comprises at least one rail configured to guide a placement of the mixing vessel when the mixing vessel is placed on the housing for coupling to the housing.

21. The frozen drink maker of claim **18**, wherein the pour-in opening is on a top of the mixing vessel.

22. The frozen drink maker of claim **18**, further comprising a collection tray configured to be removably placed in or on the housing at least partly below the mixing vessel, the collection tray comprising a collection chamber for receiving liquid from an exterior surface of the mixing vessel.

23. The frozen drink maker of claim 22, further comprising a channel formed between the exterior surface of the mixing vessel and the housing, wherein the liquid received by the collection chamber travels from the exterior surface of the mixing vessel, through the channel, and to the collection chamber.

24. A frozen drink maker comprising:

a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;

a mixing vessel to receive a drink product, the mixing vessel having:

a first end with a first opening and a second end with a second opening configured to dispense the drink product; and

a pour-in opening located on the mixing vessel between the first end and the second end;

a dasher configured to rotate in the mixing vessel;

a motor to drive the dasher;

an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and

a flexible seal arranged proximate to the upper housing section,

wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position, and

wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.

25. The frozen drink maker of claim 24, wherein the flexible seal comprises a vessel seal portion configured to create a watertight seal between the mixing vessel and the upper housing section, and an evaporator seal portion configured to seal the evaporator within the mixing vessel.

26. The frozen drink maker of claim 24, further comprising an interlock switch, wherein the interlock switch is positioned within the upper housing section and configured to be activated and permit action of the motor when the mixing vessel is coupled to the housing.

27. The frozen drink maker of claim 24, further comprising a compressor, a condenser, and a condenser fan.

28. The frozen drink maker of claim 24, wherein the pour-in opening is on a top of the mixing vessel.

29. The frozen drink maker of claim 24, wherein the flexible seal is arranged between the upper housing section and the first end of the mixing vessel when the mixing vessel is in a coupling position.

30. The frozen drink maker of claim 24, wherein the housing comprises a lever moveable relative to the upper housing section, wherein moving the lever to a first position moves the cam feature into the coupling position, and wherein, when in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling of the mixing vessel to the upper housing section.

31. The frozen drink maker of claim 30, wherein the mixing vessel comprises a wall having the first opening formed therein, wherein the first opening is sealed against the upper housing section by the flexible seal when the lever is in the first position, and wherein the flexible seal comprises a face seal that interfaces a vertically aligned surface of the upper housing section to an edge of the first end of the mixing vessel.

32. The frozen drink maker of claim 30, wherein the cam feature further comprises an ejection feature to apply an ejection force to the mixing vessel when the lever is moved from the first position to a second position.

* * * * *

EXHIBIT “2”

IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF FLORIDA

SHARKNINJA OPERATING LLC, and SHARKNINJA SALES COMPANY, *Plaintiffs*, v. THE INDIVIDUALS, CORPORATIONS, LIMITED LIABILITY COMPANIES, PARTNERSHIPS, AND UNINCORPORATED ASSOCIATIONS IDENTIFIED ON SCHEDULE A, *Defendants*.	Case No. 26-cv-23083-RAR-LFL

DECLARATION OF STEPHANIE CUGINI

I, Stephanie Cugini, declare and state as follows:

1. I make this declaration based on my personal knowledge of the facts stated herein and my role at SharkNinja Operating LLC and SharkNinja Sales Company (collectively, "SharkNinja"). If called as a witness, I could and would competently testify to the matters set forth below.

2. I submit this declaration in support of SharkNinja's motion for entry of a preliminary injunction order and related equitable relief in this action.

3. I am Vice President, Global Product Development at SharkNinja, and in that role I am knowledgeable about and have access to business records concerning key aspects of SharkNinja frozen food and drink makers' product development and brand protection operations, including, but not limited to, trademarks, copyrights, patents and other intellectual property, sales, online sales, advertising, marketing, media coverage, and associated international operations.

4. I make this declaration from matters within my own knowledge unless stated otherwise. I have been employed by SharkNinja for nearly 10 years. During most of my tenure, I have worked in product development with a focus on motorized appliances. In that role, my team developed SharkNinja's first CREAMi (NC3), which formed the foundation of the company's Frozen Treats category. I later led the development of the entire Ninja CREAMi and SLUSHi (FS3 and FS6) product lines to date and have continuously overseen the Frozen Treats category since its inception. Approximately one year ago, I was promoted to my current position as the Vice President of Global Product Development, and I report to the Senior Vice President and Chief Roadmap & Innovation Officer, Danielle Lessing.

5. In my various product development roles, I work with my team to establish product requirements, define performance standards through hands-on kitchen testing, and review and incorporate consumer feedback throughout the development process, and I am responsible for all of these for SLUSHi. I regularly receive reports regarding product launches, sales performance, and market engagement. My team assesses the competitive landscape and works closely with our product testing group—also known as the Ninja Testing Kitchen—to evaluate how competitive products perform in real kitchen environments before and after product launches. We conduct in-depth analyses of competing product reviews, pricing strategies, and consumer sentiment, with a particular focus on Amazon. As the category owner, I also participate in weekly meetings with SharkNinja's Strategic Sales & Analytics ("SS&A") team to review market share trends, pricing impacts, and competitive activity, and I regularly analyze weekly and monthly internal sales and market reports prepared by the SS&A team. *See* Exhibits 10, 13.

6. I understand that this lawsuit pertains to SharkNinja's U.S. Patent No. 12,593,855 (the "SLUSHi Patent"). A true and correct copy of the SLUSHi Patent is attached as Exhibit 1. I

understand from SharkNinja's legal team that SharkNinja Operating LLC is the owner of all rights, title, and interest in and to the SLUSHi Patent and that SharkNinja Sales Company is a licensee of that patent.

7. SharkNinja is a global, leading product design and technology company that develops and commercializes innovative household appliances across more than 20 home appliance products, including floorcare products, environmental products (such as fans and purifiers), kitchen appliances, and—relevant to this case—frozen food and beverage makers and systems. SharkNinja has been recognized for consistently redefining consumer experiences and introducing new product categories through disruptive innovation and earned an international reputation for quality, reliability, and value. It is the exclusive supplier and manufacturer of Shark and Ninja brand products in the United States.

8. Building on the widespread popularity of its CREAMi home ice-cream maker, SharkNinja recognized a significant gap in the home appliance market: the market lacked a genuine at-home slush machine capable of producing consistent slush textures across various beverages without requiring pre-frozen ice and all in a form suitable for everyday countertop placement. Following extensive cross-functional research and development efforts, SharkNinja created the SLUSHi—the first compact, countertop-appropriate slush machine designed for home use that delivers uniform texture without the need for pre-frozen ice. Before the introduction of Ninja SLUSHi, consumers had to rely on blender-based icy drinks or ice-cream-maker alternatives that were typically slow, cumbersome, oversized, loud, and produced inconsistent results.

9. Designed specifically for home consumers, the SLUSHi offers a simple, intuitive user experience. Consumers pour a liquid containing sugar, allulose, or alcohol into the container, select a preset program, and enjoy a frozen beverage in as little as 15 minutes. SLUSHi's

horizontal loading design enables easy, continuous topping off during use, allowing users to have continuous slushy throughout the day without having to move the product from their countertops.

10. To bring this vision to fruition, SharkNinja assembled a multidisciplinary team in late 2022, comprising industrial designers, engineers, food scientists, and market researchers to address this market gap. The company aimed to create a compact, countertop-friendly design that could be easily moved and would fit beneath standard kitchen cabinetry. SharkNinja established strict dimensional requirements to ensure the unit could reside and operate comfortably on standard kitchen countertops. The height of the machine could not exceed 17 inches, and the depth was limited to 16.3 inches to ensure that it could fit beneath a standard 18-inch cabinet. This design allows users to add ingredients without removing the unit from the countertop. It also enables the vessel to be removed while the unit remains on the countertop or under the cabinet, for easy cleaning.

11. Delivering commercial-quality output within a small kitchen footprint demanded innovative configurations of the compressor, condenser, and airflow systems; precisely calibrated dasher speeds and shapes; a specialized container design to control flow and guarantee consistent dispensing; an attachment mechanism that requires minimal user effort and force to secure the container to the machine; and user-friendly, preset temperature settings verified through comprehensive culinary testing. These components—developed through considerable investment and protected by patents and proprietary rights—are what convert the concept of a home slush machine into a compact, countertop-worthy, and intuitive appliance.

12. Among many other innovations, SharkNinja recognized the need for a user-friendly method for attaching the vessel to the machine and sealing it with minimal user effort and force. Exhibits 2, 3. After much internal and consumer testing, SharkNinja developed a unique cam

feature that can attach and detach the mixing vessel with minimal effort from the user without compromising the overall compact design, as it allows generally horizontal geometry of the mixing vessel and horizontal attachment onto and detachment from the upper housing in the limited countertop space beneath a standard cabinet. This indeed became one of the features that consumers consistently praise SLUSHi for—its ease of installation and cleaning. Exhibits 4–7 ("Easy to assemble, easy to use, easy to clean"; "Very easy to set up, very easy to clean! I love the sleek look and it fits perfectly on my counter"; "So easy to put together"; "The whole thing comes apart and goes back together REALLY easily for easy cleaning . . . ").

13. Over approximately 18 months, the team advanced through numerous proof-of-concept builds and engineering iterations, transitioned from initial thermoelectric approaches to a compact, compressor-based cooling system, and refined critical subsystems—including evaporator geometry, container design, dasher (the rotating mixing element inside the container) speed and configuration, horizontal mixing vessel geometry, cam feature controlling the coupling and uncoupling of the mixing vessel, preset temperature programs, and user safety and cleaning features. This rigorous development program required substantial financial investment and specialized technical expertise, resulting in a first-of-its-kind, compact, countertop-suitable, and user-friendly device that achieves rapid slush creation without ice, maintains a streamlined design appropriate for under-cabinet positioning, and is easy to maintain and operate. The cam mechanism is a critical enabling invention behind SLUSHi's innovative, compact, countertop-worthy design, allowing seamless installation and removal with minimal force while maintaining reliable locking performance, easy cleaning, and storage compatibility under standard cabinets.

14. The SLUSHi was a truly category-defining innovation. As the clear first mover, SLUSHi captured approximately 96% of the market at launch, establishing immediate and commanding category leadership. It successfully filled a previously unserved gap for a compact, countertop-worthy slush machine that does not require pre-frozen ice to produce consistently smooth texture. Its success was immediate and extraordinary—driven by overwhelming consumer demand, the product sold out within approximately ten hours of release. The launch quickly became a viral phenomenon, generating extensive social media engagement and unprecedented consumer excitement. Exhibit 8. In short order, SLUSHi came to define the category itself, with consumer behavior reflecting that "Ninja SLUSHi" had become synonymous with at-home slush machines. Exhibit 14.

15. The commercial success of Ninja SLUSHi has led to the emergence of numerous lookalikes in the market, many of which I understand from SharkNinja's legal team infringe the SLUSHi Patent and other intellectual property rights. These imitators did not independently create or invest in solving the engineering challenges associated with a compact, countertop-worthy, and user-friendly home-use slush machine that actually works; they merely exploited SharkNinja's innovations to produce knockoff products. As a result, SharkNinja has established an anti-infringement workstream for SLUSHi and is investigating suspicious websites and online marketplace listings discovered through proactive internet monitoring conducted as part of that workstream. SharkNinja has identified multiple domain names connected to fully functional websites and marketplace listings ("Marketplace Platforms").

16. SharkNinja's investigation has uncovered that Defendants are selling—including through the Marketplace Platforms—products that, according to SharkNinja's legal team, infringe the SLUSHi Patent. I understand, from the Schedule A to the Consolidated Complaint, the

Defendants' products infringe the SLUSHi Patent (the "Infringing Products"). I am not a lawyer, and I have not conducted any legal analysis of any of the Infringing Products. That is a job for SharkNinja's lawyers. I have, however, reviewed the Schedule A and the claim charts attached to the Complaint, and confirmed that all of the products listed bear a striking resemblance to the SLUSHi, and in particular appear to use a strikingly similar horizontal loading cam mechanism for the mixing vessel, which is a key innovation that we brought to bear with the SLUSHi.

17. Defendants have established Internet Stores and engage in ongoing sales of the Infringing Products. Furthermore, the quantity and pace at which new Infringing Products continue to surface have significantly exceeded SharkNinja's capacity to address them through marketplace intellectual property enforcement measures. My team and I regularly monitor the sales of these Infringing Products and other imitation products, as well as their impact on SLUSHi. This sprawling proliferation of imitation products has steadily eroded SLUSHi's market position, depriving SharkNinja of the ability to recapture the virality and first-mover advantage it invested substantial time and resources to establish. Exhibits 10, 11. Imitation products are launching and relaunching Internet Stores at a volume and pace far exceeding ordinary market activity, and despite SharkNinja's proactive intellectual property enforcement efforts—including recent lawsuits in Florida (1:25-cv-25323-RAR) and New Jersey (1:25-cv-05650-CPO-MJS)—these imitators quickly reappear, reintroducing essentially identical or highly similar products under different trade names or model numbers, or with only superficial design changes.

18. More specifically, Defendants' trade names entered the market relatively late, beginning approximately in the second quarter of 2025, but their market share has since grown, capturing an increasing portion of the market that SharkNinja created. Exhibit 11. To counter this surge in infringement, SharkNinja has been forced to offer discounts on SLUSHi in an effort to

temporarily regain market share—competing directly against unauthorized copies of the very technology it invented and brought to market.

19. I understand that SharkNinja's legal team has analyzed each of the Defendants' Internet Stores with outside counsel and determined that Infringing Products are being offered for sale to consumers in the United States, including within this Judicial District. I did not personally participate in that process; that is for the lawyers.

20. To the best of my knowledge, neither Defendants nor their associated websites have any business relationship with SharkNinja, nor do they possess any right or authorization to use the SLUSHi Patent for any purpose. SharkNinja has not licensed, authorized, or otherwise permitted Defendants to use the SLUSHi Patent, and there is no reason to believe that any Defendant is an authorized reseller or retailer of genuine Shark or Ninja branded products.

21. From the perspective of our SLUSHi team, Defendants are freeriding on SharkNinja's breakthrough innovations by capitalizing on the extensive time, financial investment, and technical risk SharkNinja undertook to bring this product to market. Rather than investing the years of research, engineering, and testing required to develop a compact, countertop-worthy, and user-friendly slush machine, Defendants appear to have instead misappropriated SharkNinja's patented solution. While some Defendants' individual sales volume may be modest, their collective activity diverts sales that would otherwise accrue to SharkNinja, dilutes SharkNinja's hard-earned market share, undermines the premium associated with its innovation, increases the risk of inferior product quality in the marketplace, and erodes consumer trust. It is also particularly concerning that Defendants' sales have been increasing in recent weeks on Amazon. Exhibit 11.

22. In addition, these imitation products erode SharkNinja's brand equity, which was built through a viral launch strategy and significant marketing investment designed to make Ninja

SLUSHi synonymous with this category. Exhibit 8; Exhibit 14. Defendants are exploiting the SLUSHi Patent in a market that SharkNinja itself created, thereby depleting that market and unfairly capturing the economic returns meant to reward and sustain innovation.

23. Monetary damages alone are inadequate to compensate SharkNinja for Defendants' ongoing infringement. Financial compensation cannot remedy the loss of control over SharkNinja's reputation, goodwill, and brand identity. That harm is already evident and increasingly concerning. Despite strong engagement and visibility on social media platforms, conversion to sales has lagged—an outcome that I and SharkNinja attribute to consumer diversion toward infringing look-alike products. The resulting harm to brand equity and consumer trust is inherently difficult, if not impossible, to quantify, rendering monetary damages insufficient.

24. Monetary damages alone are insufficient also because SharkNinja's business model depends on category-defining launches and the preservation of first-mover brand equity. SharkNinja turns unmet consumer needs into new markets through viral, category-defining product launches. These launches rely on a narrow, non-repeatable window during which consumers come to associate a new product category with SharkNinja as the original source. SharkNinja maintains its viral momentum by investing in organic consumer advocacy and paid media amplification, generating strong network effects that drive rapid adoption and strengthen durable brand associations. The persistent presence of Infringing Products decreases network effects, accelerates consumer confusion, compresses pricing, and irreversibly erodes SharkNinja's first-mover advantage. These injuries are difficult to measure and impossible to unwind after the fact.

25. The harm is particularly acute for Ninja SLUSHi. Unlike SharkNinja's prior category-defining launches, such as the viral CREAMi, SLUSHi is not maintaining its expected

market share trajectory and risks losing its association as the original compact, countertop-worthy slush machine for home use. The main apparent reason for that difference appears to be the tsunami of look-alike products for the SLUSHi. While the countertop slush machine category was only recently invented and introduced to the market by SharkNinja in 2024, the proliferation of knockoffs is rapid. Even though the market segment keeps growing over time, the Defendants' sales of Infringing Products have derailed SLUSHi's dominant trajectory as predicted by past viral product launches. Exhibit 9 and Exhibit 12. To preserve SLUSHi's viral brand equity and avoid enduring brand dilution, SharkNinja must reestablish relative exclusivity during the upcoming peak season.

26. Seasonality also heightens the need for immediate relief. The summer months—including the upcoming Amazon Prime Day (predicted to be near the end of June)—are typically a peak sales season for frozen beverage appliances. Exhibit 11. Indeed, that seasonal sales peak is second only to the peak we experience around the holidays at the end of the year, beginning with Black Friday. Likewise, Defendants' sales also increased significantly during last year's Amazon Prime Day, which occurred around Week 28. Allowing Infringing Products to remain on the market during this critical seasonal period, especially on Prime Day, will continue to divert sales, depress prices, and dilute SLUSHi's association with SharkNinja at the precise moment consumers are highly engaged.

27. Prior injunctive relief obtained by SharkNinja in a recent, similar enforcement action confirms the correlation between infringement and market harm. In that matter, SharkNinja secured a temporary restraining order on November 21, 2025, against defendants that were infringing two different patents practiced by the SLUSHi product. No. 1:25-cv-25323-RAR (S.D. Fla. November 21, 2025), ECF No. 26. During the TRO period, SLUSHi's market share increased

significantly—from approximately 30% to nearly 60%. Exhibit 13. After the TRO expired, SLUSHi's market share declined and stabilized at a materially lower level. Exhibit 11. This pattern demonstrates that injunctive relief restricting infringing imitation products has likely contributed to improved market performance for SLUSHi, and that continued infringement would erode SLUSHi's sales and market share.

28. Without preliminary injunctive relief in place before the upcoming summer season, SharkNinja will continue to suffer immediate and irreparable harm in the form of lost market share, diminished brand equity, and erosion of its position as the original source of this category-defining product. Injunctive relief is necessary to preserve the status quo and protect the goodwill SharkNinja has built through substantial investment, innovation, and consumer trust.

29. I declare under penalty of perjury under the laws of the United States of America the foregoing is true and correct.

30. Executed on May 8, 2026 in Aruba.

Stephanie Cugini
Vice President, Global Product Development
SharkNinja Operating LLC

EXHIBIT “1”

US012593855B2

(12) **United States Patent**
Roberts et al.

(10) **Patent No.: US 12,593,855 B2**
(45) **Date of Patent: *Apr. 7, 2026**

(54) **DRINK MAKER WITH DETACHABLY CONNECTABLE MIXING VESSEL**

(71) Applicant: **SharkNinja Operating LLC**, Needham, MA (US)

(72) Inventors: **Matthew Roberts**, Needham, MA (US); **Michael Lerman**, Providence, RI (US); **Macrae Benziger**, Dedham, MA (US); **Alexander Mularski**, Auburn, MA (US); **Joyce Tu**, Melrose, MA (US); **Cameron John Auger**, Watertown, MA (US)

(73) Assignee: **SharkNinja Operating LLC**, Needham, MA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **18/423,894**

(22) Filed: **Jan. 26, 2024**

(65) **Prior Publication Data**

US 2025/0234887 A1 Jul. 24, 2025

Related U.S. Application Data

(63) Continuation-in-part of application No. 18/415,817, filed on Jan. 18, 2024.

(51) **Int. Cl.**
A23G 9/22 (2006.01)
A23G 9/04 (2006.01)

(52) **U.S. Cl.**
CPC ***A23G 9/22*** (2013.01); ***A23G 9/045*** (2013.01)

(58) **Field of Classification Search**
CPC A23G 9/045; A23G 9/06; A23G 9/08
See application file for complete search history.

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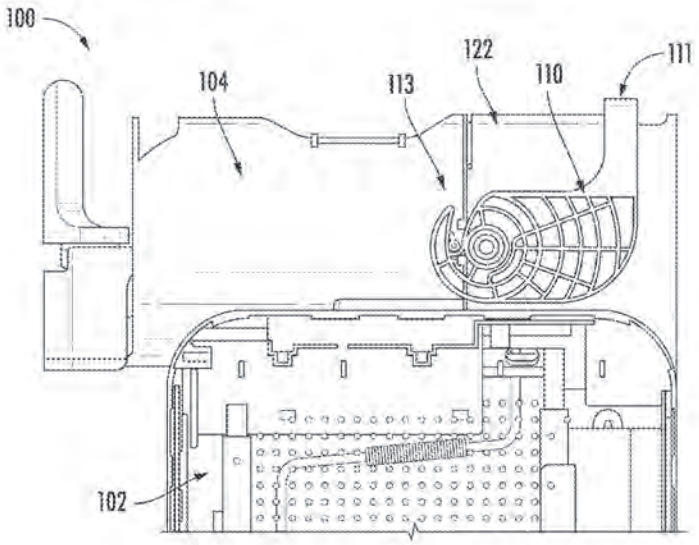
Primary Examiner — Claire X Wang
Assistant Examiner — Patrick M Mccarty
(74) *Attorney, Agent, or Firm* — The Webb Law Firm

(57) **ABSTRACT**

A frozen drink maker is described that includes a housing, a mixing vessel to mix a drink product, and a flexible seal. The housing includes an upper housing section and a lever moveable relative to the upper housing section between a coupled position and an uncoupled position. The flexible seal is between the upper housing section and the mixing vessel. The lever couples the mixing vessel to the upper housing section when in the coupled position and uncouples the mixing vessel from the upper housing section when in the uncoupled position. When the lever is in the coupled position, the mixing vessel is sealed against the upper housing section by the flexible seal.

32 Claims, 45 Drawing Sheets



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Xu Defendants' Opposition to Plaintiffs' Motion for Preliminary Injunction, *SharkNinja Operating LLC et al.* v. *The Individuals, Corporations, Limited Liability Companies, Partnerships, And Unicorporated Associations* Identified on Schedule A, 2025, 19 pages, No. 1:25-cv-25323-RAR.

Defendants answer to complaint and counterclaims, *Sharkninja Operating LLC,* v *The Individuals, Corporation, Limited liability companies, partnerships and unincorporated associations* identified on schedule A, Case No. 1:25-cv-25323, Doc. 239, Jan. 28, 2026.

Exhibit I to Glacier Parties' Opposition To Plaintiff's Motion For Preliminary Injunction, *SharkNinja Operating LLC et al.*v. *The Individuals, Corporations, Limited Liability Companies, Partnership, And Unincorporated Associations* Identified on Schedule A, Jan. 15, 2026, No. 1:25-cv-25323-RAR, 73 pages.

Exhibit I to Glacier Parties' Opposition To Plaintiff's Motion For Preliminary Injunction, *SharkNinja Operating LLC et al.*v. *The Individuals, Corporations, Limited Liability Companies, Partnership, And Unincorporated Associations* Identified on Schedule A, Jan. 15, 2026, No. 1:25-cv-25323-RAR, 57 pages.

Exhibit I to Glacier Parties' Opposition To Plaintiff's Motion For Preliminary Injunction, *SharkNinja Operating LLC et al.*v. *The Individuals, Corporations, Limited Liability Companies, Partnership, And Unincorporated Associations* Identified on Schedule A, Jan. 15, 2026, No. 1:25-cv-25323-RAR, 47 pages.

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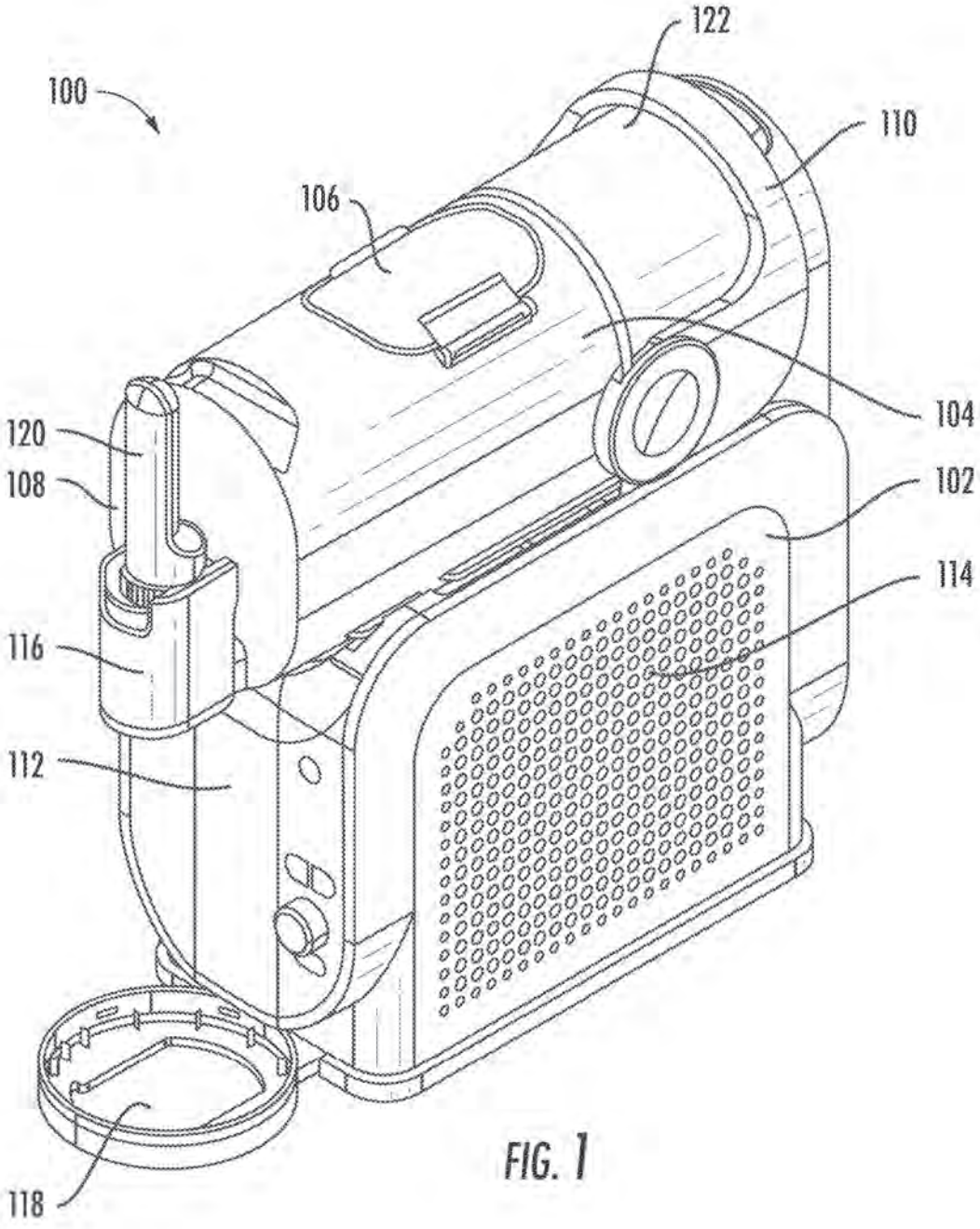
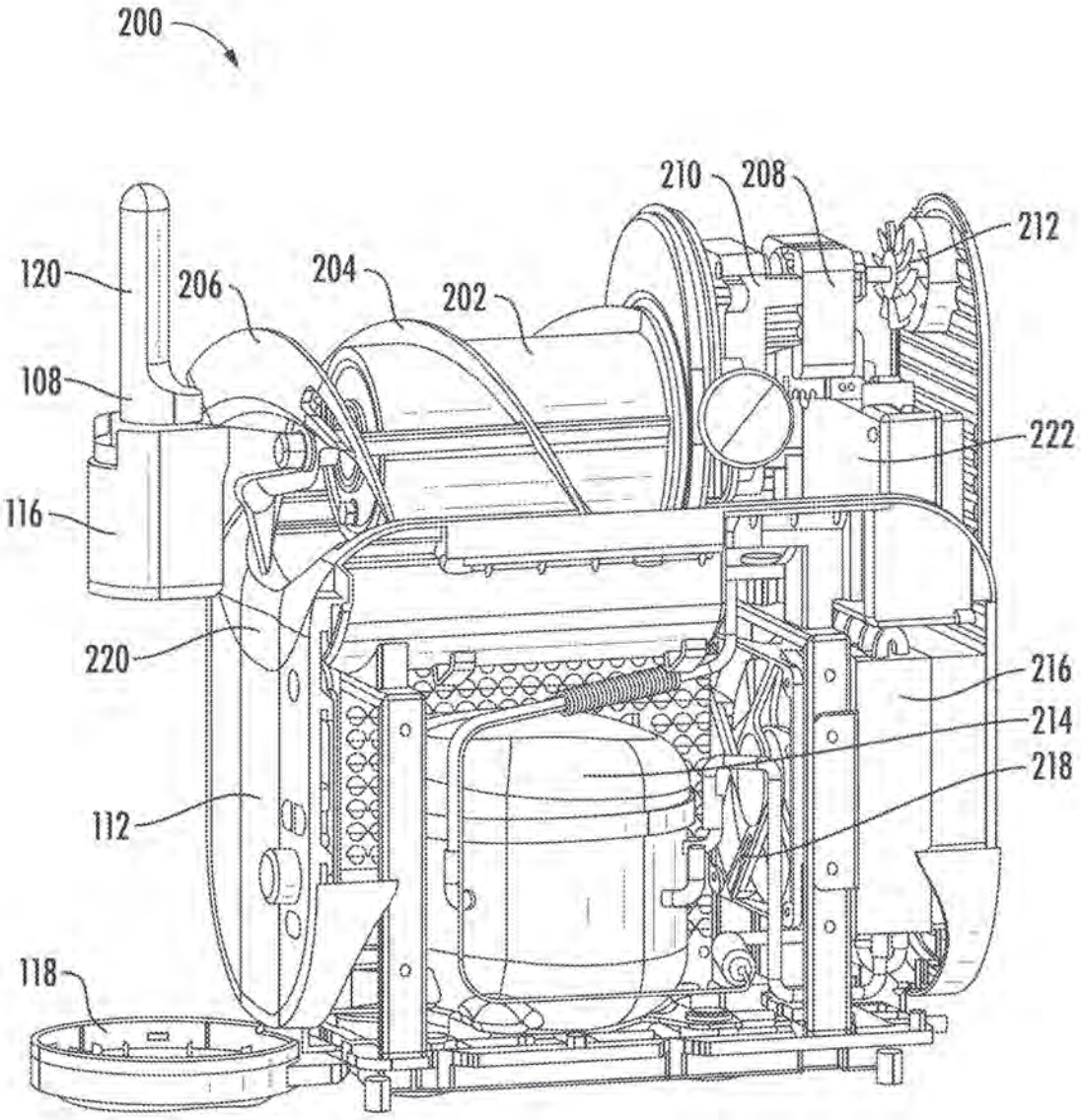


FIG. 1


200
210
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204
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108
222
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112
118

FIG. 2

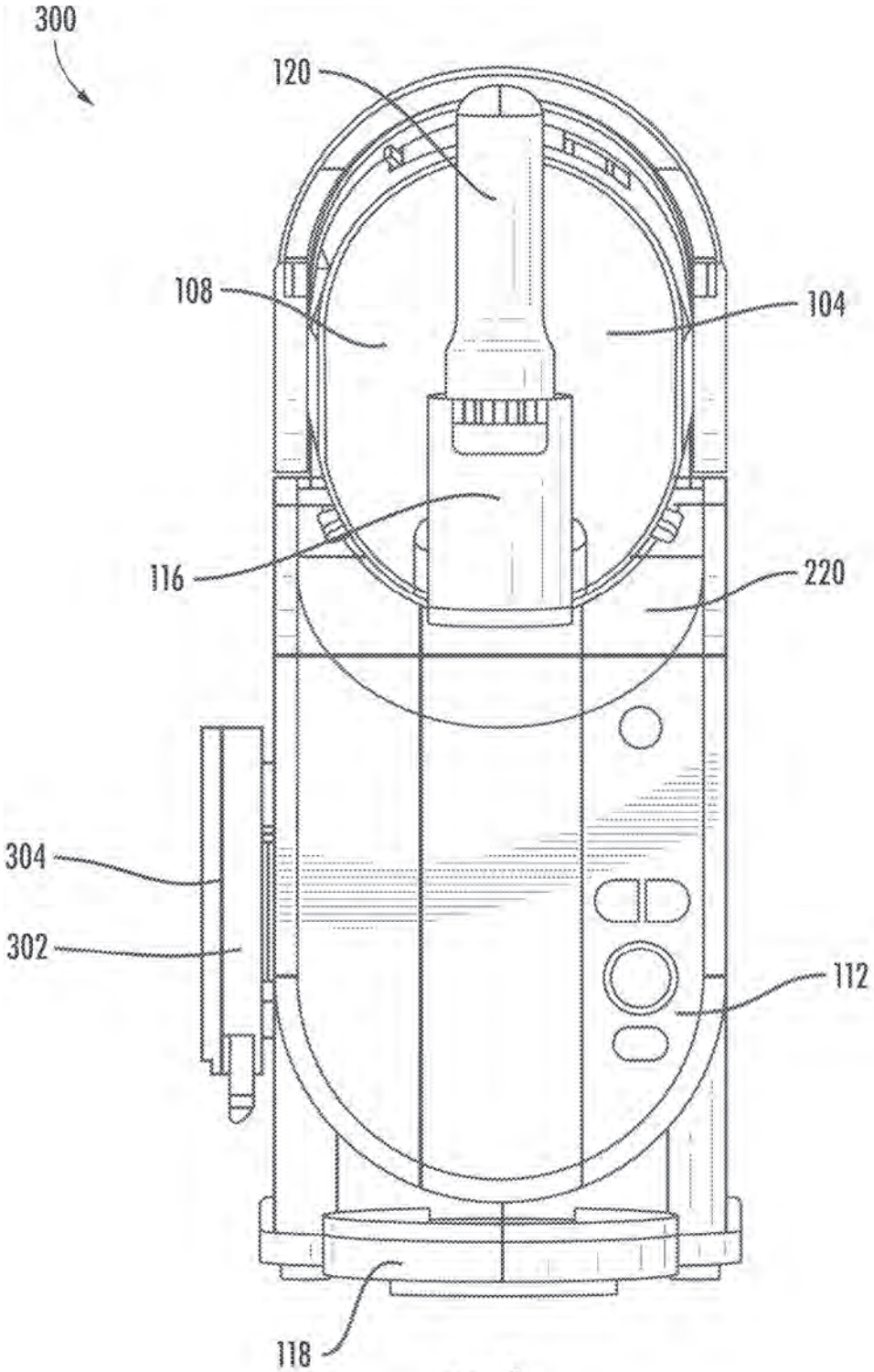


FIG. 3

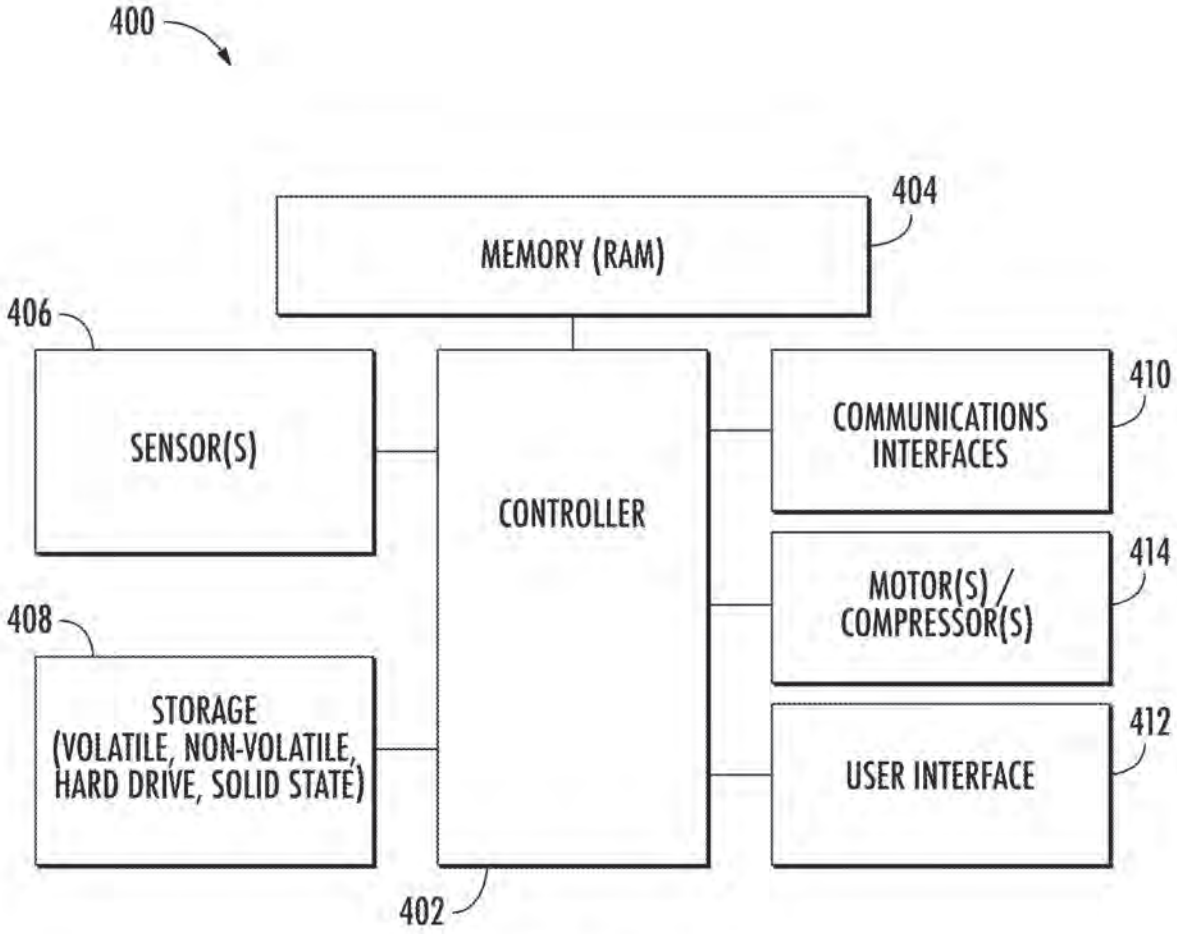

400
404
MEMORY (RAM)
406
SENSOR(S)
CONTROLLER
410
COMMUNICATIONS INTERFACES
414
MOTOR(S) / COMPRESSOR(S)
408
STORAGE (VOLATILE, NON-VOLATILE, HARD DRIVE, SOLID STATE)
412
USER INTERFACE
402

FIG. 4

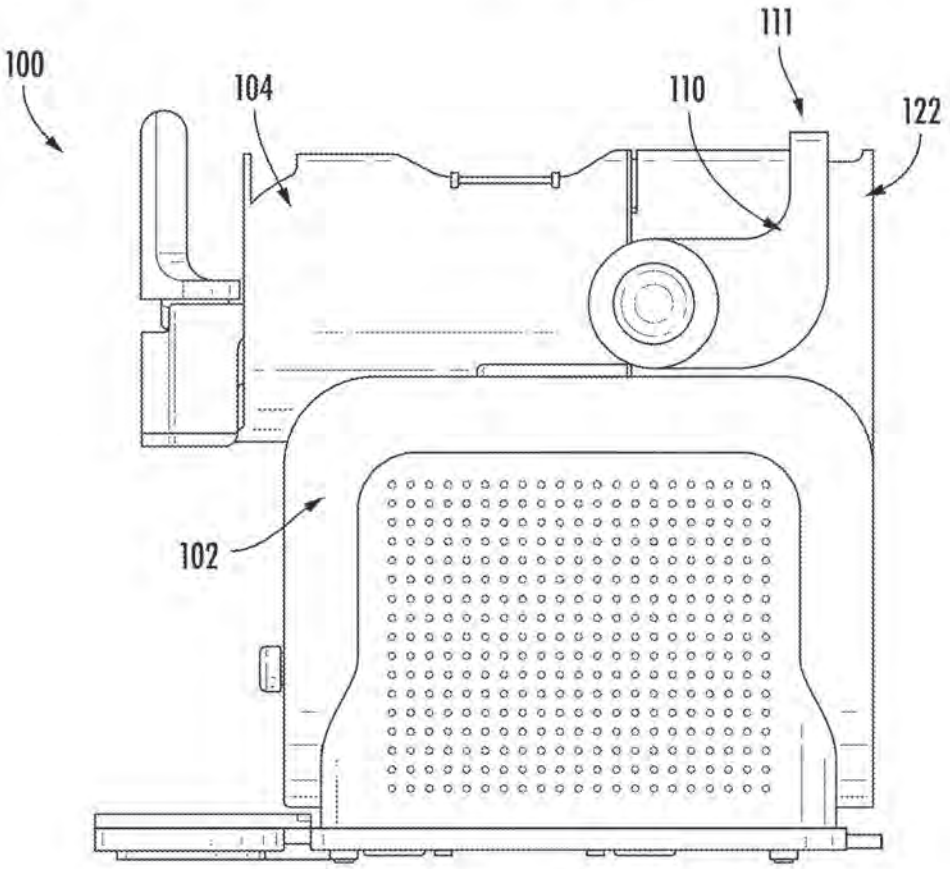


FIG. 5A

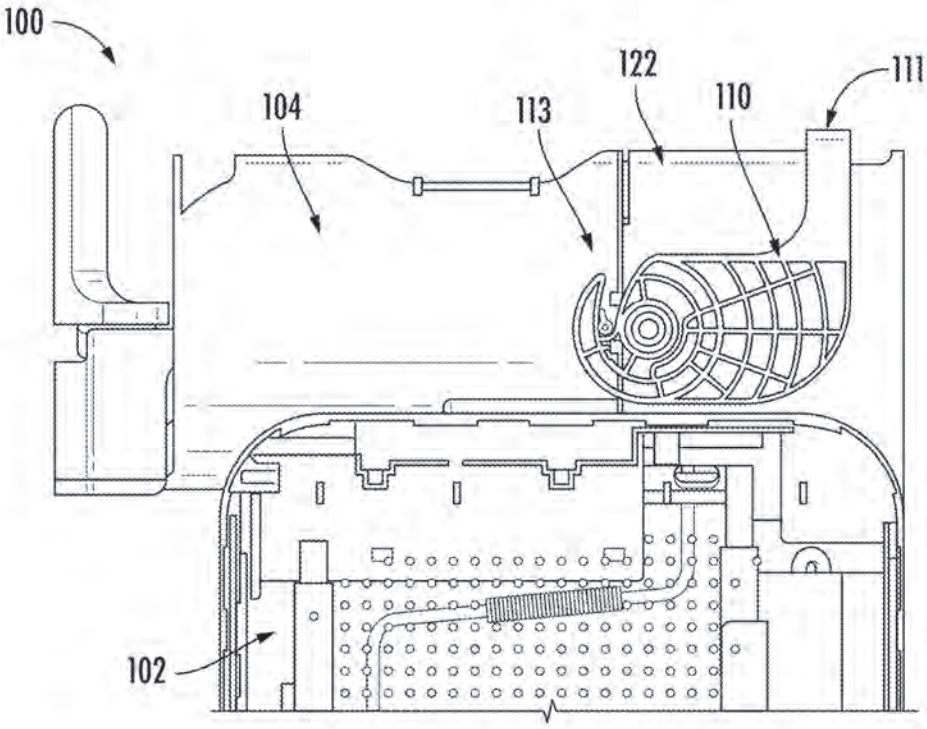


FIG. 5B

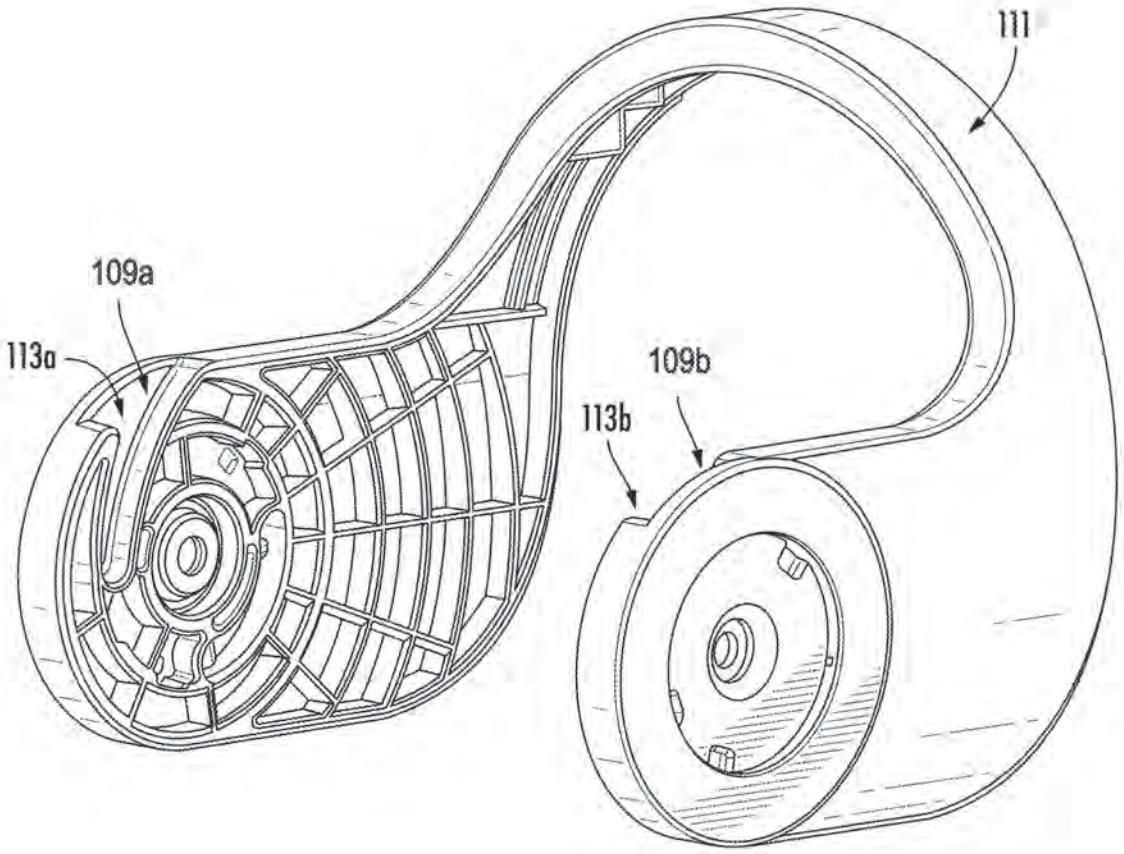


FIG. 6

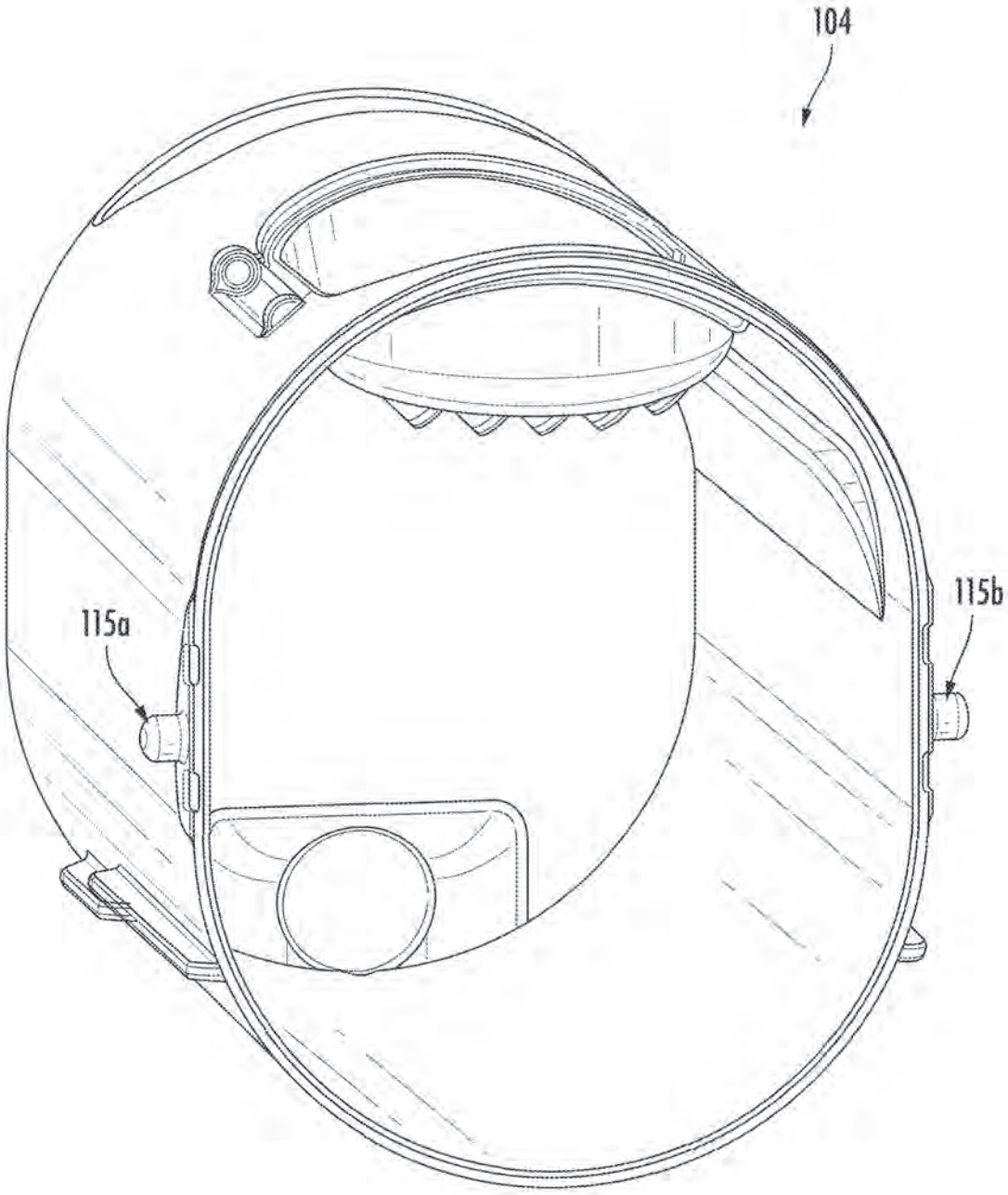


FIG. 7A

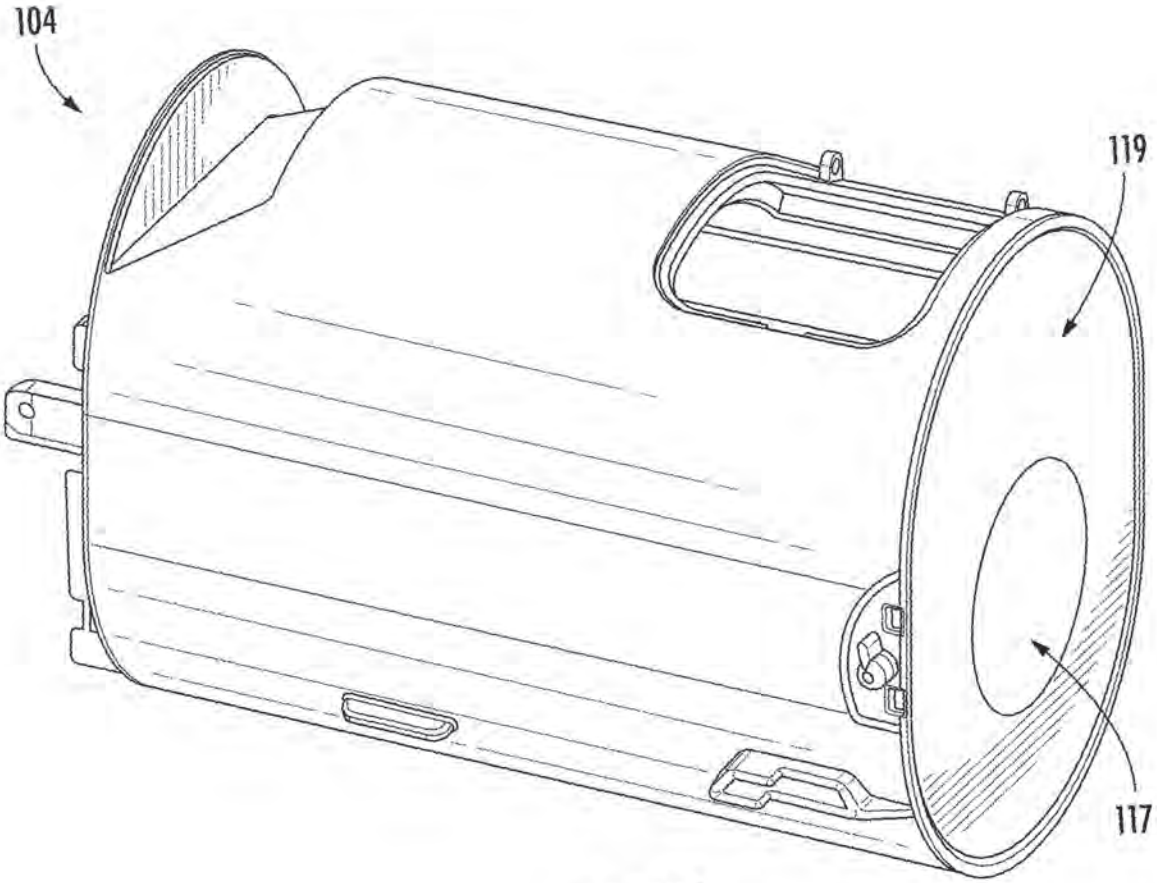


FIG. 7B

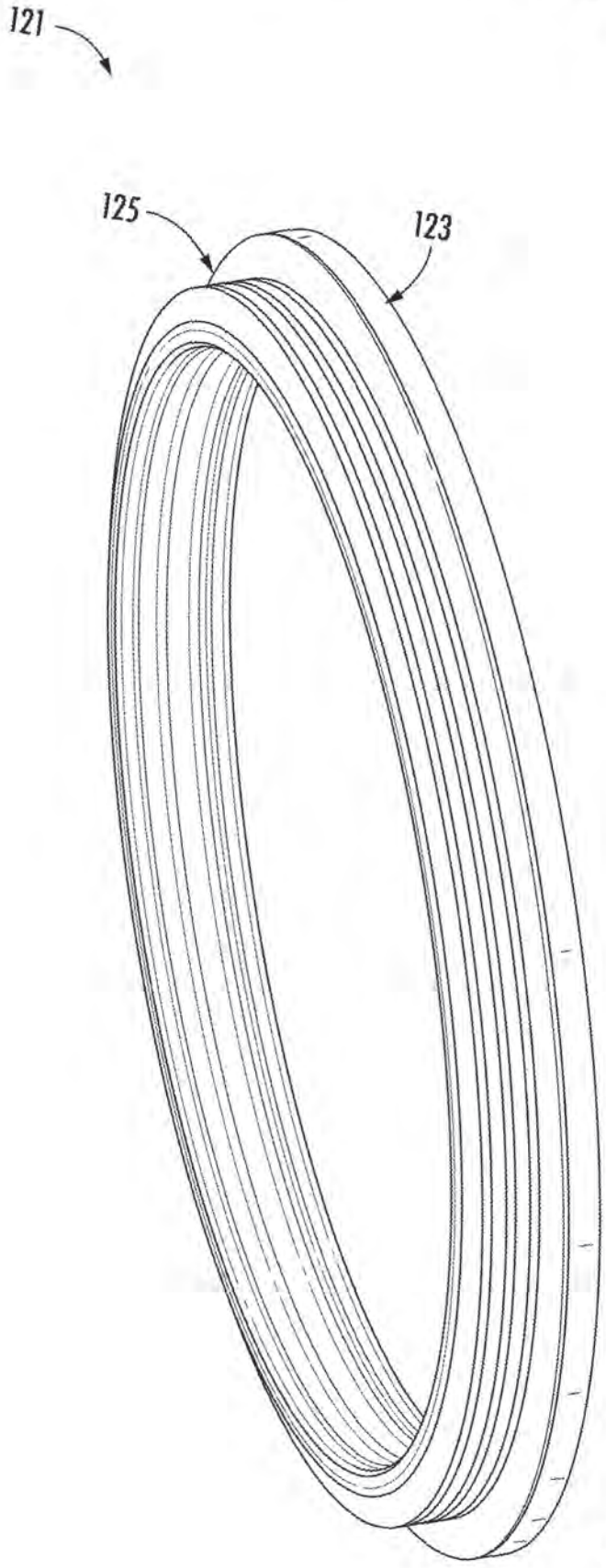


FIG. 8

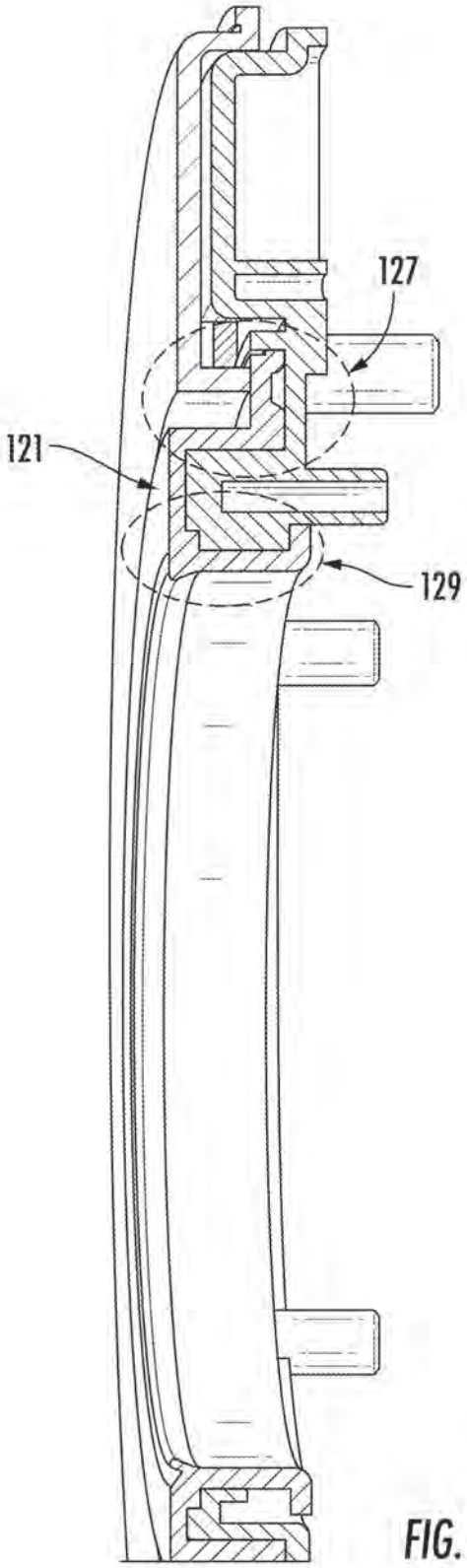


FIG. 9

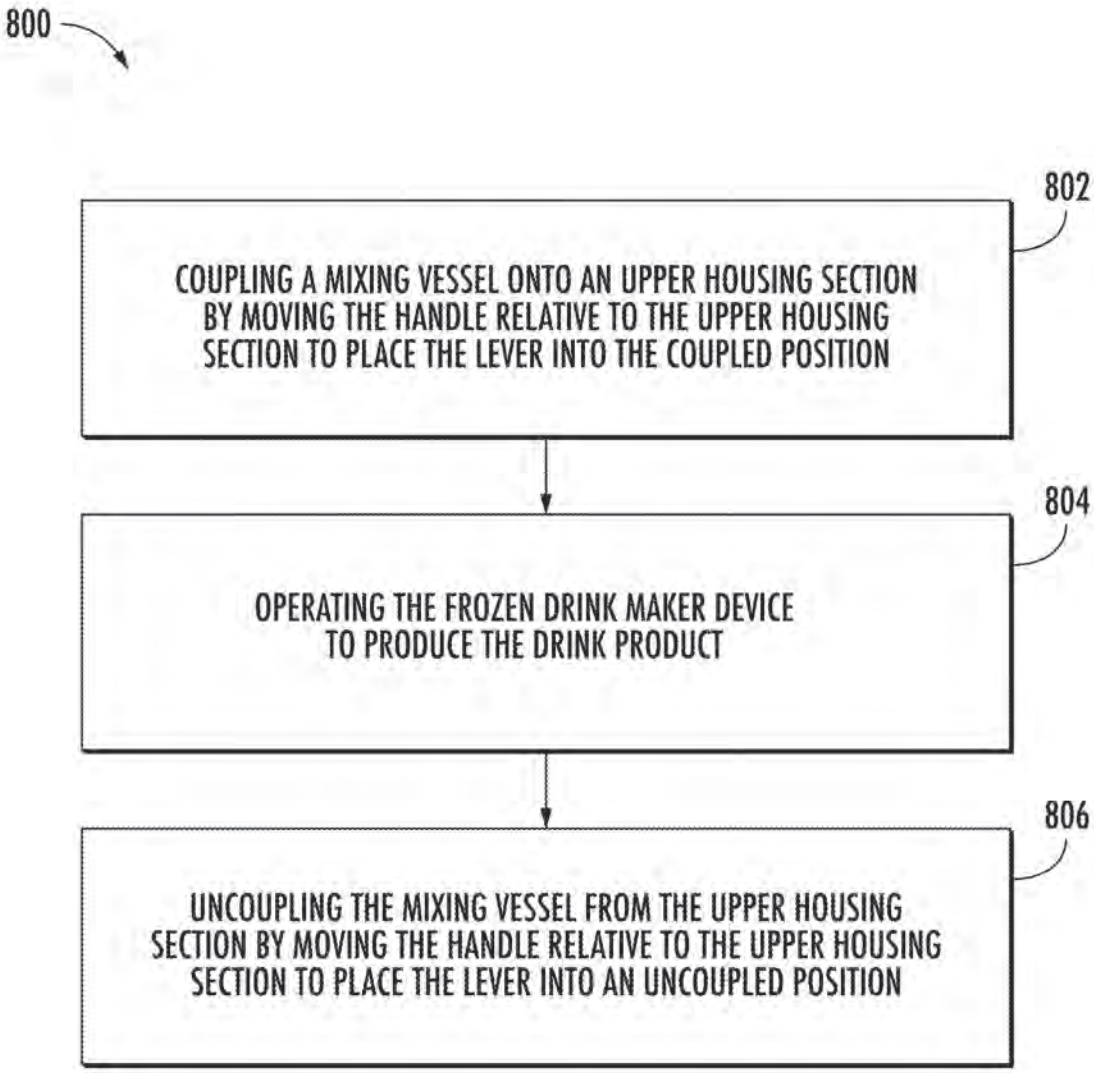

800
802
COUPLING A MIXING VESSEL ONTO AN UPPER HOUSING SECTION BY MOVING THE HANDLE RELATIVE TO THE UPPER HOUSING SECTION TO PLACE THE LEVER INTO THE COUPLED POSITION
804
OPERATING THE FROZEN DRINK MAKER DEVICE TO PRODUCE THE DRINK PRODUCT
806
UNCOUPLING THE MIXING VESSEL FROM THE UPPER HOUSING SECTION BY MOVING THE HANDLE RELATIVE TO THE UPPER HOUSING SECTION TO PLACE THE LEVER INTO AN UNCOUPLED POSITION

FIG. 10

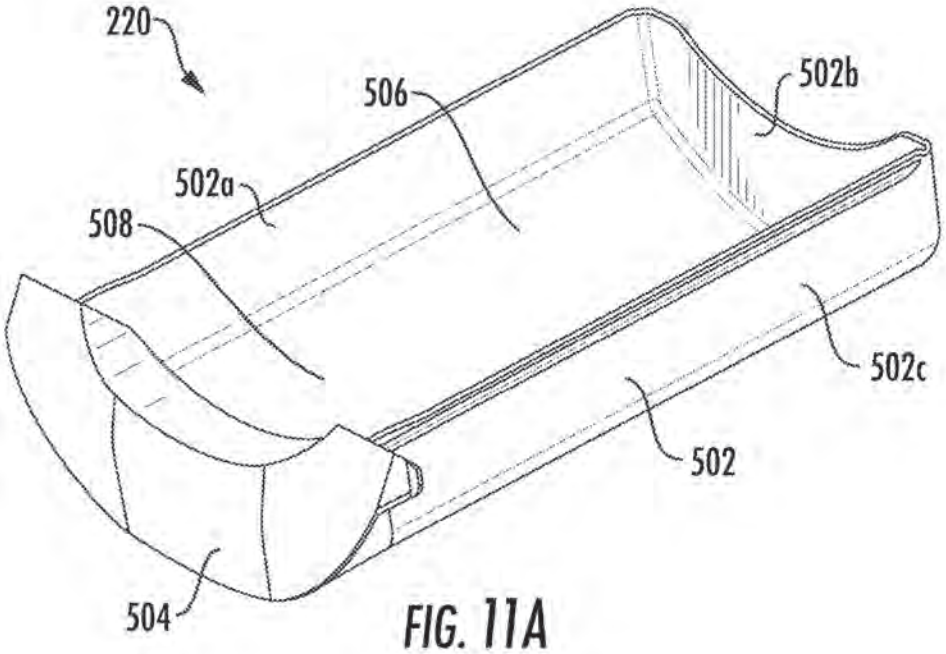


FIG. 11A

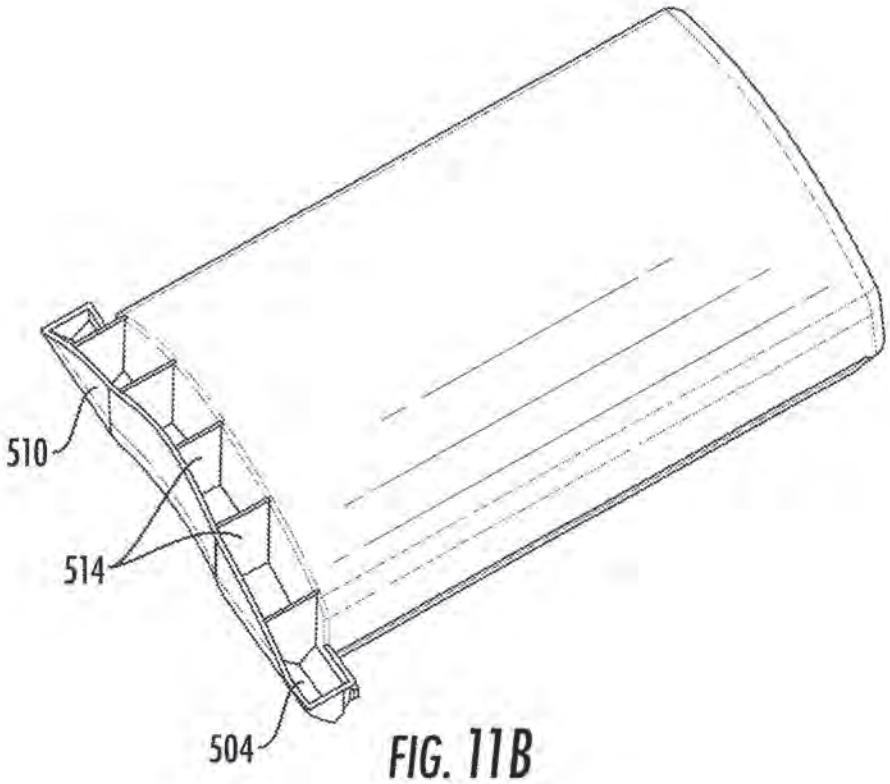


FIG. 11B

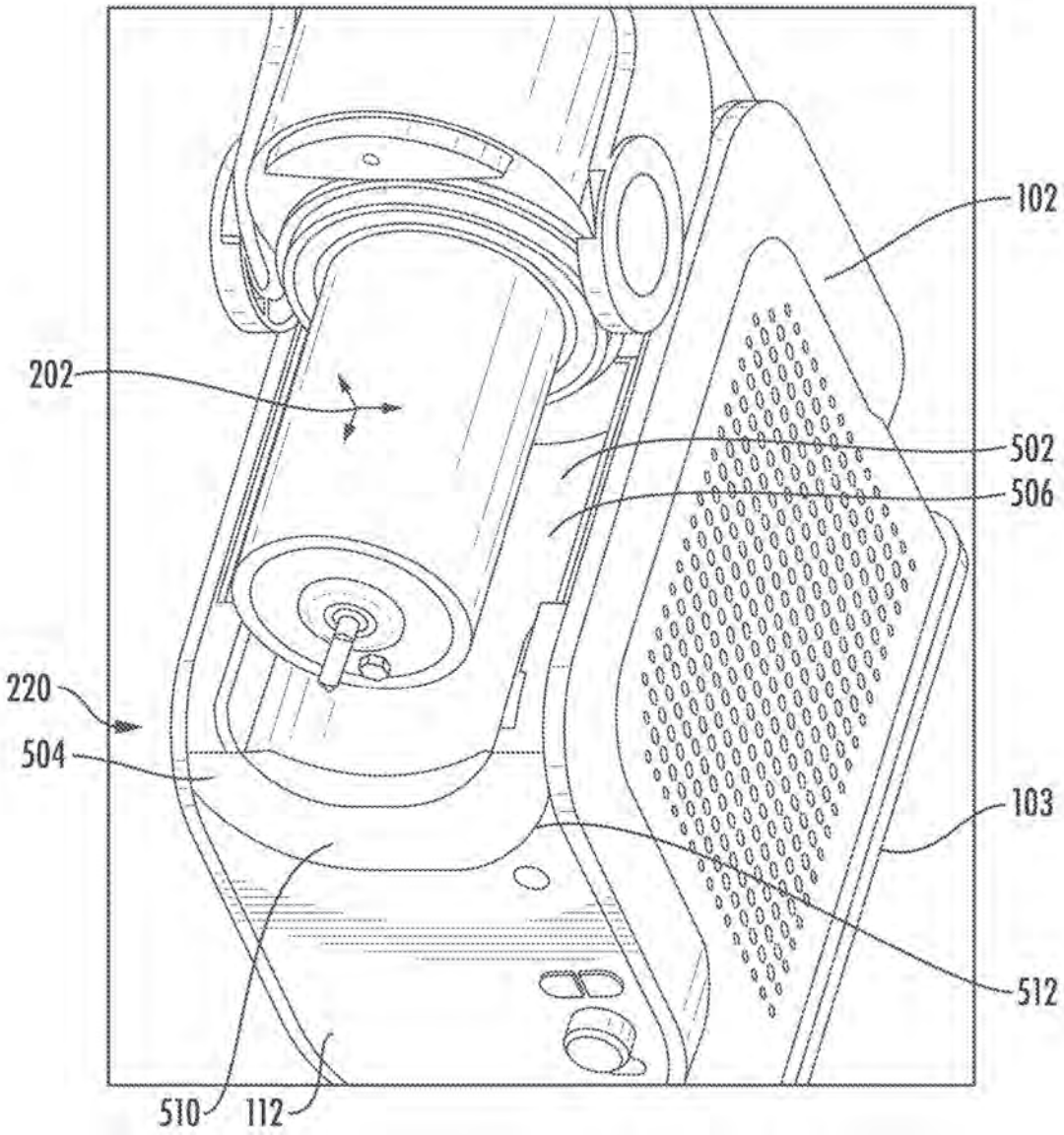


FIG. 11C

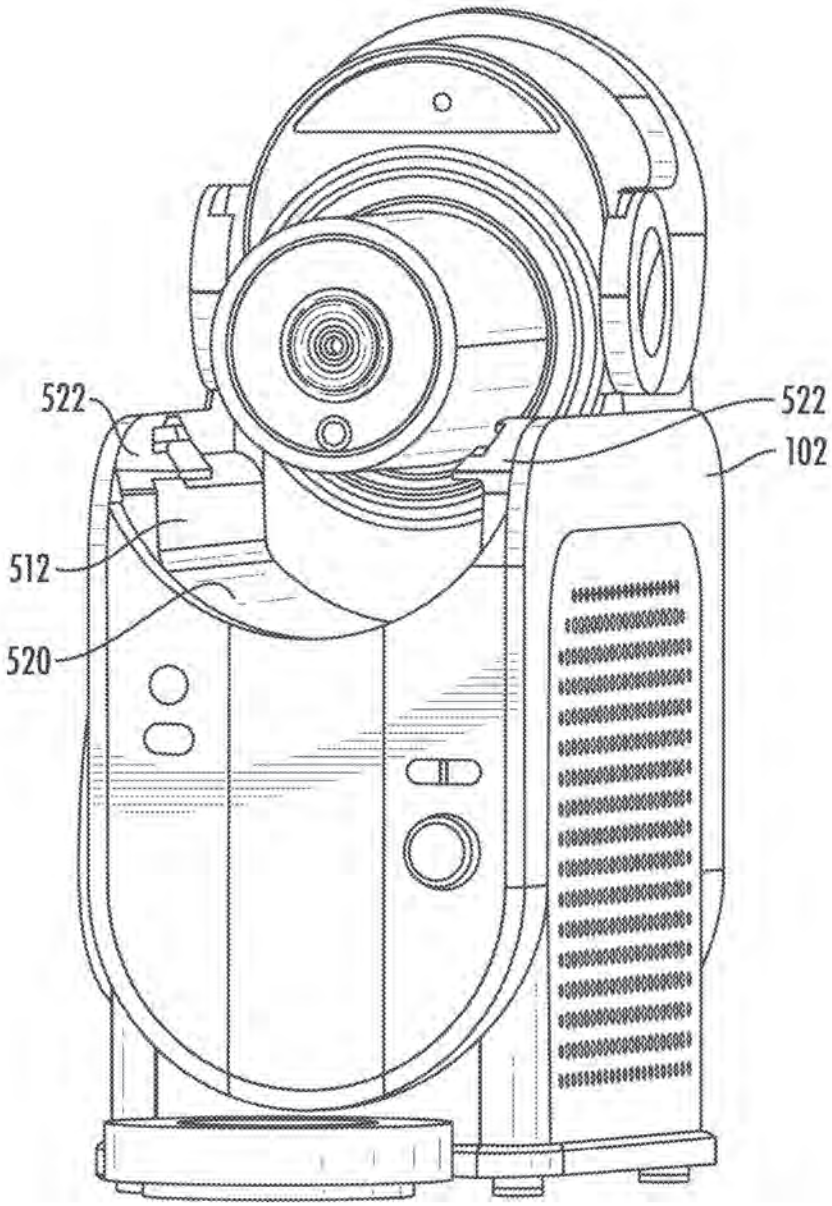


FIG. 11D

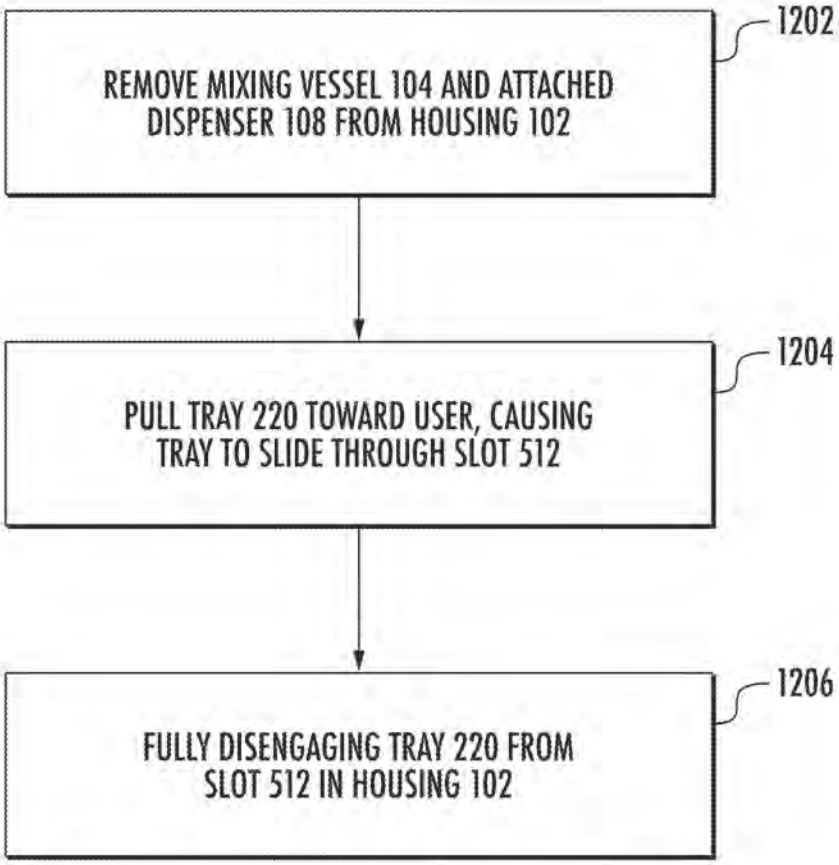

1202
REMOVE MIXING VESSEL 104 AND ATTACHED DISPENSER 108 FROM HOUSING 102
1204
PULL TRAY 220 TOWARD USER, CAUSING TRAY TO SLIDE THROUGH SLOT 512
1206
FULLY DISENGAGING TRAY 220 FROM SLOT 512 IN HOUSING 102

FIG. 12

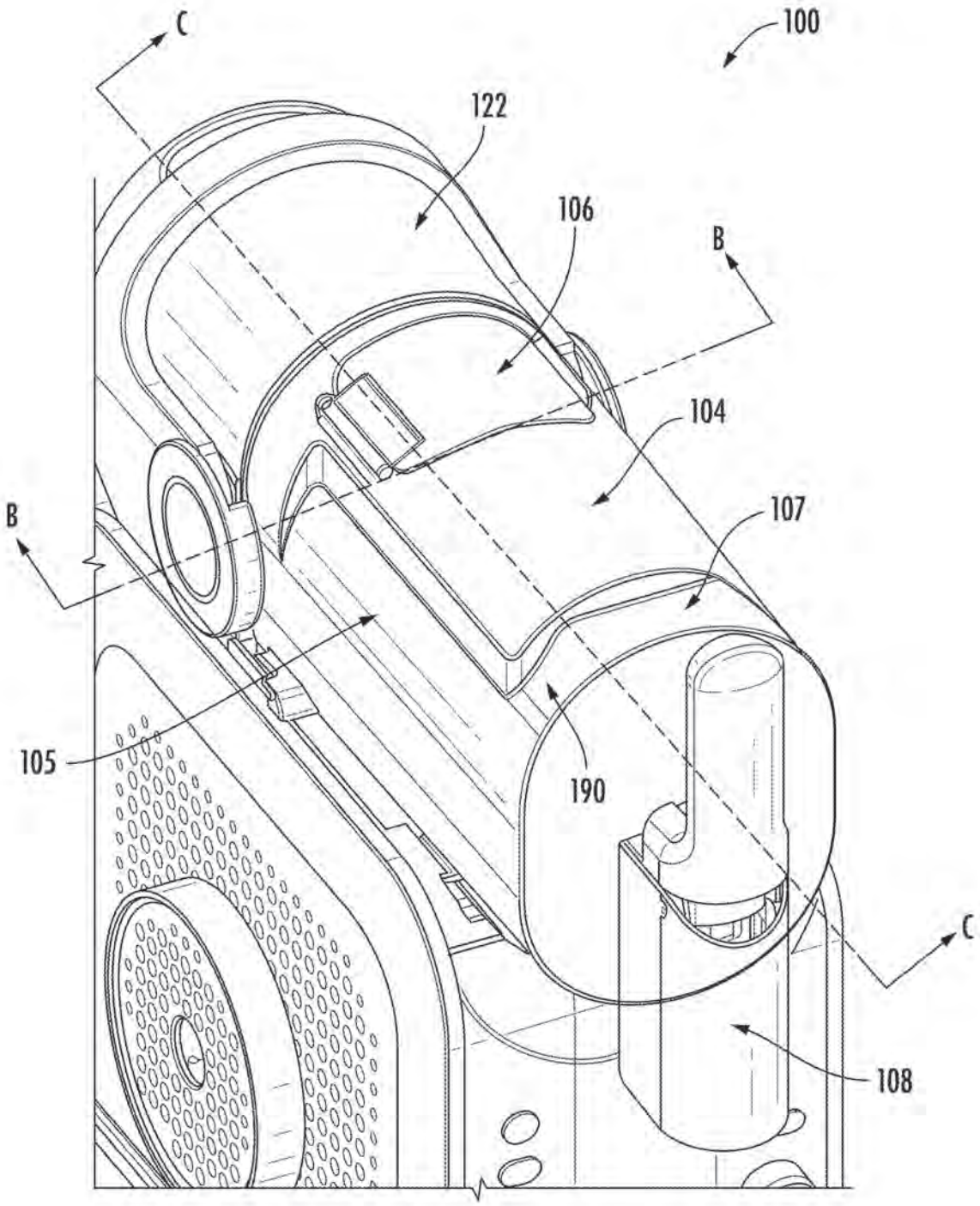


FIG. 13A

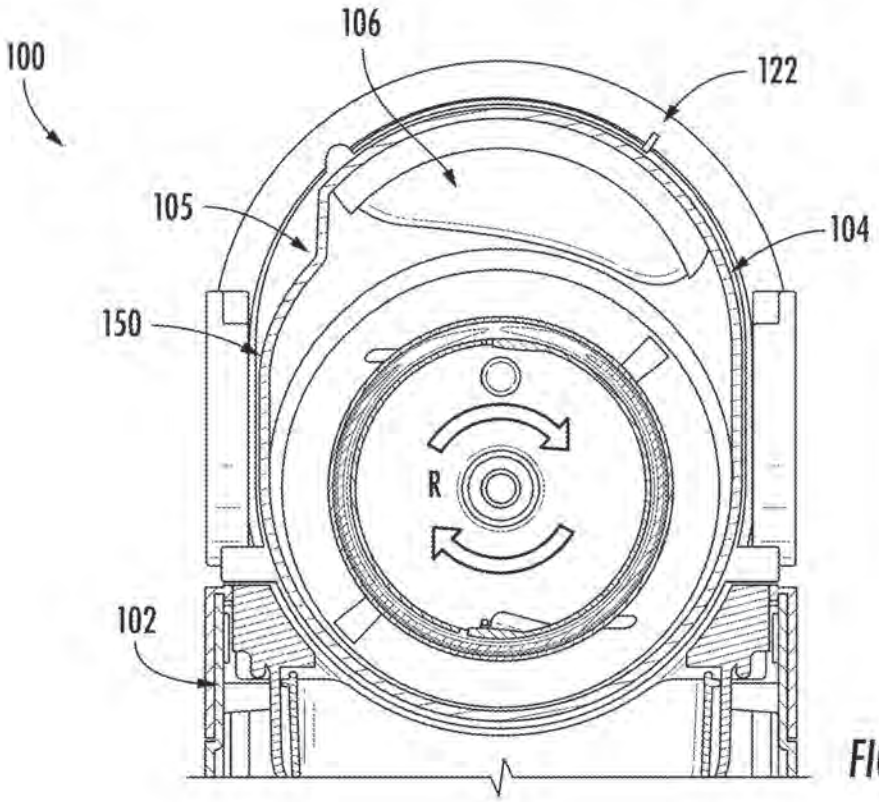


FIG. 13B

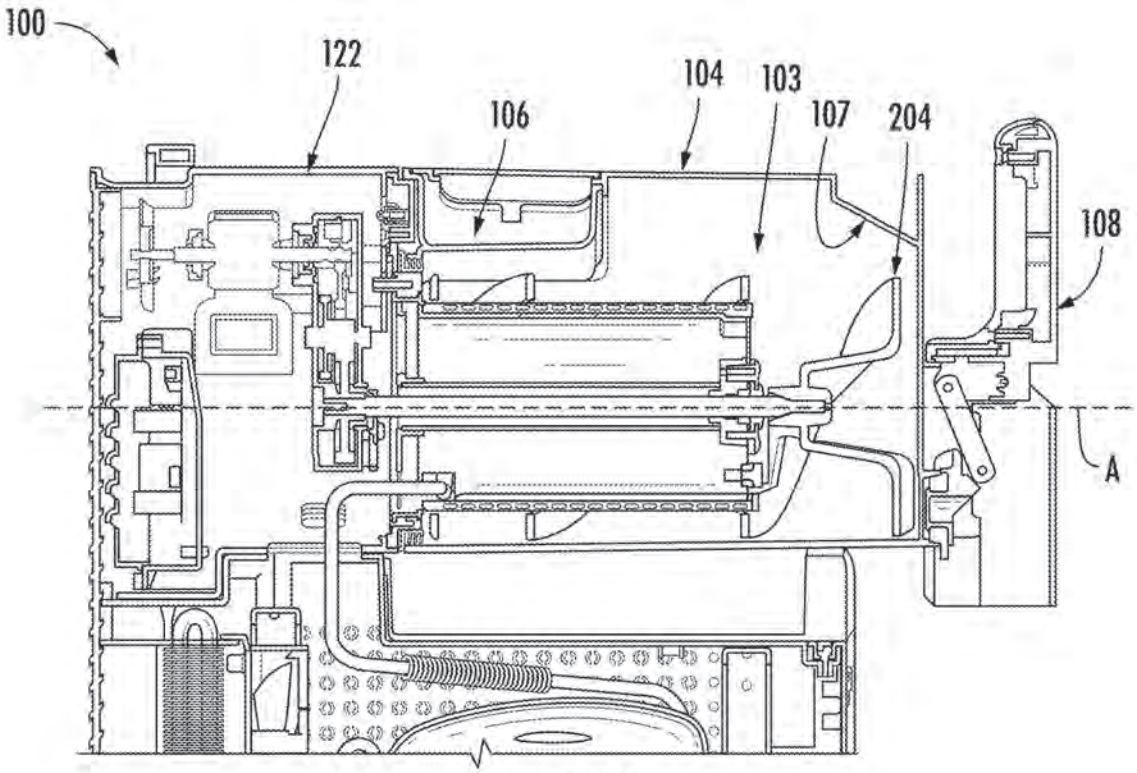


FIG. 13C

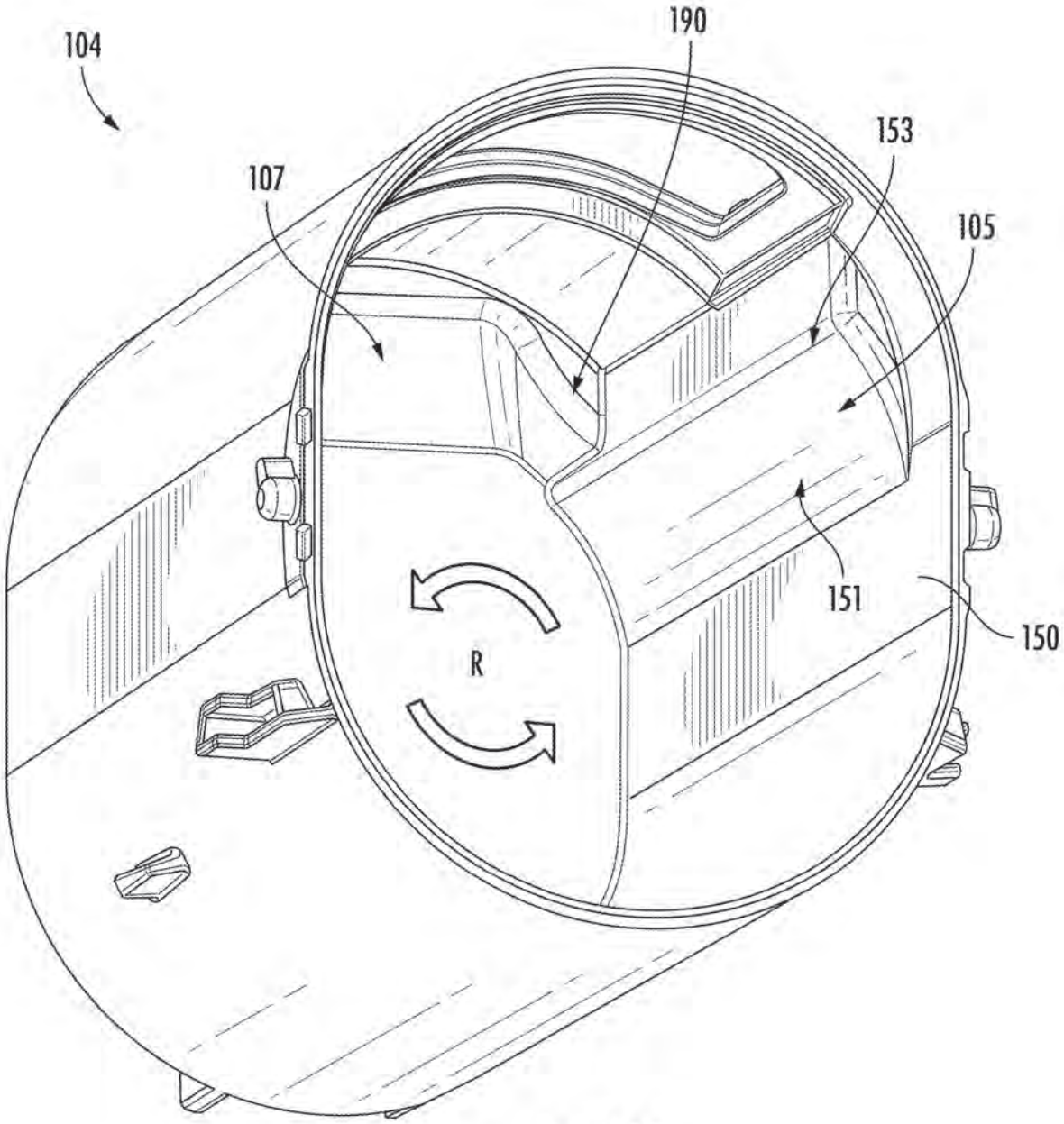


FIG. 14A

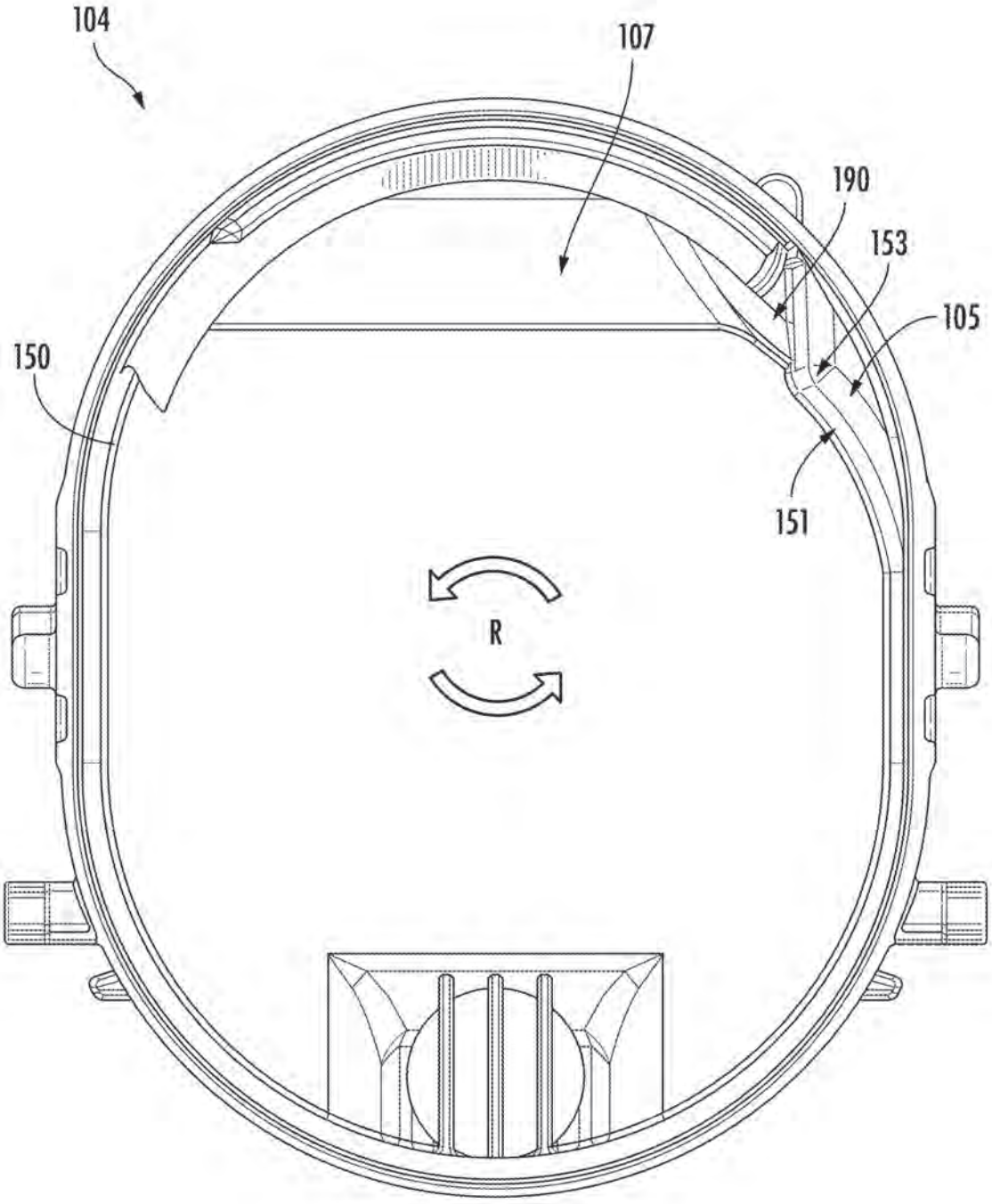


FIG. 14B

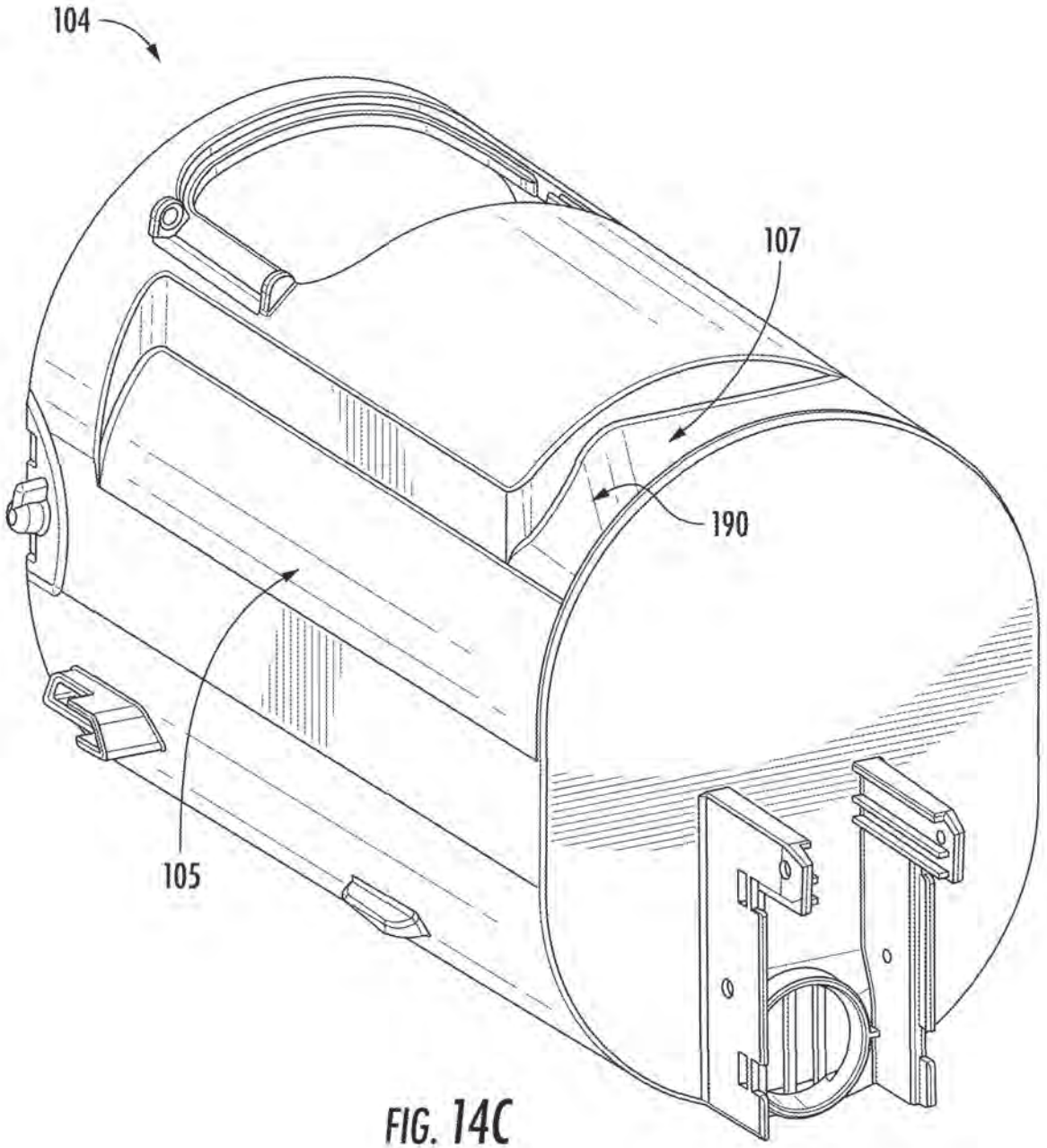


FIG. 14C

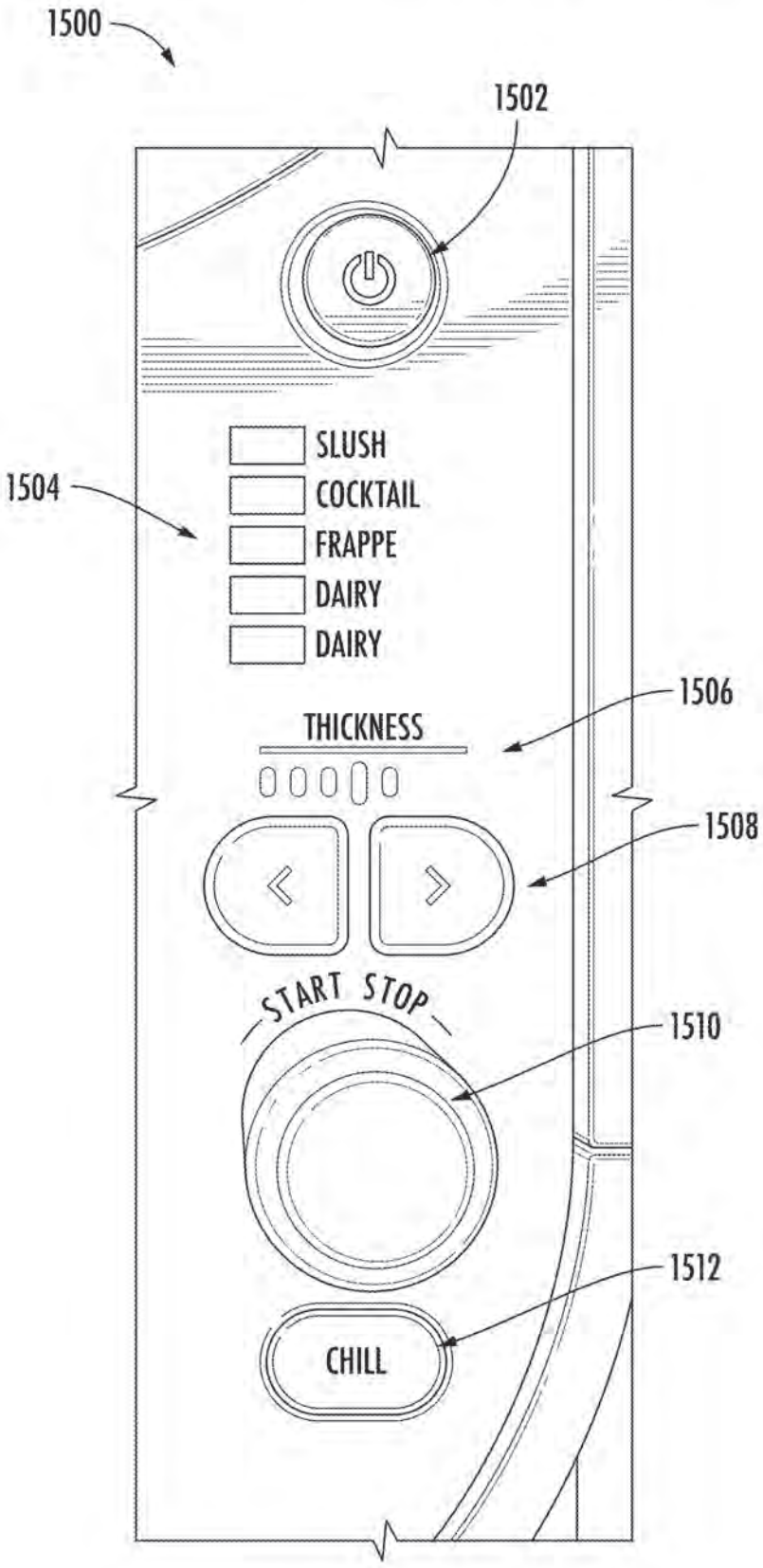

1500
1502
1504
SLUSH
COCKTAIL
FRAPPE
DAIRY
DAIRY
1506
THICKNESS
1508
START STOP
1510
1512
CHILL

FIG. 15

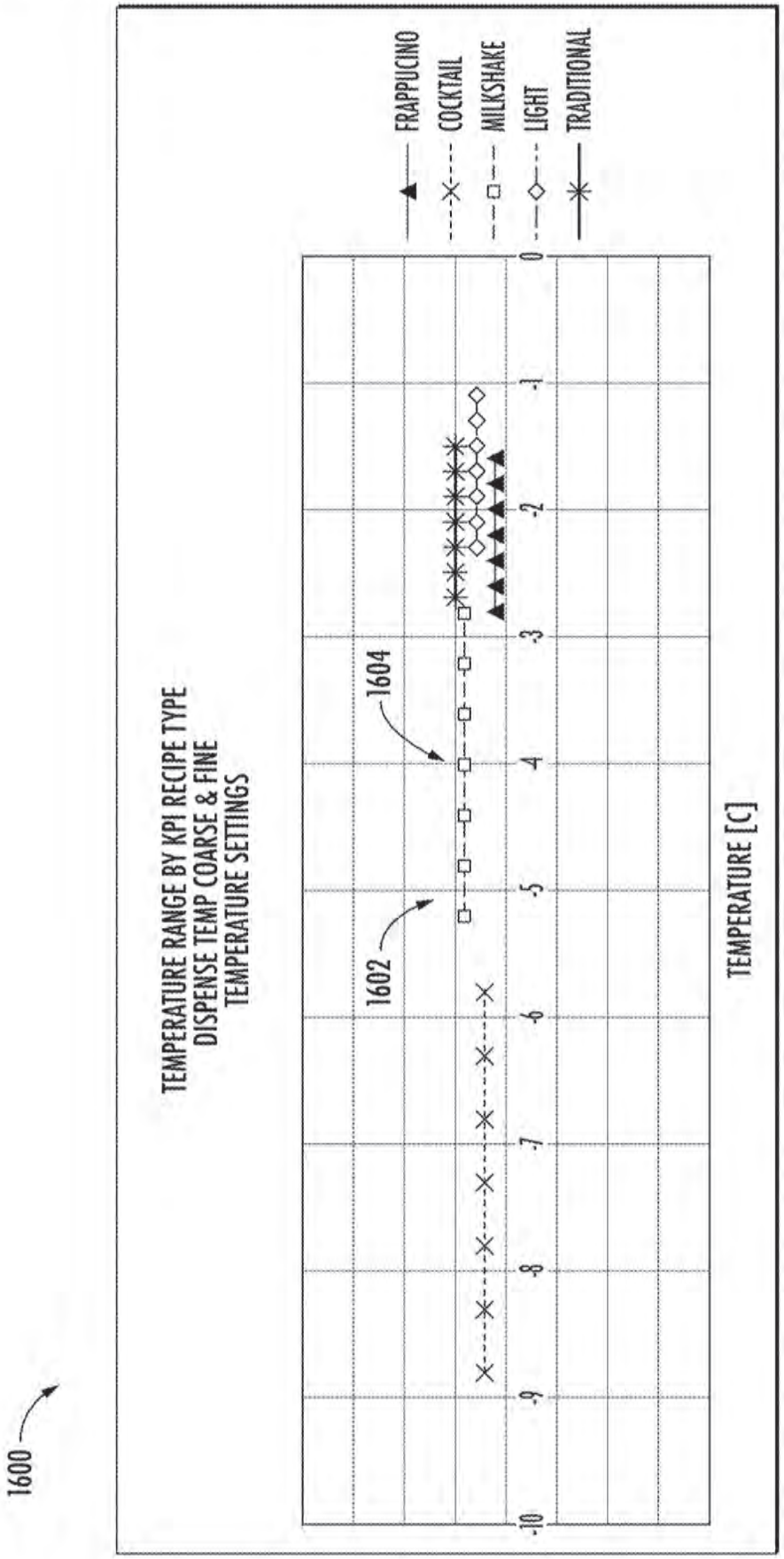

1600
TEMPERATURE RANGE BY KPI RECIPE TYPE
DISPENSE TEMP COARSE & FINE
TEMPERATURE SETTINGS
FRAPPUCINO
COCKTAIL
MILKSHAKE
LIGHT
TRADITIONAL
1602
1604
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
TEMPERATURE [C]

FIG. 16

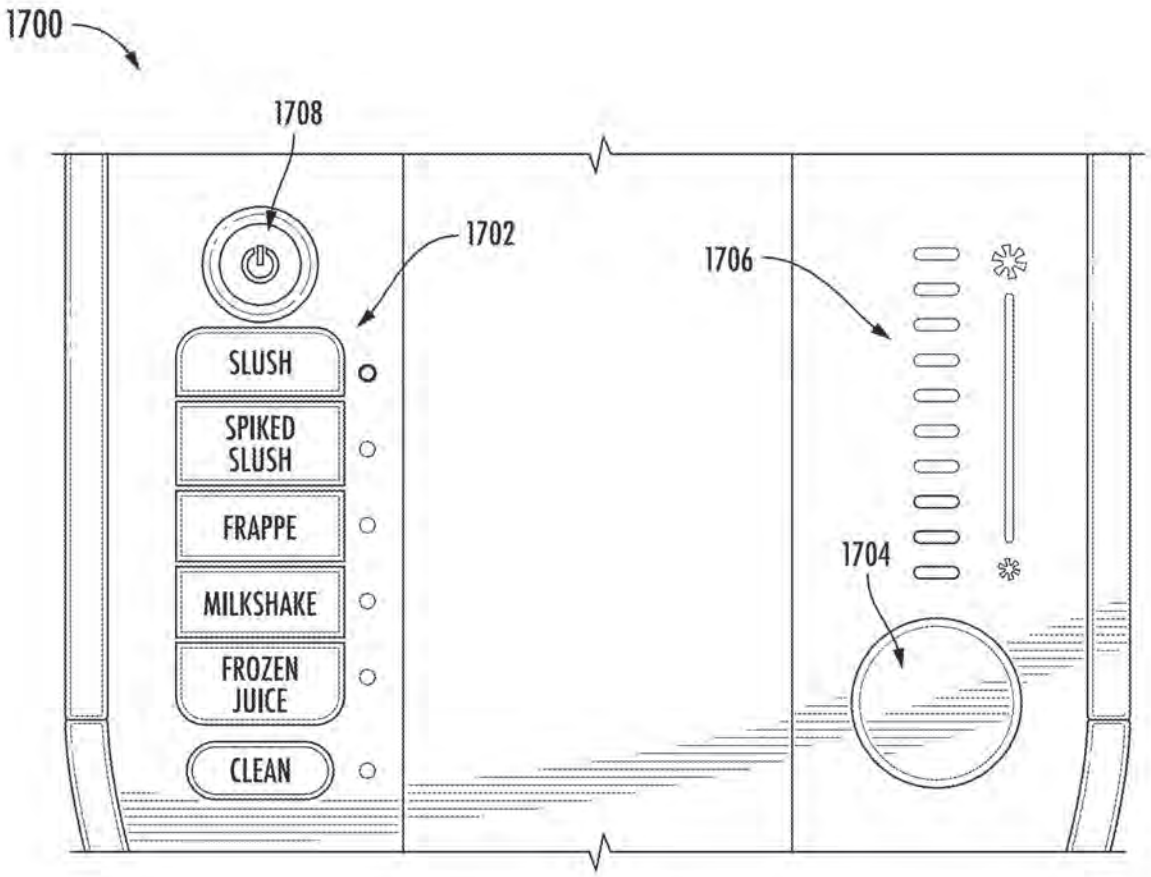

1700
1708
1702
1706
SLUSH
SPIKED SLUSH
FRAPPE
MILKSHAKE
FROZEN JUICE
CLEAN
1704

FIG. 17

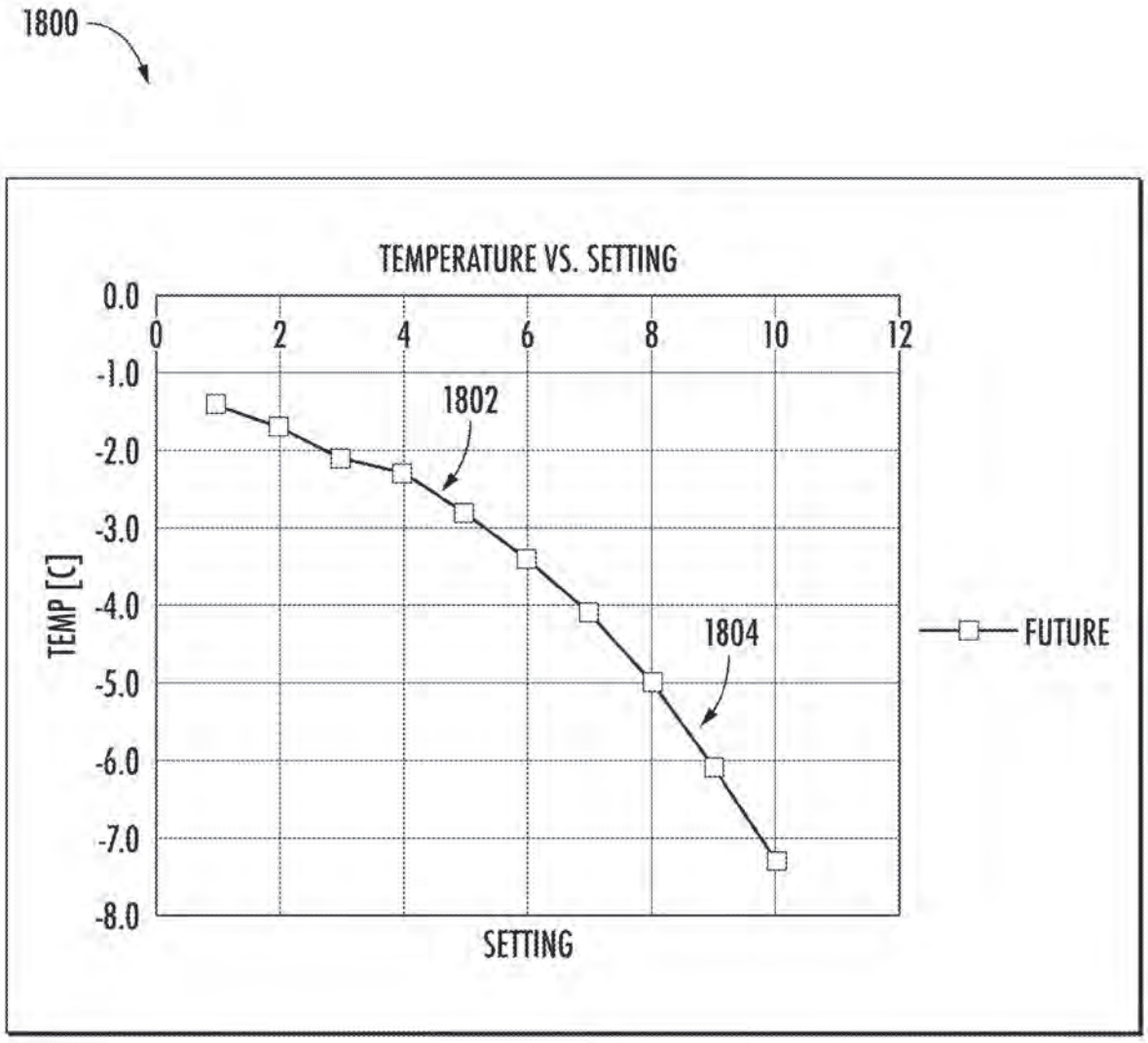
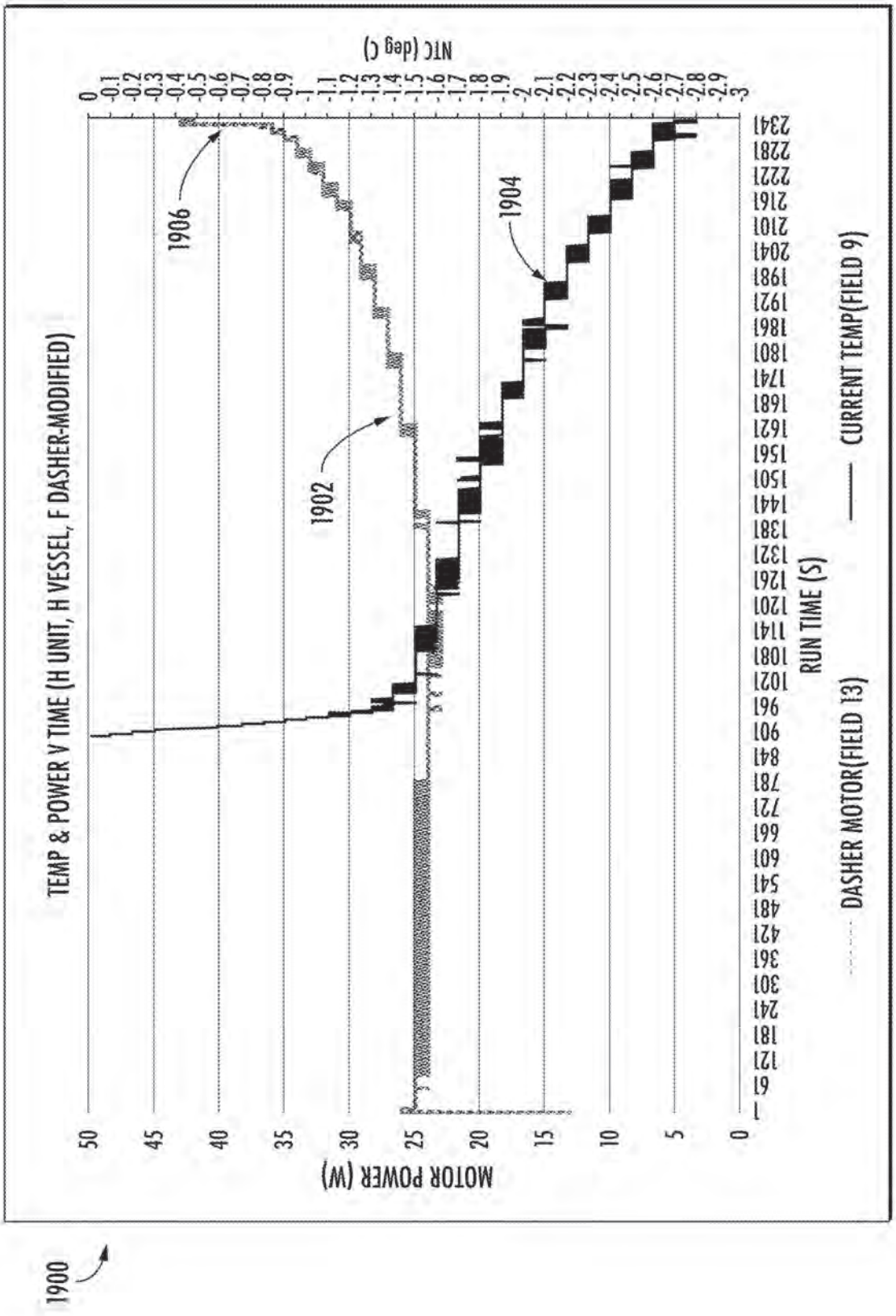

1800
TEMPERATURE VS. SETTING
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
-6.0
-7.0
-8.0
TEMP [C]
0
2
4
6
8
10
12
SETTING
1802
1804
FUTURE

FIG. 18

FIG. 19


TEMP & POWER V TIME (H UNIT, H VESSEL, F DASHER-MODIFIED)
NTC (deg C)
0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1
-1.1
-1.2
-1.3
-1.4
-1.5
-1.6
-1.7
-1.8
-1.9
-2
-2.1
-2.2
-2.3
-2.4
-2.5
-2.6
-2.7
-2.8
-2.9
-3
1906
1904
1902
MOTOR POWER (W)
50
45
40
35
30
25
20
15
10
5
0
RUN TIME (S)
61
121
181
241
301
361
421
481
541
601
661
721
781
841
901
961
1021
1081
1141
1201
1261
1321
1381
1441
1501
1561
1621
1681
1741
1801
1861
1921
1981
2041
2101
2161
2221
2281
2341
CURRENT TEMP(FIELD 9)
DASHER MOTOR(FIELD 13)

1900

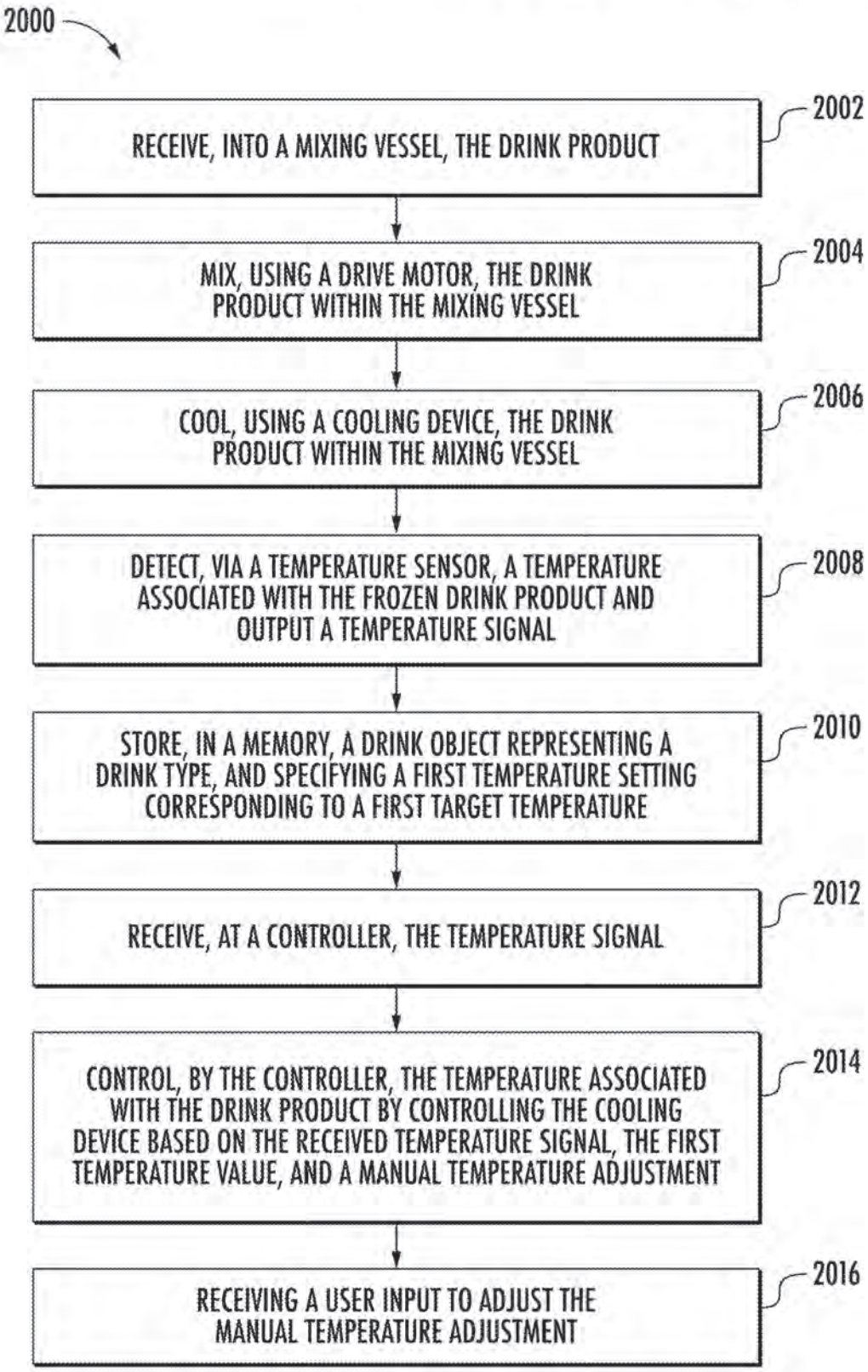

2000
RECEIVE, INTO A MIXING VESSEL, THE DRINK PRODUCT
2002
MIX, USING A DRIVE MOTOR, THE DRINK PRODUCT WITHIN THE MIXING VESSEL
2004
COOL, USING A COOLING DEVICE, THE DRINK PRODUCT WITHIN THE MIXING VESSEL
2006
DETECT, VIA A TEMPERATURE SENSOR, A TEMPERATURE ASSOCIATED WITH THE FROZEN DRINK PRODUCT AND OUTPUT A TEMPERATURE SIGNAL
2008
STORE, IN A MEMORY, A DRINK OBJECT REPRESENTING A DRINK TYPE, AND SPECIFYING A FIRST TEMPERATURE SETTING CORRESPONDING TO A FIRST TARGET TEMPERATURE
2010
RECEIVE, AT A CONTROLLER, THE TEMPERATURE SIGNAL
2012
CONTROL, BY THE CONTROLLER, THE TEMPERATURE ASSOCIATED WITH THE DRINK PRODUCT BY CONTROLLING THE COOLING DEVICE BASED ON THE RECEIVED TEMPERATURE SIGNAL, THE FIRST TEMPERATURE VALUE, AND A MANUAL TEMPERATURE ADJUSTMENT
2014
RECEIVING A USER INPUT TO ADJUST THE MANUAL TEMPERATURE ADJUSTMENT
2016

FIG. 20

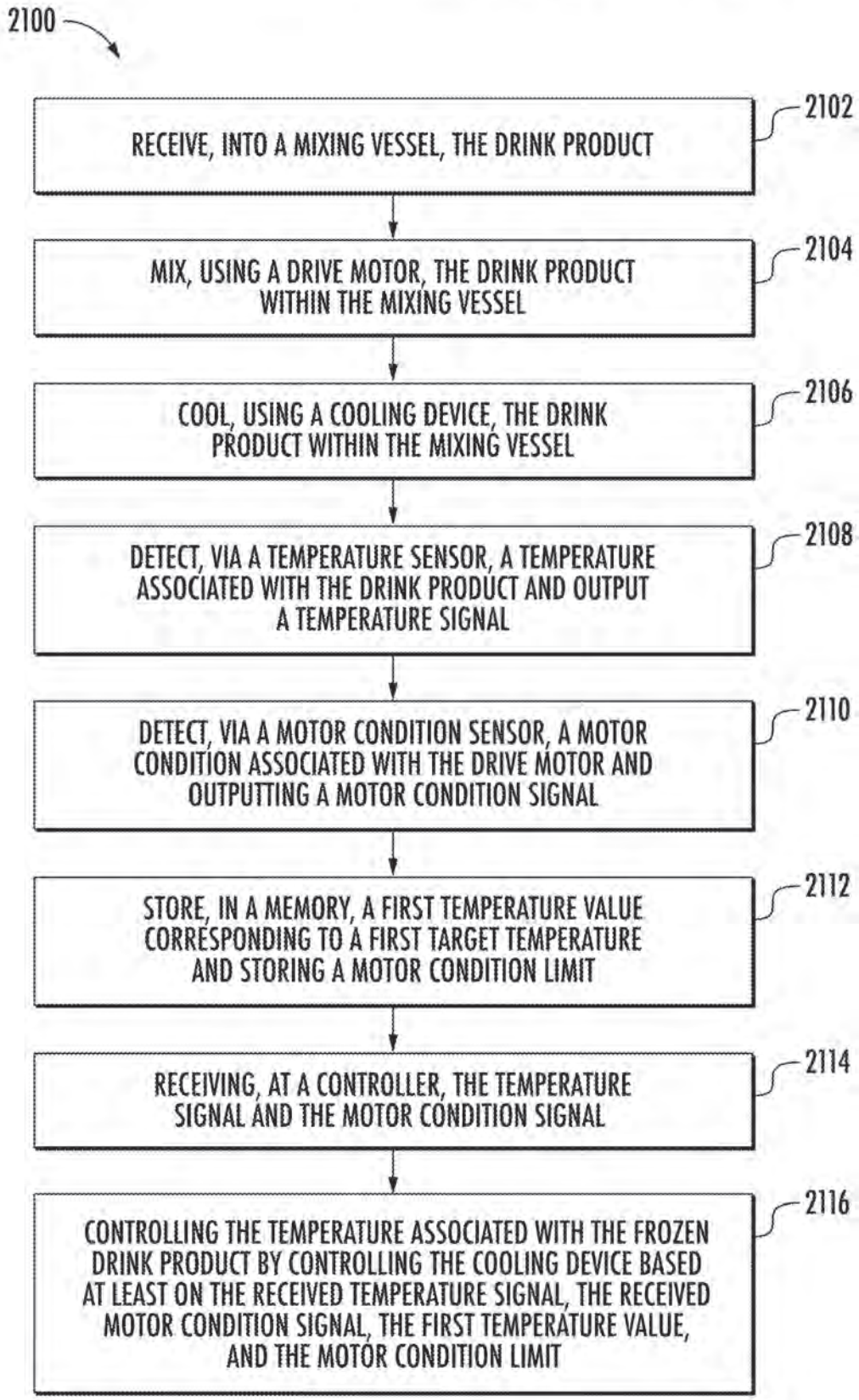

2100
RECEIVE, INTO A MIXING VESSEL, THE DRINK PRODUCT
2102
MIX, USING A DRIVE MOTOR, THE DRINK PRODUCT WITHIN THE MIXING VESSEL
2104
COOL, USING A COOLING DEVICE, THE DRINK PRODUCT WITHIN THE MIXING VESSEL
2106
DETECT, VIA A TEMPERATURE SENSOR, A TEMPERATURE ASSOCIATED WITH THE DRINK PRODUCT AND OUTPUT A TEMPERATURE SIGNAL
2108
DETECT, VIA A MOTOR CONDITION SENSOR, A MOTOR CONDITION ASSOCIATED WITH THE DRIVE MOTOR AND OUTPUTTING A MOTOR CONDITION SIGNAL
2110
STORE, IN A MEMORY, A FIRST TEMPERATURE VALUE CORRESPONDING TO A FIRST TARGET TEMPERATURE AND STORING A MOTOR CONDITION LIMIT
2112
RECEIVING, AT A CONTROLLER, THE TEMPERATURE SIGNAL AND THE MOTOR CONDITION SIGNAL
2114
CONTROLLING THE TEMPERATURE ASSOCIATED WITH THE FROZEN DRINK PRODUCT BY CONTROLLING THE COOLING DEVICE BASED AT LEAST ON THE RECEIVED TEMPERATURE SIGNAL, THE RECEIVED MOTOR CONDITION SIGNAL, THE FIRST TEMPERATURE VALUE, AND THE MOTOR CONDITION LIMIT
2116

FIG. 21

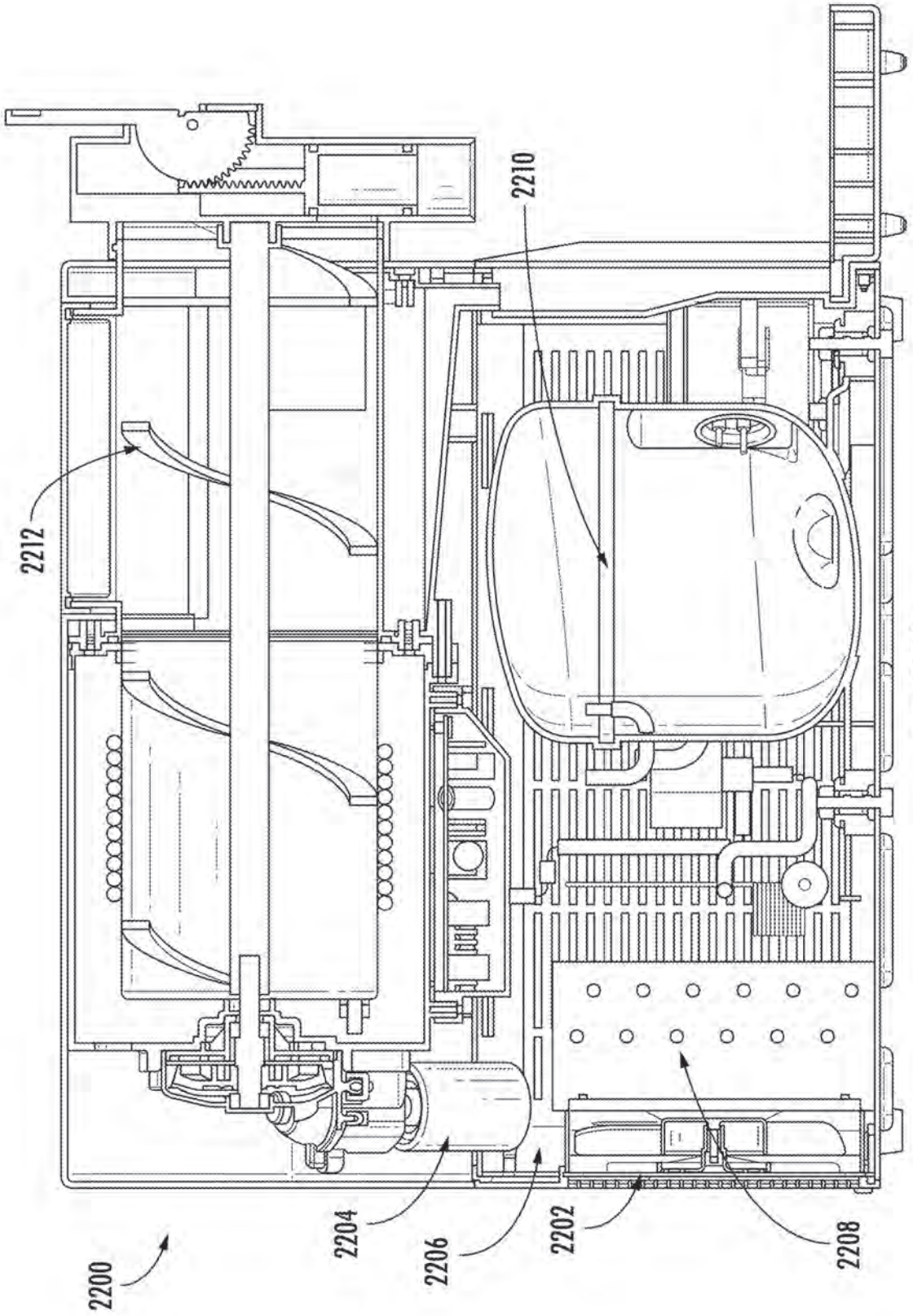


FIG. 22A

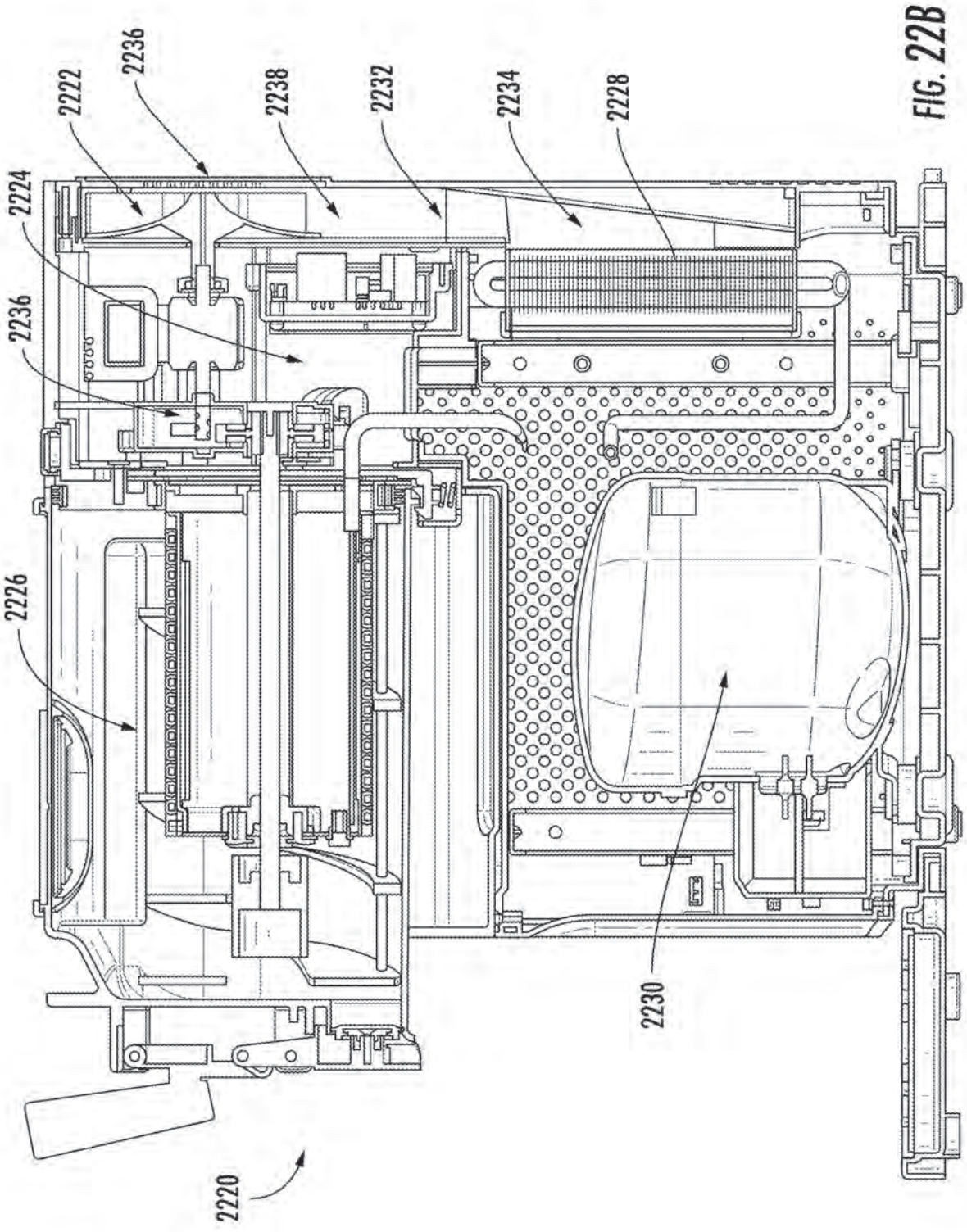


FIG. 22B

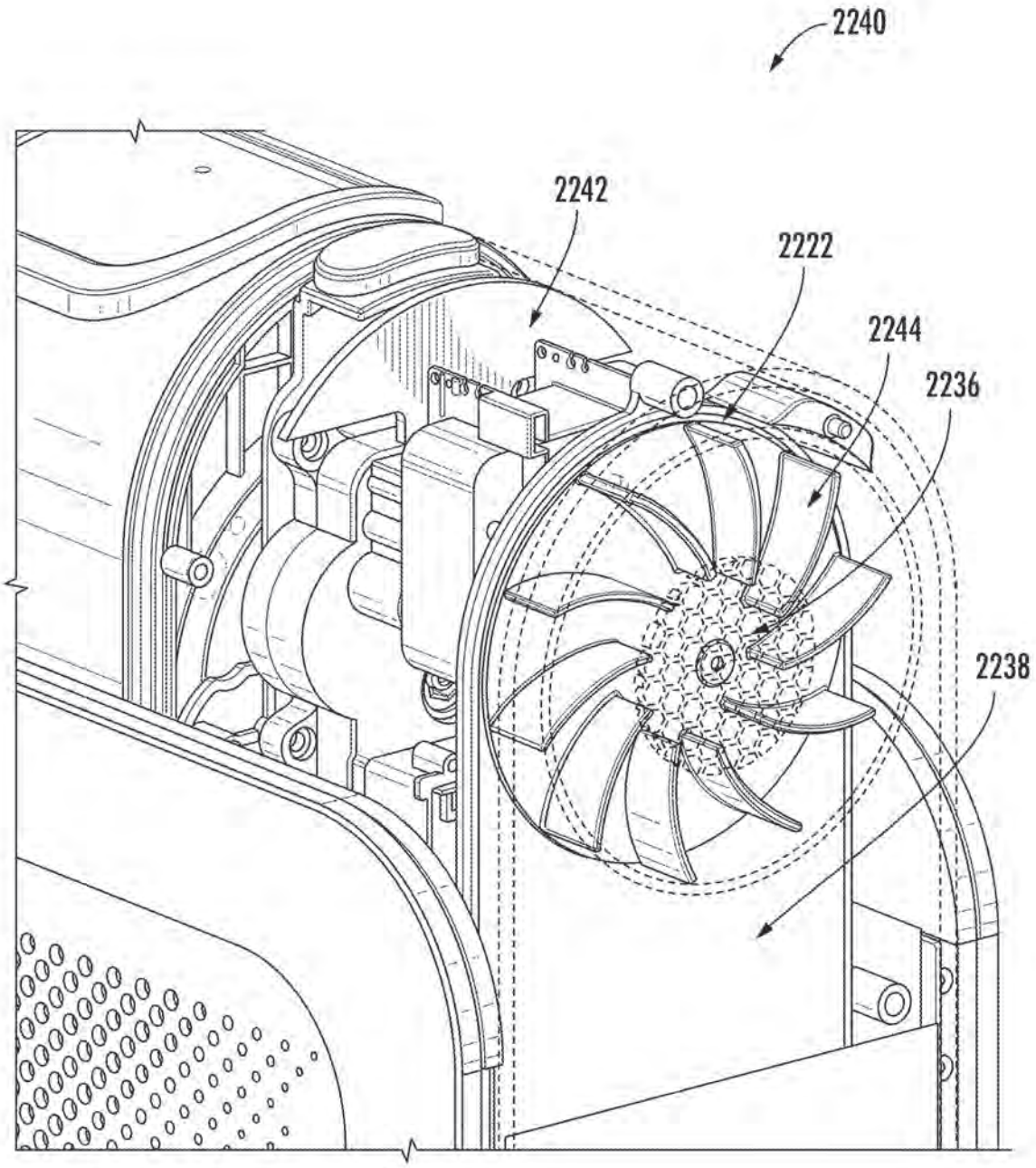


FIG. 22C

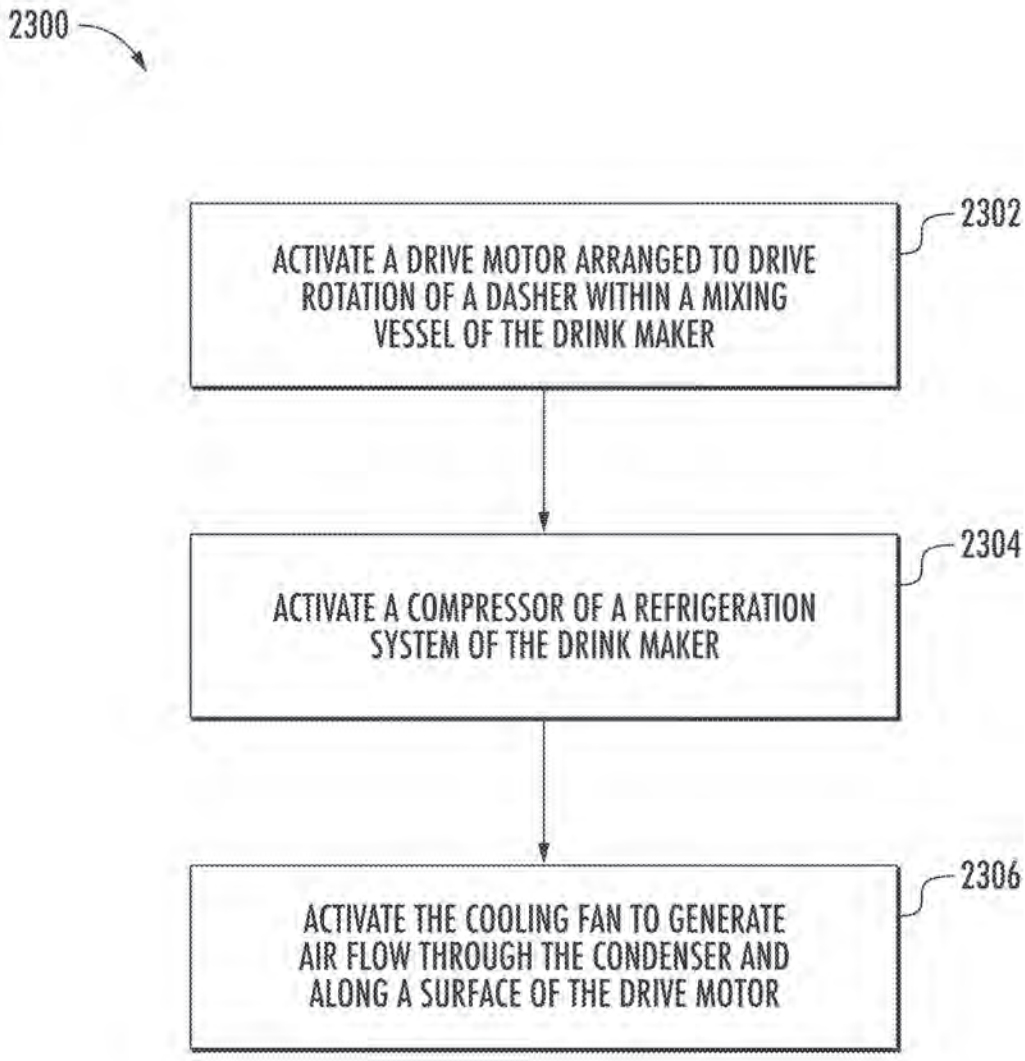

2300
ACTIVATE A DRIVE MOTOR ARRANGED TO DRIVE ROTATION OF A DASHER WITHIN A MIXING VESSEL OF THE DRINK MAKER
2302
ACTIVATE A COMPRESSOR OF A REFRIGERATION SYSTEM OF THE DRINK MAKER
2304
ACTIVATE THE COOLING FAN TO GENERATE AIR FLOW THROUGH THE CONDENSER AND ALONG A SURFACE OF THE DRIVE MOTOR
2306

FIG. 23

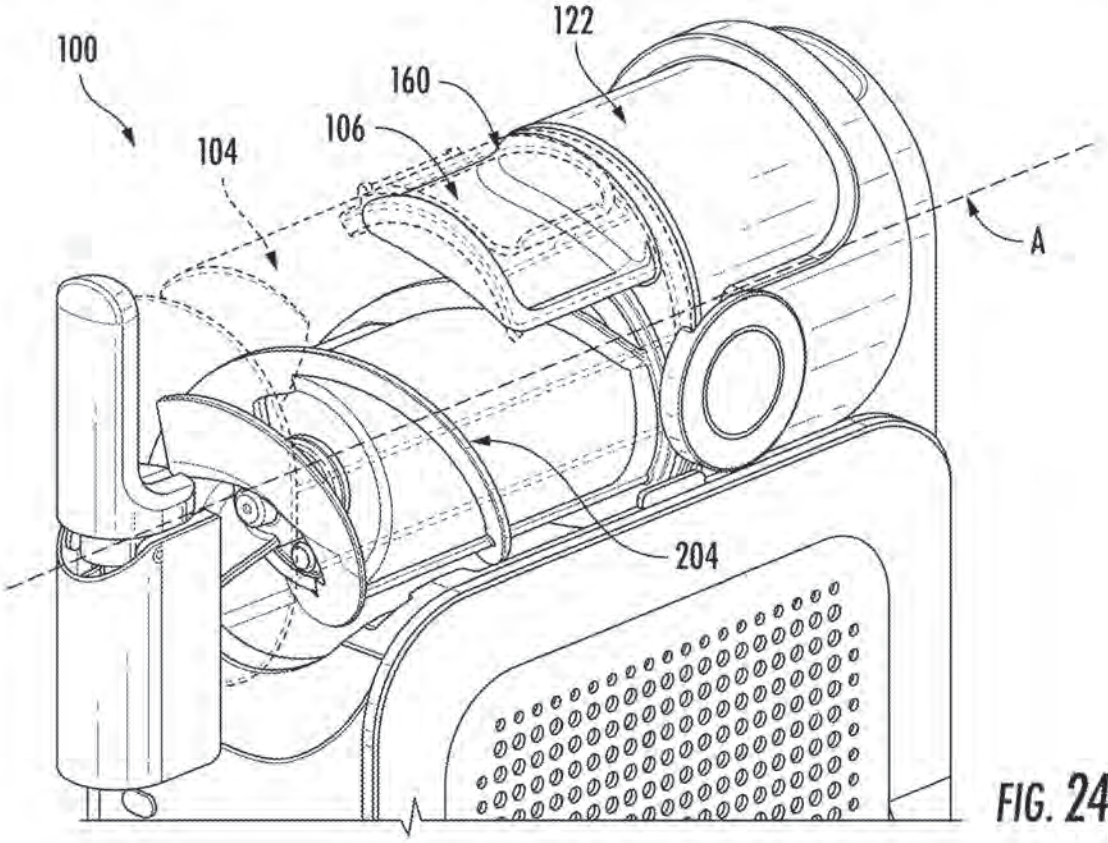


FIG. 24A

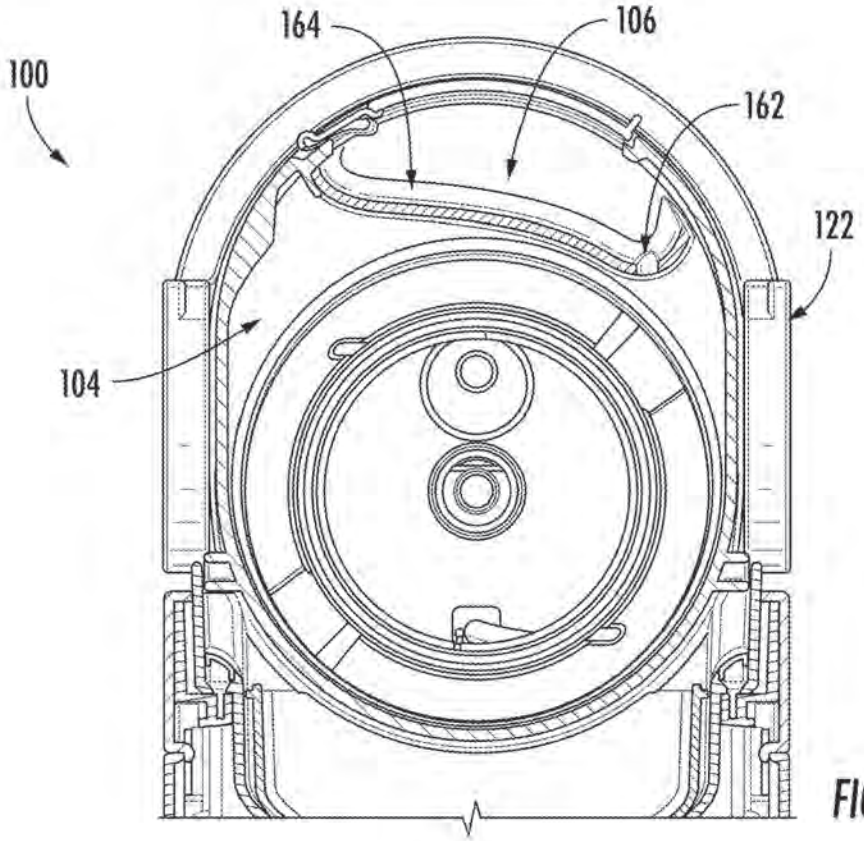


FIG. 24B

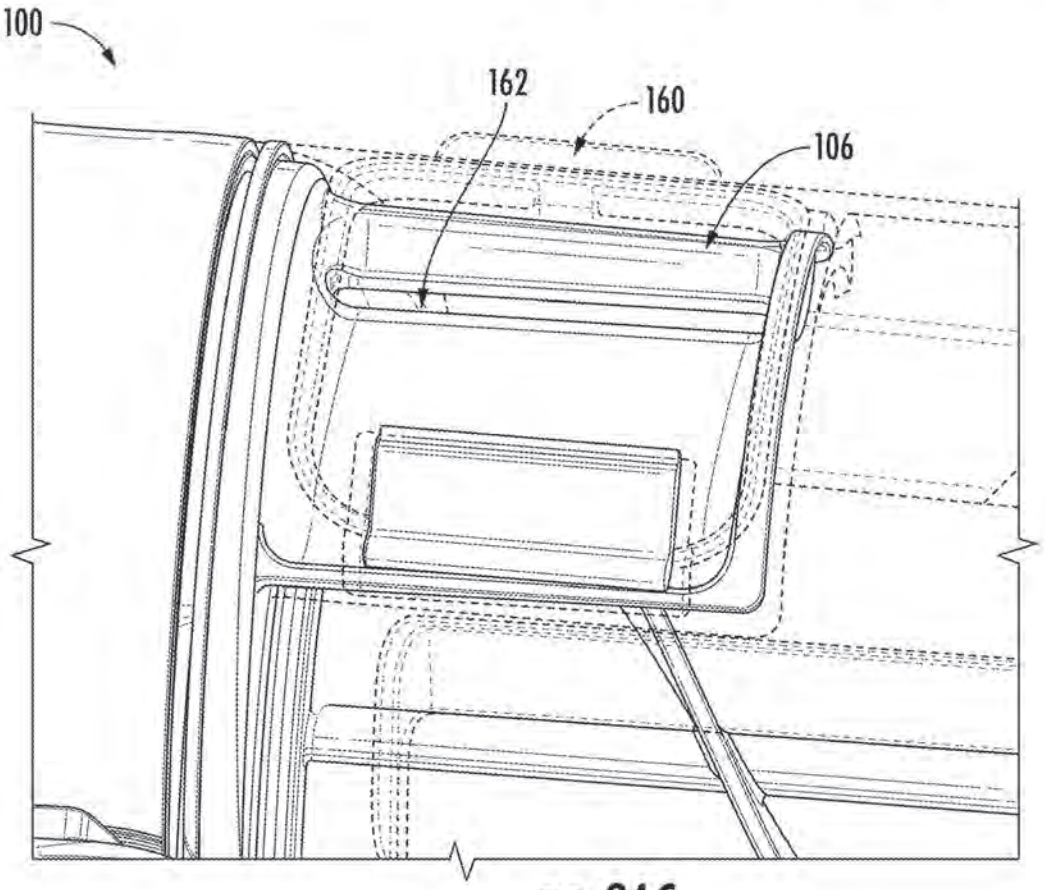


FIG. 24C

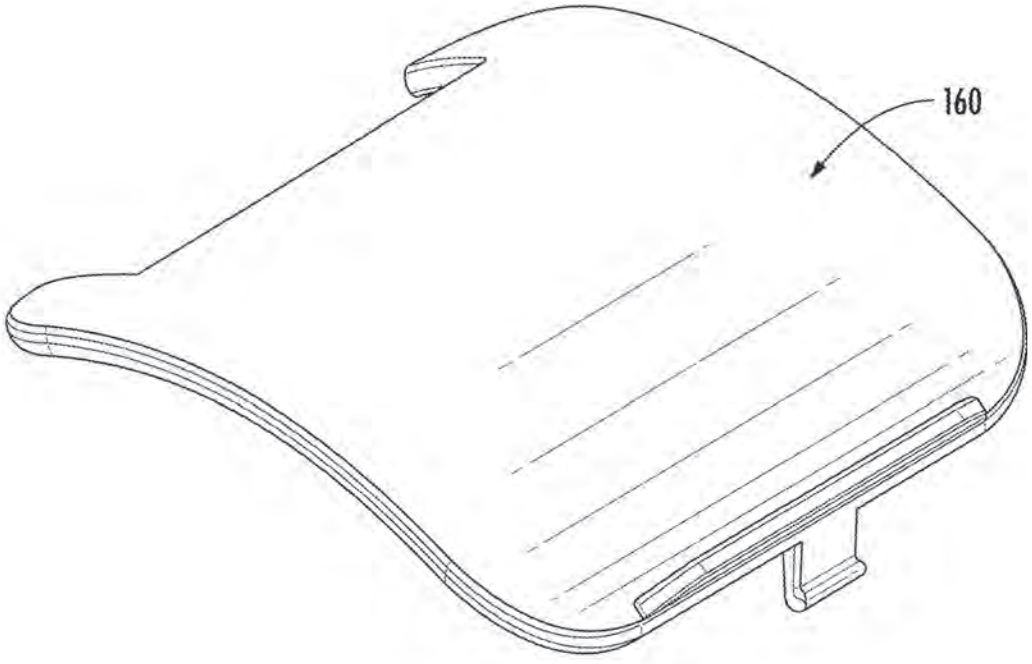


FIG. 25

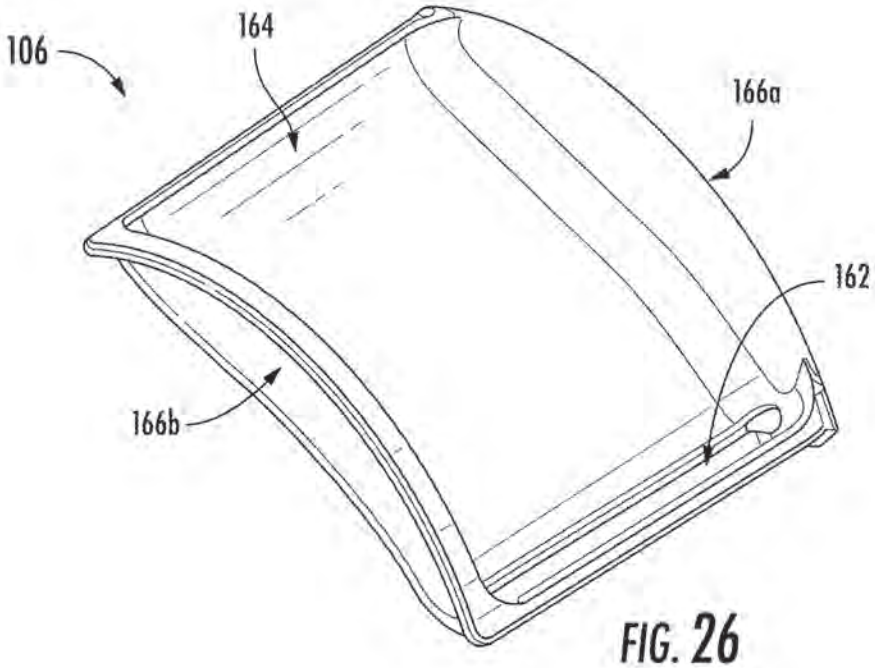


FIG. 26

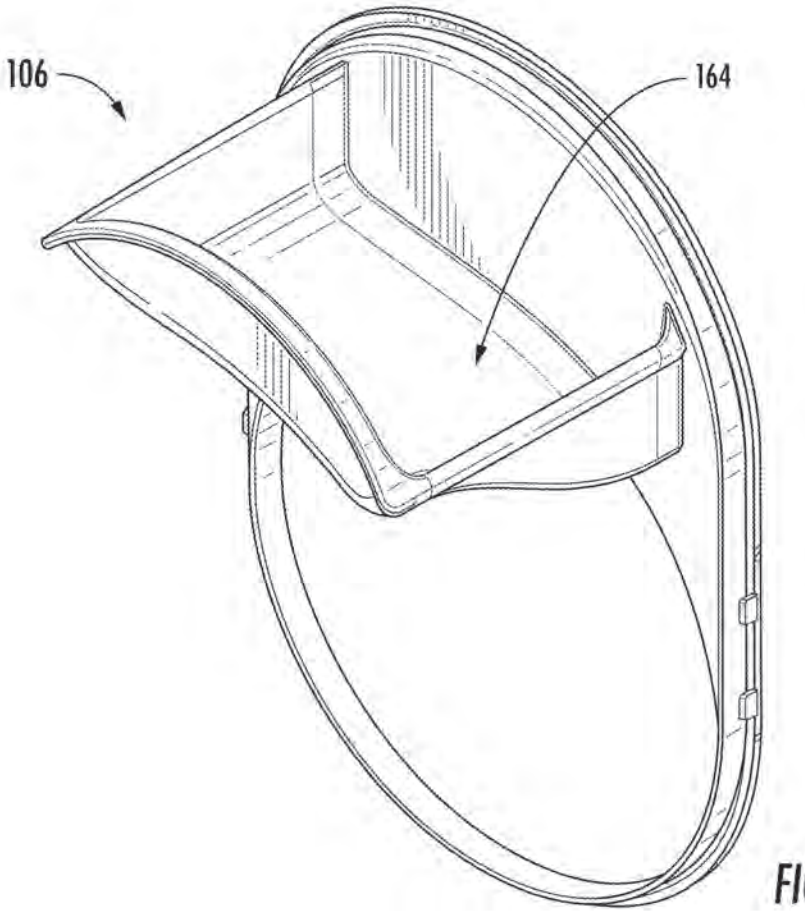


FIG. 27A

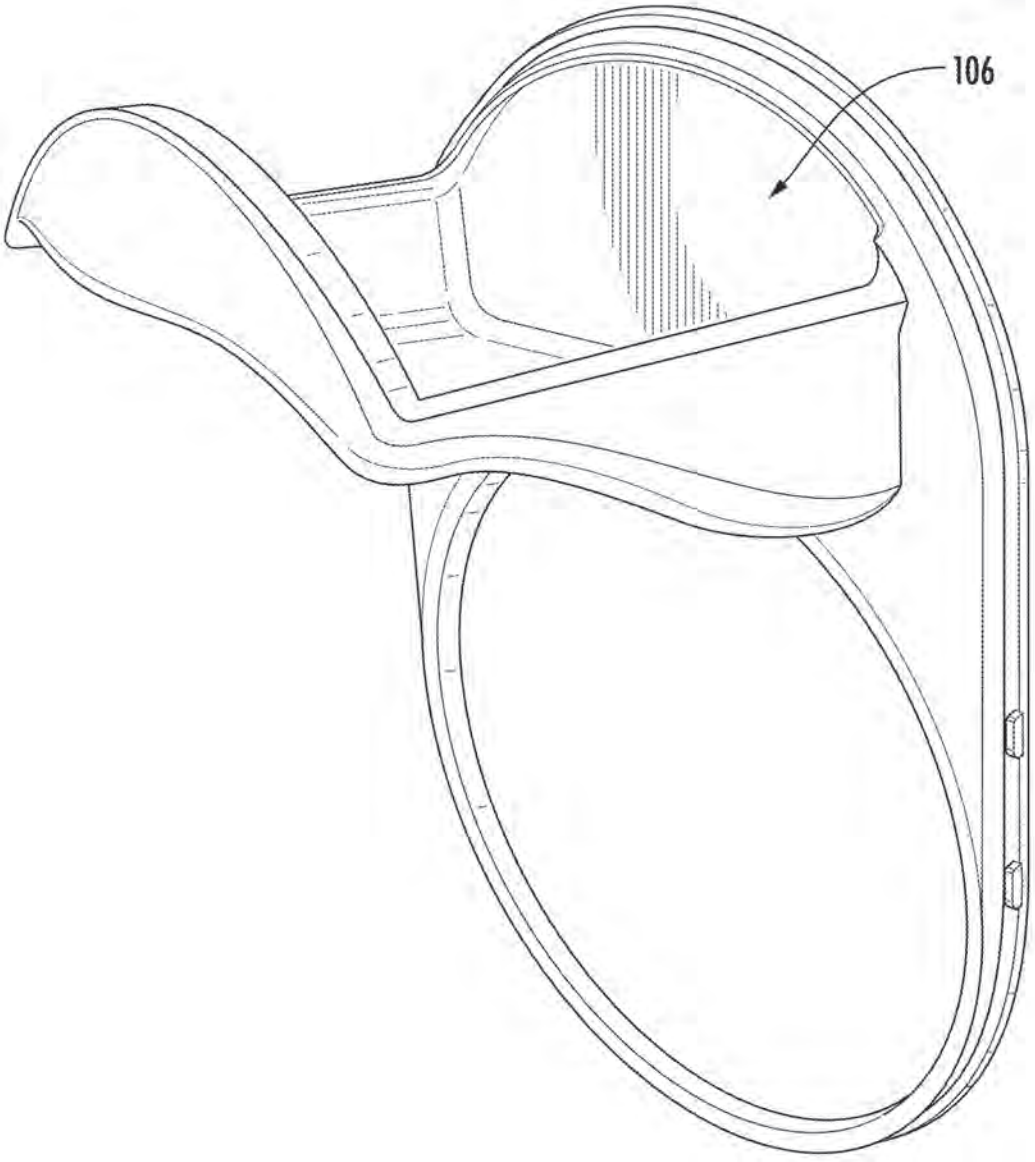


FIG. 27B

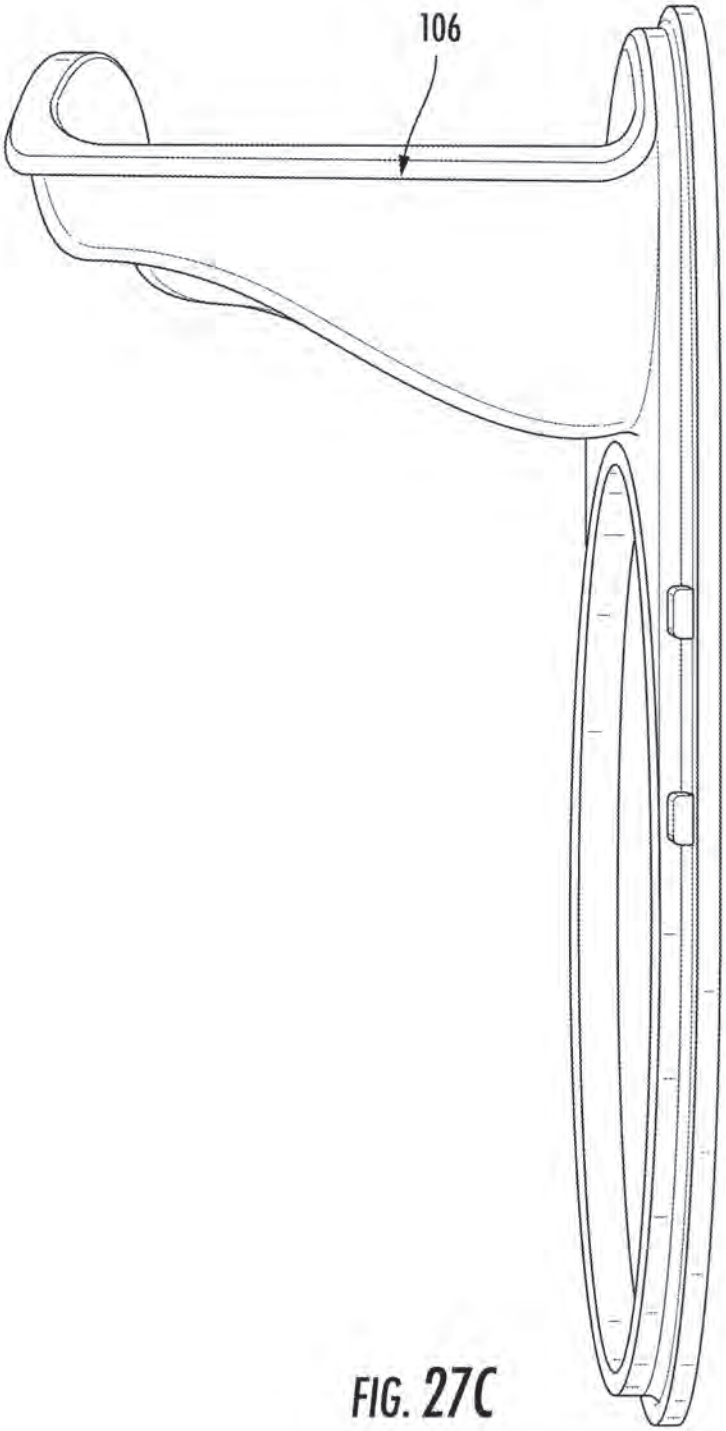


FIG. 27C

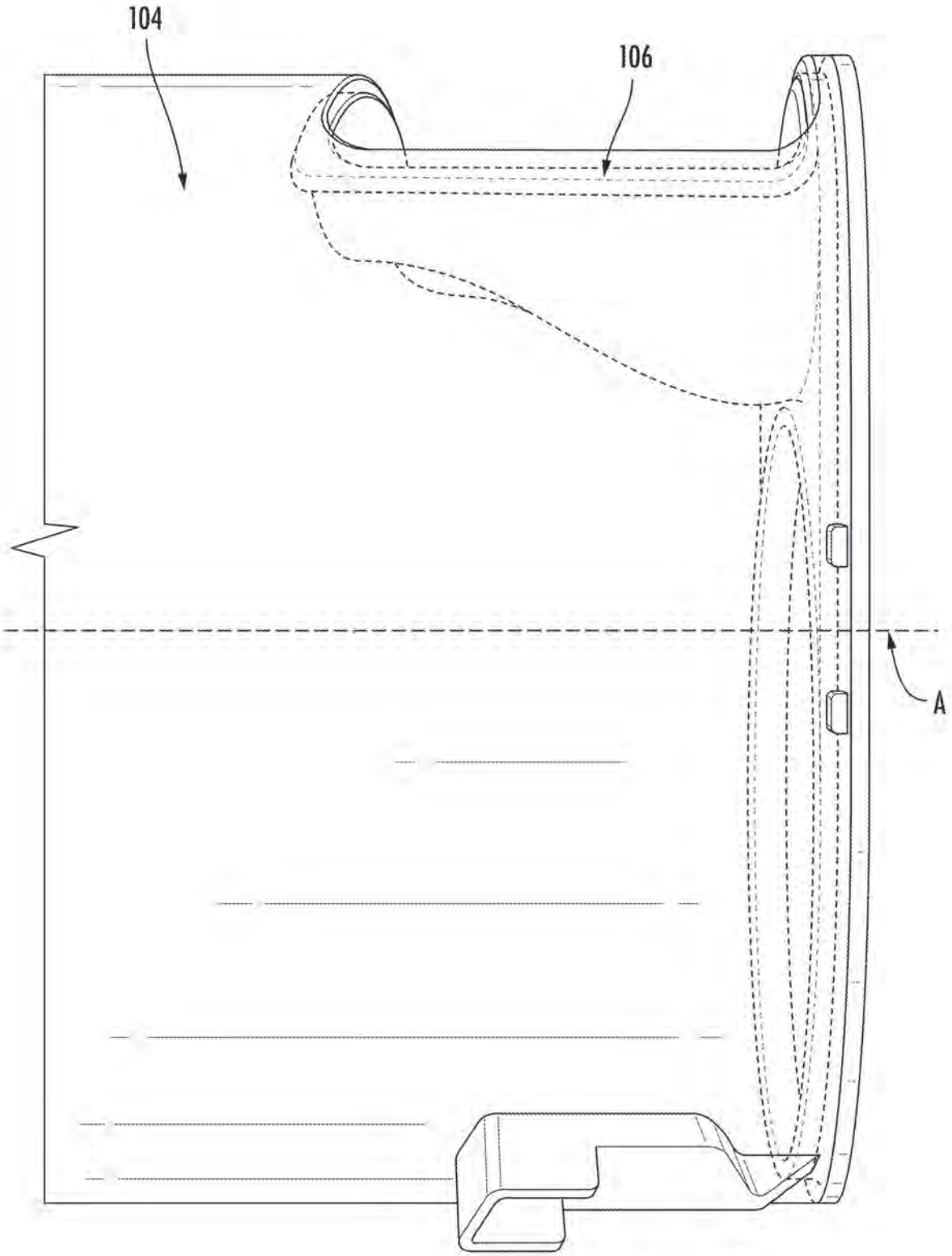


FIG. 27D

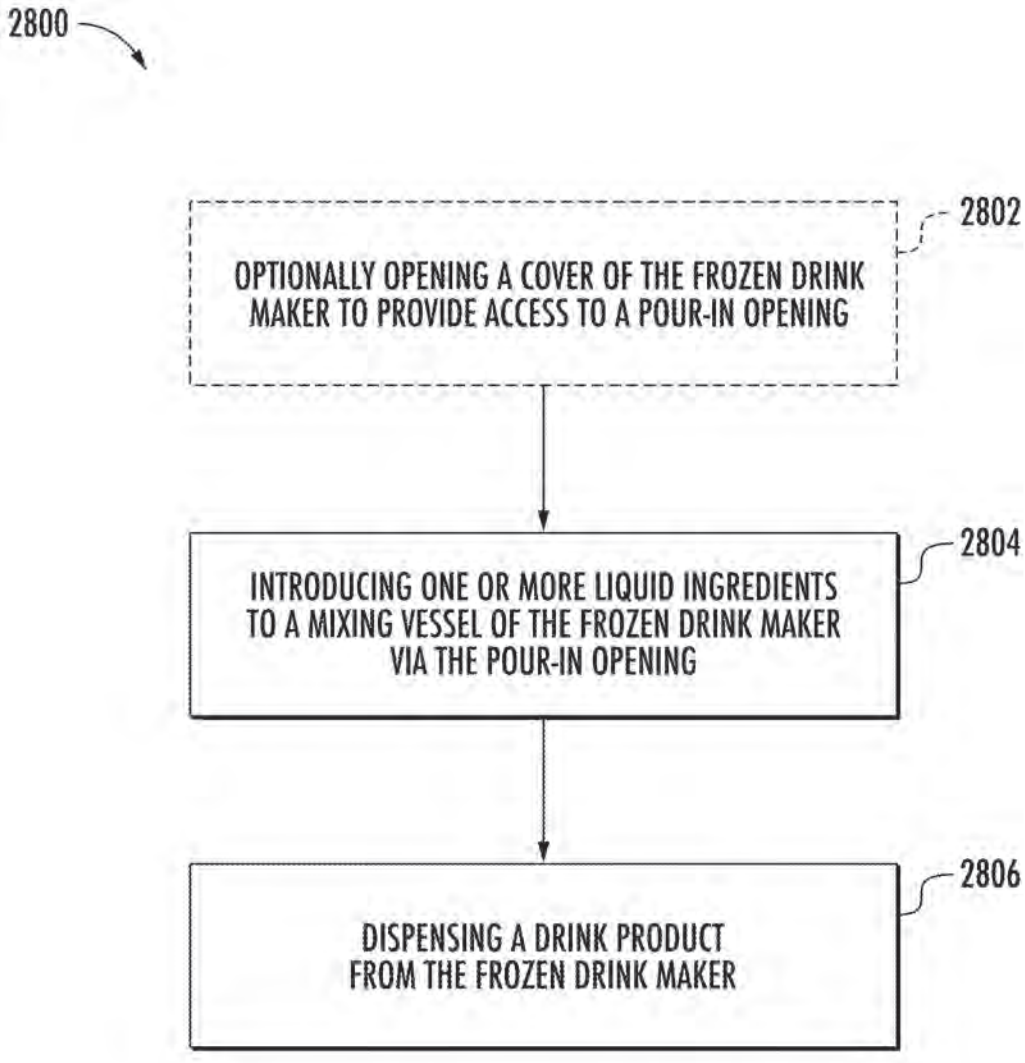

2800
2802
OPTIONALLY OPENING A COVER OF THE FROZEN DRINK MAKER TO PROVIDE ACCESS TO A POUR-IN OPENING
2804
INTRODUCING ONE OR MORE LIQUID INGREDIENTS TO A MIXING VESSEL OF THE FROZEN DRINK MAKER VIA THE POUR-IN OPENING
2806
DISPENSING A DRINK PRODUCT FROM THE FROZEN DRINK MAKER

FIG. 28

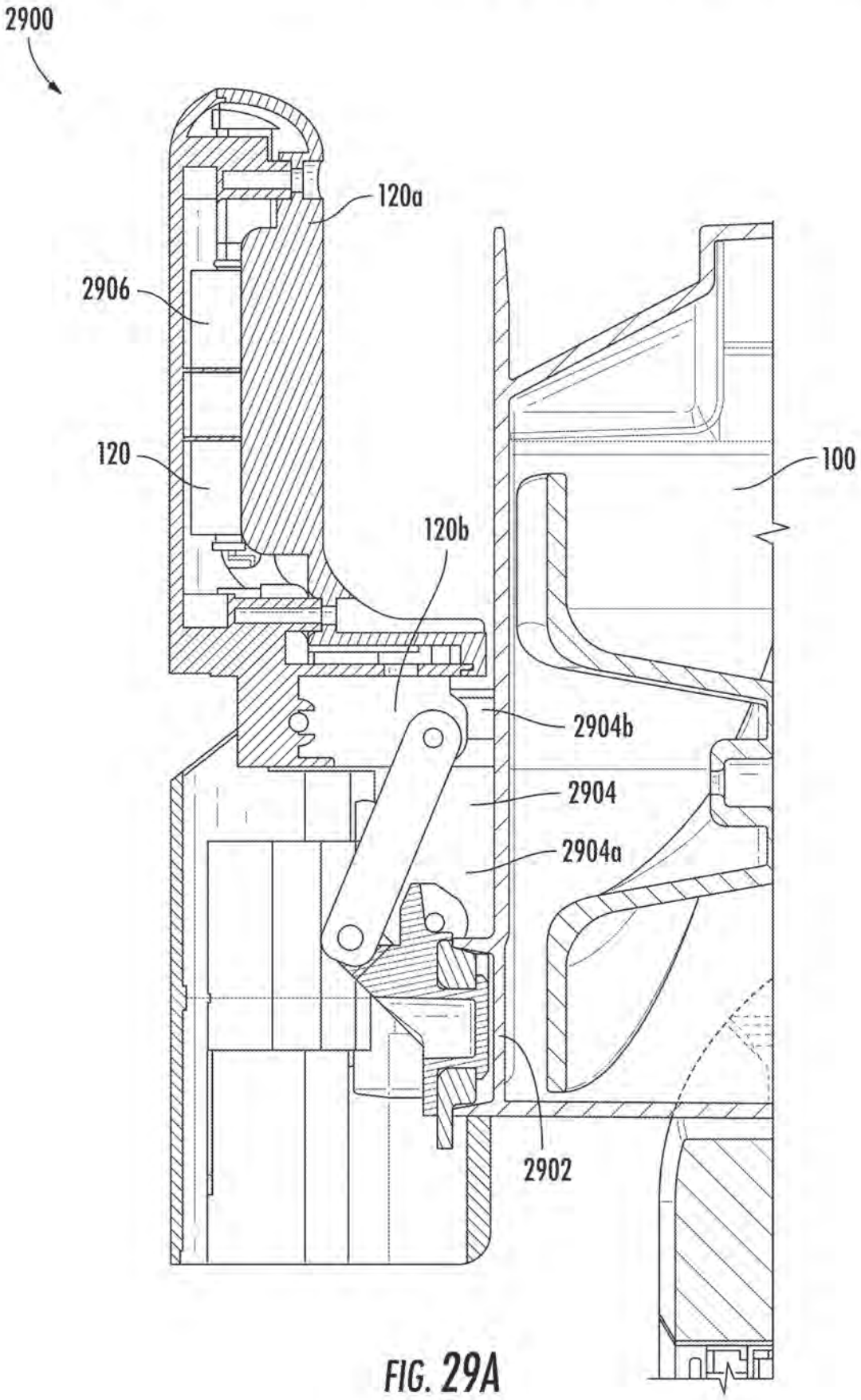


FIG. 29A

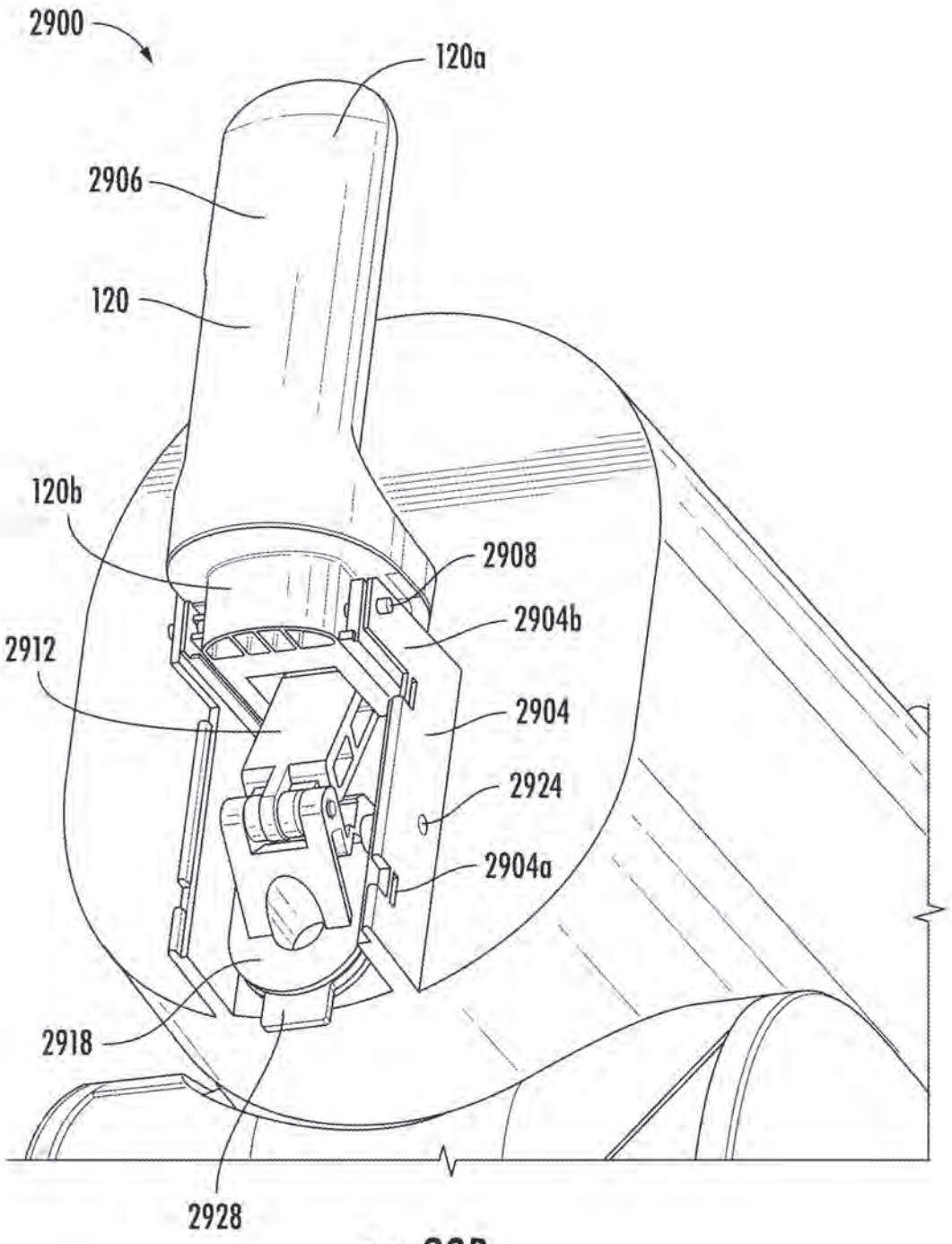

2900
120a
2906
120
120b
2908
2904b
2912
2904
2924
2904a
2918
2928

FIG. 29B

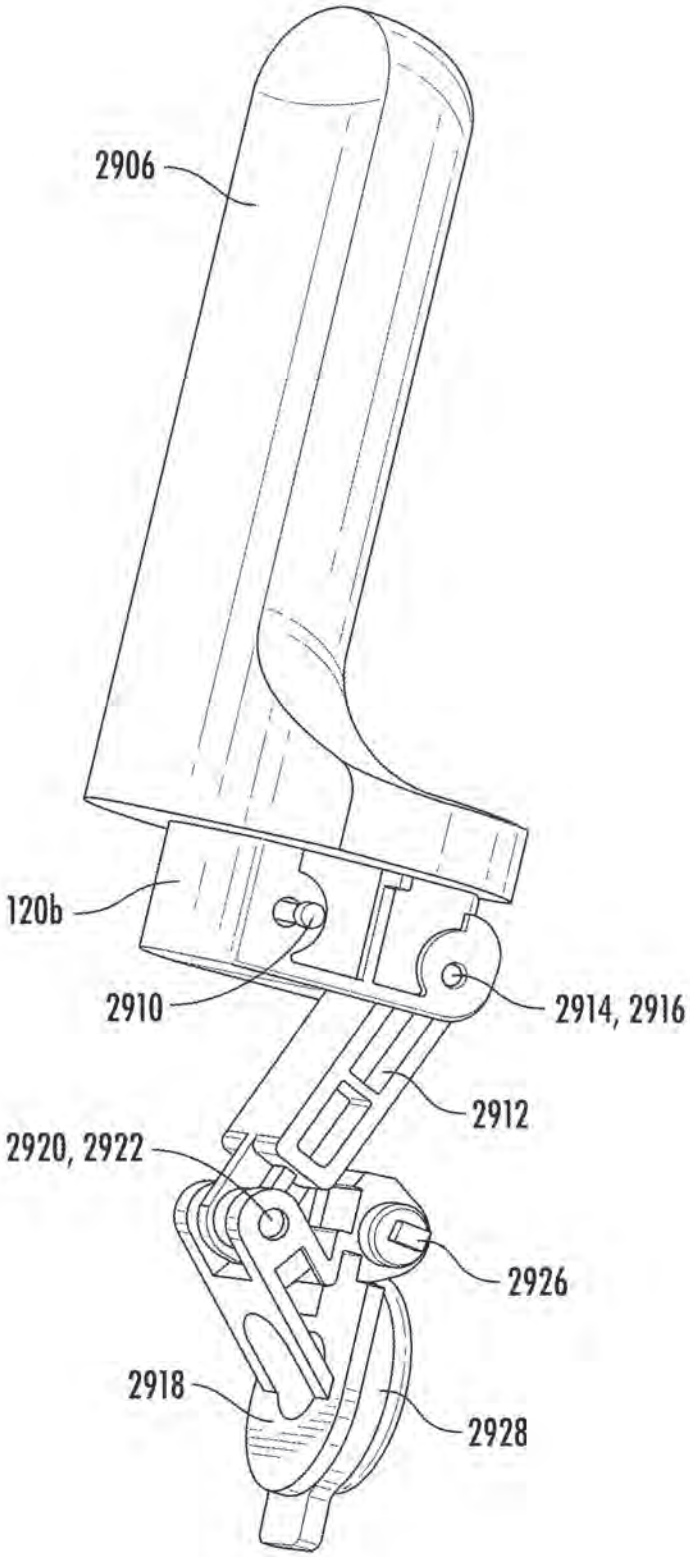


FIG. 29C

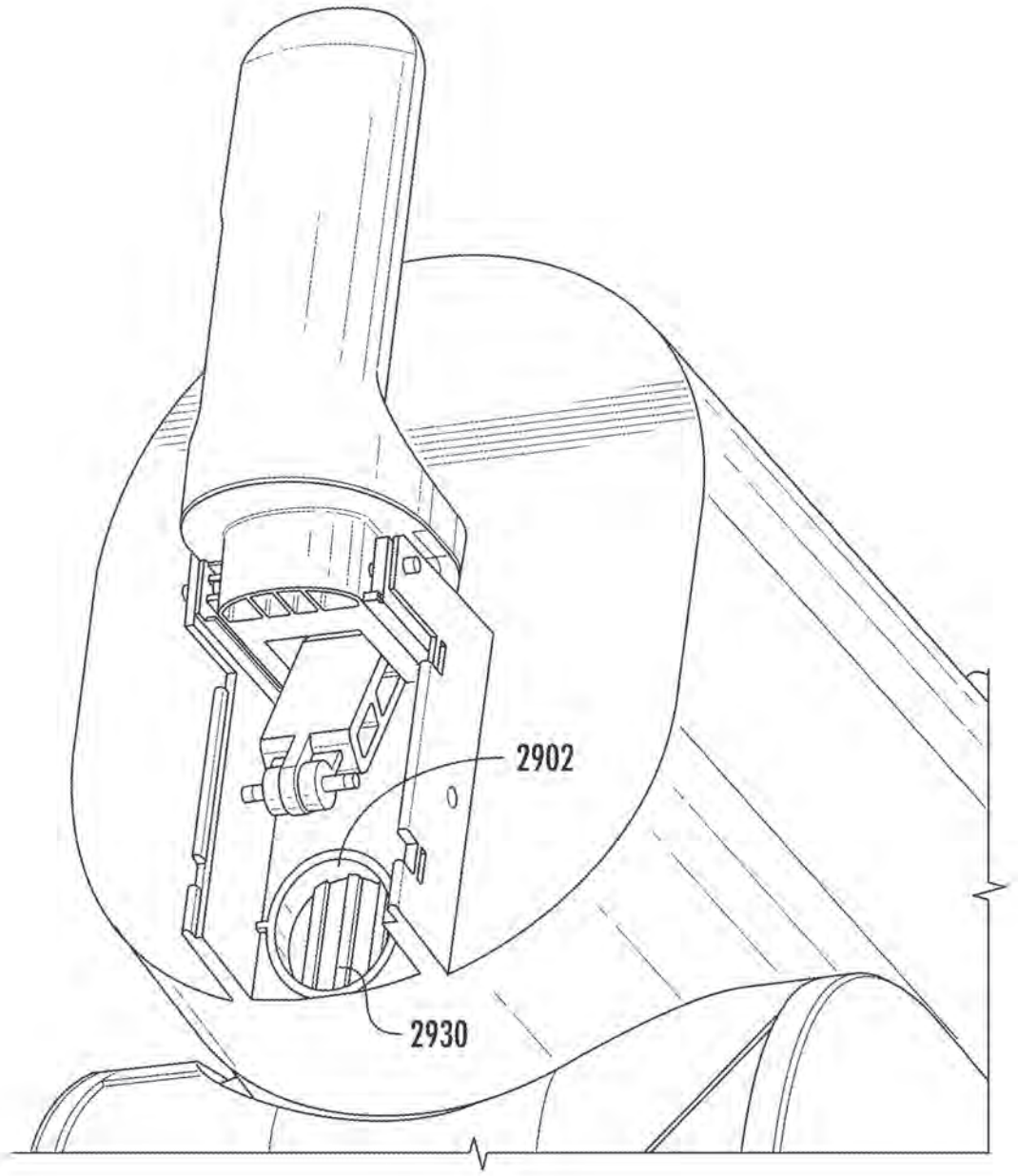


FIG. 29D

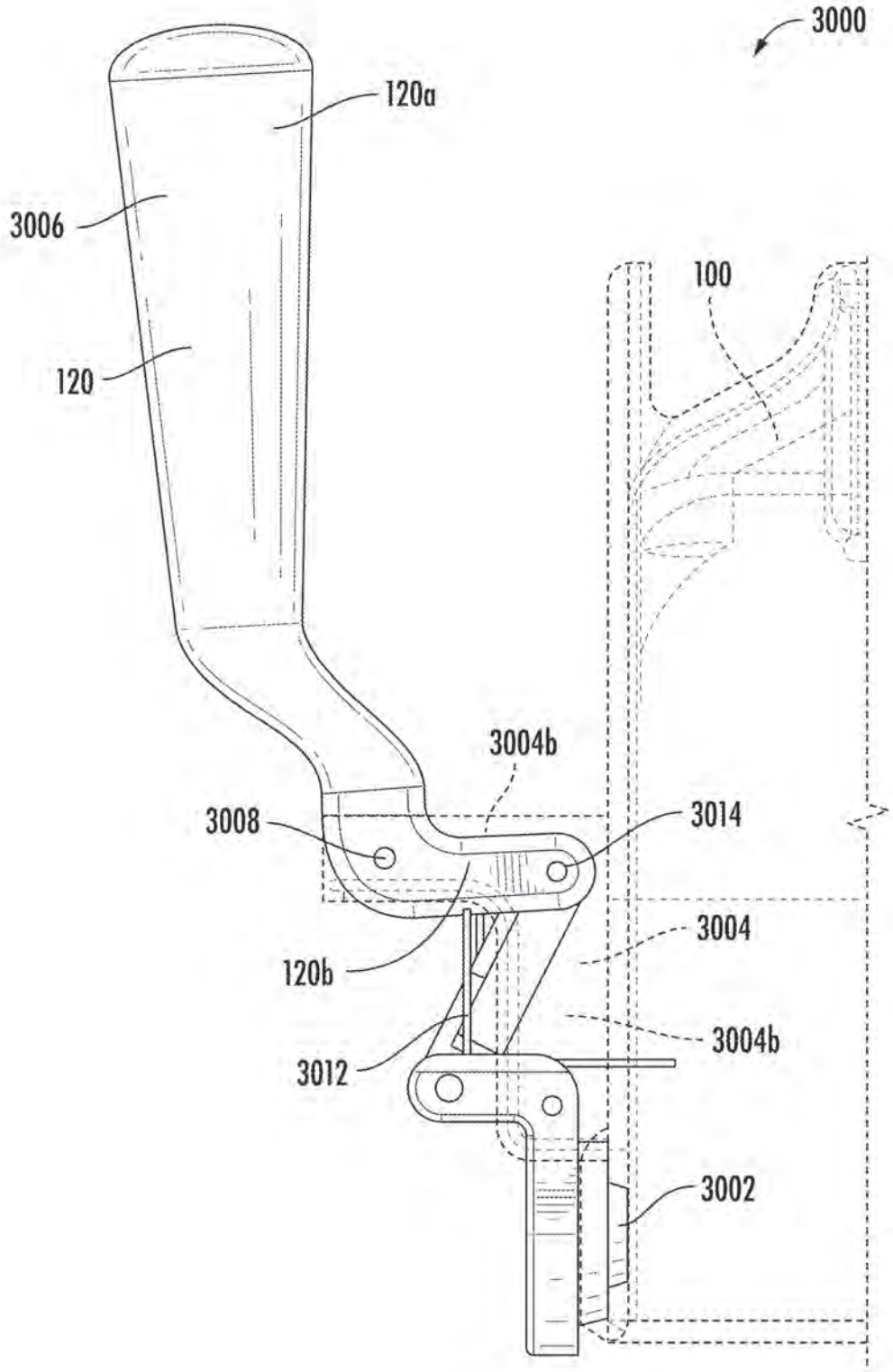

3000
120a
3006
120
100
3004b
3008
3014
3004
120b
3004b
3012
3002

FIG. 30A

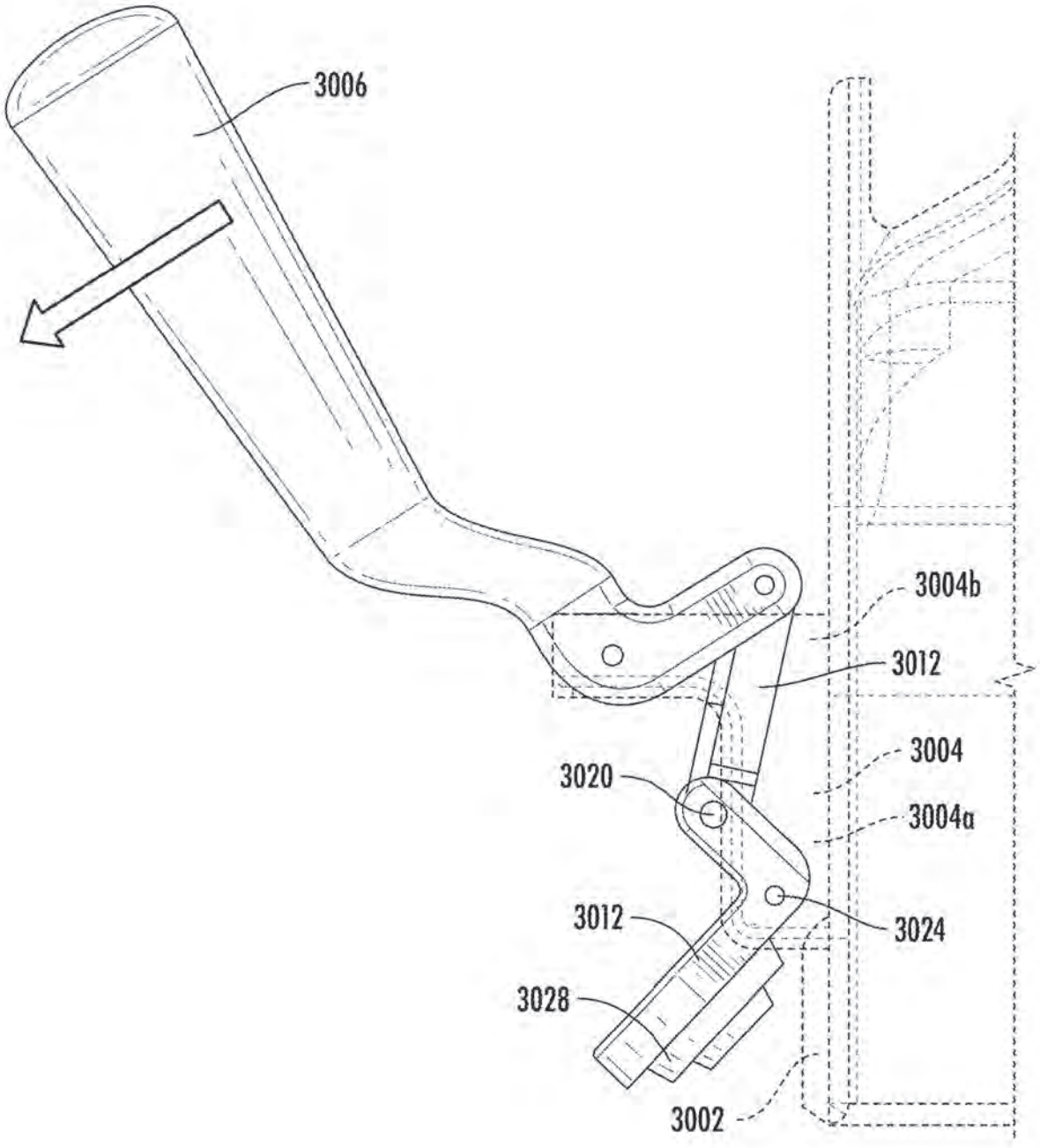


FIG. 30B

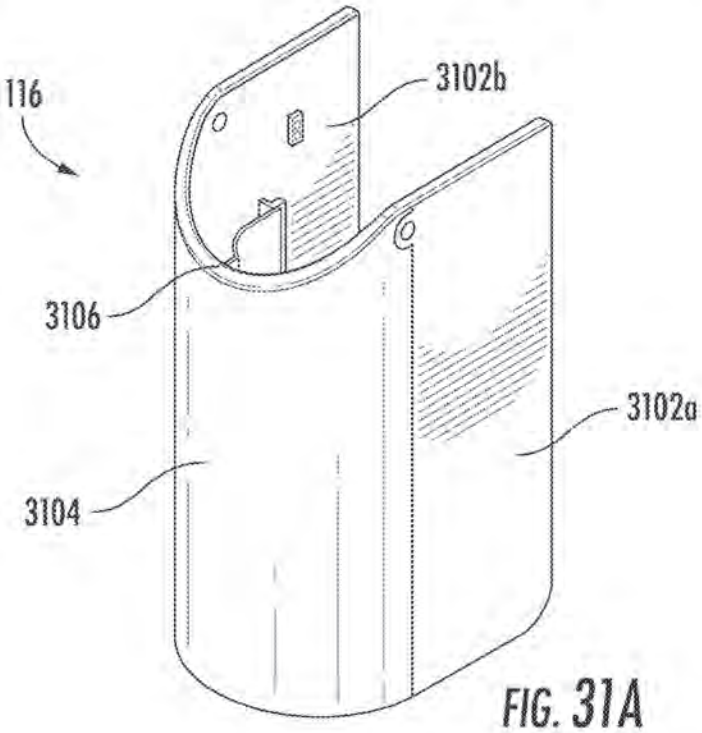


FIG. 31A

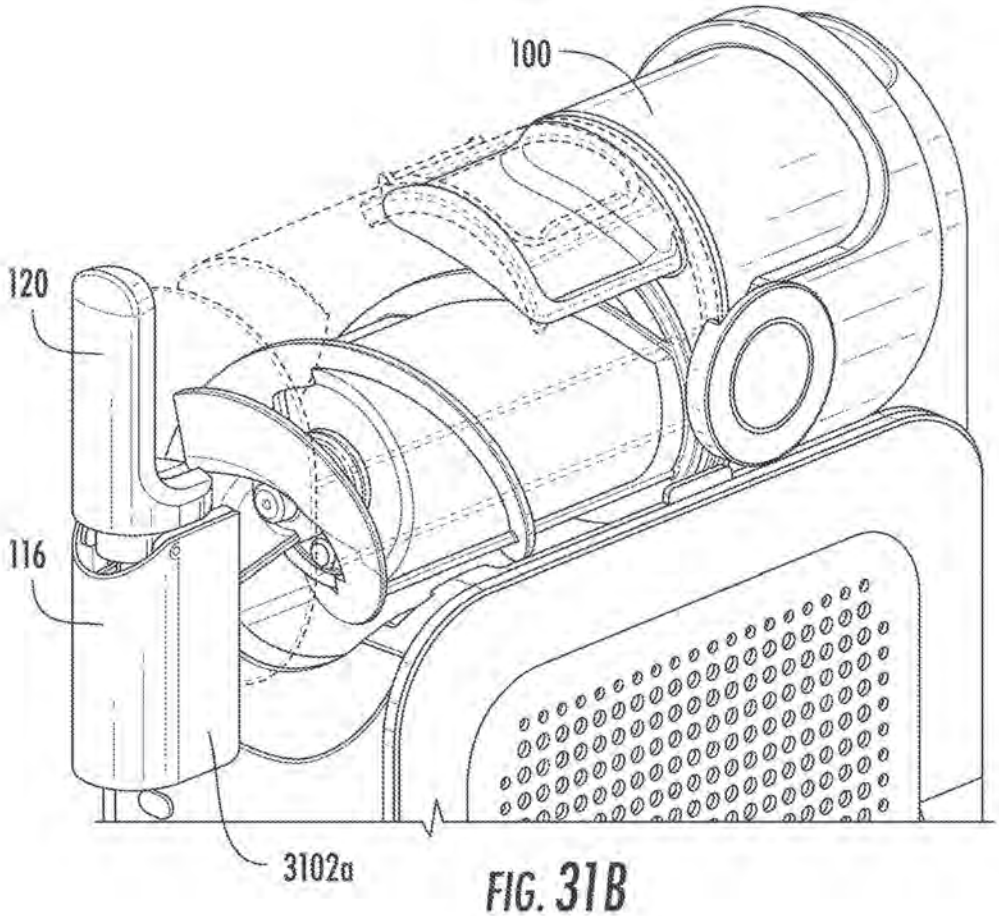


FIG. 31B

DRINK MAKER WITH DETACHABLY CONNECTABLE MIXING VESSEL

REFERENCE TO RELATED APPLICATIONS

This application is a continuation-in-part of U.S. patent application Ser. No. 18/415,817, filed on Jan. 18, 2024, the entire contents of which are incorporated herein by reference.

TECHNICAL FIELD

The present disclosure relates to a drink maker and, more particularly, to a frozen drink maker including a detachably connectable mixing vessel configured to be easily installed and uninstalled from the frozen drink maker with minimal user effort.

BACKGROUND

Frozen drink makers, which may also be referred to as semi-frozen beverage makers, or crushed-ice drink makers typically include a transparent tank or mixing vessel in which a drink product is received and processed, including being cooled, often transforming the drink product from a pure liquid (or a combination of a liquid and portions of ice) to a frozen or semi-frozen product, such as, for example, a granita, slush drink, smoothie, ice cream, or other frozen or semi-frozen product, which is then dispensed. The cooled product is typically dispensed through a tap, spigot or dispenser located at the front and near the bottom of the vessel. Thus, the term "frozen drink maker" as used herein is not limited to a device that only makes drinks or frozen drinks, but includes devices that cool received drink products to produce cooled outputs in any of a variety of frozen and semi-frozen forms. A drink product typically consists of a mixture of water or milk, a syrup flavoring powders, or other additives that give the drink product the desired taste and color.

Some existing frozen drink makers include a mixing system within the mixing vessel having a mixing blade or auger that is rotated by a motor via a drive shaft and drive assembly. Some existing frozen drink makers include a refrigeration system having a compressor, a condenser and an evaporator (i.e., chiller) for receiving refrigerant from the compressor where the evaporator is located adjacent to or within the mixing vessel to cool the drink product during processing.

Some existing frozen drink makers include a controller that controls operations of the frozen drink maker related to making drink products, including the temperature of frozen food products during processing.

SUMMARY

The application, in various implementations, addresses deficiencies associated with prior frozen drink makers, including commercial slush machine vessels, such as reducing the force required to install and uninstall a mixing vessel from the device. A unique lever is described that provides helpful mechanical advantages, allowing a user to easily and securely couple the mixing vessel onto an upper housing of the frozen drink maker with just one hand, if desired. The lever is configured to move relative to the upper housing between an uncoupled position and a coupled position. When the lever is in the coupled position, the mixing vessel is sealed against the upper housing section by a flexible seal. The flexible seal may include a face seal that interfaces a vertically aligned surface of the upper housing section to a vertically aligned side of the mixing vessel. The flexible seal may include a vessel seal portion configured to create a watertight seal between the mixing vessel and the upper housing section, and an evaporator seal portion configured to seal an evaporator within the mixing vessel. When the lever is moved to the uncoupled position, the lever uncouples the mixing vessel from the upper housing section. The lever can include a cam feature, which provides significant compression. This application describes illustrative systems, methods, and devices that permit a mixing vessel to be easily installed and uninstalled from a frozen drink maker in a more adaptive and user-friendly manner.

In some aspects, a frozen drink maker is described. The frozen drink maker includes a housing, a mixing vessel to mix a drink product, and a flexible seal. The housing includes an upper housing section and a lever moveable relative to the upper housing section between a coupled position and an uncoupled position. The flexible seal is between the upper housing section and the mixing vessel. The lever couples the mixing vessel to the upper housing section when in the coupled position and uncouples the mixing vessel from the upper housing section when in the uncoupled position. When the lever is in the coupled position, the mixing vessel is sealed against the upper housing section by the flexible seal.

In select implementations, the mixing vessel has a substantially cylindrical shape with a base having an opening formed therein, and the opening is sealed by the flexible seal when the lever is in the coupled position. In these and other implementations, the opening is substantially circular. The opening may be positioned to face horizontally when the lever is in the coupled position. The flexible seal may include a face seal that interfaces a vertically aligned surface of the upper housing section to a vertically aligned side of the mixing vessel. In select implementations, the lever includes a handle enabling a user to move the lever between the coupled position and the uncoupled position. In these and other implementations, the handle is positioned closer to the upper housing section when in the coupled position than when in the uncoupled position. In some such implementations, when moving between the coupled position and the uncoupled position, the handle moves less than 90° relative to the upper housing section. In select implementations, movement of the handle to move the lever into the coupled position activates a cam in the upper housing section that engages mating features on the mixing vessel to secure the mixing vessel to the upper housing section. In these and other implementations, the cam also includes an ejection feature to apply an ejection force to the mixing vessel when the lever is moved from the coupled position to the uncoupled position. In select implementations, the frozen drink maker also includes a drive motor and an interlock switch positioned within the upper housing section and configured to be activated and permit action of the drive motor when the mixing vessel is coupled onto the housing. In various implementations, the lever is rotatably coupled to the upper housing section.

In some aspects, methods of producing a frozen drink using a frozen drink maker device are described. The frozen drink maker device includes a housing, a mixing vessel, and a flexible seal. The housing includes an upper housing section and a lever moveable relative to the upper housing section between a coupled position and an uncoupled position. The mixing vessel is arranged to couple to the upper housing section. The flexible seal is positioned between the

upper housing section and the mixing vessel. The lever includes a handle that is moveable to place the lever into the coupled position and/or the uncoupled position. When the lever is in the coupled position, the mixing vessel is sealed against the upper housing section by the flexible seal. The methods include coupling the mixing vessel onto the upper housing section by moving the handle relative to the upper housing section to place the lever into the coupled position, operating the frozen drink maker device to produce the frozen drink, uncoupling the mixing vessel from the upper housing section by moving the handle relative to the upper housing section to place the lever into the uncoupled position.

In some implementations, coupling the mixing vessel onto the upper housing section involves moving the handle toward the upper housing section. In these and other implementations, uncoupling the mixing vessel from the upper housing section involves moving the handle away from the upper housing section and/or toward a front of the housing. In some implementations, moving the handle relative to the upper housing section to place the lever into the coupled position is accomplished with only one hand. In these and other implementations, moving the handle relative to the upper housing section to place the lever into the uncoupled position is accomplished with only one hand.

In yet another aspect, a frozen drink maker is described that includes a housing, a mixing vessel to mix a drink product, and a flexible seal. The housing includes an upper housing section and a coupling mechanism moveable relative to the upper housing section between a coupled position and an uncoupled position. The flexible seal is positioned between the upper housing section and the mixing vessel. The coupling mechanism couples the mixing vessel to the upper housing section when in the coupled position and uncouples the mixing vessel from the upper housing section when in the uncoupled position. When the coupling mechanism is in the coupled position, the mixing vessel is sealed against the upper portion of the housing by the flexible seal.

One of ordinary skill will recognize that the systems, methods, and devices described herein may apply to other types of food products such as to the making and/or processing of, without limitation, ice cream, frozen yogurt, other creams, and the like. While the present disclosure describes examples of a drink maker processing various frozen and/or semi-frozen drink products, the systems, devices, and methods described herein are not limited to such drink products and are capable of processing and/or making other types of drink products such as cooled drink products and/or chilled drink products. The terms "mix," "mixed" or "mixing" as used herein are not limited to combining multiple ingredients together, but also include mixing a drink product or liquid having a single or no added ingredients. For example, a drink product may consist of only water that is mixed by a dasher during processing, i.e., portions of the water are churned and/or intermingled as the dasher rotates. This may, for example, advantageously enable a more uniform temperature of the water and/or liquid as a whole within the mixing vessel by intermingling portions of the water and/or liquid having different temperatures.

A reading of the following detailed description and a review of the associated drawings will make apparent the advantages of these and other structures. Both the foregoing general description and the following detailed description serve as an explanation only and do not restrict aspects of the disclosure as claimed.

BRIEF DESCRIPTION OF THE DRAWINGS

Reference to the detailed description, combined with the following figures, will make the disclosure more fully understood, wherein:

FIG. **1** shows a perspective view of a frozen drink maker according to an implementation of the disclosure;

FIG. **2** shows a view of various internal components within the housing and mixing vessel of the frozen drink maker of FIG. **1** according to an implementation of the disclosure;

FIG. **3** shows a front view of the frozen drink maker of FIG. **1**, according to some implementations of the disclosure;

FIG. **4** is a block diagram of an example of a control system of the frozen drink maker of FIG. **1**, according to some implementations of the disclosure;

FIG. **5**A illustrates a side view of the frozen drink maker of FIG. **1** with the mixing vessel in a coupled position relative to the upper housing section, according to some implementations of the disclosure;

FIG. **5**B illustrates a side view of the frozen drink maker illustrated in FIG. **5**A with some features of the housing and the lever shown in partial cross-section, according to some implementations of the disclosure;

FIG. **6** shows a detailed view of a lever with cams for coupling a mixing vessel to the housing of a frozen drink maker, according to some implementations of the disclosure;

FIG. **7**A shows a rear view of a mixing vessel, according to some implementations of the disclosure;

FIG. **7**B shows a perspective view of the rear of a mixing vessel, according to some implementations of the disclosure;

FIG. **8** shows a perspective view of a flexible seal, according to some implementations of the disclosure;

FIG. **9** shows a cross-sectional view of a flexible seal, according to some implementations of the disclosure;

FIG. **10** illustrates a flow diagram for a method of using the disclosed frozen drink maker, according to some implementations of the disclosure;

FIGS. **11**A and **11**B show perspective views of a condensation collection tray of the frozen drink maker of FIG. **1** according to an implementation of the disclosure;

FIG. **11**C shows the collection tray of FIGS. **11**A and **11**B inserted into the frozen drink maker of FIG. **1** according to an implementation of the disclosure;

FIG. **11**D shows the frozen drink maker of FIG. **1** with the collection tray removed according to an implementation of the disclosure;

FIG. **12** is a flow chart illustrating a method of removing the collection tray of FIGS. **11**A and **11**B from the frozen drink maker of FIG. **1** according to an implementation of the disclosure;

FIG. **13**A shows an isometric view of the frozen drink maker with a mixing vessel having at least one internal baffle, in accordance with some implementations of the disclosure;

FIG. **13**B shows a cross-sectional view of the frozen drink maker shown in FIG. **13**A, taken along line B-B;

FIG. **13**C shows a cross-sectional view of the frozen drink maker shown in FIG. **13**A, taken along line C-C;

FIG. **14**A shows a rear isometric view of a mixing vessel for a frozen drink maker with three internal baffles, in accordance with some implementations of the disclosure;

FIG. **14**B shows a rear view of the mixing vessel shown in FIG. **14**A;

FIG. **14**C shows a front isometric view of the mixing vessel shown in FIG. **14**A;

FIG. **15** is a close-up view of a user interface according to an implementation of the disclosure;

FIG. **16** is a graph of coarse and fine temperature settings according to an implementation of the disclosure;

FIG. **17** is a close-up view of another user interface according to an implementation of the disclosure;

FIG. **18** is a graph of temperature values associated with automatic recipe temperature target temperatures and manual temperature adjustments;

FIG. **19** is a graph of drive motor current and temperature vs. time as a drink product being processing by the frozen drink maker of FIG. **1**;

FIG. **20** is a flow diagram of a process for making a cooled drink product using a food type for initial or coarse temperature and/or texture control and then using a user input to subsequently fine tune the temperature and/or texture of the drink product;

FIG. **21** is a flow diagram of a process for automatically detecting when drive motor current is too high and/or a drink product is too thick and, in response, adjusting the temperature of the drink product to reduce drive motor current and/or to increase the temperature of the drink product to reduce a thickness of the drink product;

FIG. **22**A shows an implementation of a dual-use cooling fan within the housing of a drink maker;

FIG. **22**B shows another implementation of a dual-use cooling fan within the housing of a drink maker;

FIG. **22**C shows a perspective view of the dual-use cooling fan of FIG. **22**B;

FIG. **23** is a flow diagram of a process for operating the dual-use fan;

FIG. **24**A shows a perspective view of a sample pour-in opening for a frozen drink maker, according to some implementations of the disclosure;

FIG. **24**B shows a front view of the pour-in opening shown in FIG. **24**A;

FIG. **24**C shows a left perspective view of the pour-in opening shown in FIG. **24**A;

FIG. **25** shows a perspective view of a sample cover for a pour-in opening, according to some implementations of the disclosure;

FIG. **26** shows a perspective view of a sample pour-in opening, according to some implementations of the disclosure;

FIG. **27**A shows a perspective view of a sample pour-in opening, according to some implementations of the disclosure;

FIG. **27**B shows an isometric view of a protype of the pour-in opening of FIG. **27**A;

FIG. **27**C shows a side view of the pour-in opening protype of in FIG. **27**B;

FIG. **27**D shows a photograph of the pour-in opening protype shown in FIG. **27**B affixed to a mixing vessel, according to some implementations of the disclosure;

FIG. **28** shows a sample method of using a pour-in opening, according to some implementations of the disclosure;

FIGS. **29**A-**29**D show a dispensing assembly for dispensing a drink product from the frozen drink maker according to an implementation of the disclosure;

FIGS. **30**A-**30**B show a dispensing assembly for dispensing a drink product from the frozen drink maker according to another implementation of the disclosure; and

FIGS. **31**A and **31**B show a shroud for covering the dispensing assembly of FIGS. **29**A-**29**D and FIGS. **30**A-**30**B according to an implementation of the disclosure.

DETAILED DESCRIPTION

In the following description, like components have the same reference numerals, regardless of different illustrated implementations. To illustrate implementations clearly and concisely, the drawings may not necessarily reflect appropriate scale and may have certain structures shown in somewhat schematic form. The disclosure may describe and/or illustrate structures in one implementation, and in the same way or in a similar way in one or more other implementations, and/or combined with or instead of the structures of the other implementations.

In the specification and claims, for the purposes of describing and defining the invention, the terms "about" and "substantially" represent the inherent degree of uncertainty attributed to any quantitative comparison, value, measurement, or other representation. The terms "about" and "substantially" moreover represent the degree by which a quantitative representation may vary from a stated reference without resulting in a change in the basic function of the subject matter at issue. Open-ended terms, such as "comprise," "include," and/or plural forms of each, include the listed parts and can include additional parts not listed, while terms such as "and/or" include one or more of the listed parts and combinations of the listed parts. Use of the terms "top," "bottom," "above," "below" and the like helps only in the clear description of the disclosure and does not limit the structure, positioning and/or operation of the disclosure in any manner.

The application, in various implementations, addresses deficiencies associated with prior commercial slush machines. Unfortunately, the architecture of prior commercial slush machines usually requires a significant amount of force to seat the vessel over a large radial seal, making it challenging for a user to install and uninstall the vessel from the device. In many prior commercial slush machines, the vessel is installed by engaging a catch to retain the vessel, which strains the plastic to properly position the vessel and requires significant user effort. Accordingly, there is a need for a more user-friendly architecture to install and uninstall the vessel of a frozen drink maker, such as, for example, a lever that can be used to couple and decouple the vessel to a housing of the frozen drink maker with minimal force and/or that only requires one hand to use.

FIG. **1** shows a perspective view of a frozen drink maker **100** according to an illustrative implementation of the disclosure. The frozen drink maker **100** includes a housing **102** and mixing vessel **104**. The housing **102** may include user interface **112** for receiving user inputs to control frozen drink maker **100** and/or to output or display information. User interface **112** may include one or more buttons, dials, switches, touchscreens, indicators, LEDs, and the like. User interface **112** may display status information including for example, a temperature of a drink product within mixing vessel **104**, an indicator of a recipe and/or program currently being implemented, a timer associated with the progress of a recipe and/or program in progress and/or currently being implemented. User interface **112** may provide indicators and/or warnings to users regarding, for example, when a recipe is complete or when a user is expected to perform an action associated with processing a drink product. User interface **112** may include a selectable menu of drink types (e.g., recipes) and/or programs for different types of drink products such as, without limitation, granita, smoothie, margarita, daiquiri, pina colada, slushi, cocktail, frappe, juice, diary, milk shake, cool drink, semi-frozen drink, frozen drink, and the like.

Housing **102** may include a panel (e.g., a removable panel) **114** along a side of the housing **102**. Panel **114** may include a plurality of openings that facilitate air flow to aid in cooling components within housing **102**. Housing **102** may include upper housing section **122** that is arranged to couple with a rear end of mixing vessel **104** when mixing vessel **104** is attached to housing **102**. Mixing vessel **104** may include walls, or a portion thereof, that are transparent to enable a viewer to see a drink product within mixing vessel **104** during processing. Mixing vessel **104** may include pour-in opening **106** whereby mixing vessel **104** can receive ingredients for processing a drink product within mixing vessel **104**. FIG. **1** shows pour-in opening **106** in a closed configuration with a cover sealing the pour-in opening **106**. The cover may be detachably removable or moveable to open or close opening **106**. Pour-in opening **106** may include a grate to inhibit a user from reaching into mixing vessel **104** when pour-in opening **106** is open, i.e., the cover is not installed. Mixing vessel **104** may include a dispenser assembly **108** having a user handle **120**, a spout (not shown), and a spout shroud and/or cover **116**. Dispenser assembly **108** enables a user, by pulling down on handle **120**, to open a spout, connected to a wall of mixing vessel **104**, to dispense a processed (e.g., cooled) drink product from mixing vessel **104**. The user can close the spout by pushing handle **120** back to its upright position (shown in FIG. **1**) and, thereby, stop the dispensing of the processed drink product.

Frozen drink maker **100** may include a coupling mechanism that enables a secure coupling of mixing vessel **104** to housing **102**, including upper housing section **122**. In some implementations, the coupling mechanism is a lever **110** rotatably coupled to the upper housing section **122**. FIG. **1** shows lever **110** in the coupled, locked, and/or closed position whereby mixing vessel **104** is coupled to (e.g., attached to, latched to, and/or locked to) housing **102** and upper housing section **122**. In the coupled position, lever **110** ensures that there is a water-tight seal to prevent leakage of drink product from mixing vessel **104**. Lever **110** may be placed in the coupled position by sliding mixing vessel **104** against upper housing section **122** and then rotating lever **110** in a clockwise direction until its handle rests on or about the top surface of upper housing section **122**. Mixing vessel **104** can be disengaged and/or decoupled from housing **102** and upper housing section **122** by pulling and/or rotating lever **110** in a counter-clockwise direction (from the perspective of FIG. **1**) toward the front of mixing vessel **104**, which causes lever **110** to release mixing vessel **104**. Once released and/or decoupled, mixing vessel **104** may slide in a forward direction (away from upper housing section **122**) to be fully detached and/or removed from housing **102**.

A flexible seal (illustrated in FIG. **8**) may be positioned between the mixing vessel **104** and the upper housing section **122**. The flexible seal may include a face seal portion and/or a radial seal portion. If present, the face seal portion may provide an improved seal based on compression provided by lever **110** pushing mixing vessel **104** laterally against a wall of upper housing section **122**. The mixing vessel **104** may have a substantially cylindrical shape with a base having an opening formed therein, and the opening is sealed by the flexible seal when the lever **110** is in the coupled position. An interlock switch may be implemented at the upper housing section **122** that is activated when mixing vessel **104** is coupled to upper housing section **122** that prevents activation of drive motor **208** unless vessel **104** is coupled to upper housing section **122**. This ensures that a user is not exposed to a moving dasher **204**. Frozen drink maker **100** may also include drip tray **118** being positioned below dispenser assembly **108** and arranged to collect any drink product that is not properly dispensed from mixing vessel **104** to, for example, a user cup. Drip tray **118** may be attachably removable from its operational position shown in FIG. **1**. For example, water tray **118** may mounted and/or stored on a side panel of housing **102** as illustrated in FIG. **3** as water tray **304**.

FIG. **2** shows a view **200** of various internal components within housing **102** and mixing vessel **104** of frozen drink maker **100** of FIG. **1**. Frozen drink maker **100** includes a cylindrical evaporator **202** that is surrounded by an auger and/or dasher **204**. Dasher **204** may include one or more mixing blades and/or protrusions that extend helically around evaporator and/or chiller **202**. Dasher **204** may be driven to rotate by a central drive shaft (not shown) within mixing vessel **104**. The drive shaft may be surrounded by evaporator **202**. However, in various implementations, evaporator **202** does not rotate. The drive shaft may be coupled via a gear assembly **210** to a drive motor **208**. In some implementations, drive motor **208** is an AC motor, but another type of motor may be used such as, without limitation, a DC motor. Drive motor **208** may include a motor fan **212** arranged to provide air cooling for motor **208**. While FIG. **2** shows an implementation where drive motor **208** is not coaxially aligned with the drive shaft used to rotate dasher **204**, in other implementations, motor **208** can be aligned coaxially with the drive shaft. During processing of a drink product, motor **208** may be continuously operated at a one or more speeds to drive continuous rotation of dasher **204** and, thereby, provide continuous mixing of the drink product within mixing vessel **104**. In some implementations, the rotation of the dasher **204** causes the helically arranged blades to push the cooling drink product to the front of the mixing vessel **104**. During the processing, portions of the drink product may freeze against the surface of the evaporator as a result of being cooled by the evaporator. In some implementations, the blades of the rotating dasher **204** scrape frozen portions of the drink product from the surface the evaporator while concurrently mixing and pushing the cooling drink product towards the front of the mixing vessel **104**.

Frozen drink maker **100** may include a refrigeration circuit and/or system to provide cooling of a drink product and/or to control the temperature of a drink product within mixing vessel **104**. The refrigeration circuit may include a compressor **214**, an evaporator **202**, a condenser **216**, a condenser fan **218**, a bypass valve, and conduit that carries refrigerant in a closed loop among the refrigeration circuit components to facilitate cooling and/or temperature control of a drink product in mixing vessel **104**. Operations of the refrigeration circuit may be controlled by a controller, such as controller **402**, as described further with respect to FIG. **4** later herein. Frozen drink maker **100** may also include a condensation collection tray **220** arranged to collect any liquid condensation caused by cooling from evaporator **202**. FIG. **2** shows tray **220** in the inserted position. Tray **220** may be insertably removable from a slot within housing **102** to enable collection of condensed liquid when inserted into the slot and then efficient removal to empty tray **220**, and then re-insertion into the slot for subsequent liquid collection.

FIG. **3** shows a front view **300** of frozen drink maker **100** of FIG. **1**. Frozen drink maker **100** may include user interface **112** on a front surface of housing **102**. In other implementations, user interface **112** may be located on a side, top, or back of housing **102**. Frozen drink maker may include a mount **302** on a side of housing **102** where drip tray

118 can be mounted when not in use (shown as drip tray 304 in FIG. 3) such as during transport of frozen drink maker 100. Frozen drink maker 100 may include a power interface arranged to receive AC power from a power outlet (not shown). In some implementations, frozen drink maker 100 may include one or more batteries housed within housing 102 and arranged to provide power to various components of frozen drink maker 100. Frozen drink maker 100 may also include a printed circuit board assembly (PCBA) 222 within housing 102. As will be explained with respect to FIG. 4, PCBA 222 may include a control system 400 arranged to automatically control certain operations of frozen drink maker 100.

FIG. 4 is a block diagram illustrating an example of a control system 400 of frozen drink maker 100 according to some implementations of the disclosure. Control system 400 may include a microcontroller, a processor, a system-on-a-chip (SoC), a client device, and/or a physical computing device and may include hardware and/or virtual processor (s). In some implementations, control system 400 and its elements as shown in FIG. 4 each relate to physical hardware, while in some implementations one, more, or all of the elements could be implemented using emulators or virtual machines. Regardless, electronic control system 400 may be implemented on physical hardware, such as in frozen drink maker 100.

As also shown in FIG. 4, control system 400 may include a user interface 212 and/or 112, having, for example, a keyboard, keypad, one or more buttons, dials, touchpad, or sensor readout (e.g., biometric scanner) and one or more output devices, such as displays, speakers for audio, LED indicators, and/or light indicators. Control system 400 may also include communications interfaces 410, such as a network communication unit that could include a wired communication component and/or a wireless communications component, which may be communicatively coupled to controller and/or processor 402. The network communication unit may utilize any of a variety of proprietary or standardized network protocols, such as Ethernet, TCP/IP, to name a few of many protocols, to effect communications between processor 402 and another device, network, or system. Network communication units may also comprise one or more transceivers that utilize the Ethernet, power line communication (PLC), Wi-Fi, cellular, and/or other communication methods. For example, control system 400 may send one or more communications associated with a status of frozen drink maker 100 to a mobile device of a user, e.g., send an alert to the mobile device when a recipe is complete and/or a drink product is ready for dispensing, or to indicate that the mixing vessel is low or out of a drink product.

Control system 400 may include a processing element, such as controller and/or processor 402, that contains one or more hardware processors, where each hardware processor may have a single or multiple processor cores. In one implementation, the processor 402 includes at least one shared cache that stores data (e.g., computing instructions) that are utilized by one or more other components of processor 402. For example, the shared cache may be a locally cached data stored in a memory for faster access by components of the processing elements that make up processor 402. Examples of processors include but are not limited to a central processing unit (CPU) and/or microprocessor. Controller and/or processor 402 may utilize a computer architecture base on, without limitation, the Intel® 8051 architecture, Motorola® 68HCX, Intel® 80X86, and the like. The processor 402 may include, without limitation, an 8-bit, 12-bit, 16-bit, 32-bit, or 64-bit architecture. Although not illustrated in FIG. 4, the processing elements that make up processor 402 may also include one or more other types of hardware processing components, such as graphics processing units (GPUs), application specific integrated circuits (ASICs), field-programmable gate arrays (FPGAs), and/or digital signal processors (DSPs).

FIG. 4 also illustrates that memory 404 may be operatively and communicatively coupled to controller 402. Memory 404 may be a non-transitory medium configured to store various types of data. For example, memory 404 may include one or more storage devices 408 that include a non-volatile storage device and/or volatile memory. Volatile memory, such as random-access memory (RAM), can be any suitable non-permanent storage device. The non-volatile storage devices 408 may include one or more disk drives, optical drives, solid-state drives (SSDs), tape drives, flash memory, read-only memory (ROM), and/or any other type of memory designed to maintain data for a duration time after a power loss or shut down operation. In certain configurations, the non-volatile storage devices 408 may be used to store overflow data if allocated RAM is not large enough to hold all working data. The non-volatile storage devices 408 may also be used to store programs that are loaded into the RAM when such programs are selected for execution. Data store and/or storage devices 408 may be arranged to store a plurality of drink product making and/or processing instruction programs associated with a plurality of drink product processing sequences, i.e., recipes. Such drink product making and/or processing instruction programs may include instruction for controller and/or processor 402 to: start or stop one or motors and/or compressors 414 (e.g., such as motor 208 and/or compressor 214), start or stop compressor 214 to regulate a temperature of a drink product being processed within mixing vessel 104, operate the one or more motors 414 (e.g., motor 208 and/or compressor 214) at certain periods during a particular drink product processing sequence, operate motor 208 at certain speeds during certain periods of time of a recipe, issue one or more cue instructions to user interface 412 and/or 112 that are output to a user to illicit a response, action, and/or input from the user.

Persons of ordinary skill in the art are aware that software programs may be developed, encoded, and compiled in a variety of computing languages for a variety of software platforms and/or operating systems and subsequently loaded and executed by processor 402. In one implementation, the compiling process of the software program may transform program code written in a programming language to another computer language such that the processor 402 is able to execute the programming code. For example, the compiling process of the software program may generate an executable program that provides encoded instructions (e.g., machine code instructions) for processor 402 to accomplish specific, non-generic, particular computing functions.

After the compiling process, the encoded instructions may be loaded as computer executable instructions or process steps to processor 402 from storage 408, from memory 404, and/or embedded within processor 402 (e.g., via a cache or on-board ROM). Processor 402 may be configured to execute the stored instructions or process steps in order to perform instructions or process steps to transform the electronic control system 400 into a non-generic, particular, specially programmed machine or apparatus. Stored data, e.g., data stored by a data store and/or storage device 408, may be accessed by processor 402 during the execution of computer executable instructions or process steps to instruct one or more components within control system 400 and/or

other components or devices external to system **400**. For example, the recipes may be arranged in a lookup table and/or database within data store **408** and be accessed by processor **402** when executing a particular recipe selected by a user via user interface **412** and/or **112**.

User interface **412** and/or **112** can include a display, positional input device (such as a mouse, touchpad, touchscreen, or the like), keyboard, keypad, one or more buttons, one or more dials, a microphone, speaker, or other forms of user input and output devices. The user interface components may be communicatively coupled to processor **402**. When the user interface output device is or includes a display, the display can be implemented in various ways, including by a liquid crystal display (LCD) or a cathode-ray tube (CRT) or light emitting diode (LED) display, such as an OLED display.

Sensors **406** may include one or more sensors that detect and/or monitor conditions of a drink product within mixing vessel **104**, conditions associated with a component of the frozen drink maker **100**, and/or conditions of a refrigerant within the refrigeration system. Conditions may include, without limitation, rotation, speed of rotation, and/or movement of a device or component (e.g., a motor), rate of such movement, frequency of such movement, direction of such movements, motor current, motor voltage, motor power, motor torque, temperature, pressure, fluid level in vessel **104**, position of a device or component (e.g., whether pour-in opening **106** is open or closed), and/or the presence of a device or component (e.g., whether shroud **116** is installed or not). Types of sensors may include, for example, electrical metering chips, Hall sensors, pressure sensors, temperature sensors, optical sensors, current sensors, torque sensors, voltage sensors, cameras, other types of sensors, or any suitable combination of the foregoing. Frozen drink maker **100** may include one or more temperature sensors positioned in various locations within mixing vessel **104** such as, for example, on or about the lower front area within mixing vessel **104**, on or about the upper front area within mixing vessel **104**, on or about the upper rear area within vessel **104**, within one or more coils of evaporator **202**, and/or within housing **102**.

Sensors **406** may also include one or more safety and/or interlock switches that prevent or enable operation of certain components, e.g., a motor, when certain conditions are met (e.g., enabling activation of motor **208** and/or **414** when a lid or cover for opening **106** is attached or closed and/or when a sufficient level of drink product is in vessel **104**). Persons of ordinary skill in the art are aware that electronic control system **400** may include other components well known in the art, such as power sources and/or analog-to-digital converters, not explicitly shown in FIG. **4**.

In some implementations, control system **400** and/or processor **402** includes an SoC having multiple hardware components, including but not limited to: a microcontroller, microprocessor or digital signal processor (DSP) core and/or multiprocessor SoCs (MPSoC) having more than one processor cores; memory blocks including a selection of read-only memory (ROM), random access memory (RAM), electronically erasable programmable read-only memory (EEPROM) and flash memory; timing sources including oscillators and phase-docked loops; peripherals including counter-timers, real-time timers and power-on reset generators; external interfaces, including industry standards such as universal serial bus (USB), Fire Wire, Ethernet, universal synchronous/asynchronous receiver/transmitter (USART), serial peripheral interface (SPI); analog interfaces including analog-to-digital converters (ADCs) and digital-to-analog converters (DACs); and voltage regulators and power management circuits.

A SoC includes both the hardware, described above, and software controlling the microcontroller, microprocessor and/or DSP cores, peripherals and interfaces. Most SoCs are developed from pre-qualified hardware blocks for the hardware elements (e.g., referred to as modules or components which represent an IP core or IP block), together with software drivers that control their operation. The above listing of hardware elements is not exhaustive. A SoC may include protocol stacks that drive industry-standard interfaces like a universal serial bus (USB).

Once the overall architecture of the SoC has been defined, individual hardware elements may be described in an abstract language called RTL which stands for register-transfer level. RTL is used to define the circuit behavior. Hardware elements are connected together in the same RTL language to create the full SoC design. In digital circuit design, RTL is a design abstraction which models a synchronous digital circuit in terms of the flow of digital signals (data) between hardware registers, and the logical operations performed on those signals. RTL abstraction is used in hardware description languages (HDLs) like Verilog and VHDL to create high-level representations of a circuit, from which lower-level representations and ultimately actual wiring can be derived. Design at the RTL level is typical practice in modern digital design. Verilog is standardized as Institute of Electrical and Electronic Engineers (IEEE) 1364 and is an HDL used to model electronic systems. Verilog is most commonly used in the design and verification of digital circuits at the RTL level of abstraction. Verilog may also be used in the verification of analog circuits and mixed-signal circuits, as well as in the design of genetic circuits. In some implementations, various components of control system **400** are implemented on a PCB such as PCB **222**.

In operation in certain implementations, a user fills mixing vessel **104** via pour-in opening **106** with ingredients associated with a drink product. The user selects the type of drink product to be processed via user interface **112**, e.g., the user selects the recipe for "margarita." In some implementations, the user selects the product type and/or recipe before filling the mixing vessel **104** and the user interface **112** provides one or more indicators or queues (visible and/or audible) that instruct the user to add ingredients to mixing vessel **104**. Mixing vessel **104** may include one or more fill sensors that detect when a sufficient amount or level of ingredients and/or fluid is within mixing vessel **104**. The one or more fill sensors may provide a signal to processor **402** that indicates when vessel **104** is sufficiently filled or not filled. Processor **402** may prevent operations of the frozen drink maker **100** (e.g., prevent activation of motor **208** and/or other components) if the fill sensor(s) **406** indicate that vessel **104** is not sufficiently filled. A lid sensor may be associated with opening **106** whereby the lid sensor sends an open and/or closed signal to processor **402** that indicates whether opening **106** is open or closed. Processor **402** may prevent operations of the frozen drink maker **100** if the lid sensor indicates that opening **106** is open and/or not closed. Depending on the sensed condition, user interface **112** may provide an indication regarding the condition, e.g., that vessel **104** is sufficiently filled or not sufficiently filled and/or that opening **106** is not closed, to enable a user to take appropriate action(s).

Once mixing vessel **104** is filled with ingredients, the user may provide an input, e.g., a button press, to start processing of the drink product based on the selected recipe. Processing

may include activation of motor **208** to drive rotation of dasher **204** and/or blade **206** to effect mixing of the ingredients of the drink product. Processing may also include activation of the refrigeration system including activation of compressor **214** and condenser fan **218**. The compressor **214** facilitates refrigerant flow through one or more coils of evaporator **202** and through condenser **216** to provide cooling and/or temperature control of the drink product within mixing vessel **104**. Processor **402** may control operations of various components such as motor **208** and compressor **214**. To regulate temperature at a particular setting associated with a recipe, processor **402** may activate/start and/or deactivate/stop compressor **214** to start and/or stop refrigerant flow through the coil(s) of evaporator **202** and, thereby, start or stop cooling of the drink product within mixing vessel **104**.

By cooling a drink product to a particular temperature, slush and/or ice particles may be formed within the drink product. Typically, the amount of particles and/or texture of a drink product corresponds to a temperature of the drink product, i.e., the cooler the temperature—the larger the amount of particles (and/or the larger the size of particles) and/or the more slushi the drink product. User interface **112** may enable a user to fine tune and/or adjust a preset temperature associated with a recipe to enable a user to adjust the temperature and/or texture of a drink product to a more desirable temperature and/or texture.

Processor **402** may perform processing of the drink product for a set period of time in one or more phases and/or until a desired temperature and/or texture is determined. Processor **402** may receive one or more temperature signals from one or more temperature sensors **408** within mixing vessel **104** to determine the temperature of the drink product. Processor **402** may determine the temperature of the drink product by determining an average temperature among temperatures detected by multiple temperature sensors **408**. Processor **402** may determine the temperature of the drink product based on the detected temperature from one sensor **408** within mixing vessel **104** and/or based on a temperature of the refrigerant detected by a refrigerant temperature sensor **408**. Once a phase and/or sequence of a recipe is determined to be completed by processor **402**, processor **402** may, via user interface **116**, provide a visual and/or audio indication that the recipe is complete and ready for dispensing. In response, a user may place a cup or container below dispenser assembly **108** and pull handle **120** rotationally downward towards the user to open a spout located at the lower front wall of mixing vessel **104**, resulting in dispensing of the drink product into the cup or container. Once filled, the user can close the spout by pushing handle **120** back rotationally upward away from the user to its upright position shown in FIG. **2**. In implementations where handle **120** is spring-biased to the closed position, the user can release their hold of handle **120** and, thereby, allow a spring force to move handle **120** back rotational upward away from the user to the upright and closed position.

As previously mentioned, the frozen drink maker **100** includes an upper housing section **122** arranged to couple with a rear end of the mixing vessel **104** when the mixing vessel **104** is attached to the housing **102**. The frozen drink maker **100** also includes a lever **110** that enables the mixing vessel **104** to be coupled (e.g., locked, attached to, and/or affixed to) to the housing **102** (i.e., the upper housing section **122**). The lever **110** also enables the mixing vessel **104** to be unlocked and decoupled from the housing **102** (i.e., the upper housing section **122**). Features of the lever **110** are shown in FIGS. **5**A and **5**B. FIG. **5**A illustrates a side view of the frozen drink maker **100**, with the mixing vessel **104** in a coupled position relative to the upper housing section **122**. FIG. **5**B illustrates a side view of the frozen drink maker **100** illustrated in FIG. **5**A, with some features of the housing **102** and the lever **110** shown in partial cross-section.

As shown in FIGS. **5**A and **5**B, the lever **110** includes a handle **111** that can be gripped by a user and moved relative to the upper housing section **122**. The handle **111** can be moved into the position shown in FIGS. **5**A and **5**B to couple the mixing vessel **104** into place on the frozen drink maker **100** and can be moved away from the upper housing section **122** and/or toward a front of the housing **102** to decouple the mixing vessel **104** from the frozen drink maker **100**. When the handle **111** is moved relative to the upper housing section **122**, it activates a cam **113**, which engages mating features on the mixing vessel **104** to either couple or uncouple the mixing vessel **104** relative to the upper housing section **122**. In some implementations, the handle **111** moves less than 90° relative to the upper housing section **122** when moving between the coupled position and the uncoupled position.

FIG. **6** shows a detailed view of a handle **111** with two cams **113***a*, **113***b* positioned on opposing sides. The handle **111** may include one, two, three, four, or more cams **113**, if desired. As the handle **111** is moved, the cams **113**, **113***b* rotate with respect to the upper housing section **122**. FIG. **7**A shows a rear view of a mixing vessel **104**. The mixing vessel **104** includes protrusions **115***a*, **115***b* on opposing outer sides, near the rear bottom of the mixing vessel **104**. The protrusions **115***a*, **115***b* are shaped and positioned to engage with the cams **113***a*, **113***b* on the handle **111**. In particular, the cams **113***a* and **113***b* have channels and/or cam paths **109***a* and **109***b* through which the protrusions **115***a* and **115** slide respectively. As the cams **113***a* and **113***b* rotate toward the back of the housing **102**, the protrusions **115***a* and **115***b* slide along cam paths **109***a* and **109***b* and are pulled toward the upper housing section **122** and the rear of the housing **102**, causing the mixing vessel **104** to press against the upper housing section **122** and form a water-tight seal with the housing **102**. When the cams **113***a*, **113***b* are rotated toward the front of the frozen drink maker **100**, the protrusions **115***a*, **115***b* are pushed away from the upper housing section **122**, causing the mixing vessel **104** to be decoupled from contact with the upper housing section **122**.

The cam **113** may be an over-center cam, as shown in FIG. **5**B and FIG. **6**, or the cam **113** may have alternative geometry. In the disclosed frozen drink maker **100**, the cam **113** retains the mixing vessel **104** on the housing **102** when the lever **110** is in the coupled position. As previously discussed, the mixing vessel **104** may have an overall cylindrical or approximately cylindrical shape and may include an opening **117** (shown in FIG. **7**B) at its rear end that couples to the upper housing section **122**. As shown in FIG. **7**B, the opening may be in a rear panel **119** of the mixing vessel **104**. The opening **117** may be positioned to face horizontally when the mixing vessel **104** is in the coupled position on the upper housing section **122**.

To move the lever **110** into a coupled position, the handle **111** is moved toward the upper housing section **122**. When the mixing vessel **104** is in a coupled position on the upper housing section **122**, the lever **110**, in cooperation with a flexible seal **121**, seals the opening **117**. FIG. **8** shows a flexible seal **121** configured in accordance with an implementation of the present disclosure. The flexible seal **121** may be formed of any elastomeric material, such as natural or synthetic rubber, silicone, neoprene, chloroprene, polyisoprene, polybutadiene, or combinations thereof. The flexible seal **121** may be independent of the housing **102**. If

desired, the flexible seal **121** may be affixed to the upper housing section **122**. The flexible seal **121** may be a single member including a face seal portion **123** and/or a radial seal portion **125**, as shown in FIG. **8**. However, in other embodiments, the face seal portion **123** and the radial seal portion **125** may be implemented with distinct flexible seals **121**.

The face seal portion **123** has an annular shape with a primary dimension that is vertically aligned to form a vertically aligned seal between a horizontal face of the upper housing section **122** and a horizontal edge of the mixing vessel **104**. When in the coupled position, the face seal portion **125** interfaces a vertically aligned surface of the upper housing section **122** to a vertically aligned side of the mixing vessel **104**. The radial seal portion **125** includes multiple flexible annular ribs, as shown in FIG. **8**. The radial seal portion **125** forms a radial seal relative to the horizontal axis of the vessel **104**, sealing against an inside (i.e., cylindrical) surface of the vessel **104**. The flexible seal **121** may include at least one of a radial seal portion **125** and a face seal portion **123**.

Previously known frozen drink makers do not include both a face seal and a radial seal for a mixing vessel. If present, the face seal portion **123** of the flexible seal **121** may provide an improved seal based on compression provided by the handle **111** pushing the mixing vessel **104** laterally against a wall of upper housing section **122**. The cam **113** also allows high force on the face seal portion **123** to be easily achieved and maintained. Since the face seal portion **123** serves as the primary seal in some implementations, the radial seal portion **125** size can be reduced, thereby lowering the mixing vessel's resistance to seating and improving ease of use.

In some implementations, the flexible seal **121** may serve as the seal for the vessel **104** and/or the evaporator **202**. For example, FIG. **9** shows a cross-sectional view of a sample flexible seal **121** having a vessel seal portion **127** and an evaporator seal portion **129**. The vessel seal portion **127** of the flexible seal **121** creates a watertight seal between the mixing vessel **104** and the upper housing section **122**. The evaporator seal portion **129** of the flexible seal **121** seals the evaporator **202** within the mixing vessel **104**.

To move the lever **110** from a coupled position to an uncoupled position, the handle **111** is moved away from the upper housing section **122** and/or toward a front of the housing **102**, which causes the mixing vessel **104** to slide in a forward direction (away from upper housing section **122**) to be fully detached and/or removed from the housing **102**. If desired, the cam **113** may include an ejection feature to apply an ejection force to the mixing vessel **104** to eject past the radial seal portion **125**.

In other aspects, methods of using a frozen drink maker **100** as disclosed here are described. FIG. **10** illustrates a method **800** of producing a frozen drink using a frozen drink maker device. The frozen drink maker device includes a housing having an upper housing section and a lever configured to move relative to the upper housing section between a coupled position and an uncoupled position, and a mixing vessel arranged to couple to the upper housing section. The lever includes a handle that is moveable to place the lever into the coupled position and/or the uncoupled position. As shown in FIG. **10**, method **800** includes coupling the mixing vessel onto the upper housing section by moving the handle relative to the upper housing section to place the lever into the coupled position (block **802**). When in the coupled position, at least one of a face seal and a radial seal are formed between the mixing vessel and the upper housing section. Method **800** also includes operating the frozen drink maker device to produce the frozen drink (block **804**). Method **800** further includes uncoupling the mixing vessel from the upper housing section by moving the handle relative to the upper housing section to place the lever into an uncoupled position (block **806**).

In some implementations, coupling the mixing vessel onto the upper housing section involves moving the handle toward the upper housing section. In these and other implementations, uncoupling the mixing vessel from the upper housing section involves moving the handle away from the upper housing section and/or toward a front of the housing. Moving the handle relative to the upper housing section to place the lever into the coupled position may be accomplished by a user with only one hand. In these and other implementations, moving the handle relative to the upper housing section to place the lever into the uncoupled position may be accomplished by a user with only one hand. In select implementations, moving the handle relative to the upper housing section to position the lever from the coupled position to the uncoupled position requires moving the handle less than 90° relative to the upper housing section.

FIGS. **11**A and **11**B show perspective views of the collection tray **220** according to an illustrative implementation of the disclosure. The collection tray **220** may generally comprise a collection portion **502** and a handle **504** that may be used to insert the tray **220** into and remove the tray **220** from the housing **102**. The collection portion **502** may comprise three walls **502***a,b,c* extending generally upwards from an evaporator-facing surface **506**. Together with the handle **504**, the walls **502***a,b,c* and the surface **506** may define a chamber **508** for collecting liquid, including condensation falling from the evaporator **202**, spills, and water poured into the mixing vessel **104** to clean the inside of the mixing vessel **104**. A shape of the collection portion **502**, including the evaporator-facing surface **506**, may correspond to an outer shape of the evaporator **202**. For example, the shape of the evaporator-facing surface **506** may be semi-cylindrical to correspond to the cylindrical shape of the evaporator **202**, as shown in FIG. **11**A. However, the disclosure contemplates other suitable shapes, such as rectangular, of the collection portion **502**. The chamber **508** may have a liquid volume capacity of about 16 ounces. However, the disclosure contemplates a liquid volume capacity of more or fewer than 16 ounces. As shown in FIG. **11**B, an underside of the handle **504** may define one or more ribs **514** for adding structural integrity between a user-facing surface **510** of the handle **504** and the main body of the tray **220**. The tray **220** may be made from dishwasher-safe materials for easy cleaning.

FIG. **11**C shows the collection tray **220** inserted into the housing **102** of the frozen drink maker **100** according to an illustrative implementation of the disclosure. For ease of illustration, the housing **102** is shown with the mixing vessel **104** and attached dispenser assembly **108** removed. When fully inserted, the user-facing surface **510** of the handle **504** may sit flush with the user interface **112** of the housing **102**. In the inserted position, the tray **220** may be spaced vertically above a bottom side **103** of the housing **102**. Once liquid is collected in the chamber **508**, the user may remove the tray **220** for disposal of the collected liquid and cleaning of the tray **220**.

FIG. **11**D shows the housing **102** with the collection tray **220** removed according to an implementation of the disclosure. As shown in FIG. **11**D, the housing **102** may include a top surface **520** for supporting the collection tray **220** when the tray **220** is inserted into the housing **102**. A shape of the top surface **520** may be semi-cylindrical to correspond to the

semi-cylindrical shape of the evaporator-facing surface **506**. The housing **102** may also include one or more rails **522** defining one or more slots **512** between the rails **522** and the top surface **520**. The rails **522** may help guide the user in inserting the tray **220** into the slots **512** when installing the tray **220** to the housing **102**.

In some implementations, to remove the collection tray **220** (e.g., for emptying and/or cleaning the tray **220**), the user must first remove the mixing vessel **104** and the attached dispenser **108** (FIG. **1**). The user may then remove the collection tray **220** by pulling the collection tray **220** toward the user. This movement may cause the collection tray **220** to slide along the slots **512** until it is completely disengaged from the housing **102**. Conversely, to insert the collection tray **220** into the housing **102**, the user may insert the tray **220** into the housing **102** by inserting the collection portion **502** into the slots **512** underneath the evaporator **202** (FIG. **2**) such that the evaporator-facing surface **506** faces the evaporator **202**. In some implementations, after the collection tray **220** has been inserted into the housing **102**, the mixing vessel **104** with the attached dispenser **108** may be inserted onto the housing **102** and fastened and sealed against the housing **102**. FIG. **12** is a flow chart illustrating a method of removing the collection tray **220** from the housing **102** as described above. FIG. **12** includes removing the mixing vessel **104** and attached dispenser **108** from the housing **102** (block **1202**), pulling the tray **220** toward the user, causing the tray to slide through slot **512** (block **1204**), and fully disengaging the tray **220** from the slot **512** in housing **102** (block **1206**).

FIGS. **13**A-**13**C show a sample frozen drink maker **100** with a mixing vessel **104** coupled to a housing **102** (specifically, the upper housing section **122**) and a dispenser assembly **108**, according to some implementations. The mixing vessel **104** has a curved sidewall defining a substantially cylindrical chamber within. In select implementations, the mixing vessel **104** is shaped as an ovoid or approximately as an ovoid (i.e., a cylinder with an ovular cross-section), or as an elliptic cylinder (i.e., a cylinder with an elliptic cross-section), or an approximate elliptic cylinder. When coupled to the housing **102**, the front of the mixing vessel **104** contacts the dispenser assembly **108** and the rear of the mixing vessel **104** abuts the upper housing section **122**. Within the mixing vessel **104**, the front face of the chamber may have a substantially ovular shape or a substantially circular shape. The rear of the mixing vessel **104** chamber may include an opening configured to form a seal with the upper housing section **122**. The opening at the rear of the mixing vessel **104** may have a substantially circular shape or a substantially ovular shape. The mixing vessel **104** is sized to accommodate a dasher **204** that rotates about a center axis (shown as center axis "A" in FIG. **13**C). FIG. **13**B shows a possible direction of dasher **204** rotation ("R"). The mixing vessel **104** may be shaped such that a distance from the center axis (A) of the dasher **204** to the top of the vessel chamber is less than 6 inches, less than 8 inches, less than 10 inches, less than 12 inches, less than 14 inches, or less than 16 inches.

FIGS. **14**A-**14**C show an example of the mixing vessel **104** with at least one internal baffle configured to control slush flow within the mixing vessel **104**. As shown in FIGS. **13**A, **13**B, and **14**A-**14**B, the mixing vessel **104** includes a side baffle **105** extending laterally along a sidewall **150** of the vessel chamber. In some implementations, the side baffle **105** extends from the front of the vessel chamber (or approximate thereto) to the rear of the vessel chamber (or approximate thereto). In some implementations, the side baffle **105** extends along the chamber sidewall in a direction parallel to the center axis (A) of the dasher **204**. In some implementations, the side baffle **105** is positioned on a left side (when viewed from the front) of the chamber sidewall (e.g., in embodiments in which the dasher rotates in a clockwise direction). FIGS. **14**A and **14**C illustrate a clockwise direction of dasher rotation (R) when viewed from the front. The side baffle **105** may be positioned slightly above the center axis (A) of the dasher **204**, in some implementations.

The side baffle **105** may include a curved surface **151** that conforms to the pathway of the dasher **204**, as shown in FIGS. **14**A and **14**B. For example, when viewed along the center axis (A) of the dasher, the side baffle **105** may protrude inwardly relative the ovular (e.g., elliptical) cross-section of the chamber sidewall **150**, where, starting from a bottom end of the side baffle **105** at which the curved surface **151** of the side baffle **105** is vertical or substantially vertical, the curved surface **151** may slope gradually inward until reaching an inflection point **153**. After reaching the inflection point **153**, the curved surface **151** may slope more sharply vertically until the top end of the side baffle **105** is reached and, thereafter, the curved surface **151** of the side baffle **105** returns to a curvature in conformance with the ovular cross-section of the chamber sidewall **150**. The radial direction of the curved surface **151** of the side baffle **105** from its bottom to the inflection point **153** is generally aligned with the radial movement of the dasher **204** and thus the contents of the vessel chamber **104**. The cross-sectional geometry of the side baffle **105** described above directs the contents of the vessel away from a top of the vessel chamber (i.e., at a lower radial trajectory than if the side baffle **105** was not present, such as the right side of the vessel chamber as shown in FIG. **13**B). If the side baffle **105** was not present, contents of the vessel chamber could flow unimpeded up the sidewall **150** to a top interior surface of the vessel chamber, which would leave these contents excluded from mixing and/or allow them to escape from the mixing vessel **104**. The side baffle **105** thus reduces the amount of frozen material that could otherwise form on the top interior surface of the mixing vessel **104** as a result of its contents being rotated upwards.

As shown in FIGS. **13**B, **13**C, and **14**A-**14**C, the mixing vessel **104** may include a front baffle **107**. If present, the front baffle **107** may be positioned at a front top portion of the vessel chamber **103** (illustrated in FIG. **13**B). In some implementations, the front baffle **107** extends along the front face of the vessel chamber between the right sidewall and the left sidewall of the vessel chamber. The rotation of the dasher **204** pushes vessel contents towards the front of the vessel chamber, where, if left unchecked, contents could build up near the top front, perhaps even creating a frozen mass detrimental to the mixing process. Viewing from the cross-section of FIG. **13**C, the front baffle **107** may form an angle relative the front face of the vessel chamber (e.g., 100°-150°, 100°-125°, or 105°-120°), which redirects vessel contents that have been forced into the top front of the mixing vessel **104** towards the rear of the vessel chamber. In some implementations, the front baffle **107** may include a curved surface extending upwardly from the front face of the vessel chamber toward a top of the vessel chamber. In some such implementations, the angle the front baffle **107** forms relative to the front face of the vessel chamber varies from a lower angle (e.g., 5°-20°) at a section of front baffle **107** proximate to the front face of the vessel chamber to a higher angle (e.g., 75°-90°) at a section of front baffle proximate to the top of the vessel chamber.

The front baffle **107** is configured to urge contents away from the top surface of the vessel chamber to avoid buildup and overflow on the top of the mixing vessel **104**. The front baffle **107** thus reduces the amount of frozen material that could otherwise form on the top front interior surface of the mixing vessel **104** as a result of the action of the dasher **204**.

As shown in FIGS. **13**C and **14**A-**14**C, the mixing vessel **104** may include a corner baffle **190**. The corner baffle **190** may be positioned at a front top side of the vessel chamber. The corner baffle **190** joins or connects the side baffle **105** and the front baffle **107**. Thus, if the side baffle **105**, front baffle **107**, and corner baffle **190** are each present, the corner baffle **190** physically joins the side baffle **105** to the front baffle **107**. As shown in FIGS. **14**A-**14**B, the side baffle **105** and the front baffle **107** are orthogonal to each other and if these baffles terminated in a hard corner without a corner baffle **190**, slush may not be properly directed. Connecting the side baffle **105** and the front baffle **107** with a corner baffle **190** allows slush to easily flow out of the corner between the side baffle **105** and the front baffle **107**.

The corner baffle **190** has a curved surface **155** that extends from the side baffle **105** to the front baffle **107**. The curved surface **155** may be convex, as shown in FIG. **14**A. Along its length, the corner baffle **190** extends into the vessel chamber at a relatively constant distance. In other words, the depth of the corner baffle **190** may be relatively constant along the length of the corner baffle **190**. The side of the vessel chamber in which the corner baffle **190** is positioned (e.g., the left side or the right side) can be selected based on the direction in which the dasher **204** rotates within the mixing vessel **104**. In particular, the corner baffle **190** may be positioned such that the dasher **204** is directed toward the corner baffle **190** while moving upwardly within the vessel chamber. For example, in select implementations, the corner baffle **190** is positioned at the left top front of the vessel chamber when the dasher is arranged to rotate in a clockwise direction. This positioning may advantageously force slush downward toward the dasher **204** when it contacts the corner baffle **190** as the slush moves upwardly with the dasher **204**, thereby reducing slush buildup on the sidewall and the top of the mixing vessel **104**.

It should be understood that, in some implementations, the disclosed mixing vessel **104** includes one, two, three, or more internal baffles positioned within the vessel chamber. In other words, the mixing vessel **104** may include the side baffle **105**, the front baffle **107**, and/or the corner baffle **190**. The side baffle **105**, front baffle **107**, and/or corner baffle **190** can reduce slush buildup on the sidewalls and top of the vessel chamber, which is important for commercial frozen drink makers as well as household frozen drink makers with significantly less headspace than commercial units.

FIG. **15** is a close-up view **1500** of a user interface such as user interface **112**. According to view **1500**, user interface **112** may include a power button **1502**, drink type indicator panel **1504**, manual temperature adjustment and/or temperature offset indicator **1506**, a manual temperature adjustment interface **1508**, a drink type control dial **1510**, and a chill button **1512**. A user may turn frozen drink maker **100** on or off using power button **1502**. A user may select a drink type to process a type of drink product by turning dial **1510** until a selected drink type is indicated via panel **1504**. The user may select, for example, a slushi, cocktail, a frappe, a juice, or a dairy/milkshake drink type. Dial **1510** may also include a push button feature that enables a user to start or stop processing of a drink type by pressing dial **1510**. Manual temperature adjustment interface **1508** may include left and right buttons that enable a user to adjust a temperature within a temperature offset band such as temperature offset band **1602** of FIG. **16** for a milkshake recipe. A user may select chill button **1512** to initiate a chill program and/or recipe whereby drink maker **100** and/or controller **402** maintains the drink product within mixing vessel **104** at a cool temperature without forming a frozen or semi-frozen drink product. In some implementations, the same cool temperature is maintained for any drink type. For example, the controller **402** may receive a signal indicative of the selection of the chill button **1512**, and reduce the temperature to, and maintain the temperature at or near, a predefined temperature (e.g., in a range) that should not result in any drink type freezing. In another embodiment, the controller **402** may receive a signal indicative of the selection of the chill button **1512** and a selection of a drink type from drink type control dial **1510**, and reduce the temperature to, and maintain the temperature at or near, a predefined temperature (e.g., in a range) defined for that particular drink type (e.g., as specified by a drink type object in memory) that should not result in that drink type freezing.

FIG. **16** is a graph **1600** of coarse and fine temperature settings associated with processing a drink product, where such temperature settings may be stored as temperature values in memory, as described elsewhere herein. For example, when a user selects a dairy and/or milkshake recipe and starts a frozen drink processing sequence and/or recipe using dial **1510**, controller **402** will control processes of the dairy/milkshake recipe to adjust the temperature of the drink product to a coarse temperature setting **1604** at −4 degrees Celsius in graph **1600**. A user before, during, or after the coarse temperature setting **1604** is reached, may fine tune or adjust the coarse target temperature of the drink type by setting a temperature offset using manual temperature adjustment interface **1508**. The user may push the left arrow button to decrease the recipe target temperature in increments of about 0.4 degrees Celsius to about −5.2 degrees Celsius. As the temperature decreases, the thickness and/or amount of frozen drink particles increases. Hence, the manual temperature adjustment indicator **1506** may include a "thickness" label. But different labels may be used such as "temperature offset" or "temperature adjust", and the like.

The user may push the right arrow button to increase the recipe target temperature in increments of about 0.4 degrees Celsius to about −2.8 degrees Celsius. As the temperature increases, the thickness and/or amount of frozen drink particles decreases. The manual temperature adjustment indicator **1506** may include one or more light indicators that are illuminated in a configuration corresponding to the selected temperature offset. For example, the manual temperature adjustment indicator **1506** may have a center light indicator that indicates that a 0 degree Celsius offset is selected (i.e., no offset). The offset indicator **1506** may include light indicators corresponding to each increment of offset selected above or below the coarse setting (e.g., the 0 degree Celsius offset point). FIG. **16** also shows temperature offset and/or manual adjustment bands associated with various types of drink products, such as Milkshake, Frappuccino, Cocktail, Light, and Traditional. Each of the temperature bands may include a center, coarse, and/or target drink type temperature and user-selectable fine tune offset temperatures above and below the drink type target temperature. In some implementations, the temperature offset band associated with one recipe is different than that temperature offset band of a different recipe, resulting in the temperature offset increments being different between the different recipes.

FIG. **17** is a close-up view **1700** of another user interface according to an implementation of the disclosure. According to view **1700**, user interface **112** may include a power button **1708**, drink type selector/indicator panel **1702**, manual temperature adjustment and/or temperature offset indicator **1706**, and a manual temperature adjustment dial **1704**. A user may turn drink maker **100** on or off using power button **1708**. A user may select a drink type to process a type of drink product by pressing a button associated with a selected drink type, e.g., SLUSHI. The selection of a particular drink type may be indicated by illumination of a light indicator associated with the selected drink type button. For example, FIG. **17** shows that the SLUSHI drink type has been selected by illumination of the white LED indicator next to the SLUSHI button. The user may select, for example, a slush drink, spiked slushi or cocktail, a frappe, a frozen juice, or a dairy/milkshake drink type. Manual temperature adjustment dial **1704** may be rotated clockwise or counter-clockwise to set the temperature value and/or target temperature setting within a universal range of drink product temperature values. For example, manual temperature adjustment indicator **1706** may include 10 temperature values or settings corresponding to target temperatures such as illustrated in FIG. **18**.

FIG. **18** is a graph **1800** of temperature values associated with automatic recipe temperature target temperatures and manual temperature adjustments. Graph **1800** shows temperature values 1 through 10 where setting #1 is at −1.3 degrees Celsius and setting #10 is at −7.2 degree Celsius. The ten temperature settings of graph **1800** correspond to the ten light indicators of manual temperature adjustment indicator **1706**. In operation, when a user selects a drink type, e.g., a MILKSHAKE, by pressing the corresponding button in drink type selector/indicator panel **1702**, the button's adjacent indicator illuminates. Also, if the coarse or automatic temperature value associated with a milkshake is about −4.0 degrees Celsius, which corresponds the setting #7 in graph **1800**, then seven indicators (i.e., light bars) will be illuminated in manual adjustment indicator **1706**. The light bars may be dimmed or flash periodically until the target temperature is reached and/or detected by controller **402**. Interface **112** may emit an audible sound, e.g., a beep or beep sequence when a target temperature is reached. A dimmed or flashing illumination may be changed to a brighter and/or steady illumination when a target temperature is reached. In some implementations, once a target temperature is reached, controller **402** will cycle compressor **214** on and off to keep a temperature of the drink product within a target temperature range above and/or below the target temperature. For example, the range may be greater than or equal to about 0.2, 0.3, 0.5, or 1.0 degrees Celsius above and below the drink product target temperature. As long as the temperature remains within the target temperature range, controller **402** will not initiate an alert (e.g., audible output) or change in status of any indicators of indicator **1706**.

If the user wants to further decrease the target temperature and/or increase the target thickness of the milkshake to setting #10 of FIG. **18**, the user can turn dial **1704** until all 10 light indicators are illuminated. If the user wants to increase the target temperature to setting #3 of FIG. **18** and/or reduce the target thickness of the milkshake, the user can turn dial **1704** until three indicators bars of indicator **1706** are illuminated as illustrated in FIG. **17**. While FIG. **17** shows an interface using a dial **1704** to manually adjust temperature, other types of interfaces may be used such as, without limitation, up/down buttons, a touch screen, or a slider switch.

FIG. **18** also illustrates how each increment of temperature change between each of the temperature settings #1 to #10 may be nonlinear to account for adequate changes in thickness of a cooled or frozen drink product. As temperature decreases, it requires a larger change in temperature to cause a material or proportional change in the amount of frozen drink particles within or the thickness of a drink product. For example, temperature increment **1802** (between settings #4 and #5) is about 0.6 degrees Celsius, while temperature increment **1804** (between setting #8 and #9), in a lower temperature range, is about −1.0 degrees Celsius. In other implementations, the increment of temperature change between settings may be constant, resulting a linear temperature range. While a range including 10 temperature values or settings is illustrated in FIGS. **17** and **18**, any number of settings and/or temperature ranges may be implemented.

FIG. **19** is a graph **1900** of drive motor **208** current and temperature of a drink product vs. time as the drink product is being processed by frozen drink maker **100** of FIG. **1**. Graph **1900** shows changes in drive motor current **1902** and corresponding drink product temperatures **1904** over time as a drink product is being made. Graph **1900** illustrates how the current **1902** applied to drive motor **208** increases as the temperature **1904** decreases, causing the thickness of the drink product to increase, which results in an increased resistance of the drink product to the rotation of the dasher **204** which, in turn, requires increased motor power and/or current **1902** to drive dasher **204** against the resistance. When the current **1902**, or power, or torque, reaches or exceeds a threshold or motor condition limit **1906**, e.g., about 40 Watts and/or about 0.3 amps current, controller **402** may deactivate the cooling circuit, i.e., stop coolant and/or refrigerant flow to evaporator **202**, to allow the temperature **1904** to increase and, thereby reduce the thickness of the drink product to reduce the current **1902** of drive motor **208** to below the motor condition limit **1906**. Controller **402** may automatically adjust the temperature setting associated with a particular drink type, which may have been fine-tuned by a user selection of a manual temperature adjustment and/or temperature offset, to a new temperature setting corresponding to a second target temperature, where the magnitude of the motor current **1902** is lower than the motor condition limit **1906**. The second target temperature may set to be, for example, 0.25, 0.5, 0.75, 1, 1.25, 1.5, or 2.0 degrees Celsius above (by a relatively small offset) the initial and/or first target temperature. In this way, controller **402** prevents an overcurrent condition and possible damage to drive motor **208**. This may also enable operation of drink maker **100** and dasher **204** to continue by preventing excessive buildup of ice within mixing vessel **104**, i.e., prevents drive motor **208** from stalling. Otherwise, drive motor **208** would stall and drink maker **100** would be jammed up, blocking slush output from mixing vessel **104** and requiring a user to defrost and/or unblock mixing vessel **104** before normal operations can be resumed. Hence, this stall preventions enables drink maker **100** to provide some slush output. Further, an excessive current or power condition of drive motor **208** caused by an object blocking rotations of dasher **204** can also be prevented. Controller **402** may perform actions in addition to stopping drive motor **208**, such as shutting down compressor **214**. Graph **1900** also shows how controller **402** may continuously and/or periodically monitor temperature associated with a drink product within mixing vessel **104** via

temperature sensor(s) **406** to enable continuously control of components such as compressor **214**, and other components, of frozen drink maker **100** to enable automatic control of the temperature of a drink product.

FIG. **20** is a flow diagram of a process **2000** for making a cooled drink product using a recipe for initial or coarse temperature and/or texture control and then using a user input to fine tune the temperature and/or texture of the drink product. In certain implementations, process **2000** includes: receiving, into mixing vessel **104**, a drink product (Step **2002**); mixing, using a mixer and/or dasher **204** driven by drive motor **208**, the drink product within mixing vessel **104** (Step **2004**); cooling, using a cooling circuit such as a refrigeration circuit including evaporator **202**, the drink product within mixing vessel **104** (Step **2006**); detecting, via temperature sensor(s) **406**, a temperature associated with the drink product and outputting a temperature signal (Step **2008**); storing, in a memory **408**, a drink object representing a drink type, the drink object specifying a first temperature value and/or setting corresponding to a first target temperature (Step **2010**); receiving, at controller **402**, the temperature signal (Step **2012**); controlling, by controller **402**, the temperature associated with the drink product by controlling the cooling circuit, e.g., by activating or deactivating compressor **214** to initiate or stop refrigerant flow through evaporator **202**, based on the received temperature signal, the first temperature value, and/or a manual temperature adjustment (Step **2014**); and receiving a user input to adjust the manual temperature adjustment (Step **2016**). The user input may be indicative of a desired thickness corresponding to the manual temperature adjustment. In some implementations, the manual adjustment may be customized per drink type. In certain implementations, the manual adjustment is universal for all drink types. In some implementations, the manual adjustment is finer and/or for a smaller range specific to a drink type (e.g., corresponding to FIG. **16**) and in other implementations coarser and/or for a larger range not specific to a drink type—i.e., spanning multiple (e.g., all) drink types, thereby enabling a user greater latitude in adjusting thickness and/or temperature.

FIG. **21** is a flow diagram of a process **2100** for automatically detecting when drive motor current is too high and/or a drink product is too thick and, in response, adjusting the temperature of the drink product to reduce drive motor current and/or to increase the temperature of the drink product to reduce a thickness of the drink product. In certain implementations, process **2100** includes: receiving, in mixing vessel **104**, the drink product (Step **2102**); mixing, using a mixer and/or dasher **204** driven by drive motor **208**, the drink product within mixing vessel **104** (Step **2104**); cooling, using a cooling circuit such as evaporator **202**, the drink product within mixing vessel **104** (Step **2106**); measuring, via temperature sensor(s) **406**, a temperature associated with the drink product and outputting a temperature signal (Step **2108**); measuring, via motor condition sensor(s) **406**, a motor condition associated with drive motor **208** and outputting a motor condition signal (Step **2110**); storing, in memory **408**, a first temperature value corresponding to a first target temperature and storing a motor condition limit (Step **2112**); receiving, at controller **402**, the temperature signal and the motor condition signal (Step **2114**); and controlling the temperature associated with the drink product by controlling the cooling circuit, e.g., by activating or deactivating compressor **214** to initiate or stop the refrigerant flow through evaporator **202**, based at least on the received temperature signal, the received motor condition signal, the first temperature setting, and the motor condition limit (Step **2116**).

In some implementations, controller **402** may stop and/or deactivate drive motor **208** to stop rotation of dasher **204** when the motor condition signal exceeds a motor knockdown threshold, i.e., the motor current or power is too high and/or high enough to damage drive motor **208**, which may be caused by an excessive buildup of ice within mixing vessel **104**. Excessive ice build up may be caused, for example, by filling mixing vessel with only water or a liquid predominantly consisting of water. Shutdown of drive motor **208** may also prevent damage to dasher **204** caused by excessive buildup hard ice. Controller **402** may perform other actions in additional to deactivating drive motor **208** or alternatively such as issuing an alert, via user interface **112**, to a user to add more ingredients such as sugar or alcohol to the drink product or issuing an alert to the user to turn off drink maker **100**. A different motor shutdown threshold for motor **208** may be set higher than the motor knockdown threshold limit. In this way, controller **104** may attempt to increase temperature in mixing vessel **104** when a motor knockdown threshold limit is reached, but only shut down and/or stop drive motor **208** when a motor shutdown threshold is reached to prevent damage to drive motor **208**. Controller **104** may take action based on determining whether the motor knockdown threshold limit or the motor shutdown limit has been reached or exceeded for a period of time, e.g., 0.5, 1.0, 1.5, 2.0, 5 seconds or more. By observing motor current and/or power for a period of time, a false positive and/or reading of current and/or power may be eliminated.

FIG. **22**A shows a dual-use cooling fan **2202** within a housing of a drink maker **2200** including a refrigeration system having a condenser **2208** and compressor **2210**. Drink maker **2200** also includes a drive motor **2204** configured to drive rotation of dasher **2212** during processing of a drink product. Dual-use cooling fan **2202** draws an air flow through condenser **2208** and directs the air flow, via an air channel **2206**, toward drive motor **2204**. The air flow passes over and adjacent to condenser coils as it passes through condenser **2208** to cool the refrigerant passing through condenser **2208** within a closed loop refrigeration system. The air flow also passes along a surface and/or surfaces of drive motor **2204** to effect cooling of drive motor **2204**. While FIG. **22**A shows a configuration where drive motor **2204** and condenser **2208** are positioned at about right angles with respect to dual-use cooling fan **2202**, other configurations, arrangements, or orientations may be implemented such that dual-use cooling fan **2202** provides a cooling air flow to condenser **2208** and drive motor **2204**.

In some implementations, a drink maker, such as drink maker **2200**, includes a mixing vessel, like mixing vessel **104**, arranged to receive a drink product. The drink maker **2200** includes a mixing component such as dasher **2212** or another type of mixing component, driven by drive motor **2212**, that is arranged to mix the drink product within the mixing vessel **104**. A refrigeration system is arranged to cool the drink product within mixing vessel **104** that includes a condenser, such as condenser **2208**. Cooling fan **2202**, i.e., a dual-use cooling fan, is configured to concurrently cool the drive motor **2204** and the condenser **2208**. Cooling fan **2202** may provide air flow through condenser **2208** to cool refrigerant flowing through condenser **2208**. Cooling fan **2202** may provide air flow along a surface of drive motor **2204** to cool the drive motor **2204**. Cooling fan **2202**, drive motor **2204**, and condenser **2208** may be positioned such

that air generated by cooling fan **2202** passes serially through condenser **2208** and along a surface of the drive motor **2204**.

A first portion of air generated by cooling fan **2202** may cool condenser **2208** and a second portion of air generated by cooling fan **2202** may cool drive motor **2204**. Condenser **2208** may include a plurality of coils that carry coolant and/or refrigerant within a closed loop of the refrigeration circuit. When cooling fan **2202** provides air flow through condenser **2208** to cool refrigerant flowing through condenser **2208**, the air flow may travel adjacent to and/or around the plurality of coils. A cooling channel **2206** may extend between cooling fan **2202** and drive motor **2204** where cooling channel **2206** provides cooling air flow between cooling fan **2202** and drive motor **2204**. Cooling channel **2206** may be at least partially formed by a duct and/or ducting. The ducting may include plastic, metals, composite materials, and the like. A cooling channel may extend between cooling fan **2202** and condenser **2208**, where the cooling channel provides cooling air flow between cooling fan **2202** and condenser **2208**. The cooling channel may be at least partially formed by a duct. Cooling fan **2202** and **2222** may include a centrifugal fan, a cross-flow fan, a tangential fan, a volute fan, a backward curved fan, a forward curved fan, a blower fan, a squirrel-cage fan, and/or an axial fan.

In some implementations, a cooling fan, such as cooling fan **2202**, is configured for cooling a drive motor, such as drive motor **2204**, and a condenser, such as condenser **2208**, within a housing of a drink maker. Cooling fan **2202** may include an air inlet configured to receive an air flow, an impeller configured to generate the air flow; and an air outlet configured to output the air flow through condenser **2208** and along a surface of the drive motor **2204**.

FIG. **22**B shows another implementation of a dual-use cooling fan **2222** within the housing of a drink maker **2220** including a drive motor **2224**, a dasher **2226**, a compressor **2230**, and a condenser **2228**. The drive motor **2224** is coupled to and drives rotation of the dasher and also drives rotation of the cooling fan **2222** via gears **2236**. Cooling fan **2222** includes an air outlet **2238** that directs air flow from cooling fan **2222** through air channel **2232** which may include ducting **2234** that directs air flow through condenser **2228** to cool refrigerant flowing through condenser **2238**.

FIG. **22**C shows a perspective view **2240** of the dual-use cooling fan **2222** within housing **2242** of drink maker **2220**. Cooling fan **2222** may be a centrifugal fan and/or another type of fan as described herein. Cooling fan **2222** may include an impeller **2244** that draws air flow into cooling fan **2222** via inlet **2236** and then expels air downward at about a right angle via outlet **2238** with respect to inlet **2236**. The air flow exiting outlet **2238** flows downward past drive motor **2224**, including along a surface of drive motor **2224**, and through air channel **2232**, which may include ducting **2234** that directs the air flow through condenser **2228** (adjacent to and/or around coils of condenser **2228**) to effect cooling of refrigerant passing through the coils.

FIG. **23** is a flow diagram of a process **2300** for operating dual-use cooling fan **2202** or **2222** of FIGS. **22**A and **22**B respectively. Process **2300** facilitates concurrently cooling condenser **2208** (or condenser **2228**) and drive motor **2204** (or drive motor **2224**) within a housing of a drink maker using a cooling fan **2202** or **2222** respectively by: activating drive motor **2204** (or drive motor **2224**) that is arranged to drive rotation of dasher **2212** (or dasher **2226**) within a mixing vessel of a drink maker (Step **2302**); activating compressor **2208** (or compressor **2230**) of a refrigeration circuit of the drink maker (Step **2304**); and activating cooling fan **2202** (or cooling fan **2222**) to concurrently generate air flow through condenser **2208** (or condenser **2228**) and along a surface of drive motor **2204** (or drive motor **2224**) (Step **2306**).

As previously mentioned, the frozen drink maker **100** may include pour-in opening **106** through which the mixing vessel **104** can receive ingredients to be mixed to produce a drink product. An illustrative pour-in-opening **106** for a frozen drink maker **100** is shown in FIGS. **24**A-**24**C. The frozen drink maker **100** includes a mixing vessel **104** with a substantially cylindrical chamber and a housing **102** with an upper housing section **122**. FIG. **24**A shows a perspective side view of the pour-in opening **106**. FIG. **24**B shows a front view of the pour-in opening **106** of FIG. **24**A, and FIG. **24**C shows a perspective view of the pour-in opening **106** of FIG. **24**A from the left side of the mixing vessel **104** (when viewed from the front view). The pour-in opening **106** may facilitate the addition of fluids, liquids, slush, or other ingredients to the mixing vessel **104** while the dasher **204** is active as well as minimizing spillage and preventing finger insertion during use.

In some implementations, the pour-in opening **106** may include a cover **160** to seal the pour-in opening **106**, as shown in FIGS. **24**A and **24**C. A detailed perspective view of a sample cover **160** for the pour-in opening **106** is shown in FIG. **25**. If present, the cover **160** may be hingedly connect to an upper section of the mixing vessel **104**. The cover **160** may be moved between an open position in which the pour-in opening **106** is accessible to a user and a closed position in which the pour-in opening **106** is not accessible to a user. Although not illustrated in the accompanying figures, the pour-in opening **106** may also include a grate to restrict objects from entering the aperture **162**. If present, a grate may reduce the risk of solids greater than a certain size and/or having one or more certain shapes entering the mixing vessel **104**, which can cause damage.

FIG. **26** shows a perspective view of a sample pour-in opening **106**. The pour-in opening **106** includes a surface **164** that inclines radially with respect to a center axis of a dasher **204** (shown as axis "A" in FIG. **24**A). The incline **164** reduces possible splashing as the vessel is filled. The incline **164** also prevents slush contained within the mixing vessel **104** from being pushed out of the pour-in opening **106**. The surface **164** has an aperture **162**. Although FIG. **26** shows only one aperture **162**, additional apertures may also be present. The aperture **162** is in fluid communication with an interior chamber of a mixing vessel **104**. In some implementations, the aperture **162** extends laterally along the surface **164** in a direction parallel to the center axis "A" of the dasher **204**. The aperture **162** may be shaped as a slot, as shown in FIG. **26**, or may have a different shape. If shaped as a slot, the aperture **162** may be longer or wider than shown in FIGS. **24**A-**24**C and/or may have a different ratio of length to width than shown. Further, the aperture **162**, as a slot or another oblong shape, may have its major axis aligned parallel or perpendicular to the axis of the mixing vessel **104**, or at any other angle relative to the axis of the mixing vessel **104**. The aperture **162**, for example, in the form of a slot, may be sized small enough (at least in width) to not allow passage of a human finger, at least not the entire length of a human finger, to thereby prevent a user from sticking one or more fingers into mixing vessel **104**.

The pour-in opening **106** may optionally include one or more lips **166***a*, **166***b* extending up from a perimeter of the surface **164** to form a well that feeds into the aperture **162**, as shown in FIG. **26**. One or more lips **166***a*, **166***b* may

reduce overflow spill when a liquid is poured into the mixing vessel **104**. If desired, the pour-in opening **106** may also include a grate (not illustrated) covering at least a portion of the aperture **162**. For safety concerns, users should not contact the dasher **204** while it is rotating. The geometry of the pour-in opening **106** (including the aperture **162** as described above) may inhibit or prevent a user from reaching into mixing vessel **104** even when the cover **160** is in an open position and/or the dasher **204** is rotating.

The pour-in opening **106** may be positioned on a top of the mixing vessel **104**, near its rear end, as shown in FIGS. **24**A-**24**C, opposite the dispenser assembly. Positioning the pour-in opening **106** near the rear of the mixing vessel **104** avoids interference with slush circulation in the front of the frozen drink maker **100**, which can lead to waste and non-homogeneous texture. With the pour-in opening **106** positioned at the rear of the mixing vessel **104**, the front ⅔ of the vessel has a continuous and smooth internal shape to provide good slush flow and minimize migration of the slush out of the top. By positioning the pour-in opening **106** near the rear of the vessel **104**, the opening **106** is located in a position where there is less possible buildup of frozen and/or slush materials, enabling less obstructed pouring and reducing possible buildup of ice and/or slush material at the opening **106** during processing.

The surface **164** of the pour-in opening **106** is sloped to direct incoming ingredients to enter the mixing vessel **104** in an entry direction, which is the same as the direction of dasher **204** rotation. This prevents the rotating frozen mixture from exiting the vessel **104** through the pour-in opening **106**. In some implementations, when the dasher **204** is rotating in a clockwise direction when viewed from the front of the frozen drink maker **100**, the opening **106** is positioned on the right side of the vessel **104**. The aperture **162** may be positioned to extend laterally along the surface **164** in a direction parallel to the center axis (A) of the dasher **204**, whereas in other implementations, when the dasher **204** is rotating in a counter-clockwise direction when viewed from the front of the frozen drink maker **100**, the opening **106** is positioned on the left side of the vessel **104**.

FIGS. **27**A-**27**D illustrate a sample pour-in opening **106** in which the surface **164** of the pour-in opening is shaped to slope downwardly toward a rear of the mixing vessel. In some such implementations, one or more apertures **162** may be positioned at a bottom portion of surface **164**. Shaping surface **164** to include a rearward slope can increase the volume capacity of the pour-in opening **106** and reduce spillage. In implementations in which the surface **164** of the pour-in opening **106** is sloped relative to the center axis (A) of the dasher **204**, the surface **164** may be shaped such that a section of surface **164** closest to a front of the mixing vessel is positioned farther away from the center axis (A) of the dasher **204** than a section of surface **164** closest to a rear of the mixing vessel.

FIG. **28** illustrates a sample method **2800** of using a pour-in opening **106** for a frozen drink maker. As shown in FIG. **28**, method **2800** includes optionally opening a cover of the frozen drink maker to provide access to the pour-in opening (block **2802**). Method **2800** also includes introducing one or more liquid ingredients to a mixing vessel of the frozen drink maker via the pour-in opening (block **2804**). The one or more liquid ingredients may be added to the mixing vessel while the vessel is actively mixing (e.g., while the dasher is rotating). Method **2800** further includes dispensing a drink product from the frozen drink maker (block **2806**). The drink product may be dispensed while the dasher is rotating, if desired.

FIGS. **29**A-**29**D show a dispensing assembly **2900** for dispensing a drink product from the frozen drink maker **100** according to a first illustrative implementation of the disclosure. As shown in FIG. **29**A, the dispensing assembly **2900** may include a dispenser housing **2904** for housing the component parts of the dispensing assembly **2900**. The housing **2904** may have a first portion **2904***a* attached to an outer surface of the frozen drink maker **100** adjacent to a spout **2902** and a second portion **2904***b* spaced apart from the spout **2902** and extending outward from the outer surface. In some implementations, the housing **2904** may have an inverted L-shape. However, the disclosure contemplates other suitable shapes of the housing **2904**. The handle **120** of the frozen drink maker **100** may have an upper portion **120***a* in the form of a user-actuatable lever **2906** and a lower portion **120***b* attached to the second portion **2904***b* of the housing **2904**.

As shown in FIGS. **29**B and **29**C, the lever **2906** may be rotatable relative to the second portion **2904***b* of the housing **2904** about a first pivot member **2908**. In some implementations, the first pivot member **2908** may be a rod or pin **2910** extending through the second portion **2904***b* of the housing **2904** and the lower portion **120***b* of the handle **120**. However, the disclosure contemplates other suitable types of pivot members **2908**. A link member **2912** may operatively couple to the lower portion **120***b* of the handle **120**. In some implementations, the link member **2912** may be insertable into the lower portion **120***b* of the handle **120**. The link member **2912** may be rotatable relative to the lever **2906** about a second pivot member **2914**. In some implementations, the second pivot member **2914** may be a rod or pin **2916** extending through the link member **2912** and through the lower portion **120***b* of the handle **120**. However, the disclosure contemplates other suitable types of pivot members **2916**. A bracket member **2918** may operatively couple to the link member **2912** and may be attached to the first portion **2904***a* of the housing **2904**. In some implementations, the link member **2912** may be insertable into a portion bracket member **2918**. The bracket member **2918** may be rotatable relative to the link member **2912** about a third pivot member **2920**. In some implementations, the third pivot member **2920** may be a rod or pin **2922** extending through the bracket member **2918** and the link member **2912**. However, the disclosure contemplates other suitable types of pivot members **2920**. The bracket member **2918** may also be rotatable relative to the first portion **2904***a* of the housing **2904** about a fourth pivot member **2924**. In some implementations, the fourth pivot member **2924** may be a rod or pin **2926** extending through the first portion **2904***a* of the housing **2904** and the bracket member **2918**. However, the disclosure contemplates other suitable types of pivot members **2924**. A seal **2928** may attach to the bracket member **2918**. The seal **2928** may be configured to seal the spout **2902** to prevent inadvertent dispensing of the drink product. In some implementations, the seal **2928** may be a lip seal that covers the spout **2902**. However, other suitable types of seals **2928** are contemplated by this disclosure. For example, in some implementations, the seal **2928** may be, or may include, a plug that is made out of one or more relatively dense materials having a relatively high durometer and that extends into the spout **2902** to seal the spout **2902**. The spout **2902** may include a safety grate **2930** or other mechanism to prevent the user from inadvertently inserting his or her fingers into the spout **2902** (FIG. **29**D).

To dispense the drink product, in some implementations, actuation of the lever **2906** by the user may cause the link member **2912** to move upward relative to the housing **2904**.

Because the bracket member **2918** is attached to both the link member **2912** and to the housing **2904**, a portion of the bracket member **2918** may move upward with the link member **2912** while the remainder of the bracket member **2918** is forced to pivot about fourth pivot member **2924**. This in turn may cause the seal **2928** to move into an open position. When the seal **2928** moves into the open position, the seal **2928** may uncover the spout **2902** to dispense the drink product. Advantageously, in the open position, the seal **2928** may be angled at about 45-60 degrees with respect to the spout **2902** to direct the drink product downward toward the beverage cup. Release of the lever **2906** by the user may allow the components to return to their unactuated position, allowing the seal **2928** to again close the spout **2902**.

FIGS. **30**A and **30**B show a dispensing assembly **3000** for dispensing a drink product from the frozen drink maker **100** according to a second illustrative implementation of the disclosure. Dispensing assembly **3000** may be substantially similar to dispensing assembly **2900**. For example, as shown in FIG. **30**A, the dispensing assembly **3000** may include a dispenser housing **3004** for housing the component parts of the dispensing assembly **3000**. The housing **3004** may have a first portion **3004***a* attached to an outer surface of the frozen drink maker **100** adjacent to a spout **3002** and a second portion **3004***b* spaced apart from the spout **3002** and extending outward from the outer surface. The handle **120** may have an upper portion **120***a* in the form of a user-actuatable lever **3006** and a lower portion **120***b* attached to the second portion **3004***b* of the housing **3004**. The lever **3006** may be rotatable relative to the second portion **3004***b* of the housing **3004** about a first pivot member **3008**. A link member **3012** may operatively couple to the lower portion **120***b* of the handle **120**. The link member **3012** may be rotatable relative to the lever **3006** about a second pivot member **3014**.

As shown in FIG. **30**B, a bracket member **3018** may operatively couple to the link member **3012** and may be attached to the first portion **3004***a* of the housing **3004**. In some implementations, the bracket member **3018** may have an inverted L-shape, as shown. However, the disclosure contemplates other suitable shapes of the bracket member **3018**. The bracket member **3018** may be rotatable relative to the link member **3012** about a third pivot member **3020**. The bracket member **3018** may also be rotatable relative to the first portion **3004***a* of the housing **3004** about a fourth pivot member **3024**. A seal **3028** may attach to the bracket member **3018**. The seal **3028** may be configured to seal the spout **3002** in a closed position. In some implementations, the seal **3028** may be a lip seal that covers the spout **3002**. However, in some implementations, the seal **3028** may be, or may include, a plug that is made out of one or more relatively dense materials having a relatively high durometer and that extends into the spout **3002** to seal the spout **3002**.

To dispense the drink product, in some implementations, actuation of the lever **3006** by the user may cause the link member **3012** to move upward relative to the housing **3004**. Because the bracket member **3018** is attached to both the link member **3012** and to the housing **3004**, a portion of the bracket member **3018** may move upward with the link member **3012** while the remainder of the bracket member **3018** is forced to pivot about fourth pivot member **3024**. This in turn may cause the seal **3028** to move into an open position. When the seal **3028** moves into the open position, the seal **3028** may uncover the spout **3002** to dispense the drink product. Advantageously, in the open position, the seal **3028** may be angled at about 45-60 degrees with respect to the spout **3002** to direct the drink product downward toward the beverage cup. Release of the lever **3006** by the user may allow the components to return to their unactuated position, allowing the seal **3028** to again close the spout **3002**.

Advantageously, unlike other dispenser mechanisms, the dispensing assemblies **2900**, **3000** of this disclosure do not rely on leverage against the outer surface of the frozen drink maker **100** to open the seal **2928**, **3028**. This may reduce wear and tear of the component parts of the dispensing assembly **2900**, **3000** and on the outer surface of the frozen drink maker **100**. Furthermore, because the seal **2928**, **3028** moves both horizontally and vertically with respect to the spout **2902**, **3002** to unseal the spout **2902**, **3002**, the open position of the seal **2928**, **3028** may provide less obstruction to the flow of the drink product from the spout **2902**, **3002**.

FIGS. **31**A and **31**B illustrate in greater detail the spout cover or shroud **116** for covering a portion of the dispensing assembly **2900**, **3000** according to an illustrative implementation of the disclosure. As shown in FIG. **31**A, the shroud **116** may include a first panel section **3102***a* and a second panel section **3102** extending substantially parallel to one another. A front section **3104** may extend between the panel sections **3102***a*, **3102***b*. In some implementations, the panel sections **3102***a*, **3102***b* may be substantially flat, while the front section **3104** may be curved, as shown. In some implementations, the front section **3104** may include an arcuate upper edge **3106** configured such that actuation of the handle **120** is not impeded. However, the disclosure contemplates other suitable shapes of the upper edge **3106**, such as the rectilinear shape shown in FIG. **1**. As shown in FIG. **31**B, the panel sections **3102***a*, **3102***b* may be configured to form a removable snap fit with the dispenser housing **2904**, **3004**. A length of the shroud **116** may be selected to cover the component parts of the dispensing assemblies **2900**, **3000** other than the handle **120** to improve the aesthetic appearance of the frozen drink maker **100**. The shroud **116** may also aid in directing the drink product downward toward the beverage cup. The shroud **116** may be made of a dishwasher safe material for easy cleaning.

In some implementations, at least the front section **3104** of the shroud **116** may be vertically moveable relative to the dispensing assembly **2900**, **3000**. For example, in some implementations, the front section **3104** may be moveable relative to the first panel section **3102***a* and the second panel section **3102***b*. In some implementations, the front section **3104** may be hingedly connected to the first and second panel sections **3102***a*, **3102***b* or may be vertically slidable relative the first and second panel sections **3102***a*, **3102***b*. Such movement may be useful when dispensing a non-frozen, water-based beverage to prevent the beverage from dispensing at too lateral of a trajectory from the spout **2902**, **3002**. Such a lateral trajectory may result in at least a portion of the beverage not dispensing into a receiving vessel located below the spout **2902**, **3002**.

It should be appreciated that the various implementations described herein are not limited to making frozen or semi-frozen drinks, but may be applied to produce a cold and/or cooled drink product that is cooler than a received drink product, but not frozen or semi-frozen. For example, in some implementations, the same or similar mechanisms and/or techniques may be used as part of a cold drink machine and/or cooled drink maker to produce, maintain and dispense cold drinks.

As discussed with respect to FIG. **4**, actions associated with configuring or controlling a frozen drink maker such as frozen drink maker **100** and processes described herein can be performed by one or more programmable processors executing one or more computer programs to control or to

perform all or some of the operations described herein. All or part of the frozen drink maker **100** systems and processes can be configured or controlled by special purpose logic circuitry, such as, an FPGA and/or an ASIC or embedded microprocessor(s) localized to the instrument hardware.

Non-transitory machine-readable storage media suitable for embodying computer program instructions and data include all forms of non-volatile storage area, including by way of example, semiconductor storage area devices, such as EPROM (erasable programmable read-only memory), EEPROM (electrically erasable programmable read-only memory), and flash storage area devices; magnetic disks, such as internal hard disks or removable disks; magneto-optical disks; and CD-ROM (compact disc read-only memory) and DVD-ROM (digital versatile disc read-only memory).

Elements of different implementations described may be combined to form other implementations not specifically set forth previously. Elements may be left out of the systems described previously without adversely affecting their operation or the operation of the system in general. Furthermore, various separate elements may be combined into one or more individual elements to perform the functions described in this specification.

The disclosure describes a removeable collection tray that may be disposed within the unit underneath the vessel/evaporator. The tray may be configured to collect condensation dripping off the vessel or spills resulting from filling the vessel. The tray may also be used to collect water from cleaning between uses. The tray of this disclosure may be sized to collect up to 16 ounces of liquid. The tray may also be made of a dishwasher safe material for easy cleaning.

This application describes illustrative systems, methods, and devices that provide a removeable condensation tray below vessel to reduce cleaning concerns and increase ease of use.

In some implementations, a removeable collection tray for a frozen drink maker includes a collection chamber for receiving liquid, and a handle. The collection chamber is configured to be removably inserted into a slot in a housing of the frozen drink maker adjacent an evaporator. In some implementations, the collection chamber is vertically spaced from a bottom side of the housing when inserted into the slot. In some implementations, the collection chamber includes an evaporator-facing surface. The evaporator-facing surface has a shape corresponding to an outer surface of the evaporator. In some implementations, the shape is semi-cylindrical. In some implementations, the handle, the evaporator-facing surface, and three other side walls define the collection chamber. In some implementations, the collection chamber has a liquid volume capacity of 16 ounces. In some implementations, the removeable collection tray is made from a dishwasher-safe material. In some implementations, a user-facing surface of the handle is flush with a user interface of the housing when the collection chamber is fully inserted into the slot. In some implementations, an underside of the handle has one or more ribs for adding structural integrity between the handle and the collection chamber. In some implementations, the slot is defined between at least one rail and a top surface of the housing.

In some implementations, a method of removing a collection tray from a frozen drink maker includes removing a mixing vessel from a housing of the frozen drink maker and, after the removing of the mixing vessel from the housing, removing the collection tray from the housing. In some implementations, removing the mixing vessel from the housing includes removing the mixing vessel and an attached dispenser from the housing. In some implementations, removing the collection tray from the housing includes pulling the handle toward the user. In some implementations, pulling the handle toward the user includes sliding the collection tray along a slot in the housing toward the user. In some implementations, the method also includes fully disengaging the collection tray from the slot in the housing.

The application, in various implementations, addresses deficiencies associated with controlling slush flow within a mixing vessel of a frozen drink maker. This application describes illustrative systems, methods, and devices that use one or more internal baffles positioned within the mixing vessel to direct slush flow for thorough mixing and to prevent blockage within the mixing vessel. The one or more internal baffles control flow of contents within the mixing vessel can also reduce waste (e.g., waste caused by slush sticking to the vessel instead of dispensing through the spout).

In a first aspect, a mixing vessel for a frozen drink maker is described and the mixing vessel has at least one internal baffle. The mixing vessel includes a curved sidewall defining a substantially cylindrical vessel chamber therein. The vessel chamber includes a front, a rear, a right side, a left side, and a top. The mixing vessel also includes a corner baffle configured to control slush flow within the vessel chamber. The corner baffle is positioned at the front top of the vessel chamber on either the right side or the left side.

The mixing vessel may be configured to accommodate a dasher that rotates within the vessel chamber about a center axis and the corner baffle may be positioned such that the dasher is directed toward the corner baffle while moving upwardly within the vessel chamber. In these and other implementations, the corner baffle is positioned on the left side of the vessel chamber and the dasher is arranged to rotate in a clockwise direction. In select implementations, a distance from the center axis of the dasher to the top of the vessel chamber is less than 16 inches.

The corner baffle may extend out from the front into the vessel chamber at a relatively constant distance. In some implementations, the mixing vessel also includes a side baffle extending laterally along the vessel chamber from the front to the rear. The side baffle may include a curved surface that protrudes inwardly relative to a cross-section of the vessel chamber when viewed along a center axis of the vessel chamber. In these and other implementations, the side baffle is positioned on the left side or the right side of the vessel chamber. The side baffle and the corner baffle may both be positioned on either the left side or the right side of the vessel chamber. In some implementations, the mixing vessel also includes a front baffle positioned at the front of the vessel chamber extending across the top. In these and other implementations, the front baffle forms an angle of between 100°-150° relative the front of the vessel chamber. In various implementations in which the front baffle is present, the mixing vessel also includes a side baffle extending laterally along the vessel chamber from the front to the rear, and the corner baffle has a curved surface that extends from the side baffle to the front baffle. The substantially cylindrical vessel chamber may have an oval-shaped cross-section.

In another aspect, a mixing vessel for a frozen drink maker is described and the mixing vessel has at least three internal baffles. The mixing vessel includes a curved sidewall defining a substantially cylindrical vessel chamber therein. The vessel chamber includes a front, a rear, a right side, a left side, and a top. The mixing vessel includes a

corner baffle positioned at the front top of the vessel chamber on either the right side or the left side. The mixing vessel also includes a side baffle extending laterally along the vessel chamber from the front to the rear. The mixing vessel further includes a front baffle positioned at the front of the vessel chamber extending across the top.

In some implementations, the side baffle and the corner baffle are both positioned on either the left side or the right side of the vessel chamber. In these and other implementations, the mixing vessel is configured to accommodate a dasher that rotates within the vessel chamber about a center axis. The corner baffle and the side baffle are positioned such that the dasher is directed toward the corner baffle and the side baffle while moving upwardly within the vessel chamber. In these and other implementations, the corner baffle and the side baffle are positioned on the left side of the vessel chamber and the dasher is arranged to rotate in a clockwise direction. In select implementations, a distance from the center axis of the dasher to the top of the vessel chamber is less than 16 inches. The corner baffle may extend out from the front into the vessel chamber at a relatively constant distance.

In yet another aspect, a frozen drink maker is described. The frozen drink maker includes a mixing vessel, a housing, a dasher, and a disperser assembly. The mixing vessel has a front, a rear, and a curved sidewall defining a vessel chamber therein. The housing has an upper housing section abutting the rear of the mixing vessel. The dasher is arranged to rotate within the mixing vessel about a center axis. The disperser assembly is at the front of the mixing vessel. The mixing vessel includes at least two internal baffles configured to control slush flow within the vessel chamber.

In some implementations, the mixing vessel includes at least three internal baffles configured to control slush flow within the vessel chamber. In some such implementations, the at least three internal baffles include: (1) a corner baffle positioned at a front top of the vessel chamber on either a right side or a left side, (2) a side baffle extending laterally along the vessel chamber from the front to the rear, and (3) a front baffle positioned at the front of the vessel chamber extending across the top. In these and other implementations, the dasher rotates in a clockwise direction, and the corner baffle and the side baffle are positioned on a left side of the vessel chamber when viewed from a front of the frozen drink maker.

The application, in various implementations, addresses deficiencies associated with controlling temperatures of drink products using recipes in a more adaptive and user-specific manner.

This application describes illustrative systems, methods, and devices that enable a drink maker to automatically control a temperature of a drink product based on a preset recipe target temperature stored in memory, while further allowing a user to adjust the preset temperature via a user input to enable the frozen drink maker to more flexibly achieve desired temperatures and/or textures tailored to the preferences of different users. The application also describes illustrative systems, methods, and devices that enable a drink maker to automatically control a temperature of a drink product based on a preset recipe target temperature stored in memory, while further monitoring a condition of a drive and/or dasher motor, such as current or power, and, if the current or power is too high, increasing the temperature of the drink product to reduce the thickness of the drink product and, thereby, reduce the current and/or power used by the drive and/or dasher motor to prevent damage to the drive motor.

In one aspect, a drink maker includes a mixing vessel arranged to receive a drink product and a dasher, driven by a drive motor, that is arranged to mix the drink product within the mixing vessel. The drink maker also includes a cooling circuit and/or device arranged to cool the drink product within the mixing vessel, a temperature sensor arranged to measure a temperature associated with the drink product and output a temperature signal, and a memory arranged to store a drink object representing a drink type, the drink object specifying a first temperature value corresponding to a first target temperature. A controller, in communication with the memory, is arranged to: i) receive the temperature signal, and ii) control the temperature associated with the drink product by controlling the cooling circuit based on the received temperature signal, the first temperature value, and/or a manual temperature adjustment and/or temperature offset. The frozen drink maker also includes a user interface arranged to receive a user input to adjust the manual temperature adjustment.

The temperature associated with the drink product may include a temperature of the drink product, a temperature of a cooling element used to cool the drink product, and/or a temperature of a refrigerant used to cool the drink product. The controller may adjust the first target temperature by adding the manual temperature adjustment to the first target temperature. The manual temperature adjustment may include positive or negative temperature value. The manual temperature adjustment may include a range of temperatures at, above, and below the first target temperature. The manual temperature adjustment may be adjustable in increments of greater than or equal to 0.1, 0.2, 0.3, 0.4, 0.5, 1, and/or 2 degrees Celsius.

In some implementations, the memory includes a plurality of recipes, each of the recipes including a temperature value corresponding to a target temperature. The cooling circuit and/or device may include a refrigeration circuit including an evaporator. The evaporator may be part of the closed loop refrigeration circuit and/or system including a condenser and a compressor. The controller may be configured to control the temperature associated with the drink product by activating the compressor to circulate refrigerant through the evaporator to cool the drink product and deactivating the compressor to stop a flow of refrigerant through the evaporator to stop cooling of the drink product. The controller may control the temperature associated with the drink product by comparing the received temperature signal to the first temperature value, adjusted based on the manual temperature adjustment, and, in response, activating or deactivating the cooling circuit to match the received temperature signal to the first temperature value, adjusted by the manual temperature adjustment, and, thereby, adjust the temperature associated with the drink product to about the target temperature adjusted by the manual temperature adjustment. In some implementations, the cooling circuit includes a thermal energy cooling (TEC) system implementing, for example, the Peltier effect.

In another aspect, a method for making a drink product includes: receiving, into a mixing vessel, the drink product; mixing, using a dasher driven by a drive motor, the drink product within the mixing vessel; cooling, using a cooling circuit, the drink product within the mixing vessel; measuring, via a temperature sensor, a temperature associated with the drink product and outputting a temperature signal; storing, in a memory, a drink object representing a drink type, the drink object specifying a first temperature value corresponding to a first target temperature; receiving, at a controller, the temperature signal; controlling, by the con-

troller, the temperature associated with the drink product by controlling the cooling circuit based on the received temperature signal, the first temperature value, and a manual temperature adjustment; and receiving a user input to adjust the manual temperature adjustment.

In a further aspect, a drink maker includes a mixing vessel arranged to receive a drink product and a dasher, driven by a drive motor, arranged to mix the drink product within the mixing vessel. The drink maker also includes a cooling circuit arranged to cool the drink product within the mixing vessel, a temperature sensor arranged to measure a temperature associated with the drink product and output a temperature signal, a motor condition sensor arranged to measure a motor condition associated with the drive motor and output a motor condition signal, and a memory arranged to store a first temperature value corresponding to a first target temperature and store a motor condition limit. A controller, in communication with the memory, is arranged to: i) receive the temperature signal, ii) receive the motor condition signal, and ii) control the temperature associated with the drink product by controlling the cooling circuit based at least on the received temperature signal, the received motor condition signal, the first temperature value, and the motor condition limit.

In some implementations, the controller deactivates the cooling circuit when a magnitude (e.g., a current or power level) of the received motor condition signal is equal to or greater than the motor condition limit. The controller may determine a second temperature value corresponding to a second target temperature, where the magnitude of the received motor condition signal is lower than the motor condition limit. The controller may control the temperature associated with the drink product by controlling the cooling circuit based on the second temperature value. In some implementations, the controller deactivates the cooling circuit until when the temperature associated with the drink product is about equal to the second target temperature.

The motor condition may include current, power, torque, speed of rotation, acceleration of rotation, noise, and/or thermal output. The motor condition sensor may include a motor current sensor, motor voltage sensor, motor torque sensor, motor rotation sensor, acoustic sensor, and/or temperature sensor. A user interface may be arranged to receive a user input to adjust a manual temperature adjustment. The controller may control the temperature associated with the drink product by controlling the cooling circuit based on the received temperature signal, the received motor condition signal, the first temperature value, the motor condition limit, and/or the manual temperature adjustment. The controller may adjust the first target temperature by adding the manual temperature adjustment to the first target temperature.

In yet a further aspect, a method for making a drink product includes: receiving, in a mixing vessel, the drink product; mixing, using a dasher driven by a drive motor, the drink product within the mixing vessel; cooling, using a cooling circuit, the drink product within the mixing vessel; measuring, via a temperature sensor, a temperature associated with the drink product and output a temperature signal; measuring, via a motor condition sensor, a motor condition associated with the drive motor and outputting a motor condition signal; storing, in a memory, a first temperature value corresponding to a first target temperature and storing a motor condition limit; receiving, at a controller, the temperature signal and the motor condition signal; and controlling the temperature associated with the drink product by controlling the cooling circuit based on the received temperature signal, the received motor condition signal, the first temperature value, and/or the motor condition limit.

The application, in various implementations, addresses deficiencies associated with cooling components of a drink maker.

This application describes illustrative systems, methods, and devices whereby a dual-use cooling fan concurrently provides cooling air flow to both a drive motor used to drive rotation of a dasher and a condenser used to cool refrigerant of a refrigeration circuit and/or system of the drink maker.

In one aspect, a drink maker includes a mixing vessel arranged to receive a drink product and a dasher, driven by a drive motor, arranged to mix the drink product within the mixing vessel. A refrigeration circuit is arranged to cool the drink product within the mixing vessel including a condenser. A cooling fan is configured to concurrently cool the drive motor and the condenser. In some implementations, the cooling fan is driven by the drive motor either directly or via a gear assembly, and therefore is activated when the drive motor is activated.

The cooling fan may provide air flow through the condenser to cool refrigerant flowing through the condenser. The cooling fan may provide air flow along a surface of the drive motor to cool the drive motor. The cooling fan, drive motor, and condenser may be positioned such that air flow generated by the cooling fan passes serially through the condenser and along a surface of the drive motor. A first portion of air flow generated by the cooling fan may cool the condenser and a second portion of air flow generated by the cooling fan may cool the drive motor. In another implementation, air flow generated by the cooling fan passes in parallel through the condenser and along a surface of the drive motor such that a first portion of the air flow passes through the condenser, while a second portion of the air flow passes along a surface of the drive motor. The condenser may include one or more coils wound in a serpentine arrangement. Each of the one or more coils may include a plurality of thermal transfer fins. When the cooling fan provides air flow through the condenser to cool refrigerant flowing through the condenser, the air flow may travel adjacent to and/or around the plurality of coils.

A cooling channel may extend between the cooling fan and the drive motor, where the cooling channel provides cooling air flow between the cooling fan and the drive motor. The cooling channel may be at least partially formed by a duct. A cooling channel may extend between the cooling fan and the condenser, where the cooling channel provides cooling air flow between the cooling fan and the condenser. The cooling channel may be at least partially formed by a duct. The cooling may include a centrifugal fan, a cross-flow fan, a tangential fan, a volute fan, a backward curved fan, a forward curved fan, a blower fan, a squirrel-cage fan, and/or an axial fan.

In another aspect, a cooling fan is configured for cooling a drive motor and a condenser within a housing of a drink maker, where the drive motor is configured to drive rotation of a dasher within a mixing vessel of the drink maker and the condenser is configured to cool a refrigerant circulating within a refrigeration system of the drink maker. The cooling fan includes an air inlet configured to receive an air flow from the ambient environment, an impeller configured to generate the air flow, and an air outlet configured to output the air flow through the condenser and along a surface of the drive motor. The cooling fan may include an air channel arranged to direct the air flow through the condenser and along the surface of the drive motor. The air channel may be at least partially formed by an air duct. The cooling fan may

include a centrifugal fan, a cross-flow fan, a tangential fan, a volute fan, a backward curved fan, a forward curved fan, a blower fan, a squirrel-cage fan, and/or an axial fan.

In a further aspect, a method for concurrently cooling a condenser and a drive motor within a housing of a drink maker using a cooling fan includes: activating the drive motor that is arranged to drive rotation of a dasher within a mixing vessel of the drink maker; activating a compressor of a refrigeration system of the drink maker; and activating the cooling fan to concurrently generate air flow through the condenser and along a surface of the drive motor. In some implementations, the cooling fan is coupled to and/or driven to rotate by the drive motor. The method may include receiving a user input to activate the drive motor, compressor, and the cooling fan. The user input may initiate a recipe and/or computer program, controlled by a controller, that automatically activates the drive motor, compressor, and the cooling fan.

One of ordinary skill will recognize that the systems, methods, and devices described herein may apply to other types of food products such as to the making and/or processing of, without limitation, ice cream, frozen yogurt, other creams, and the like. While the present disclosure describes examples of a drink maker processing various frozen and/or semi-frozen drink products, the systems, devices, and methods described herein are not limited to such drink products and are capable of processing and/or making other types of drink products such as cooled drink products and/or chilled drink products. The terms "mix," "mixed" or "mixing" as used herein are not limited to combining multiple ingredients together, but also include mixing a drink product or liquid having a single or no added ingredients. For example, a drink product may consist of only water that is mixed by a dasher during processing, i.e., portions of the water are churned and/or intermingled as the dasher rotates. This may, for example, advantageously enable a more uniform temperature of the water and/or liquid as a whole within the mixing vessel by intermingling portions of the water and/or liquid having different temperatures.

The application, in various implementations, addresses deficiencies associated with fluid inlets for frozen drink makers. Previous frozen drink makers are typically sized for commercial applications. Commercial frozen drink makers have significant headspace above the slush in the vessel. In a commercial frozen drink maker, liquid ingredients can be roughly poured into an open top of the vessel without concern of losing liquids due to splashing or ingredient expansion generated by impact force.

This application describes illustrative systems, methods, and devices that address shortcomings of how liquids are added to a vessel for a frozen drink maker. In particular, a pour-in opening for a frozen drink maker is described that allows liquid ingredients to be added to the vessel in a controlled manner, thereby minimizing or preventing slush overflow. The disclosed pour-in opening can be used with both commercial frozen drink makers or residential frozen drink makers having a smaller vessel capacity and less available headspace than commercial units. The pour-in opening advantageously avoids external splatter and spillage of liquid ingredients as they are added to the vessel and prevents finger insertion (to protect users from moving componentry within the vessel). The pour-in opening also prevents slush contained within the vessel from being pushed out of the vessel.

In some aspects, a pour-in opening for a frozen drink maker is described. The frozen drink maker has a dasher configured to rotate within a mixing vessel about a center axis. The pour-in opening includes a surface that inclines radially with respect to the center axis of the dasher. The pour-in opening also includes an aperture positioned on the surface in fluid communication with an interior of the mixing vessel. The surface may be sloped to direct fluids entering the mixing vessel to enter in the direction of dasher rotation. In some implementations, the aperture extends laterally along the surface in a direction parallel to the center axis of the dasher. The aperture may be shaped as a slot. In some implementations, the surface incline directs ingredients to enter the mixing vessel in an entry direction and the entry direction is the same as a rotation direction of the dasher. In some such implementations, the rotation direction of the dasher is clockwise when viewed from a front of the frozen drink maker. In these and other implementations, the aperture is positioned on a right side of the mixing vessel when viewed from the front of the frozen drink maker. A grate may cover at least a portion of the aperture, if desired. In these and other implementations, there may also be a cover moveable between an open position in which the pour-in opening is accessible to a user and a closed position in which the pour-in opening is not accessible to the user. In select implementations, the pour-in opening may also include a lip extending up from a perimeter of the surface to form a well that feeds into the aperture. The pour-in opening may be located approximate to a rear of the mixing vessel when viewed from a front of the frozen drink maker. In these and other implementations, a rotation of the dasher moves contents of the mixing vessel from the rear of the mixing vessel to a front of the mixing vessel.

In another aspect, a vessel for a frozen drink maker is described. The vessel includes a chamber and a pour-in opening. The chamber is a substantially cylindrical chamber sized to accommodate a dasher configured to rotate within the vessel about a center axis. The pour-in opening is positioned on a top section of the vessel. The pour-in opening includes a surface and an aperture. The surface inclines radially with respect to the center axis of the dasher. The aperture is positioned on the surface in fluid communication with the chamber. In some implementations, the pour-in opening is positioned at a rear of the vessel. In these and other implementations, the surface of the pour-in opening inclines radially to direct incoming ingredients to enter the vessel in an entry direction, and the entry direction is the same as a rotation direction of the dasher. In select implementations, the rotation direction of the dasher is clockwise and the aperture is positioned on a right side of the vessel when viewed from a front of the vessel. In some implementations, the vessel also includes a cover positioned over the pour-in opening and the cover is moveable between an open position in which the pour-in opening is accessible to a user and a closed position in which the pour-in opening is not accessible to the user.

In further aspects, a frozen drink maker is described. The frozen drink maker includes a mixing vessel having a substantially cylindrical chamber, a dasher configured to rotate within the mixing vessel about a center axis, and a pour-in opening positioned on a top of the mixing vessel. The pour-in opening has a surface that inclines radially with respect to the center axis of the dasher and an aperture positioned on the surface in fluid communication with the chamber. In some implementations, the center axis of the dasher extends in a horizontal direction. In these and other implementations, the aperture extends laterally along the surface in a direction parallel to the center axis of the dasher. The surface inclines radially to direct incoming ingredients

to enter the mixing vessel in an entry direction, and the entry direction is the same as a rotation direction of the dasher. In select implementations, the rotation direction of the dasher is clockwise when viewed from a front of the frozen drink maker and the aperture is positioned on a right side of the mixing vessel when viewed from the front of the frozen drink maker.

The disclosure describes a low-maintenance dispensing system for a frozen drink maker that uses a lip seal rather than a plunger seal. The dispensing mechanism includes several pivoting linkages that operate to swing the seal up when a user actuates a dispensing lever. In the open position, the seal is angled about 45-60 degrees with respect to the spout, which helps to direct the dispensed drink product downward. The spout opening also includes a safety grate to prevent the user from inadvertently inserting his or her fingers into the spout.

This application describes illustrative systems, methods, and devices that provide a dispensing assembly for dispensing a drink product through a spout of a frozen drink maker.

In some exemplary implementations, a dispensing assembly for a frozen drink maker of this disclosure includes a housing having a first portion attached to an outer surface of the frozen drink maker adjacent to a spout, and a second portion spaced apart from the spout and extending outward from the outer surface. A lever attaches to the second portion of the housing. The lever is rotatable relative to the second portion of the housing about a first pivot member. A seal operatively couples to the lever. The seal is configured to seal the spout in a closed position. Rotation of the lever causes the seal to move into an open position to allow dispensing of a drink product through the spout.

In some implementations, a link member operatively couples to the lever. The link member is rotatable relative to the lever about a second pivot member. A bracket member operatively couples to the link member and attaches to the first portion of the housing. The bracket member is rotatable relative to the link member about a third pivot member and rotatable relative to the first portion of the housing about a fourth pivot member. The seal is attached to the bracket member.

In some implementations, the second pivot member is a pin extending through the lever and through the link member. In some implementations, the third pivot member is a pin extending through the bracket member and through the link member. In some implementations, the fourth pivot member is a pin extending through the first portion of the housing and through the bracket member. In some implementations, the seal is angled at about 45-60 degrees with respect to the spout when the seal is in the open position. In some implementations, the spout includes a grate configured to prevent a user from inserting fingers into the spout. In some implementations, the first pivot member includes a pin extending through the second portion of the housing and through the lever. In some implementations, the seal is a lip seal. In some implementations, the bracket member is L-shaped. In some implementations, the housing is L-shaped.

In some implementations, a method of dispensing a drink product through a spout of a frozen drink maker of this disclosure includes rotating a lever about a first pivot member relative to a second portion of a housing of a dispensing assembly. The housing further includes a first portion attached to an outer surface of the frozen drink maker adjacent to the spout and the second portion spaced apart from the spout and extending outward from the outer surface. Rotating the lever causes a seal operatively coupled to the lever to move into an open position to allow dispensing of the drink product through the spout. The seal is configured to seal the spout in a closed position.

In some implementations, the dispensing assembly further includes a link member operatively coupled to the lever, and rotating the lever causes the link member to rotate relative to the lever about a second pivot member. In some implementations, the dispensing assembly further includes a bracket member operatively coupled to the link member and attached to the first portion of the housing, and rotating the lever causes the bracket member to rotate relative to the link member about a third pivot member and to rotate relative to the first portion of the housing about a fourth pivot member. In some implementations, the seal is attached to the bracket member.

The disclosure describes a shroud for attaching to a dispensing assembly of a frozen drink maker. The shroud is configured to direct the drink product downward toward a beverage cup without interfering with the movement of the dispenser lever. The shroud also hides components of the dispensing assembly for a more pleasing aesthetic appearance and is removable for easy cleaning.

This application describes illustrative systems, methods, and devices that provide a shroud for attaching to a dispensing assembly for directing a drink product downward toward a beverage cup.

In some implementations, a shroud for a dispenser assembly of a frozen drink maker of this disclosure includes a first panel section and a second panel section extending substantially parallel to the first panel section. A front section extends between the first and second panel sections. The first and second panel sections are configured to form a removable snap fit with a dispenser housing of the dispenser assembly.

In some implementations, the front section is curved. In some implementations, a vertical position of at least the front section of the shroud is adjustable relative to the dispenser assembly. In some implementations, the front section defines an upper edge. A shape of the upper edge is configured to allow actuation of a handle of the dispenser assembly. In some implementations, a shape of the upper edge is arcuate. In some implementations, a shape of the upper edge is rectilinear. In some implementations, a length of the shroud is selected to cover component parts of the dispenser assembly. In some implementations, a length and shape of the shroud is selected to direct a drink product dispensed from a spout of the frozen drink maker downward. In some implementations, the shroud is made from a dishwasher safe material. In some implementations, the front section is moveable relative to the first panel section and the second panel section. In some implementations, the front section is hingedly connected to the first panel section and the second panel section. In some implementations, the front section is vertically slidable relative to the first panel section and the second panel section. In some implementations, the first panel section is flat. In some implementations, the second panel section is flat.

What is claimed is:

1. A frozen drink maker comprising:

a housing comprising an upper housing section and a lever moveable relative to the upper housing section between a coupling position and an uncoupling position;

a mixing vessel to receive a drink product, the mixing vessel having:

a first end with a first opening and a second end with a second opening configured to dispense the drink product; and

a pour-in opening located on the mixing vessel between the first end and the second end;

a dasher configured to rotate in the mixing vessel;

a motor to drive the dasher;

an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and

a flexible seal arranged proximate to the upper housing section,

wherein the lever controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position, and

wherein, when the lever is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.

2. The frozen drink maker of claim **1**, wherein the mixing vessel comprises a wall having the first opening formed therein, and the first opening is sealed against the upper housing section by the flexible seal when the lever is in the coupling position.

3. The frozen drink maker of claim **1**, wherein the mixing vessel comprises a wall having the first opening formed therein, and wherein the flexible seal comprises a face seal that interfaces a vertically aligned surface of the upper housing section to an edge of the first end of the mixing vessel.

4. The frozen drink maker of claim **1**, wherein the flexible seal comprises a vessel seal portion configured to create a watertight seal between the mixing vessel and the upper housing section, and an evaporator seal portion configured to seal the evaporator within the mixing vessel.

5. The frozen drink maker of claim **1**, wherein when moving between the coupling position and the uncoupling position, the lever rotates less than 90° relative to the upper housing section.

6. The frozen drink maker of claim **1**, further comprising an interlock switch, wherein the interlock switch is positioned within the upper housing section and configured to be activated and permit action of the motor when the mixing vessel is coupled to the housing.

7. The frozen drink maker of claim **1**, wherein the pour-in opening is on a top of the mixing vessel.

8. The frozen drink maker of claim **1**, wherein the lever comprises a handle enabling a user to move the lever between the coupling position and the uncoupling position.

9. The frozen drink maker of claim **8**, wherein an uppermost portion of the handle is positioned closer to the upper housing section when in the coupling position than when in the uncoupling position.

10. The frozen drink maker of claim **1**, wherein movement of the lever to move the lever into the coupling position activates a cam in the upper housing section that engages at least one mating feature on the mixing vessel to secure the mixing vessel to the upper housing section.

11. The frozen drink maker of claim **10**, wherein the cam further comprises an ejection feature to apply an ejection force to the mixing vessel when the lever is moved from the coupling position to the uncoupling position.

12. The frozen drink maker of claim **1**, further comprising a collection tray configured to be removably placed in or on the housing at least partly below the mixing vessel, the collection tray comprising a collection chamber for receiving liquid from an exterior surface of the mixing vessel.

13. The frozen drink maker of claim **12**, further comprising a channel formed between the exterior surface of the mixing vessel and the housing, wherein the liquid received by the collection chamber travels from the exterior surface of the mixing vessel, through the channel, and to the collection chamber.

14. The frozen drink maker of claim **12**, wherein the collection tray is configured to be removably placed at least partly in a slot of the housing positioned below the mixing vessel.

15. The frozen drink maker of claim **12**, wherein a curvature of a user-facing surface of a handle of the collection tray is configured to correspond to a curvature of a user-facing front edge of the mixing vessel.

16. The frozen drink maker of claim **12**, wherein the housing further comprises at least one rail configured to guide a placement of the collection tray when the collection tray is placed in or on the housing.

17. The frozen drink maker of claim **16**, wherein the at least one rail is further configured to guide a placement of the mixing vessel when the mixing vessel is placed on the housing for coupling to the housing.

18. A frozen drink maker comprising:

a housing comprising an upper housing section and a coupling mechanism rotatably moveable relative to the upper housing section between a coupling position and an uncoupling position, wherein the coupling mechanism comprises a lever;

a mixing vessel to receive a drink product, the mixing vessel having:

a first end with a first opening and a second end with a second opening configured to dispense the drink product; and

a pour-in opening located on the mixing vessel between the first end and the second end;

a dasher configured to rotate in the mixing vessel;

a motor to drive the dasher;

an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and

a flexible seal arranged proximate to the upper housing section,

wherein the coupling mechanism controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position, and

wherein, when the coupling mechanism is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.

19. The frozen drink maker of claim **18**, wherein the flexible seal comprises a vessel seal portion configured to create a watertight seal between the mixing vessel and the upper housing section, and an evaporator seal portion configured to seal the evaporator within the mixing vessel.

20. The frozen drink maker of claim **18**, wherein the housing further comprises at least one rail configured to guide a placement of the mixing vessel when the mixing vessel is placed on the housing for coupling to the housing.

21. The frozen drink maker of claim **18**, wherein the pour-in opening is on a top of the mixing vessel.

22. The frozen drink maker of claim **18**, further comprising a collection tray configured to be removably placed in or on the housing at least partly below the mixing vessel, the collection tray comprising a collection chamber for receiving liquid from an exterior surface of the mixing vessel.

23. The frozen drink maker of claim 22, further comprising a channel formed between the exterior surface of the mixing vessel and the housing, wherein the liquid received by the collection chamber travels from the exterior surface of the mixing vessel, through the channel, and to the collection chamber.

24. A frozen drink maker comprising:

a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;

a mixing vessel to receive a drink product, the mixing vessel having:

a first end with a first opening and a second end with a second opening configured to dispense the drink product; and

a pour-in opening located on the mixing vessel between the first end and the second end;

a dasher configured to rotate in the mixing vessel;

a motor to drive the dasher;

an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and

a flexible seal arranged proximate to the upper housing section,

wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position, and

wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.

25. The frozen drink maker of claim 24, wherein the flexible seal comprises a vessel seal portion configured to create a watertight seal between the mixing vessel and the upper housing section, and an evaporator seal portion configured to seal the evaporator within the mixing vessel.

26. The frozen drink maker of claim 24, further comprising an interlock switch, wherein the interlock switch is positioned within the upper housing section and configured to be activated and permit action of the motor when the mixing vessel is coupled to the housing.

27. The frozen drink maker of claim 24, further comprising a compressor, a condenser, and a condenser fan.

28. The frozen drink maker of claim 24, wherein the pour-in opening is on a top of the mixing vessel.

29. The frozen drink maker of claim 24, wherein the flexible seal is arranged between the upper housing section and the first end of the mixing vessel when the mixing vessel is in a coupling position.

30. The frozen drink maker of claim 24, wherein the housing comprises a lever moveable relative to the upper housing section, wherein moving the lever to a first position moves the cam feature into the coupling position, and wherein, when in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling of the mixing vessel to the upper housing section.

31. The frozen drink maker of claim 30, wherein the mixing vessel comprises a wall having the first opening formed therein, wherein the first opening is sealed against the upper housing section by the flexible seal when the lever is in the first position, and wherein the flexible seal comprises a face seal that interfaces a vertically aligned surface of the upper housing section to an edge of the first end of the mixing vessel.

32. The frozen drink maker of claim 30, wherein the cam feature further comprises an ejection feature to apply an ejection force to the mixing vessel when the lever is moved from the first position to a second position.

* * * * *

EXHIBIT "2"
TO BE FILED
UNDER SEAL

EXHIBIT "3"
TO BE FILED
UNDER SEAL

EXHIBIT “4”

amazon prime
All Search Amazon
EN Account & Lists Returns & Orders Cart
All Rufus Same-Day Delivery Amazon Haul Medical Care Groceries Audible Buy Again Pet Supplies Amazon Business Beauty & Personal Care

Customer Review

Max

Slushies & Frappes & Milkshakes, Oh My!

Reviewed in the United States on January 12, 2026

Color: Black | **Verified Purchase**

Guys, this thing is AWESOME! Theres absolutely a bit of a learning curve and messing about to get started but honestly, this gadget is amazing! Depending on what youre making (and how much sugar is in it) it takes about 45 to an hour to make most things (if your doing the full up more than just two drinks) and sometimes even less. This thing makes it way too hard to mess things up as it has the presets and then you can change your temp from there. The whole thing comes apart and goes back together REALLY easily for easy cleaning and whatnot. It does get a bit warm on the sides as thats where the heat vents are but it doesnt seem to get too too hot overall. I would liken the sound of the machine to having a small airmattress pump or something like that but its really not all that loud in general (plus for how quickly drinks get made, the sound doesnt really seem to matter. It is a solidish size but could fit on countertops or in a cabinet probably (though we've chosen to actually leave ours out on a counter because its been used at least once a day if not more!)

Helpful | Report

Product Details

Ninja SLUSHi with RapidChill Tech…
by Ninja
4.7 out of 5
3,624 global ratings

5 star	86%
4 star	6%
3 star	3%
2 star	1%
1 star	4%

See All Buying Options

EXHIBIT “5”

Love this machine!

amazon prime All Search Amazon EN Account & Lists Returns & Orders Cart
All Rufus Same-Day Delivery Amazon Haul Medical Care Groceries Audible Buy Again Pet Supplies Amazon Bus

Customer Review

Marie

Love this machine!

Reviewed in the United States on April 10, 2025

Verified Purchase

So far so good I've only used it a few times but works well. So easy to put together. I would recommend

Helpful | Report

Product Details

Ninja SLUSHi 72 oz Professional F…
by Ninja

4.6 out of 5

625 global ratings

5 star

4 star

3 star

2 star

1 star

See All Buying Options

EXHIBIT “6”

amazon prime
All Search Amazon
EN Account & Lists Returns & Orders Cart
All Rufus Same-Day Delivery Amazon Haul Medical Care Groceries Audible Buy Again Pet Supplies Amazon Business

Customer Review

Jacquelyn

Excellent frozen slushies

Reviewed in the United States on January 3, 2026

Color: Black | **Verified Purchase**

Got my husband this for Christmas. We love it!! Easy to assemble, easy to use, easy to clean...chills quickly as advertised!! Makes delicious frozen drinks. Highly recommend

Helpful | Report

Product Details

Ninja SLUSHi with RapidChill Tech…
by Ninja

4.7 out of 5

3,624 global ratings

5 star
4 star
3 star
2 star
1 star

See All Buying Options

EXHIBIT “7”

Great purchase!

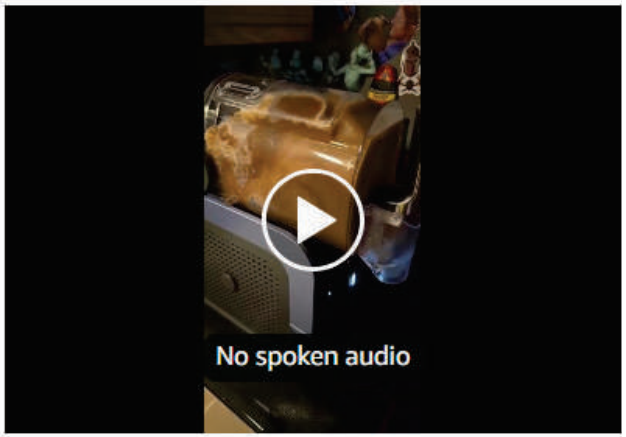
Customer Review

Jenn Miller

Great purchase!

Reviewed in the United States on April 1, 2026

Color: Black | Verified Purchase



This Ninja Slushie is a great purchase! Very easy to set up, very easy to clean! I love the sleek look and it fits perfectly on my counter. Only complaint I have is the packaging. The Ninja box itself was damaged and falling apart. Thankfully, nothing was damaged inside though.

2 people found this helpful

Helpful | Report

Product Details

Ninja SLUSHi with RapidChill Tech…
by Ninja

4.7 out of 5

3,624 global ratings

5 star
4 star
3 star
2 star
1 star

See All Buying Options

EXHIBIT “8”

SLUSHI IS VIRAL ON SOCIAL & DRIVING *SELL OUT DEMAND* ACROSS ACCOUNTS

8,000+
SOCIAL POSTS SINCE LAUNCH

150+
HEADLINES

300M+
SOCIAL IMPRESSIONS

12+
BRANDED PARTNERSHIPS

delish · brobible · REAL SIMPLE · underscored · The New York Times · tom's guide · Tasting Table. · the Strategist

You Can Make Frozen Drinks All Season Long With the Ninja SLUSHI: Here's Where to Buy It On Sale

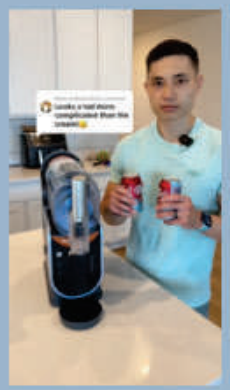
We Regret to Inform You That the Perpetually Sold-Out Ninja Slushi Lives Up to the Hype

WASTING AWAY IN NINJA SLUSHI-VILLE: THIS VIRAL DRINK MAKER IS FINALLY BACK IN STOCK

The latest fuzzy kitchen gadget from SharkNinja blew up on TikTok and entered a waitlist almost instantly after being announced — here's where you can buy one online right now

Restock Alert: I Finally Got My Hands on the Ninja Slushi, and Now I See Why It Keeps Selling Out

UGC
38.2M Views



Contracted Influencer
12.4M Views

Silk · Clean Simple Eats · Tropicana · SMIRNOFF · Ocean Spray · Liquid I.V. · Angry Orchard · Ritual Zero Proof · STōK Cold-Brew

EXHIBIT "10"
TO BE FILED
UNDER SEAL

EXHIBIT "11"
TO BE FILED
UNDER SEAL

EXHIBIT "12"
TO BE FILED
UNDER SEAL

EXHIBIT "13" TO BE FILED UNDER SEAL

EXHIBIT "14"
TO BE FILED
UNDER SEAL

EXHIBIT “3”

IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF FLORIDA

Civil Case No. 1:26-cv-23083

SHARKNINJA OPERATING LLC, and SHARKNINJA SALES COMPANY,

Plaintiffs,

v.

THE INDIVIDUALS, CORPORATIONS, LIMITED LIABILITY COMPANIES, PARTNERSHIPS, AND UNINCORPORATED ASSOCIATIONS IDENTIFIED ON SCHEDULE A,

Defendants.

DECLARATION OF MICHAEL JOBIN

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I. INTRODUCTION AND SUMMARY OF OPINIONS

1. I am Michael Jobin. I have been retained by Plaintiffs SharkNinja Operating LLC and SharkNinja Sales Company ("Plaintiffs" or "SharkNinja") as an expert in this litigation in connection with U.S. Patent No. 12,593,855 (the "'855 Patent" or "Asserted Patent") (Exhibit A).

2. I have been asked to provide certain opinions regarding the Asserted Patent. Specifically, I have been asked to provide opinions regarding whether certain frozen drink maker (or "slush machine") products that I understand have been imported and/or sold in the United States infringe the Asserted Patent.

3. I understand that SharkNinja filed three cases for patent infringement against different defendants in the Southern District of Florida.[1] I further understand that on May 6, 2026, the Court entered orders in each of the SharkNinja cases consolidating the three cases into Case No. 1:26-cv-23083-RAR.[2] As these cases are now consolidated, my opinions are reflective of all Defendants named in the SharkNinja Cases. However, for purposes of organization, I have included below a chart detailing which Defendants were associated with each of the originally filed SharkNinja Cases.

SharkNinja Case	Defendant	Exhibits
Case 1	Keenstar, Luma Comfort, Relenow	1-3
Case 2	Bizaura, BKPPM, Garvee, Generic (Wizaura), Neosism, Revotio, SUPWIN, Sweet (Bizaura), Syintao	4-12

[1] *SharkNinja Operating LLC et al. v. The Individuals, Corporations, Limited Liability Companies, Partnerships, and Unincorporated Associations Identified on Schedule A*, Case No. 1:26-cv-23083-RAR (Apr. 30, 2026) ("Case 1"); *SharkNinja Operating LLC et al. v. The Individuals, Corporations, Limited Liability Companies, Partnerships, and Unincorporated Associations Identified on Schedule A*, Case No. 1:26-cv-23084-RAR (Apr. 30, 2026) ("Case 2"); *SharkNinja Operating LLC et al. v. The Individuals, Corporations, Limited Liability Companies, Partnerships, and Unincorporated Associations Identified on Schedule A*, Case No. 1:26-cv-23086-RAR (Apr. 30, 2026) ("Case 3") (collectively, the "SharkNinja Cases").

[2] *See* Case 1, at Dkt. 7; Case 2, at Dkt. 7, Case 3, at Dkt. 8.

SharkNinja Case	Defendant	Exhibits
Case 3	Aaobosi, AllTou, Astralship, Besococina, Blizzee, Casidea, Cowsar, CROWNFUL, Culvani, Dutepa, Fesoiu, Fohere, Foyoconven, GSEICE, HBN, Maipsig, Mazzen, MuliVid, NutriChef, ONtravelo, RyRot, Topteng, VELPAX, VNN, Wetie, Wie, Wind Shear	13-40

II. QUALIFICATIONS AND COMPENSATION

4. Below, I briefly summarize my educational background, career history, publications, and other relevant qualifications. My full curriculum vitae is attached as **Appendix A** to this Declaration.

5. I received two degrees from the University of Michigan in 1991, a Bachelor of Science, Engineering with a focus on mechanical engineering, and a Bachelor of Fine Arts, Industrial Design with a focus on product development, both cum laude. I was the recipient of the Kiefer Award for excellence in Industrial Design.

6. I have worked in various product development companies throughout my 34-year career, and have developed many products that demonstrate knowledge and experience with the subject matter relevant in this case. I provide below a summary of my relevant work experience and project examples.

7. After my undergraduate degrees, I was hired as a program manager by Design 4 Plastics, Inc. I leveraged my industrial design and engineering education to develop a wide range of products. My projects included a heavy emphasis on plastic part design (including injection molding, rotational molding, vacuum and pressure forming) and sheet metal fabrication (stamping, forming). While there, I designed fluid pumps for laboratory and industrial fluid dispensing applications and a custom impeller pump for insufflation of the abdomen during laparoscopic surgery.

8. For Coca-Cola, I developed a disposable valve for a bag-in-box syrup dispensing system.

9. Next, in 1996, I joined Proteus, Inc. as Senior Mechanical Engineer. There, I focused on product design and engineering of products for consumer, medical, and laboratory applications.

10. For PUR, I developed a faucet mounted water filter with a replaceable cartridge and rotary actuated valve, and filtered water pitchers.

11. I founded Boston Innovation in 1998, focusing on developing precision fluidic dispensing instruments for pharmaceutical research applications that leveraged a novel pressure activated valve technology that I invented. In these instruments, sample fluid was stored in small sealed reservoirs, and precision low volumes dispensed by the translation of a needle and application of a rinse fluid and/or air pressure.

12. During this time, I developed and licensed novel valve technology to Delta Faucet. This project was focused on a high flow tub fill valve for residential plumbing use.

13. I founded MicroBioSciences in 2001. There, I invented and developed novel disposable fluid handling cartridges for high throughput screening in pharmaceutical research.

14. Later in 2001, I joined Altitude, Inc., a product development consulting firm, first as Engineering Manager, and then I was promoted to Director of Engineering in 2005. I performed design and engineering activities, and led a team of designers and engineers to develop a wide range of consumer products, medical devices and instrumentation.

15. I developed coffee makers for Sunbeam and Mr. Coffee, and a coffee carafe with refined pour spout to minimize drips.

16. I developed a wide range of home humidifiers for Honeywell, Kaz, and Vicks. These included water reservoirs with removable caps and elastomer valves.

17. I developed a water dispenser for PUR with chilled and heated water and dispensing valves. This included a refillable water reservoir with wide mouth threaded cap and valve for easy cleaning.

18. I developed the first integrated ice shaving and blending frozen drink appliances for home use for Margaritaville. These products included a reservoir for ice, a robust motor and rotary ice shaving blade, a blender, and electronic controls.

19. I developed a wine preservation and dispensing system for home use. The product stored multiple wine bottles at the user-selected optimum temperature using thermoelectric chiller technology, and used valves and air pressure for dispensing, and vacuum for preservation.

20. In 2008 I founded Aston Technology Advisors, and continued with product development and consulting activities.

21. I worked with a major beer company on a home keg dispenser, including work on a plastic recyclable vessel for beer.

22. In 2012, I cofounded 908 Devices Inc. to develop portable chemical detection instrumentation based on mass spectroscopy. There, I developed various instruments with applications in pharmaceutical research, forensics and hazardous material identification at the point of need. These instruments include complex fluid handling, fluidic and pneumatic connectors, custom vacuum pumps, pressure regulators and pressure sensors.

23. At 908 Devices I developed various customized fluid vials, bottles, caps, gaskets and packaging for shipping chemical reagents.

24. Throughout my professional career, I have designed products that have won various awards, including: Industrial Designers Society of America (IDSA) IDEA Awards, R&D 100, The Scientist Top 10 Innovations, and The Instrument Business Outlook Industrial Design Gold Award.

25. I have served as an expert in multiple cases. For example, in *Keurig, Inc. v. Kappos*, I was hired on behalf of the United States Patent & Trademark Office as an expert regarding technical concepts related to a USPTO Examiner's rejection of patent claims around Keurig's K-Cup coffee pods, including analysis of relevant prior art. Key issues included high volume manufacturing of thermoformed plastic pods, forming and assembly of filter baskets and fluid flow through the system under high pressure. Ultimately, the USPTO Examiner's rejection was affirmed on appeal.

26. As a further example, in *Nespresso USA, Inc. v. K-Fee System GMBH*, I was hired on behalf of Petitioner Nespresso for ten Inter Partes Review matters related to coffee beverage machines and capsules. I wrote ten declarations and was deposed 4 times. Following a ruling in one of the matters in which all challenged claims were determined to be unpatentable, the parties settled.

27. I also testified as an expert this year for SharkNinja regarding frozen drink makers similar to the ones at issue in this case with respect to two SharkNinja patents: US Patent Nos. 12, 285,028 and D1,091,236.

28. For my efforts in connection with the preparation of this Declaration, I have been compensated at my standard rate for this type of consulting activity of $599 per hour. My compensation is in no way contingent on the substance of my opinions or the results of this or any other proceedings.

III. MATERIALS CONSIDERED

29. In forming the opinions set forth in this Declaration, I have relied on my background, education, and experience discussed above and as reflected in Appendix A.

30. In addition, I have personally inspected a purchased sample of each of the accused slush machines in this case at counsel's offices in Miami, Florida. I have also relied on photographs of the accused slush machines taken by counsel as well as online product listings of the accused slush machines.

IV. THE ACCUSED PRODUCTS

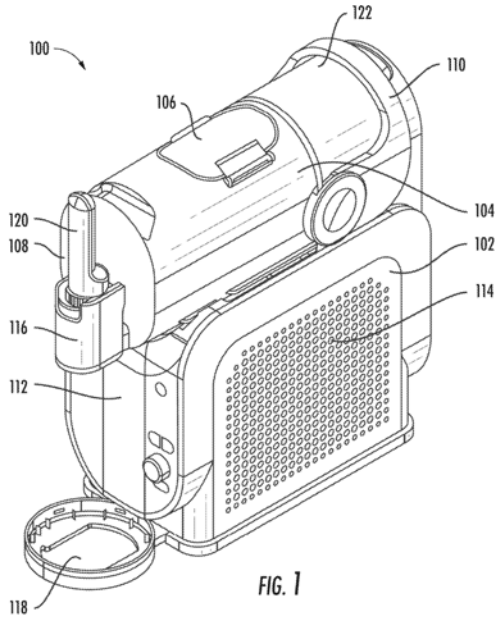
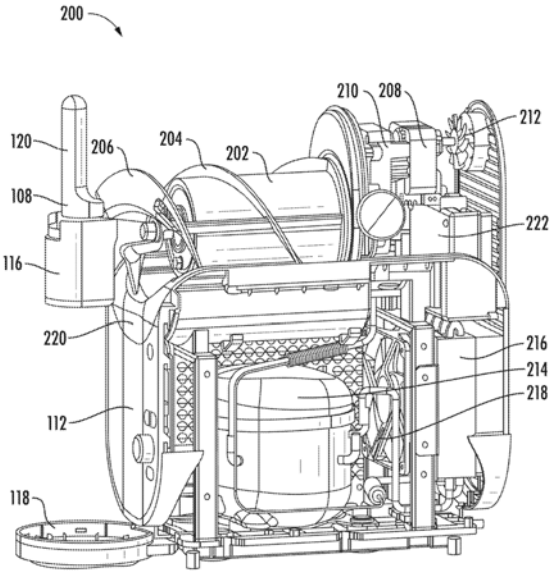
31. The accused frozen drink makers accused by Plaintiffs are listed in **Appendix B** to my declaration, which is Exhibit 1 to the Amended Complaint filed in Case 1 (collectively, the "Accused Products").

32. The Accused Products are frozen drink makers similar to SharkNinja's line of slush machines (referred to herein as the "SLUSHi"). These products are designed for the home preparation of frozen or icy beverages such as slushies, shakes, or smoothies. The Accused Products each include a condenser that can cool and produce a partially frozen beverage without the consumer having to add ice into the machine. Previous generation frozen drink makers, such as the Margaritaville, required ice to be prepared externally and added to the machine, where the ice would be crushed, scrapped, or shaved.

33. While there exist large commercial grade frozen drink makers that do not require ice to create slush, unlike commercial machines, the SharkNinja SLUSHi is small enough to fit on a home kitchen counter. Crucially, a slush machine for home use must be short enough to fit in the space between the counter and the cabinetry present in a typical kitchen. This, among numerous other functional and design aspects have led to the popularity of home frozen drink

makers, including ease of use, ease of cleaning, lack of leakage, intuitive controls, consistency of slush, elimination of ice blockages, and pleasing designs.

34. The Accused Products, like SharkNinja's SLUSHi, share a common overall arrangement of components. Below I reproduce Figure 1 and 2 from the '855 Patent, as well as images of SharkNinja's SLUSHi and examples of Accused Products.

'855 Patent Figure 1	**'855 Patent Figure 2**
 FIG. 1	 FIG. 2
SharkNinja SLUSHi[3]	**Example Accused Products**

[3] https://www.sharkninja.com/ninja-slushi-professional-frozen-drink-maker/FS301.html

<table>
<tr>
<td rowspan="3">
</td>
<td>
Fesoiu Accused Product[4]</td>
</tr>
<tr>
<td>
Keenstar Accused Product[5]</td>
</tr>
<tr>
<td>
BKPPM Accused Product[6]</td>
</tr>
</table>

[4] Sold at Amazon at ASIN B0GTSZLPZW.
[5] Sold at Amazon at ASIN B0DTHB6L3K / B0F7KL8BX9 / B0F9L29XPC
[6] Sold at Amazon at ASIN B0DT429T6D.

35. As demonstrated above, each product includes a clear plastic mixing vessel (element 104 in Figure 1 of the '855 Patent) in which the frozen beverage is formed and stored. The frozen beverage is then dispensed out of a spout by actuating a lever at the front of the machine (element 120). *Id.* Within the mixing vessel there is a cylindrical condenser (element 202) as well as a rotating dasher (element 204, also known as an auger). *Id.* The dasher is turned by a motor that is housed in the upper portion of the black plastic housing (element 122). *Id.* The rotating dasher is crucial to the operation of these machines, as the rotation stirs the freezing mixture, allowing for the production of a consistent "slush" product in the vessel. Although the dasher and condenser cannot be seen in the above images of the slush machines due to the presence of a beverage in the mixing vessel, I have confirmed the presence of the dashers and evaporators in each Accused Product through my inspection of the products. Indeed, as examples, the dasher can be seen in the below images from the Fesoiu,[7] Keenstar,[8] and BKPPM[9] websites:

Accused Product	**Exemplary Image**
Fesoiu	

[7] https://www.amazon.com/dp/B0GTSZLPZW.
[8] https://www.amazon.com/KEENSTAR-Programs-Self-Cleaning-Margaritas-Milkshake/dp/B0F7KL8BX9/.
[9] https://www.amazon.com/dp/B0DT429T6D.

Accused Product	Exemplary Image
Keenstar	
BKPPM	

36. A user prepares a frozen drink in the Accused Products by pouring in liquid ingredients through an opening on the top of the mixing vessel as seen in the above images (and

also as element 106 in Figure 1 of the '855 Patent). The user then operates and controls the slush machine using the interface on the slush machine to instruct the maker to form a frozen beverage, which the maker achieves by cooling the liquid in the mixing vessel while it is being stirred by the dasher. The clear plastic mixing vessel in each Accused Product is removable for user cleaning.

37. I understand that the Accused Products in this case were purchased by counsel from online platforms such as Amazon and Walmart.com. I have inspected each of the Accused Products in person at counsel's offices in Miami, Florida.

38. I have noted that some of the Accused Products in this case have an overall substantively identical design across sellers, with only minor cosmetic differences, such as in Case 1 and Case 2. These similarities among certain of the Accused Products indicate to me that the products likely originated from the same factory using a particular design plan, and that different seller logos were then affixed to the products, along with other minor design variations such as shape or color of various components. For other of the Accused Products, it is possible that multiple sources or factories are responsible, and it is not possible to clearly define the groups of products as coming from particular sources without additional information.

V. LEGAL STANDARDS

39. Counsel has informed me of the following legal principles of United States patent law as explained in this section, which I have applied in rendering my opinions herein.

40. I understand that the utility patent Infringement analysis requires comparing properly construed claim elements to the Accused Products from the perspective of a person of ordinary skill in the art ("POSITA"). I further understand that infringement may be either literal infringement or infringement under the doctrine of equivalents, and that infringement may also be direct or indirect.

41. As the patent holder seeking a remedy for infringement, I understand that Plaintiffs bear the burden of proof, which is a preponderance of the evidence. This means that Plaintiffs must prove that infringement is more likely than not based on the evidence presented.

42. I understand that direct infringement includes literal infringement.

43. I am informed that a patent claim is literally infringed if the Accused Products fall literally within the scope of each limitation of the asserted claim.

VI. LEVEL OF ORDINARY SKILL IN THE ART

a. '855 Patent Person of Ordinary Skill in the Art

44. In my opinion, a POSITA in the field of the '855 Patent at the time of the alleged invention would have had a bachelor's degree in either mechanical or chemical engineering or an equivalent field, plus at least 2 years of experience working in the field of consumer product mechanical design and testing including experience with injection molded parts. More years of practical experience and technical training may substitute for educational requirements, while advanced education (such as a master's or Ph.D. degree) could substitute for experience.

45. Based on my qualifications as previously discussed, and as detailed in my curriculum vitae (Appendix A), I meet, and in fact exceed, the articulation of a POSITA in this case.

VII. THE ASSERTED PATENT

46. I have reviewed the '855 Patent. Below I provide a brief summary of the patent and the technology described therein.

a. The '855 Patent

47. The '855 Patent is entitled "Drink maker with detachably connectable mixing vessel" and issued from Application No. 18/423,894 on April 7, 2026. The '855 Patent relates to

frozen drink makers, including the SLUSHi and Accused Products. In particular, the claims of the '855 Patent cover the manner in which the mixing vessel is detachably connected to the upper housing section of the frozen drink maker. *See* '855 Patent, at Abstract.

48. The '855 Patent teaches configurations that allow an operator to easily and securely couple and decouple (and thereby remove) the mixing vessel from the drink maker housing with little effort. One advantage of the claimed configurations is that little force is needed by the user to install and remove the vessel. *See, e.g.*, '855 Patent at 1:60-63. Another aspect of the claimed configuration is the use of flexible seal that facilitates a secure seal between the vessel and the housing, limiting leakage. *Id.*, 1:66-67. Likewise, the configuration provides for a watertight seal between the evaporator (which extends into the vessel), and the vessel. *Id*. at 2:3-6. The flexible seal is advantageously configured to reduce the amount of force required to seal. *Id.*, 14:58-15:41; *see also* Figs. 8-9.

49. Among the claimed features that leads to these advantages is the use of a cam mechanism. *See, e.g.*, *id.*, 14:15-17; Figs. 5-6. The cam mechanism provides significant mechanical advantage allowing the user to couple the mixing vessel securely to the mixer using little force. In particular, the cams have channels or paths that engage protrusions on the vessel. As the cam is moved, the protrusions slide along these cam paths, which are shaped to progressively pull the mixing vessel against the upper housing, and to form a watertight seal with the housing. *Id*., 14:6-43, Figs. 5B, 6. A cam mechanism can take various forms, such as the rotary over-center cam shown, or it may have alternative geometry. *Id.*, 14:44-46. A POSITA would understand that the cam paths and motions could take various forms. For example, the cam path could be modified to enable full engagement with larger or smaller angular motion. The cam paths could have an over-center or detent feature. Alternatively, the cam paths could move relative to a

rotation axis (commonly known as a rotary cam) or linearly (commonly known as a linear cam) to engage the vessel protrusions and form a seal.

50. Some embodiments claimed in the '855 Patent employ a lever. *See, e.g.*, *id.*, Claim 30. The lever facilitates a secure and easy coupling and decoupling by allowing the user to move between a coupled and decoupled position with little force. For example, in Figs. 5A and 5B, the lever is connected to a rotary cam. As the lever is rotated, a POSITA would understand that the cam would rotate about the same axis. A POSITA would further understand that the lever provides additional mechanical advantage beyond that provided by the cam itself, further contributing to the objective of coupling and uncoupling the vessel to the housing with low force.

VIII. INFRINGEMENT ANALYSIS – THE '855 PATENT

51. Based on my review of the Accused Products, including my in-person review, photographs taken by counsel, and the products listings, it is my opinion that each of the Accused Products infringes at least independent claim 24 and, in some cases, dependent claim 30 of the '855 Patent.[10] I have assisted in the preparation of charts (Exhibits 1-40 of my declaration) demonstrating that infringement, and I am willing and able to further discuss my opinions if called upon to do so.

52. Because each Accused Product meets each limitation of at least independent claim 24 of the '855 Patent as shown in Exhibits 1-40, it is my opinion that the Defendants' actions of importing, offering to sell, and selling the Accused Products in the United States constitute acts of infringement. In this Section, I explain each claim limitation and how the Accused Products meet them, as further detailed for each Accused Product in the exhibits.

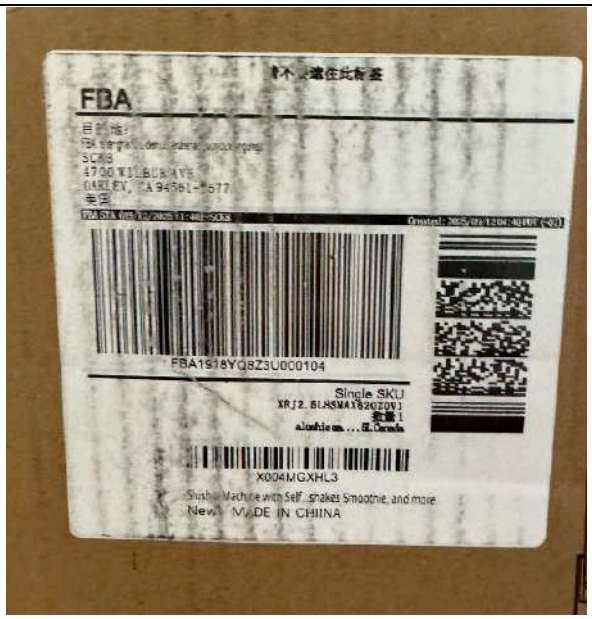
a. Claim 24

[10] I am not offering an opinion on the infringement of any other claims of the '855 Patent at this time.

i. Cl. 24[Pre.]: A frozen drink maker comprising:

53. In my opinion, the Accused Products meet this limitation.

54. Each Accused Product is a frozen drink maker. For example, as shown below for the Fesoiu Accused Product, the packaging indicates that it is a "Slush Machine."



Photograph of Fesoiu Accused Product packaging

55. As further examples, the Wetie, Luma Comfort, and BKPPM Accused Products are also frozen drink makers, as indicated on the packaging of these products as shown below.

Photograph of Wetie Accused Product packaging

Photograph of Luma Comfort Accused Product packaging

Photograph of BKPPM Accused Product packaging

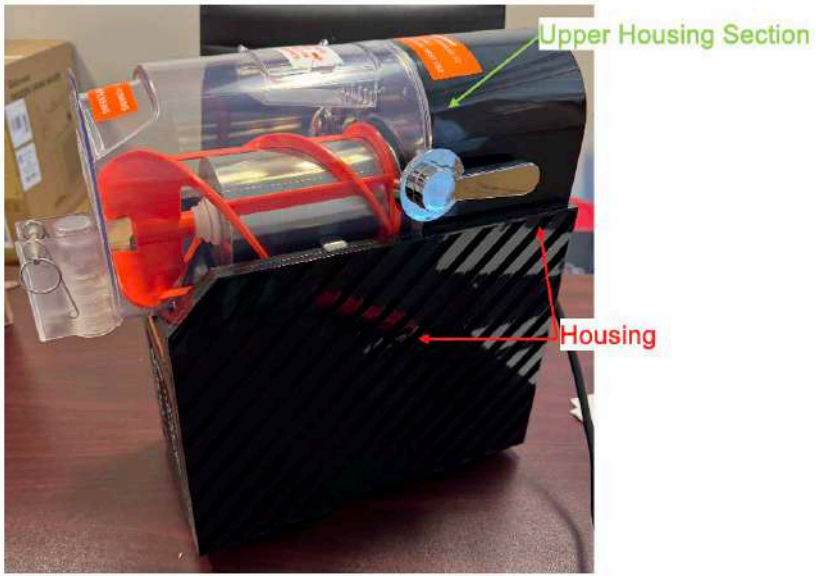
56. Similar language appears in the packaging or website materials for many of the Accused Products, and the primary function of each of the Accused Products is to make frozen drinks.

57. Exhibits 1-40 to my Declaration demonstrate how this limitation is met by all other Accused Products in a similar manner.

ii. Cl. 24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;

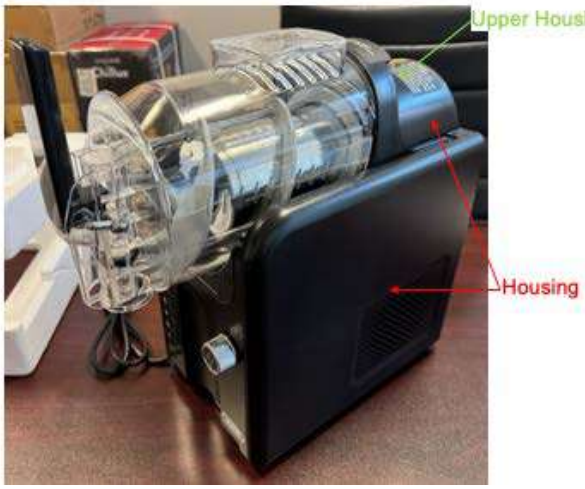
58. In my opinion, the Accused Products meet this limitation.

59. Each of the Accused Products includes a housing with an upper housing section and a cam feature moveable between a coupling position and an uncoupling position. For example, as shown below for the Fesoiu Accused Product, there is an upper housing section, which is the black plastic section on the upper part of the product, next to the clear mixing vessel.



Photograph of Fesoiu Accused Product (annotated)

60. Likewise, the Wetie, Luma Comfort, and BKPPM Accused Products each include a housing with an upper housing section and a cam feature moveable between a coupling position and an uncoupling position, as shown below.



Photograph of Wetie Accused Product (annotated)

Photograph of Luma Comfort Accused Product (annotated)

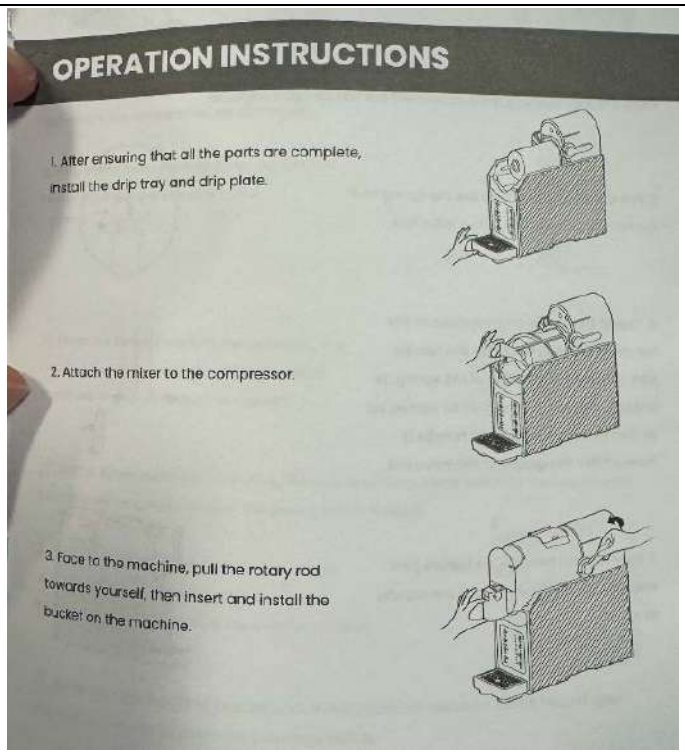
Photograph of BKPPM Accused Product (annotated)

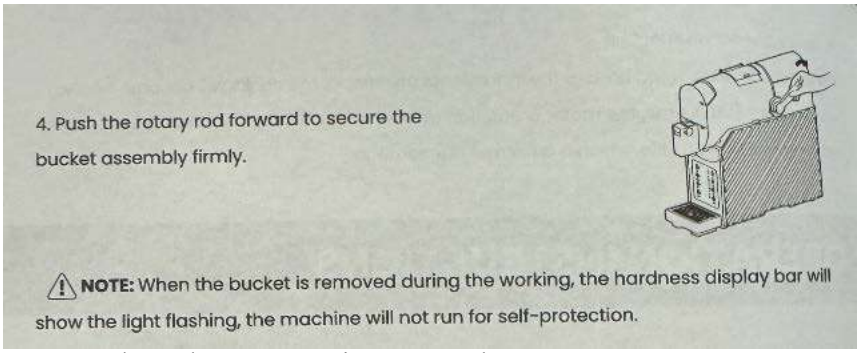
61. Each of the Accused Products also includes at least one cam feature moveable between a coupling and an uncoupling position, which a POSITA would understand to be met by a position where the mixing vessel is coupled to the upper housing section and a position where

the mixing vessel is uncoupled from the mixing vessel, respectively. For example, below I show both positions for the cam feature of the Fesoiu Accused Product.

Photograph of Fesoiu Accused Product (annotated)	Photograph of Fesoiu Accused Product (annotated)

62. Furthermore, the manual for the Fesoiu Accused Product shows a lever in two different positions, which correspond to the cam feature being in a coupling and uncoupling position.



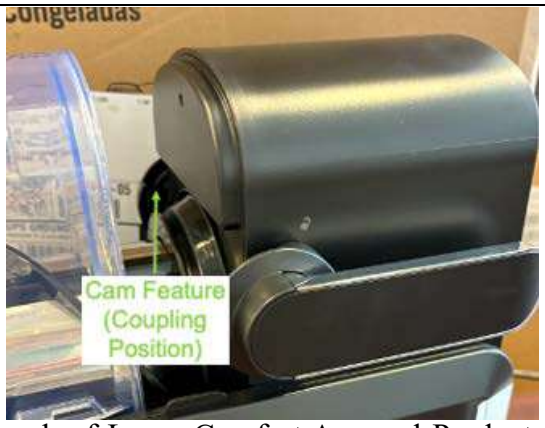


Fesoiu Accused Product Instruction Manual

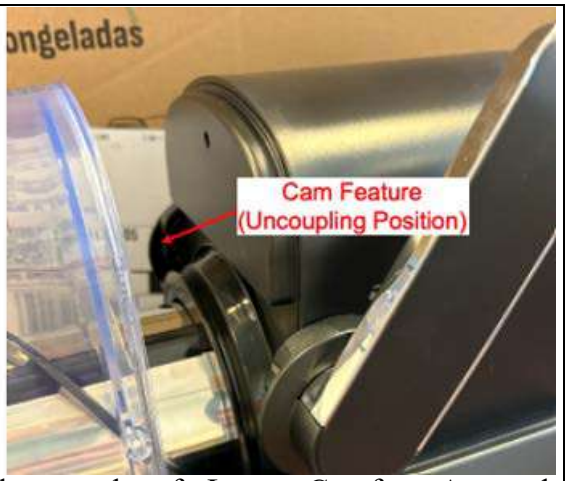
63. Likewise, the Wetie, Luma Comfort, and BKPPM Accused Products each include a cam feature moveable between coupling and uncoupling position, as shown below:

Photograph of Wetie Accused Product (annotated)

Photograph of Wetie Accused Product (annotated)



Photograph of Luma Comfort Accused Product (annotated)

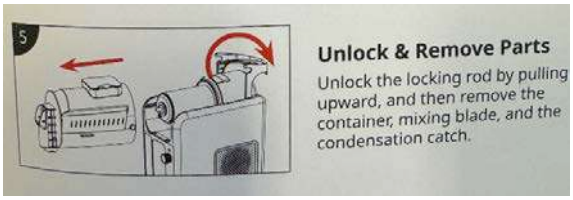


Photograph of Luma Comfort Accused Product (annotated)

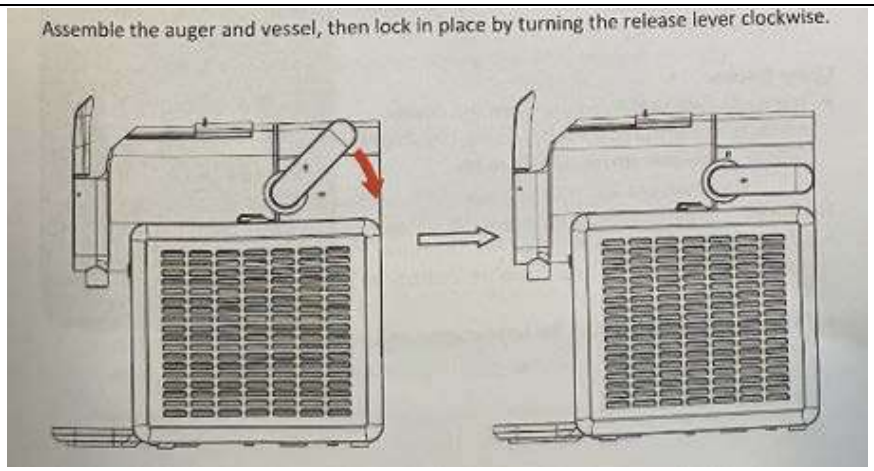
Photograph of BKPPM Accused Product (annotated)

Photograph of BKPPM Accused Product (annotated)

64. Likewise, the manuals for the Wetie, Luma Comfort, and BKPPM Accused Products each show a lever in two different positions, which correspond to the cam feature being in coupling and uncoupling position.



Wetie Accused Product Instruction Manual



Luma Comfort Accused Product Instruction Manual.

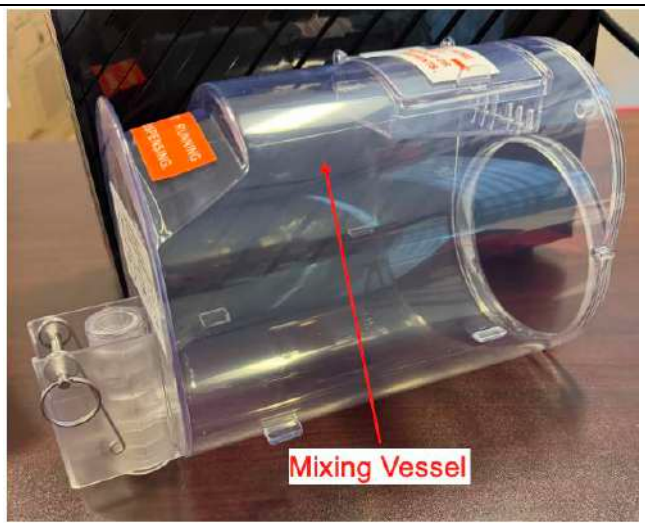
BKPPM Accused Product Instruction Manual

65. While I have discussed the example Fesoiu, Wetie, Luma Comfort, and BKPPM Accused Products above, each of the Accused Products has similar features and operates in a similar manner. Exhibits 1-40 to my Declaration set forth for each Accused Product how this limitation is met by that Accused Product.

iii. Cl. 24[b]: a mixing vessel to receive a drink product, the mixing vessel having:

66. In my opinion, the Accused Products meet this limitation.

67. Each Accused Product comprises a mixing vessel to receive a drink product. For example, I have indicated the clear mixing vessel in the below photograph of the Fesoiu Accused Product. A POSITA would understand that it is this vessel that will receive a drink product.

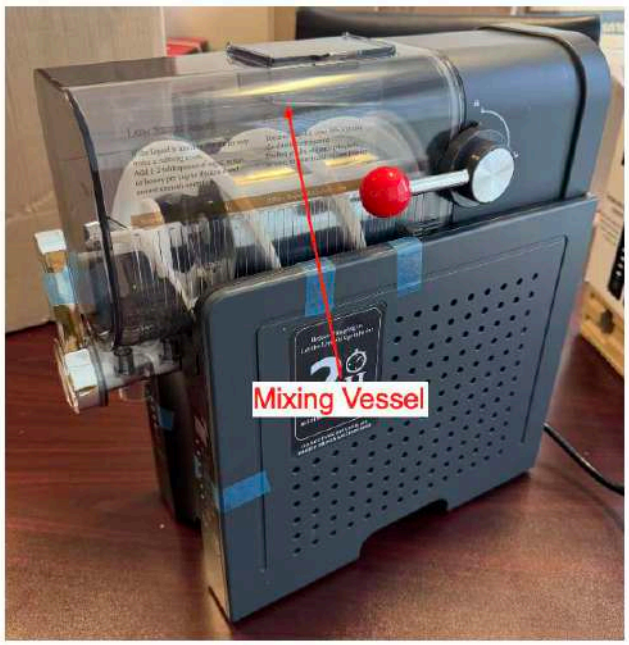


Photograph of Fesoiu Accused Product (annotated)

68. Likewise, the Wetie, Luma Comfort, and BKPPM Accused Products each comprise a mixing vessel to receive a drink product, as shown below.

Photograph of Wetie Accused Product (annotated)

Photograph of Luma Comfort Accused Product (annotated)



Photograph of BKPPM Accused Product (annotated)

69. Exhibits 1-40 to my Declaration demonstrate how this limitation is met by all other Accused Products in a similar manner.

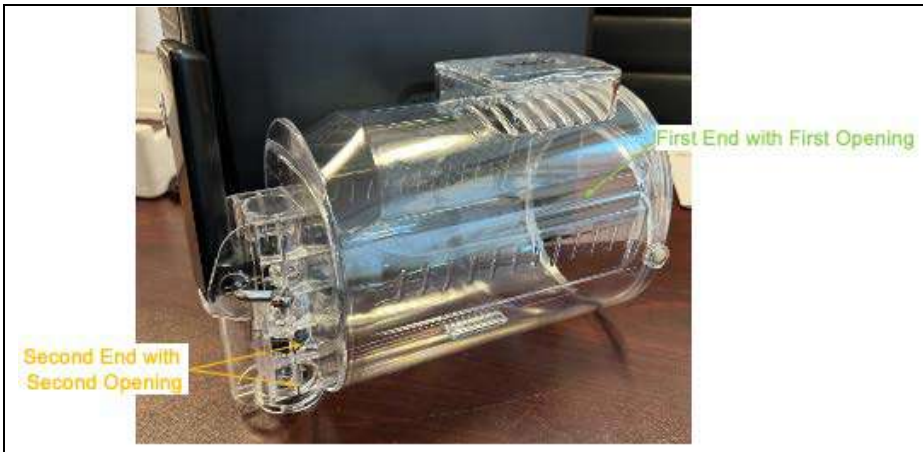
iv. 24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and

70. In my opinion, the Accused Products meet this limitation.

71. The Accused Products each comprise a mixing vessel with a first end with a first opening and a second end with a second opening configured to dispense drink product. For example, as in the below photograph of the mixing vessel for the Fesoiu Accused Product, I have indicated the second end which has the second opening, which is the opening configured to dispense the drink product, as well as the first end with the first opening.

Photograph of Fesoiu Accused Product (annotated)

72. Likewise, the Wetie, Luma Comfort, and BKPPM Accused Products each comprise a mixing vessel with a first end with a first opening and a second end with a second opening configured to dispense drink product, as shown below.



Photograph of Wetie Accused Product (annotated)

Photograph of Luma Comfort Accused Product (annotated)

Photograph of BKPPM Accused Product (annotated)

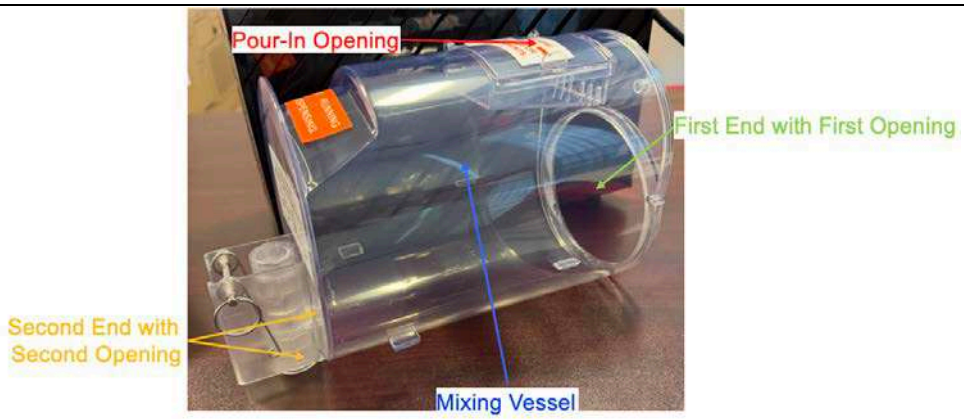
73. Exhibits 1-40 to my Declaration demonstrate how this limitation is met by all other Accused Products in a similar manner.

v. Cl. 24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;

74. In my opinion, the Accused Products meet this limitation.

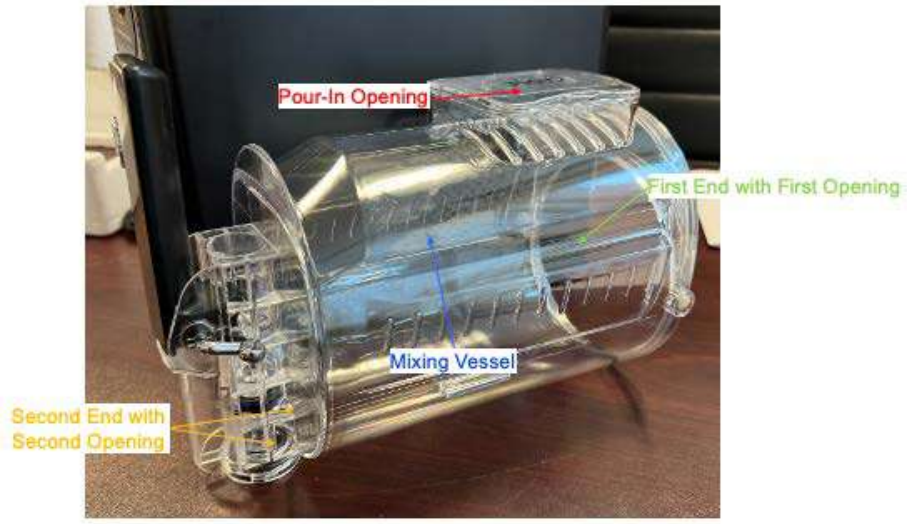
75. Each Accused Product has a mixing vessel that includes a pour-in opening located on the mixing vessel between the first end and the second end. For example, I have indicated the

pour-in opening for the Fesoiu Accused Product in the below image. For example, as shown below, the opening is located between the first end and second end of the mixing vessel.

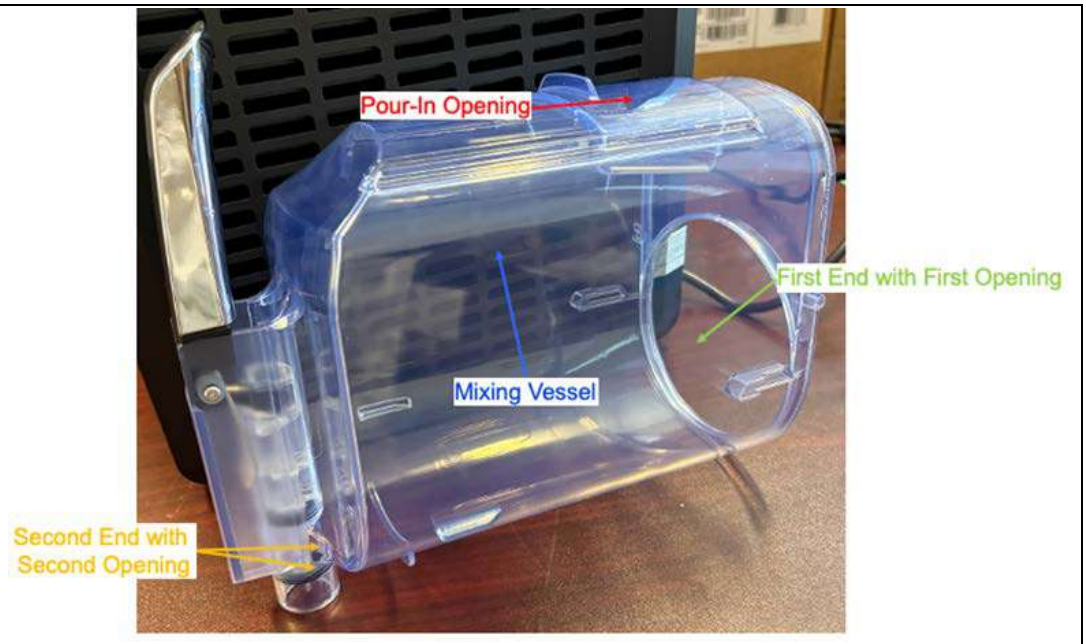


Photograph of Fesoiu Accused Product (annotated)

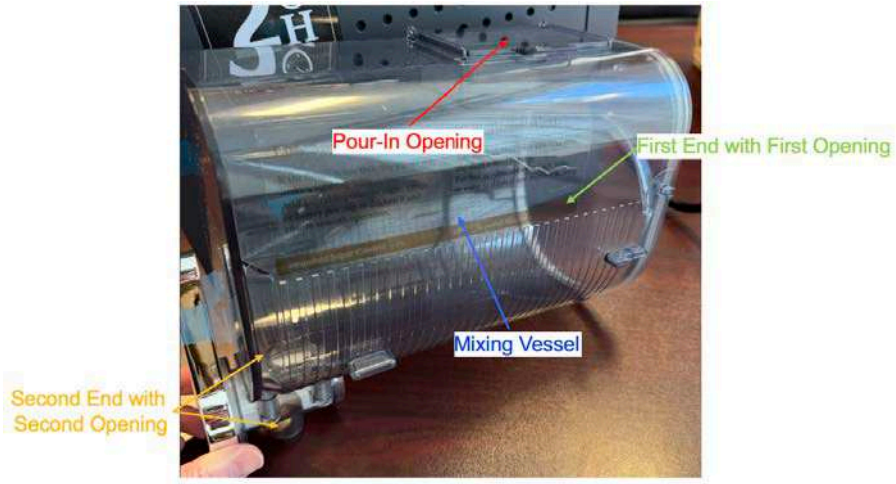
76. Likewise, the Wetie, Luma Comfort, and BKPPM Accused Products each have a mixing vessel that includes a pour-in opening located on the first end and the second end of the mixing vessel, as shown below.



Photograph of Wetie Accused Product (annotated)



Photograph of Luma Comfort Accused Product (annotated)



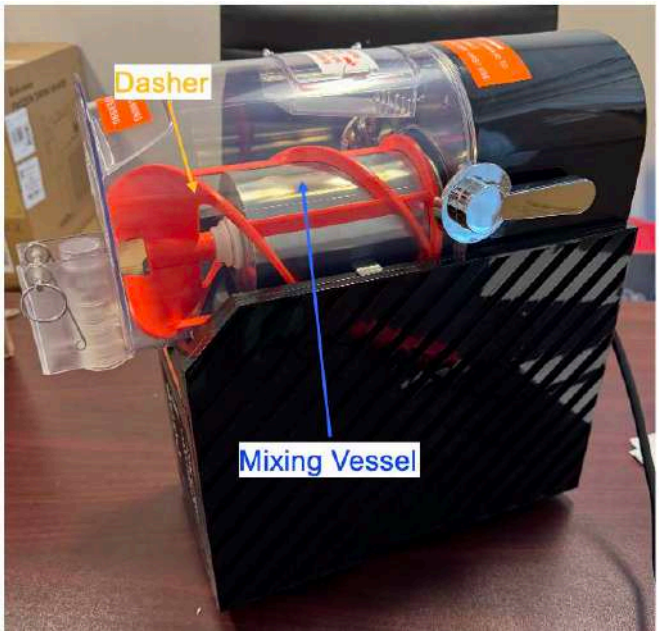
Photograph of BKPPM Accused Product (annotated)

77. Exhibits 1-40 to my Declaration demonstrate how this limitation is met by all other Accused Products in a similar manner.

vi. Cl. 24[c]: a dasher configured to rotate in the mixing vessel;

78. In my opinion, the Accused Products meet this limitation.

79. The Accused Products each comprise a dasher configured to rotate in the mixing vessel. For example, I have indicated the dasher present in the Fesoiu Accused Product. In this case, the dasher is the orange plastic spiral shaped element. Each Accused Product has a dasher (also known as an auger) that is configured to rotate in the mixing vessel in order to mix or stir the frozen drink.

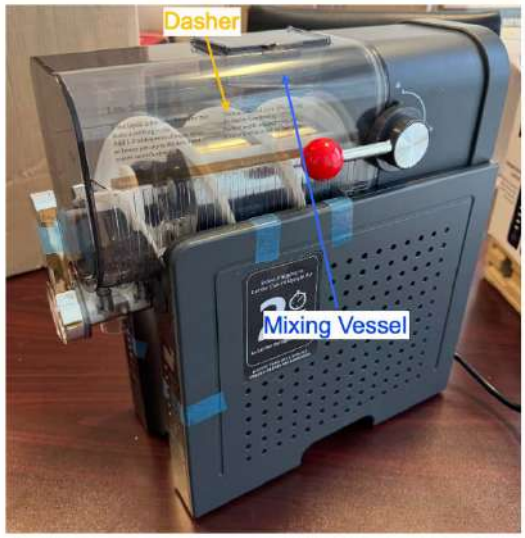


Photograph of Fesoiu Accused Product (annotated)

80. Likewise, the Wetie, Luma Comfort, and BKPPM Accused Products each comprise a dasher configured to rotate in the mixing vessel, as shown below.

Photograph of Wetie Accused Product (annotated)

Photograph of Luma Comfort Accused Product (annotated)



Photograph of BKPPM Accused Product (annotated)

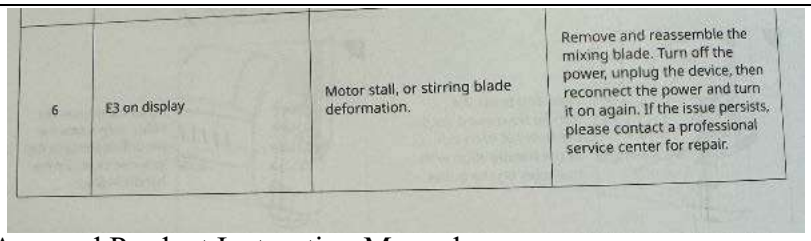
81. Exhibits 1-40 to my Declaration demonstrate how this limitation is met by all other Accused Products in a similar manner.

vii. Cl. 24[d]: a motor to drive the dasher;

82. In my opinion, the Accused Products meet this limitation.

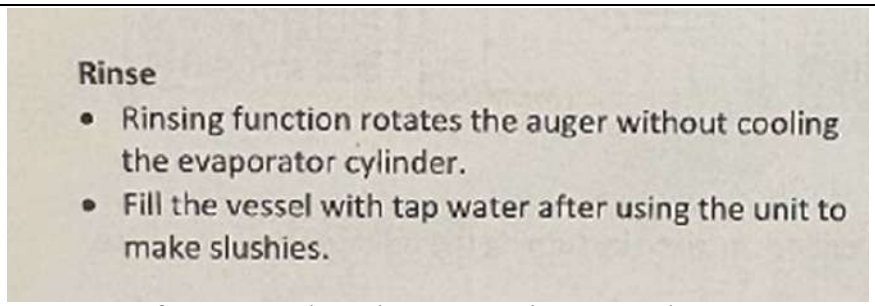
83. Each Accused Product includes a motor to drive the dasher. A POSITA would understand that each Accused Product includes a motor to drive the dasher so that the dasher can mix and stir the drink product. I have confirmed for each Accused Product that the dasher is driven by a motor to rotate during operation. As an example, product testing confirms that the Fesoiu Accused Product includes a motor to drive the dasher.

84. Likewise, the manuals for the Wetie, Luma Comfort, and BKPPM Accused Products each refer to a "motor," as shown below.



6	E3 on display	Motor stall, or stirring blade deformation.	Remove and reassemble the mixing blade. Turn off the power, unplug the device, then reconnect the power and turn it on again. If the issue persists, please contact a professional service center for repair.

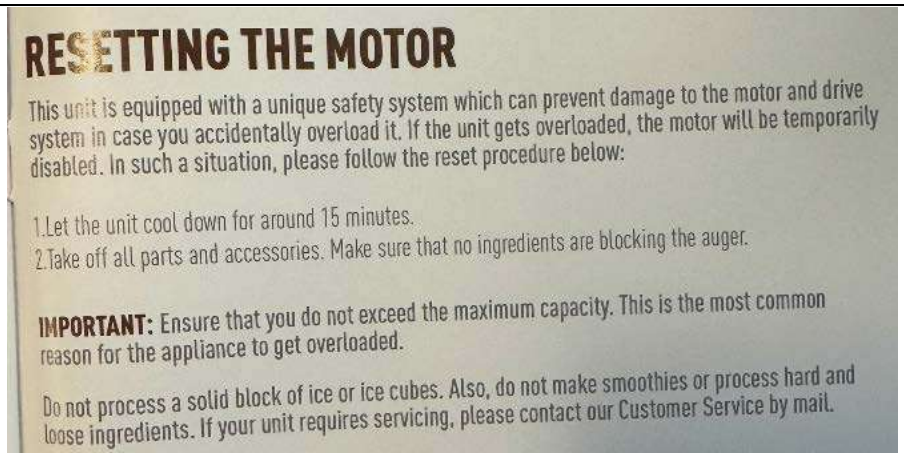
Wetie Accused Product Instruction Manual.



Rinse

- Rinsing function rotates the auger without cooling the evaporator cylinder.
- Fill the vessel with tap water after using the unit to make slushies.

Luma Comfort Accused Product Instruction Manual.



RESETTING THE MOTOR

This unit is equipped with a unique safety system which can prevent damage to the motor and drive system in case you accidentally overload it. If the unit gets overloaded, the motor will be temporarily disabled. In such a situation, please follow the reset procedure below:

1.Let the unit cool down for around 15 minutes.
2.Take off all parts and accessories. Make sure that no ingredients are blocking the auger.

IMPORTANT: Ensure that you do not exceed the maximum capacity. This is the most common reason for the appliance to get overloaded.

Do not process a solid block of ice or ice cubes. Also, do not make smoothies or process hard and loose ingredients. If your unit requires servicing, please contact our Customer Service by mail.

BKPPM Accused Product Instruction Manual.

85. Product testing also confirms that the Wetie, Luma Comfort, and BKPPM Accused Products each include a motor to drive the dasher.

86. Exhibits 1-40 to my Declaration demonstrate how this limitation is met by all other Accused Products in a similar manner.

viii. Cl. 24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and

87. In my opinion, the Accused Products meet this limitation.

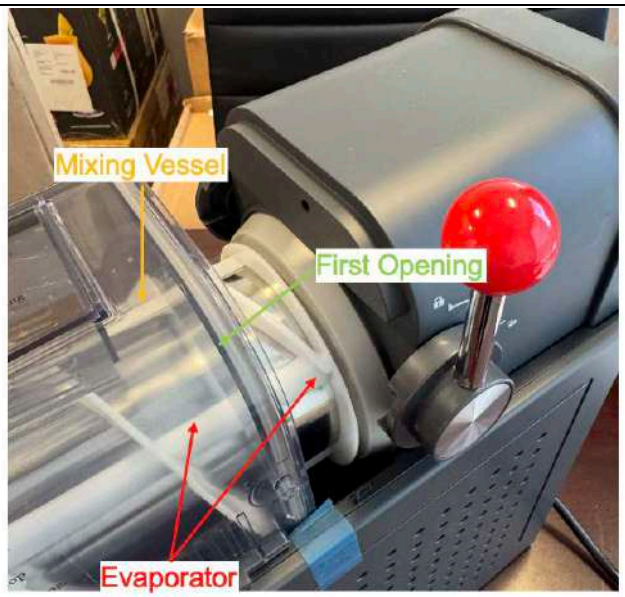
88. Each Accused Product comprises an evaporator configured to be received through the first opening and be positioned within the mixing vessel. For example, I indicate the evaporator for the Fesoiu Accused Product in the below image. In the image, it can be seen that the evaporator is configured to be received through the first opening of the mixing vessel, and therefore be positioned within the mixing vessel.

Photograph of Fesoiu Accused Product (annotated)

89. Likewise, the Wetie, Luma Comfort, and BKPPM Accused Products each comprise an evaporator configured to be received through the first opening and be positioned within the mixing vessel, as shown below.

Photograph of Wetie Accused Product (annotated)

Photograph of Luma Comfort Accused Product (annotated)



Photograph of BKPPM Accused Product (annotated)

90. Exhibits 1-40 to my Declaration demonstrate how this limitation is met by all other Accused Products in a similar manner.

ix. Cl. 24[f]: a flexible seal arranged proximate to the upper housing section;

91. In my opinion, the Accused Products meet this limitation.

92. The Accused Products each include a flexible seal arranged proximate to the upper housing section. For example, I have indicated the flexible seal present for the Fesoiu Accused Product, where it is proximate to the upper housing section.

Photograph of Fesoiu Accused Product (annotated)

93. Likewise, the Wetie, Luma Comfort, and BKPPM Accused Products each include a flexible seal arranged proximate to the upper housing section, as shown below.

Photograph of Wetie Accused Product (annotated)

Photograph of Luma Comfort Accused Product (annotated).

Photograph of BKPPM Accused Product (annotated)

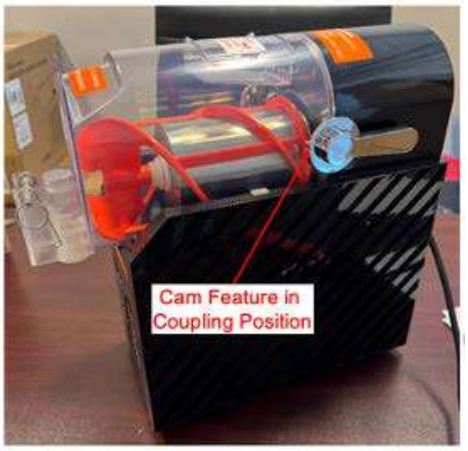
94. My inspection of each Accused Product confirms that the seal is comprised of a material that is flexible.

95. Exhibits 1-40 to my Declaration demonstrate how this limitation is met by all other Accused Products in a similar manner.

x. Cl. 24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position, and

96. In my opinion, the Accused Products meet this limitation.

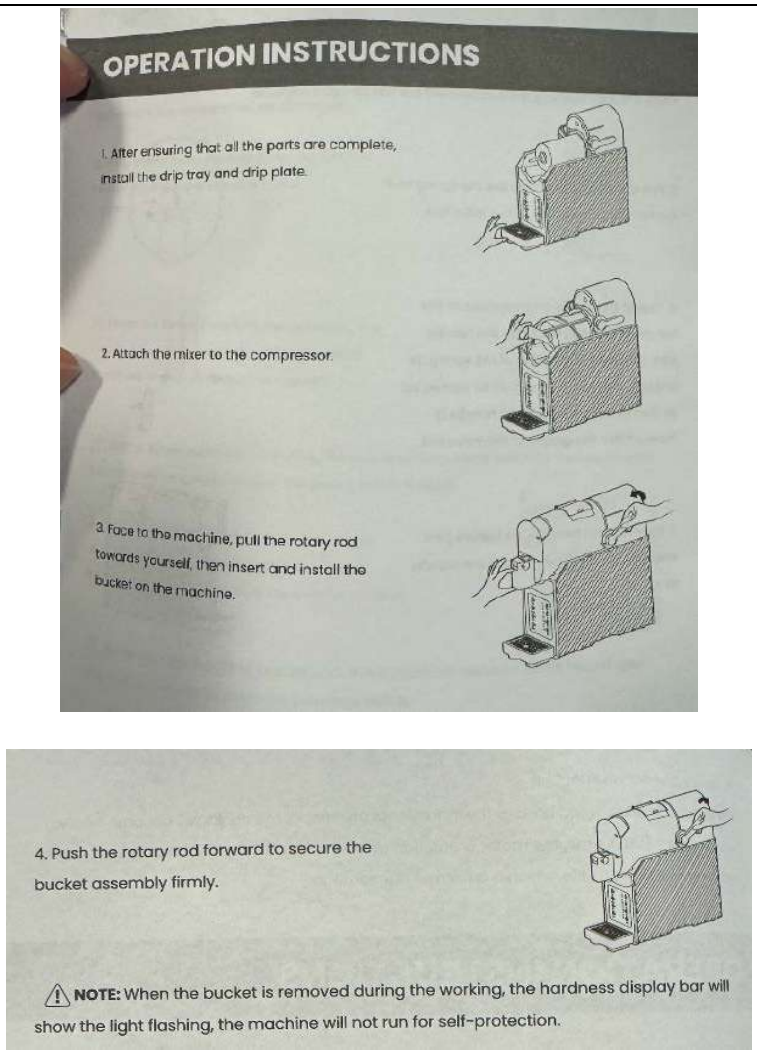
97. In each Accused Product, the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position. For example, in left side image below, I show the cam feature of the Fesoiu Accused Product in the coupling position, where the cam feature has coupled the mixing vessel to the upper housing section. In the image on the right, I show the cam feature of the Fesoiu Accused Product in the uncoupling position, where the cam feature has uncoupled the mixing vessel from the upper housing section.



Photograph of Fesoiu Accused Product (annotated)

Photograph of Fesoiu Accused Product (annotated)

98. Furthermore, the Fesoiu Accused Product Manual indicates that the release lever, which is connected to the cam feature, controls whether the mixing vessel is coupled (locked) to the upper housing section.



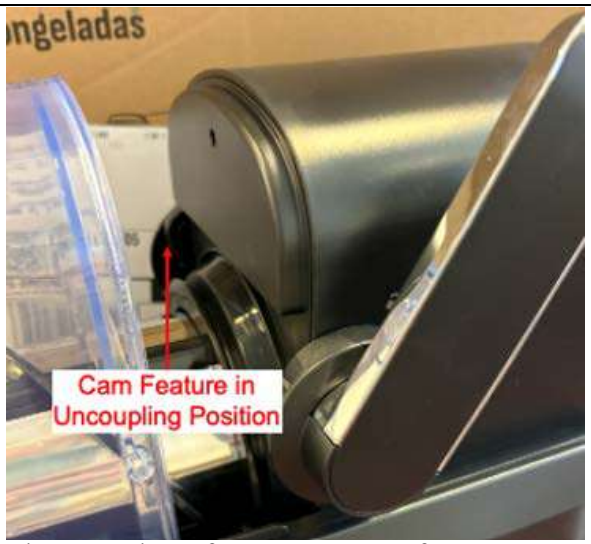
Fesoiu Accused Product Instruction Manual.

99. Likewise, in each of the Wetie, Luma Comfort, and BKPPM Accused Products, the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position, as shown below.

Photograph of Wetie Accused Product (annotated)

Photograph of Wetie Accused Product (annotated)

Photograph of Luma Comfort Accused Product (annotated)

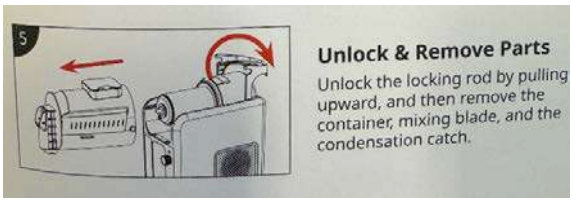


Photograph of Luma Comfort Accused Product (annotated)

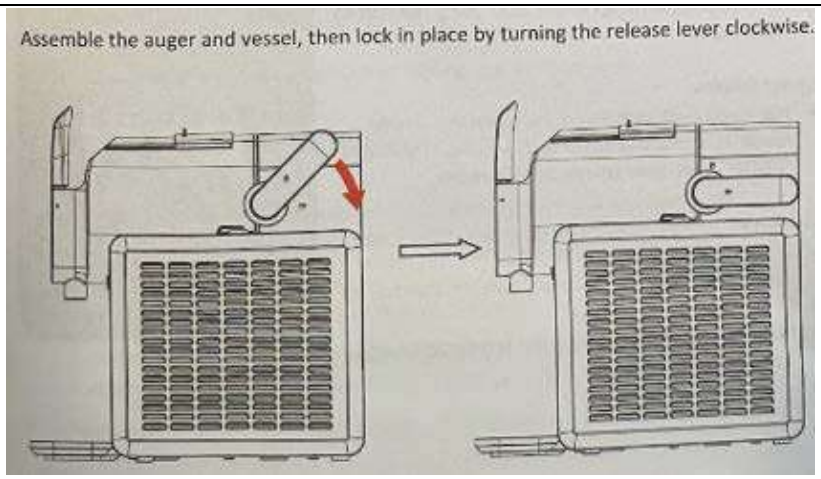
Photograph of BKPPM Accused Product (annotated)

Photograph of BKPPM Accused Product (annotated)

100. Likewise, each of the manuals for the Wetie, Luma Comfort, and BKPPM Accused Products indicates that the release lever, which is connected to the cam feature, controls whether the mixing vessel is coupled (locked) to the upper housing section.



Wetie Accused Product Instruction Manual



Luma Comfort Accused Product Instruction Manual.

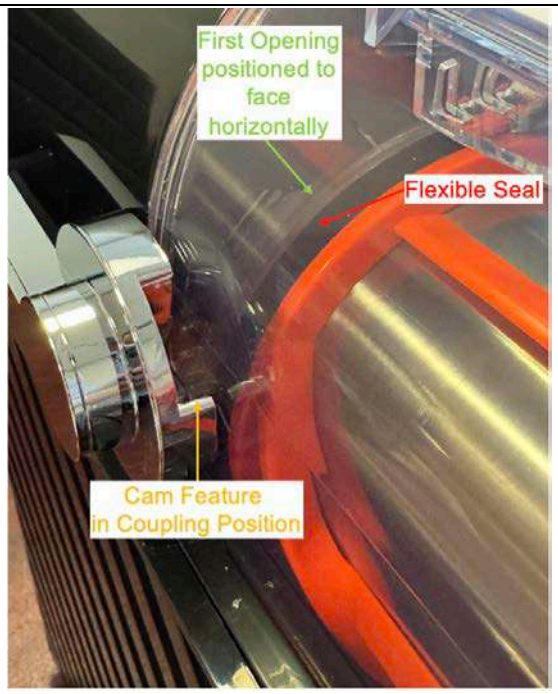
BKPPM Accused Product Instruction Manual.

101. Exhibits 1-40 to my Declaration demonstrate how this limitation is met by all other Accused Products in a similar manner.

xi. Cl. 24[h]: wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.

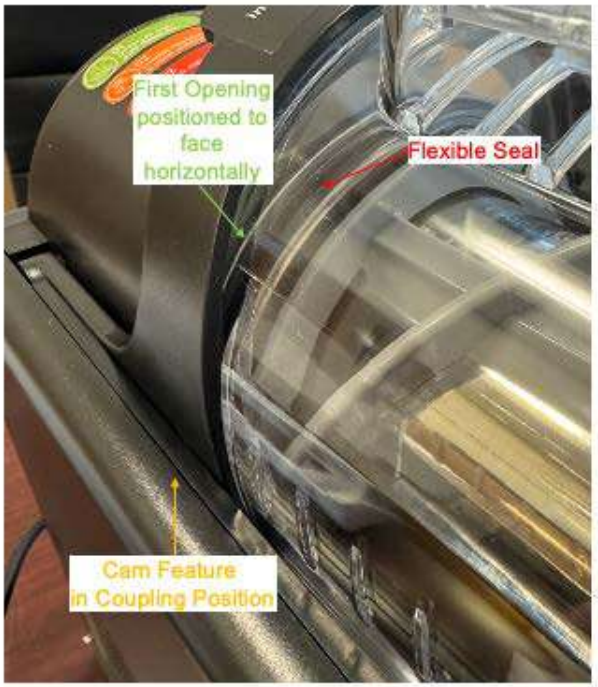
102. In my opinion, the Accused Products meet this limitation.

103. The Accused Products are each configured such that when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal. For example, as shown below for the Fesoiu Accused Product with the cam feature in the coupling position, the first opening faces horizontally and is sealed against the flexible seal.

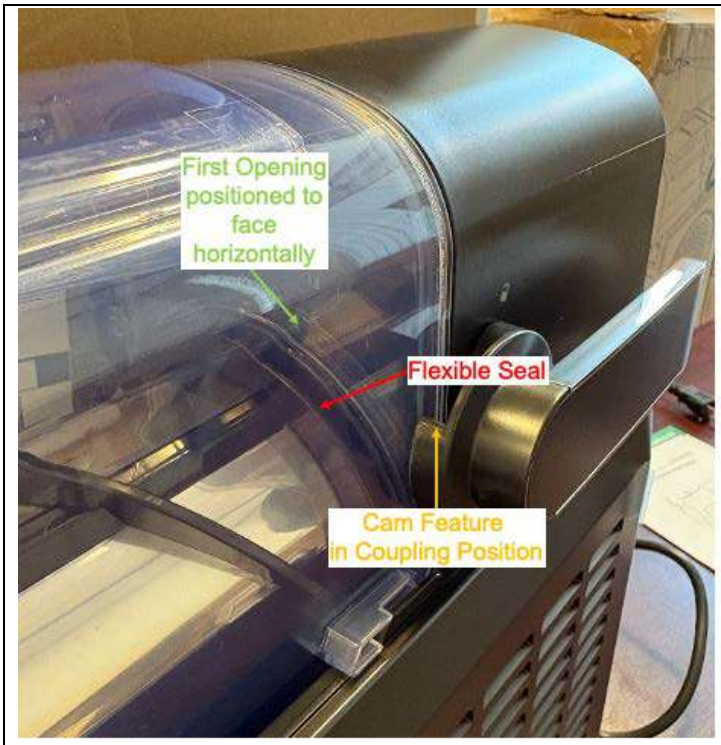


Photograph of Fesoiu Accused Product (annotated)

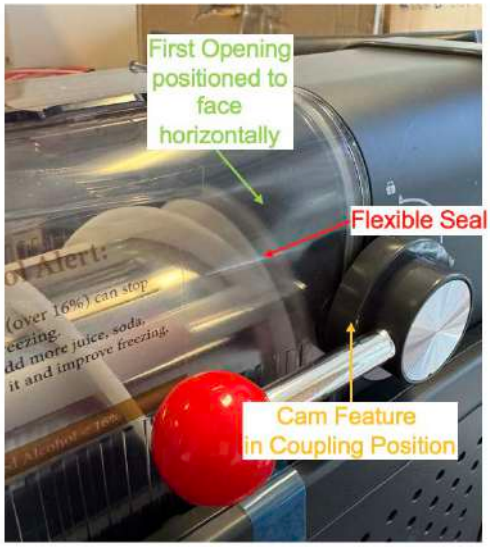
104. Likewise, when the cam feature of each of the Wetie, Luma Comfort, and BKPPM Accused Products is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal, as shown below.



Photograph of Wetie Accused Product (annotated)



Photograph of Luma Comfort Accused Product (annotated)



Photograph of BKPPM Accused Product (annotated)

105. Exhibits 1-40 to my Declaration demonstrate how this limitation is met by all other Accused Products in a similar manner.

xii. Cl. 30. The frozen drink maker of claim 24, wherein the housing comprises a lever moveable relative to the upper housing section, wherein moving the lever to a first position moves the cam feature into the coupling position, and wherein, when in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling of the mixing vessel to the upper housing section.

106. In my opinion, the Keenstar, Luma Comfort, Relexnow, Bizaura, BKPPM, Garvee, Generic (Wizaura), Neosism, Revotio, SUPWIN, Sweet (Bizaura), Syintao, Astralship, Cowsar, CROWNFUL, Fesoiu, GSEICE, Maipsig, Mazzen, Mulivid, NutriChef, Ontravelo, Topteng, Velpax, and Wetie Accused Products meet each limitation of dependent claim 30 (Exs. 1-12, 15, 19-20, 23, 26-27, 29-33, 35-36, and 38) (the "Lever Accused Products").

107. For each of the Lever Accused Products, the housing further includes a lever moveable relative to the upper housing section, wherein moving the lever to a first position moves the cam feature into the coupling position, and wherein, when in the coupling position, the cam

feature engages at least one mating feature on the mixing vessel to control coupling of the mixing vessel to the upper housing section.. For example, I have indicated the lever present in the Fesoiu Accused Product in the below pictures.

Photograph of Fesoiu Accused Product (annotated)	Photograph of Fesoiu Accused Product (annotated)

108. Likewise, the Wetie, Luma Comfort, and BKPPM Accused Products each also have a lever moveable relative to the upper housing section, as shown below.

Photograph of Wetie Accused Product (annotated)

Photograph of Wetie Accused Product (annotated)

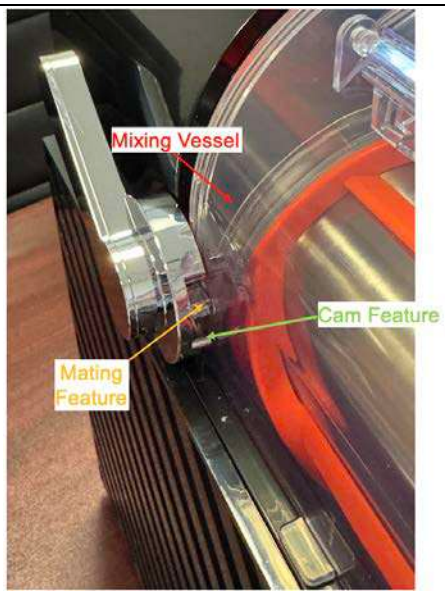
Photograph of Luma Comfort Accused Product (annotated)

Photograph of Luma Comfort Accused Product (annotated)

Photograph of BKPPM Accused Product (annotated)	Photograph of BKPPM Accused Product (annotated)

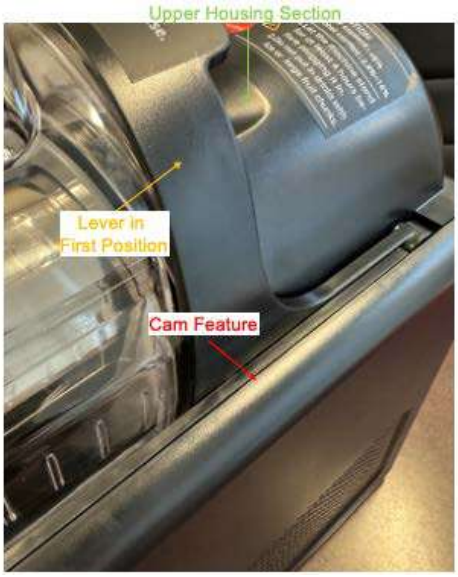
109. In each of the Lever Accused Products, moving the lever to a first position moves the cam feature into the coupling position. Indeed, when the cam feature is in the coupling position on each Lever Accused Product, the cam feature engages at least one mating feature on the mixing vessel to cause the mixing vessel to couple to the upper housing section. As an example, in the left image of the Fesoiu Accused Product below, I show the lever moved to a first position so that the cam feature engages at least one mating feature on the mixing vessel to cause the mixing vessel to couple to the upper housing section. In the right image of the Fesoiu Accused Product below, I indicate the mating feature of the mixing vessel.

Photograph of Fesoiu Accused Product (annotated)

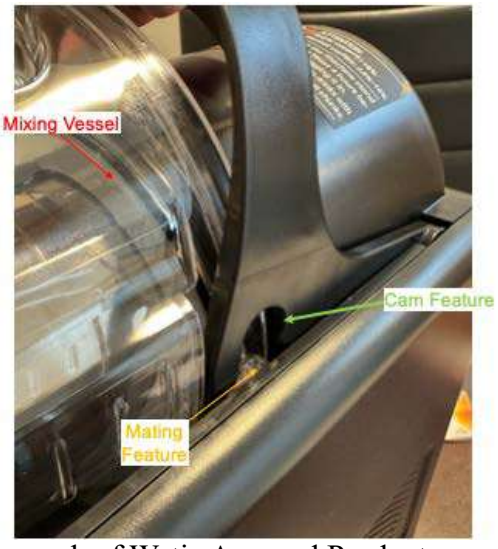


Photograph of Fesoiu Accused Product (annotated)

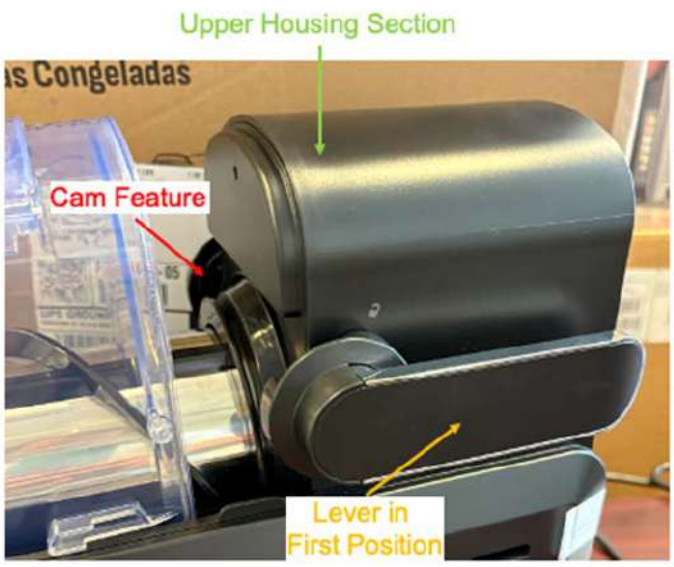
110. Likewise, in each of the Wetie, Luma Comfort, and BKPPM Accused Products, moving the lever to a first position moves the cam feature into the coupling position, which engages at least one mating feature on the mixing vessel to cause the mixing vessel to couple to the upper housing section, as shown below.



Photograph of Wetie Accused Product (annotated)

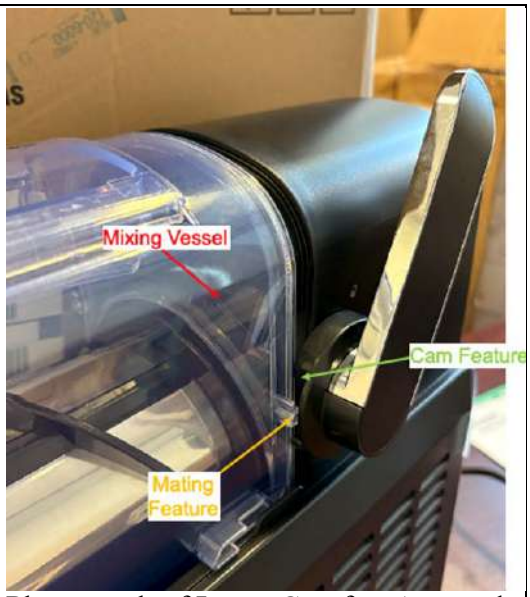


Photograph of Wetie Accused Product (annotated)

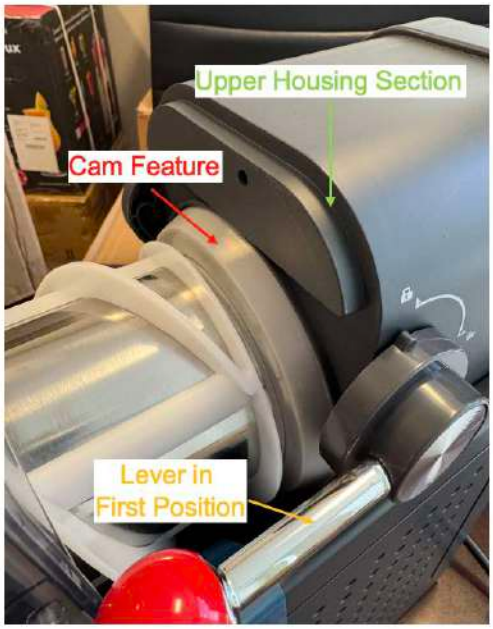


Photograph of Luma Comfort Accused Product

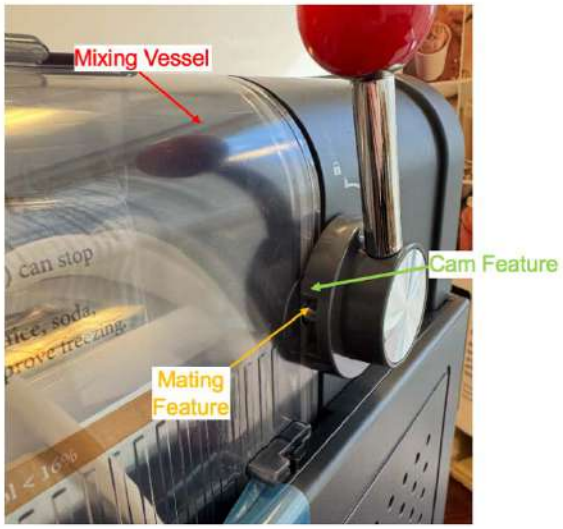
(annotated)



Photograph of Luma Comfort Accused Product (annotated)



Photograph of BKPPM Accused Product (annotated)



Photograph of BKPPM Accused Product (annotated)

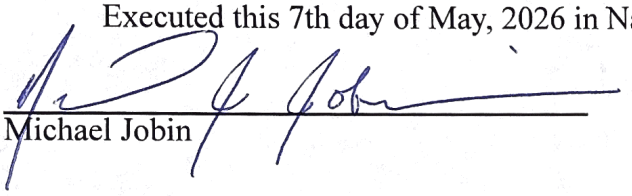
111. As shown in the Exhibits 1-40 to my Declaration, this limitation is met by all other Accused Products.

IX. CONCLUSION

112. For the reasons stated above, it is my opinion that all of the Accused Products infringe independent Claim 24, and each of the Lever Accused Products infringe dependent Claim 30.

113. I reserve the right to supplement and amend my opinions as this case continues and in view of certain evidence and information that may become available during the course of discovery in this case.

Executed this 7th day of May, 2026 in Naples, Florida.



Michael Jobin

APPENDIX A

Michael Jobin
2205 Imperial Golf Course Blvd., Naples, FL 34110
1682 Washington Street, #3, Boston, MA 02118
617-406-9415

2025-present **Aston Technology Advisors, Boston, MA**
President
- Provide product strategies and technology development services

2012-2025 **908 Devices Inc., Boston, MA**
Co-Founder & Director of Product Development (venture-backed startup)
- As a co-founder of 908 Devices, I led mechanical engineering and design efforts for chemical detection instrumentation, working with multi-disciplinary teams of chemists and engineers. I helped the company evolve from seed-stage to successful IPO in 2020 (NASDAQ: MASS).

2008-2012 **Aston Technology Advisors, Boston, MA**
President
- Provided product strategies and technology development for companies ranging from seed stage startups to Fortune 100. Services included technology feasibility assessment, patent strategy, risk analysis, conceptualization, prototype development and strategic partner opportunities.

2001-2008 **Altitude, Inc., Somerville, MA**
Engineering Manager (2001 - 2005)
Director of Engineering (2005 - 2008)
- Successfully developed new business proposals and contracts totaling several million dollars
- Managed clients in medical, consumer and commercial industries, including Boston Scientific, Jarden Consumer Solutions (home appliances) and Thermo Electron (XRF instrument)

2001-2002 **MicroBiosciences, Inc., Cambridge, MA**
Co-Founder and Chief Technology Officer (seed-funded startup)
- Invented microfluidics technologies & prototypes for High Throughput Screening
- Conducted extensive prior art searches & co-wrote three provisional patent applications
- Led business development; arranged meetings with top pharmas & biotechs to define product specifications & organize development consortium

2000-2001 **Arthur D. Little, Inc., Cambridge, MA**
Sr. Mechanical Engineer for Pyxsys Corporation (venture-backed spinout)

- Led mechanical engineering of next-generation network storage product, integrating contributions of mechanical, software, hardware and industrial designers

1998-2000 **Boston Innovation, Inc., Cambridge, MA**
Co-Founder and Chief Operating Officer (customer-funded startup)
- Developed new technologies for key clients, including: Bard (surgical instrument), Gillette (precision dispensing instrument), Merck, J&J, AstraZeneca ("fluid transistor" for life sciences microdispensing applications such as drug discovery and drug delivery)
- Co-developed technology for five pending patents and wrote provisional applications

1996-1998 **Proteus, Inc., Boston, MA**
Program Manager
- Co-founded & managed 6-person engineering department
- Managed concurrent development projects for: Xylum (diagnostic instrument), Avery Dennison (writing instruments), Honeywell (electronic thermostat), and Physiometrix (anesthesia monitor)

1992-1996 **Design 4 Plastics, Inc., Chicago, IL**
Program Manager
- Engineered products for Packard Instruments, Barnant (laboratory instruments), Nortech (surgical pump), Seaquist (miniature valves) and Coca-Cola (fluid delivery)
- Strong focus on plastic part design, materials, design for assembly, prototyping and tooling

Education
1987-1991 **University of Michigan, Ann Arbor, MI**
BS Engineering, Mechanical, *cum laude*
BFA Industrial Design, *cum laude*

Other
- Inventor on 25 issued (19 utility, 6 design) U.S. patents

1. US D932046 Fluidic cartridge assembly
2. US 9698000 Integrated mass spectrometry systems
3. US 10438787 Integrated mass spectrometry systems
4. US 9502226 Sample collection in compact mass spectrometry systems
5. US 9978574 Sample collection in compact mass spectrometry systems
6. US 9279821 Deicing system in sodar systems
7. US 9093253 High pressure mass spectrometry systems and methods
8. US 8958269 Transducer for phased array acoustic systems

9	US D703074	Handheld sensor
10	US D703075	Sensor device
11	US 8525111	High pressure mass spectrometry systems and methods
12	US 8012136	Ophthalmic fluid delivery device and method of operation
13	US 8545463	Ophthalmic fluid reservoir assembly for use with an ophthalmic fluid delivery device
14	US D597206	Ophthalmic misting device
15	US 7175270	Flexible frame assembly for eyeglasses
16	US 7210777	Floating lens brow bar attachment for eyeglasses
17	US 7237892	Temple bar with ball and socket hinge and method of making same
18	US 7246901	Adjustable length upper frame member for eyeglasses
19	US 7758789	Temple bar assembly for eyeglasses
20	US D534446	Handheld instrument
21	US 7080904	One piece spectacle with temple pre-load
22	US 6706538	Microvolume liquid dispensing array
23	US 6085773	Automatic fluid switching valve
24	US D425979	Window fan
25	US 5794897	Transmission line hanger, a method of attaching the hanger and the resulting assembly

APPENDIX B

Exhibit 41

Schedule A

Retailer Identifier	Brand	Platform	Product Link	Domicile
B0F7KL8BX9	Keenstar	Amazon	www.amazon.com/dp/B0F7KL8BX9	
B0DTHB6L3K	Keenstar	Amazon	https://www.amazon.com/dp/B0DTHB6L3K	
B0F9L29XPC	Keenstar	Amazon	https://www.amazon.com/dp/B0F9L29XPC	
B0F1WC59N5	Luma Comfort	Amazon	https://www.amazon.com/dp/B0F1WC59N5	
B0DSW3XJ3Q	Relexnow	Amazon	https://www.amazon.com/dp/B0DSW3XJ3Q	
B0F6MFZCH6	Relexnow	Amazon	https://www.amazon.com/dp/B0F6MFZCH6	
B0FX8JWND5	Relexnow	Amazon	https://www.amazon.com/dp/B0FX8JWND5	
B0GJ3JR6H5	Relexnow	Amazon	https://www.amazon.com/dp/B0GJ3JR6H5	
17857317050	BIZAURA	Walmart	https://www.walmart.com/ip/BIZAURA-Slushie-Machine-Slushy-Maker-Bundle-Slushy-Machine-Home-Ice-Need-Professional-Frozen-Drink-Maker-6-Presets-Milkshakes-Frapp-s-Slush-Bonus-Ins/17857317050?classType=REGULAR&from=/search	
B0DT429T6D	BKPPM	Amazon	https://www.amazon.com/dp/B0DT429T6D	
B0G122V5QH	Garvee	Amazon	www.amazon.com/dp/B0G122V5QH	
B0GKPHKJ1Q	Garvee	Amazon	www.amazon.com/dp/B0GKPHKJ1Q	
B0GN38T8WB	Garvee	Amazon	www.amazon.com/dp/B0GN38T8WB	
B0GS8VMV1P	Garvee	Amazon	https://www.amazon.com/dp/B0GS8VMV1P	
B0G4CGGSZ6	Generic (Wizaura)	Amazon	www.amazon.com/dp/B0G4CGGSZ6	
B0G66MQVVM	NEOISM	Amazon	www.amazon.com/dp/B0G66MQVVM	
B0GCKY1MBZ	NEOISM	Amazon	www.amazon.com/dp/B0GCKY1MBZ	
B0GCLKYZLR	NEOISM	Amazon	https://www.amazon.com/dp/B0GCLKYZLR	
B0FPF8YXCV	REVOTIO	Amazon	www.amazon.com/dp/B0FPF8YXCV	
B0FX2M6CV1	SUPWIN	Amazon	www.amazon.com/dp/B0FX2M6CV1	
B0F8BFBDBV	Sweet (Bizaura)	Amazon	www.amazon.com/dp/B0F8BFBDBV	
B0GFRZBM55	SYINTAO	Amazon	https://www.amazon.com/dp/B0GFRZBM55	
B0FF4S42Q5	Aaobosi	Amazon	www.amazon.com/dp/B0FF4S42Q5	
B0FFH37RS6	Aaobosi	Amazon	https://www.amazon.com/dp/B0FFH37RS6	
B0GLFJVZRB	AllToU	Amazon	www.amazon.com/dp/B0GLFJVZRB	
B0FVSSQP4J	Astralship	Amazon	www.amazon.com/dp/B0FVSSQP4J	

Exhibit 41

Schedule A

Retailer Identifier	Brand	Platform	Product Link	Domicile
B0F48675ZN	Astralship	Amazon	www.amazon.com/dp/B0F43VGHLZ	
B0FNK5KDSP	Besococina	Amazon	www.amazon.com/dp/B0FNK5KDSP	
B0FN13CYSZ	BLIZZEE	Amazon	www.amazon.com/dp/B0FN13CYSZ	
B0FN1WLJK1	BLIZZEE	Amazon	www.amazon.com/dp/B0FN1WLJK1	
B0FH7FJ186	CASIDEA	Amazon	https://www.amazon.com/dp/B0FH7FJ186	
B0GTK7WL43	COWSAR	Amazon	www.amazon.com/dp/B0GTK7WL43	
B0FXMCG8B3	Crownful	Amazon	www.amazon.com/dp/B0FXMCG8B3	
B0FLSDY79Z	Culvani	Amazon	www.amazon.com/dp/B0FLSDY79Z	
B0F9FXR3ZT	Dutepa	Amazon	https://www.amazon.com/dp/B0F9FXR3ZT	
B0GTSZLPZW	Fesoiu	Amazon	www.amazon.com/dp/B0GTSZLPZW	
B0FR9C7RPY	FOHERE	Amazon	www.amazon.com/dp/B0FR9C7RPY	
B0FSQHLWG4	FOHERE	Amazon	www.amazon.com/dp/B0FSQHLWG4	
B0FVFKBHF8	Foyoconven	Amazon	https://www.amazon.com/dp/B0FVFKBHF8	
B0FF9SN2GV	GSEICE	Amazon	www.amazon.com/dp/B0FF9SN2GV	
B0FQ4NJSJL	GSEICE	Amazon	www.amazon.com/dp/B0FQ4NJSJL	
B0FSKR56YN	GSEICE	Amazon	www.amazon.com/dp/B0FSKR56YN	
B0FR7P2KXS	HBN	Amazon	www.amazon.com/dp/B0FR7P2KXS	
B0GL3C5696	Magnavox	Amazon	www.amazon.com/dp/B0GL3C5696	
B0F7GZYL7B	MAIPSIG	Amazon	www.amazon.com/dp/B0F7GZYL7B	
B0G3WM3L9F	Mazzen	Amazon	www.amazon.com/dp/B0G3WM3L9F	
B0FQNZFLL2	MuliVid	Amazon	www.amazon.com/dp/B0FQNZFLL2	
B0GNNP6SNB	NutriChef	Amazon	www.amazon.com/dp/B0GNNP6SNB	
B0FR7J6MWS	Ontravelo	Amazon	www.amazon.com/dp/B0FR7J6MWS	
B0FGNGYGPD	RyRot	Amazon	www.amazon.com/dp/B0FGNGYGPD	
B0FQP7RB9N	Topteng	Amazon	www.amazon.com/dp/B0FQP7RB9N	
B0GKVSTCWK	VELPAX	Amazon	www.amazon.com/dp/B0GKVSTCWK	
B0F8TS6LBB	VNN	Amazon	https://www.amazon.com/VNN-Slushie-Machine-Auto-Clean-Margaritas/dp/B0F8TS6LBB	
B0F8TYD6L6	VNN	Amazon	https://www.amazon.com/dp/B0F8TYD6L6	
B0FNCGGZXZ	WETIE	Amazon	www.amazon.com/dp/B0FNCGGZXZ	
B0FFGR6DG9	Wie	Amazon	https://www.amazon.com/dp/B0FFGR6DG9	
B0FQJMNKPL	Wind Shear	Amazon	www.amazon.com/dp/B0FQJMNKPL	

EXHIBIT “A”

US012593855B2

(12) **United States Patent**
Roberts et al.

(10) **Patent No.: US 12,593,855 B2**
(45) **Date of Patent: *Apr. 7, 2026**

(54) **DRINK MAKER WITH DETACHABLY CONNECTABLE MIXING VESSEL**

(71) Applicant: **SharkNinja Operating LLC**, Needham, MA (US)

(72) Inventors: **Matthew Roberts**, Needham, MA (US); **Michael Lerman**, Providence, RI (US); **Macrae Benziger**, Dedham, MA (US); **Alexander Mularski**, Auburn, MA (US); **Joyce Tu**, Melrose, MA (US); **Cameron John Auger**, Watertown, MA (US)

(73) Assignee: **SharkNinja Operating LLC**, Needham, MA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **18/423,894**

(22) Filed: **Jan. 26, 2024**

(65) **Prior Publication Data**

US 2025/0234887 A1 Jul. 24, 2025

Related U.S. Application Data

(63) Continuation-in-part of application No. 18/415,817, filed on Jan. 18, 2024.

(51) **Int. Cl.**
A23G 9/22 (2006.01)
A23G 9/04 (2006.01)

(52) **U.S. Cl.**
CPC ***A23G 9/22*** (2013.01); ***A23G 9/045*** (2013.01)

(58) **Field of Classification Search**
CPC A23G 9/045; A23G 9/06; A23G 9/08
See application file for complete search history.

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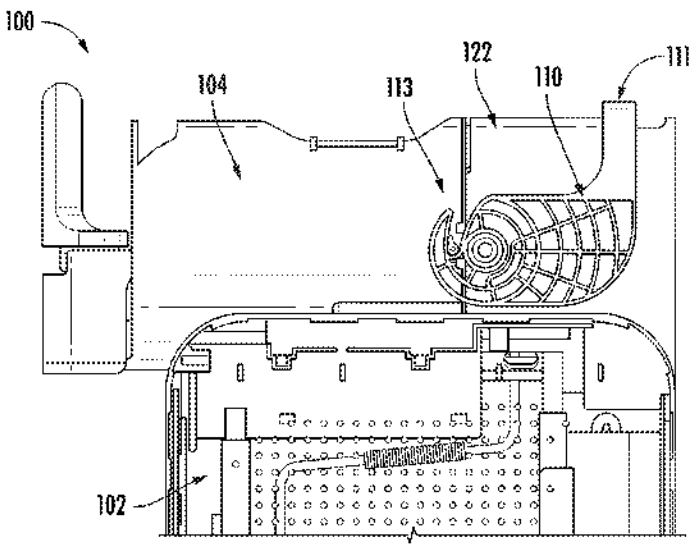
(Continued)

Primary Examiner — Claire X Wang
Assistant Examiner — Patrick M Mccarty
(74) *Attorney, Agent, or Firm* — The Webb Law Firm

(57) **ABSTRACT**

A frozen drink maker is described that includes a housing, a mixing vessel to mix a drink product, and a flexible seal. The housing includes an upper housing section and a lever moveable relative to the upper housing section between a coupled position and an uncoupled position. The flexible seal is between the upper housing section and the mixing vessel. The lever couples the mixing vessel to the upper housing section when in the coupled position and uncouples the mixing vessel from the upper housing section when in the uncoupled position. When the lever is in the coupled position, the mixing vessel is sealed against the upper housing section by the flexible seal.

32 Claims, 45 Drawing Sheets



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Shenzen Fengkai E-commerce Co., Ltd. and Hong Kong Huayun Economic & Trade c., Ltd. Defendents' Opposition to Plaintiffs' Motion for Entry of Preliminary Injunction, *SharkNinja Operating LLC et al.* v. *The Individuals, Corporations, Limited Liability Companies, Partnerships, And Unicorporated Associations* Identified on Schedule A, 2025, pp. 1-18, No. 1:25-cv-25323-RAR.

Xu Defendants' Opposition to Plaintiffs' Motion for Preliminary Injunction, *SharkNinja Operating LLC et al.* v. *The Individuals, Corporations, Limited Liability Companies, Partnerships, And Unicorporated Associations* Identified on Schedule A, 2025, 19 pages, No. 1:25-cv-25323-RAR.

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Exhibit I to Glacier Parties' Opposition To Plaintiff's Motion For Preliminary Injunction, *SharkNinja Operating LLC et al.*v. *The Individuals, Corporations, Limited Liability Companies, Partnership, And Unincorporated Associations* Identified on Schedule A, Jan. 15, 2026, No. 1:25-cv-25323-RAR, 73 pages.

Exhibit I to Glacier Parties' Opposition To Plaintiff's Motion For Preliminary Injunction, *SharkNinja Operating LLC et al.*v. *The Individuals, Corporations, Limited Liability Companies, Partnership, And Unincorporated Associations* Identified on Schedule A, Jan. 15, 2026, No. 1:25-cv-25323-RAR, 57 pages.

Exhibit I to Glacier Parties' Opposition To Plaintiff's Motion For Preliminary Injunction, *SharkNinja Operating LLC et al.*v. *The Individuals, Corporations, Limited Liability Companies, Partnership, And Unincorporated Associations* Identified on Schedule A, Jan. 15, 2026, No. 1:25-cv-25323-RAR, 47 pages.

Glacier Parties' Opposition To Plaintiff's Motion For Preliminary Injunction, *SharkNinja Operating LLC et al.*v. *The Individuals, Corporations, Limited Liability Companies, Partnership, And Unincorporated Associations* Identified on Schedule A, Jan. 15, 2026, No. 1:25-cv-25323-RAR, 37 pages.

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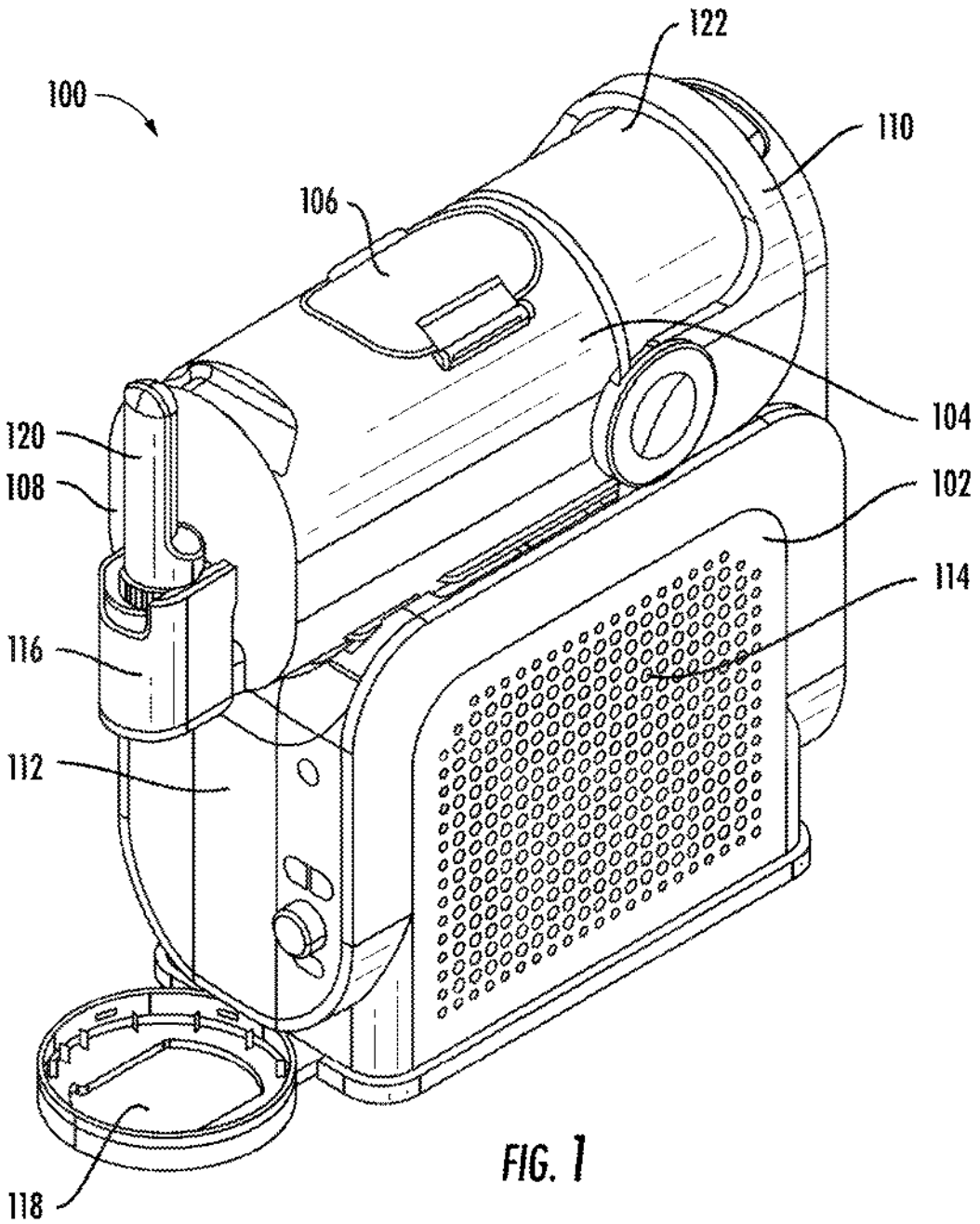

FIG. 1

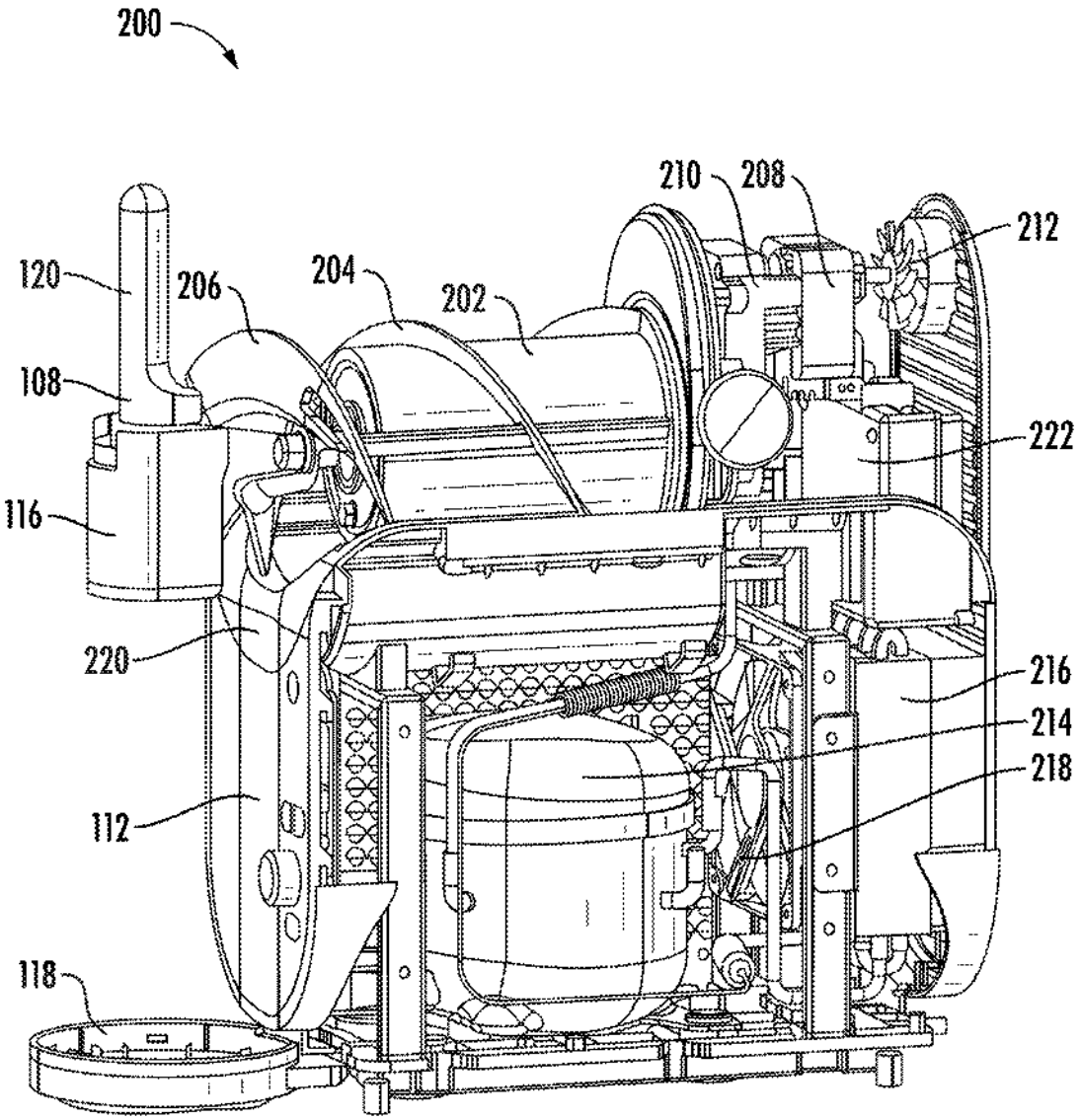
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FIG. 2

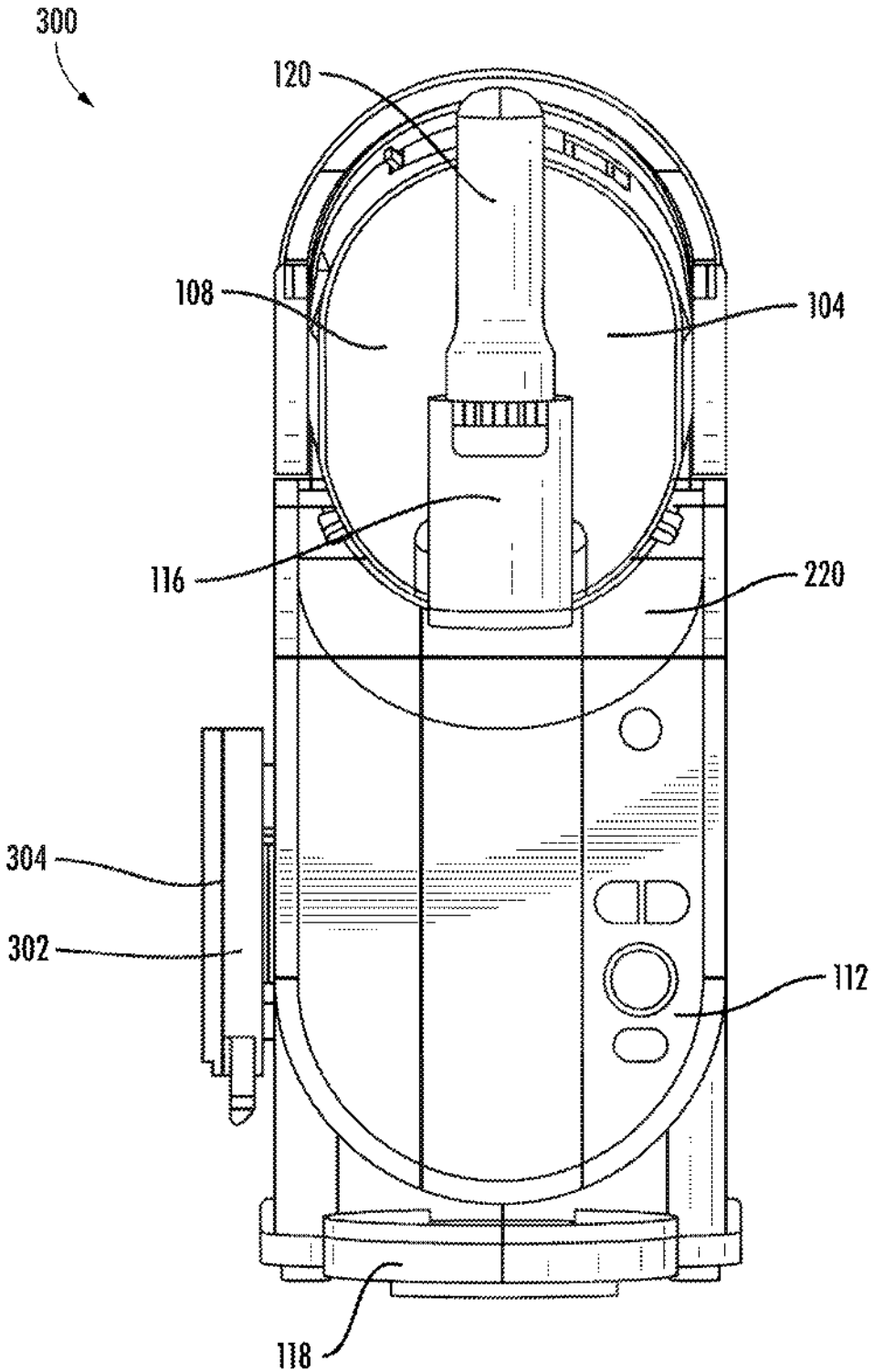


FIG. 3

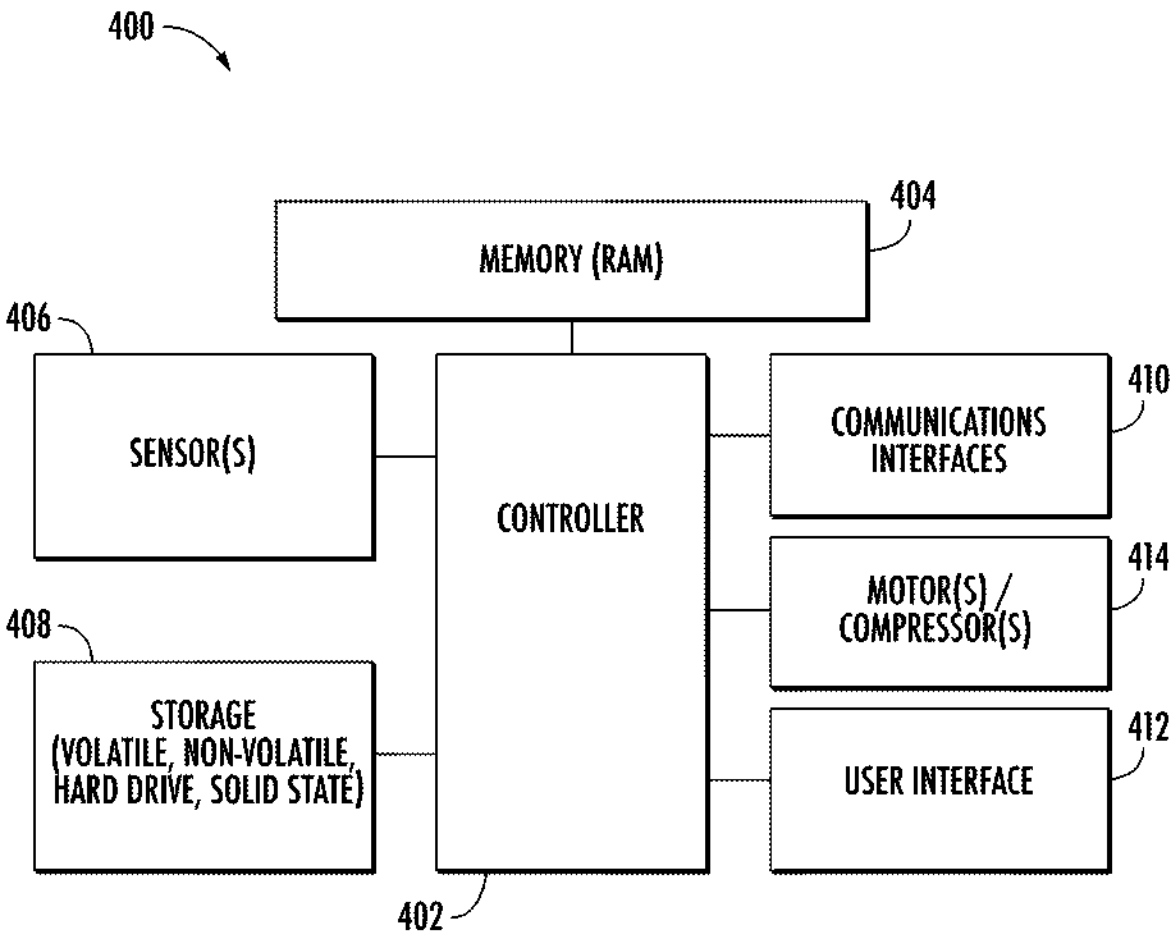

400
404
MEMORY (RAM)
406
SENSOR(S)
CONTROLLER
410
COMMUNICATIONS INTERFACES
414
MOTOR(S) / COMPRESSOR(S)
408
STORAGE (VOLATILE, NON-VOLATILE, HARD DRIVE, SOLID STATE)
412
USER INTERFACE
402

FIG. 4

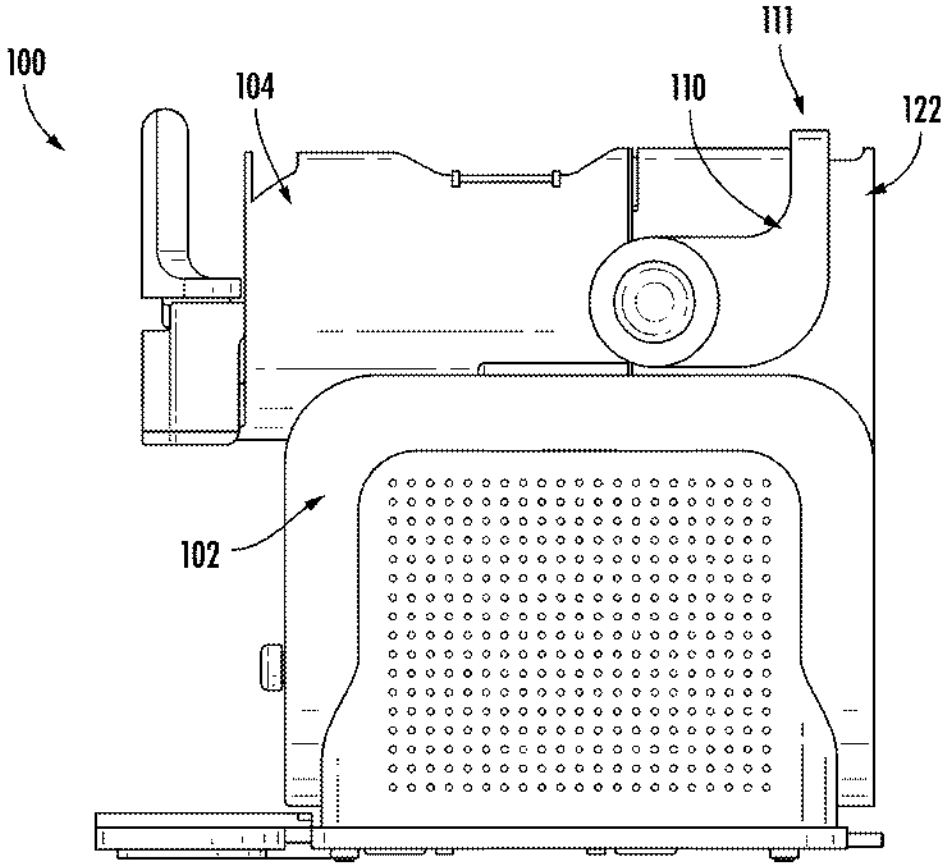


FIG. 5A

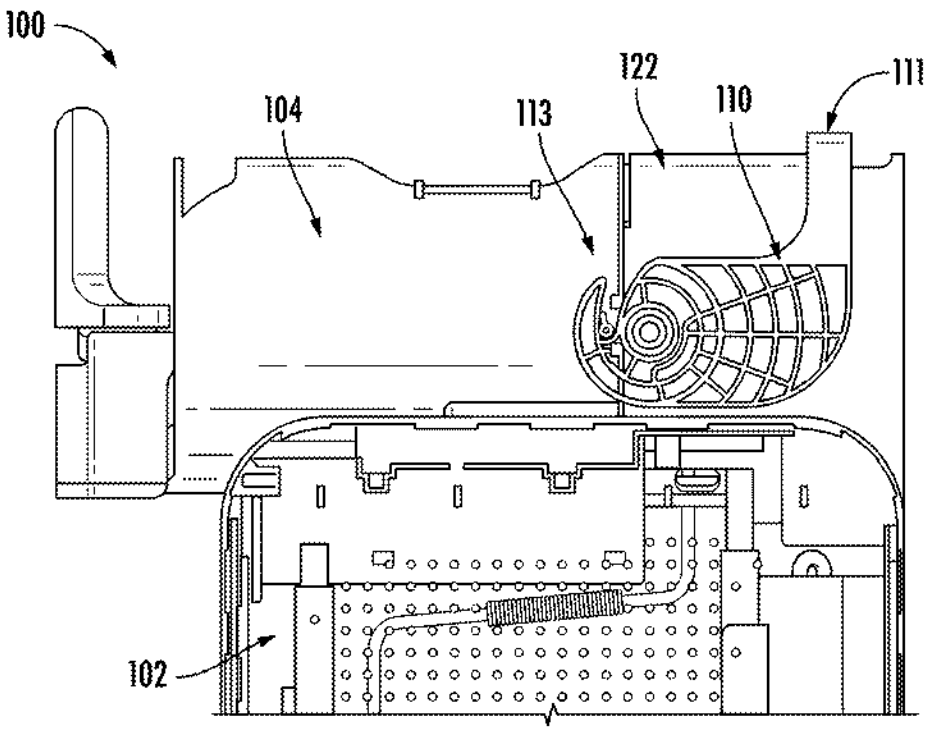


FIG. 5B

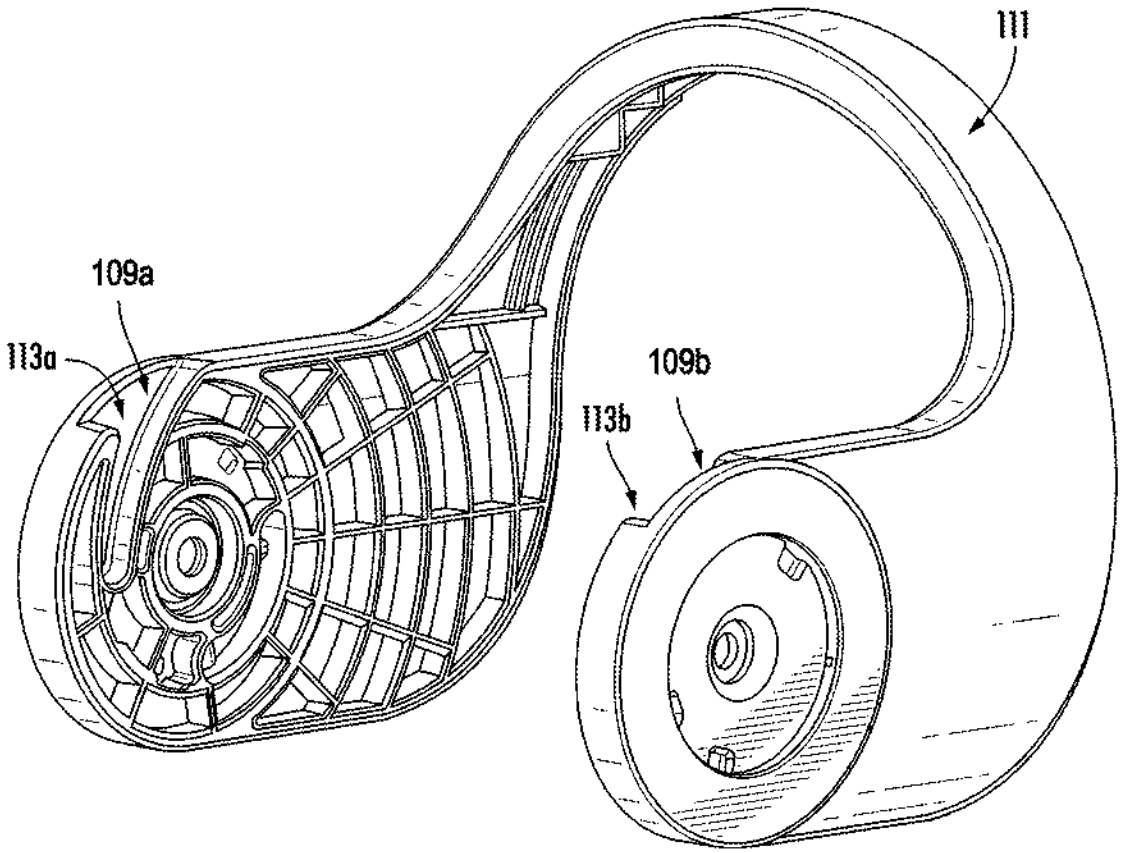


FIG. 6

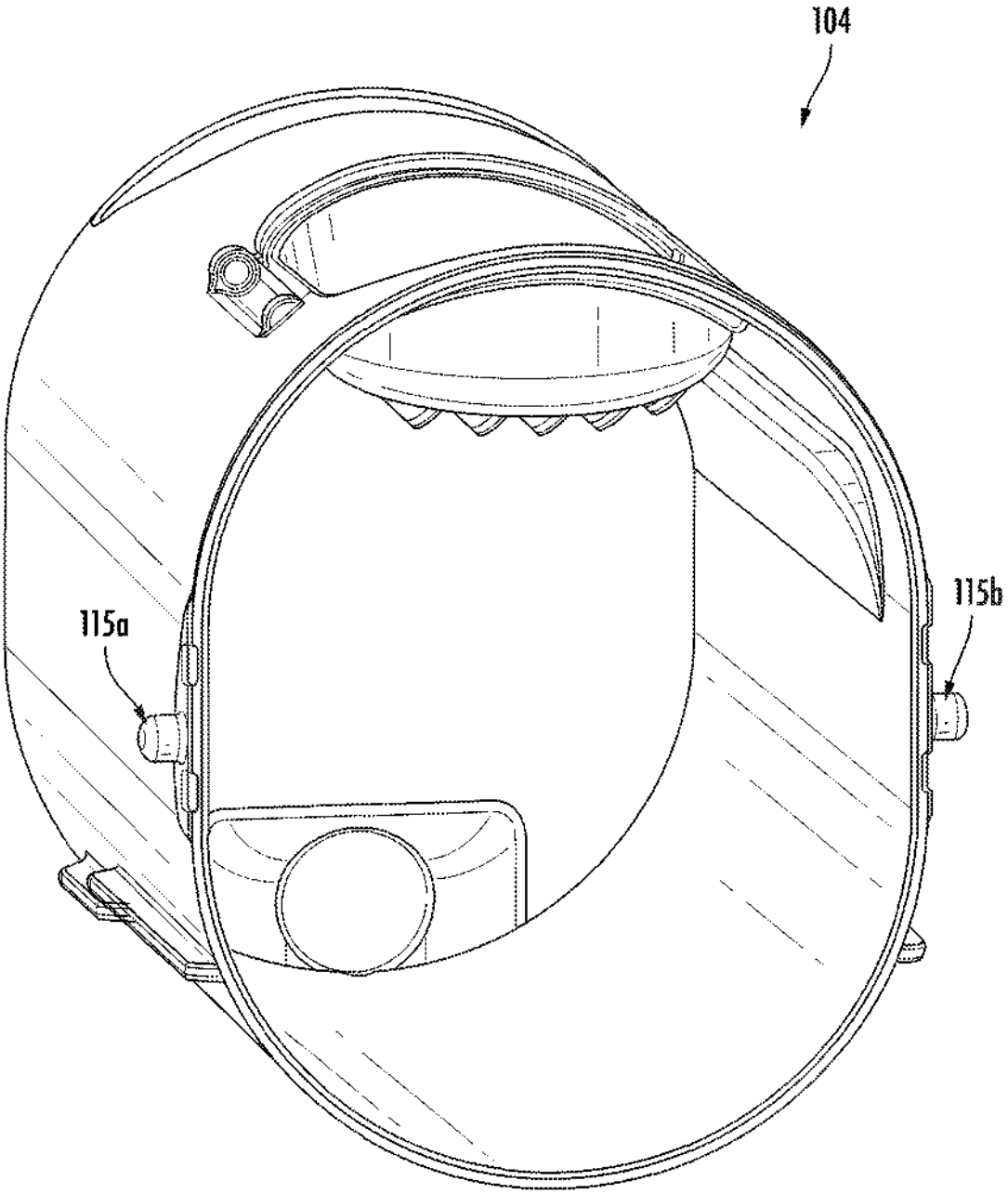


FIG. 7A

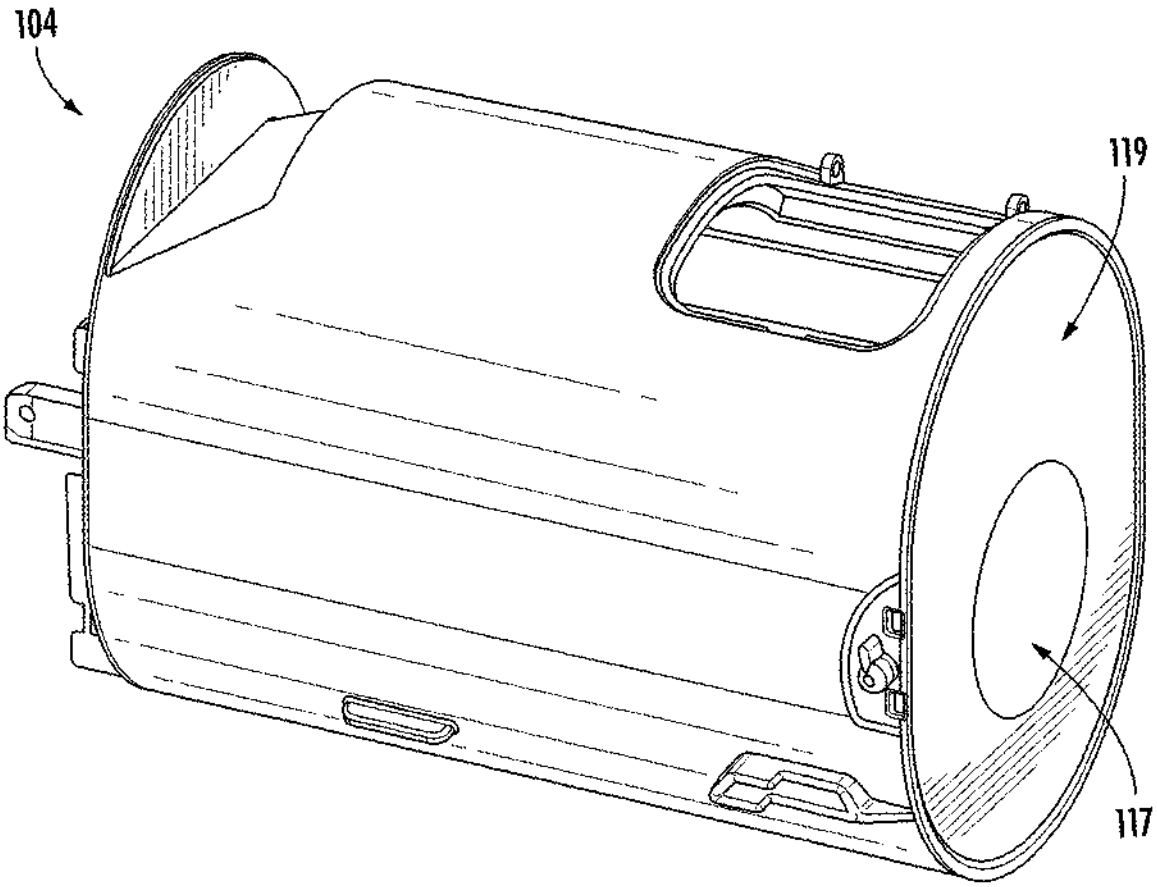


FIG. 7B

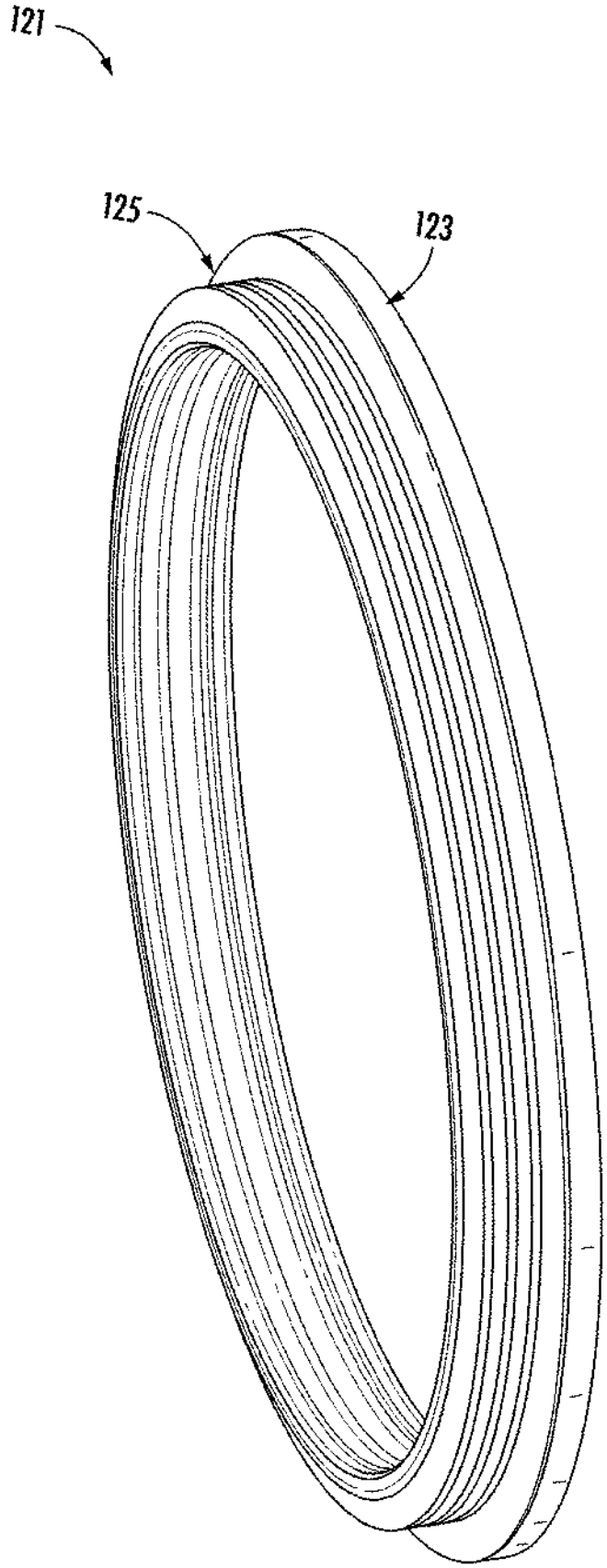


FIG. 8

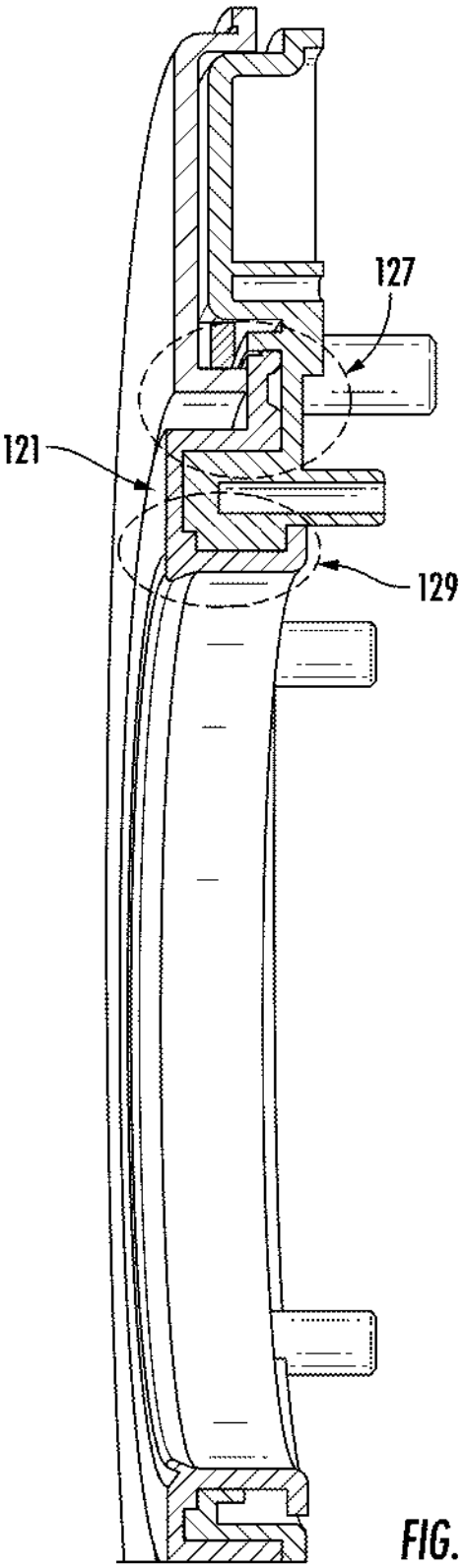


FIG. 9

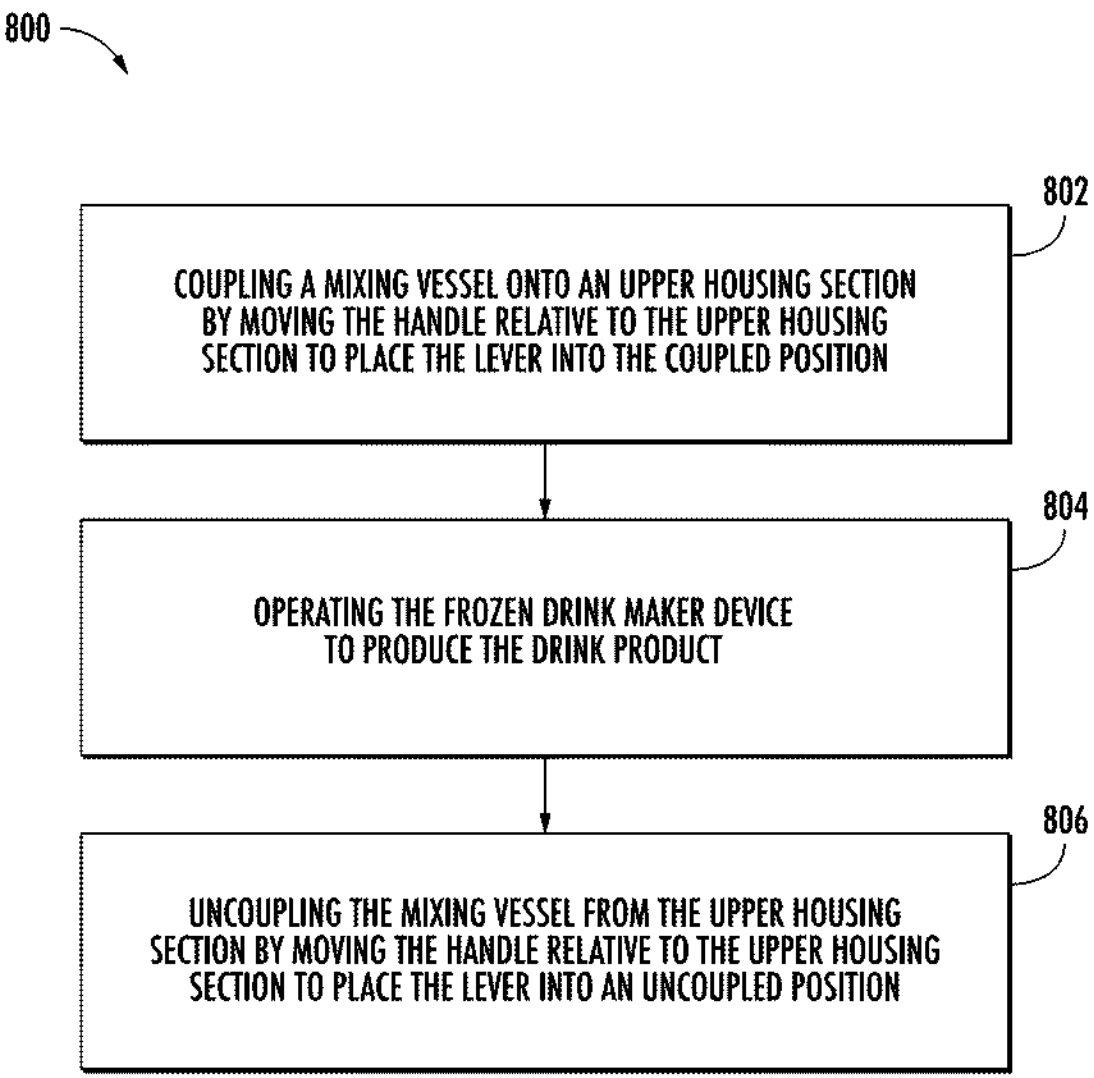

800
802
COUPLING A MIXING VESSEL ONTO AN UPPER HOUSING SECTION BY MOVING THE HANDLE RELATIVE TO THE UPPER HOUSING SECTION TO PLACE THE LEVER INTO THE COUPLED POSITION
804
OPERATING THE FROZEN DRINK MAKER DEVICE TO PRODUCE THE DRINK PRODUCT
806
UNCOUPLING THE MIXING VESSEL FROM THE UPPER HOUSING SECTION BY MOVING THE HANDLE RELATIVE TO THE UPPER HOUSING SECTION TO PLACE THE LEVER INTO AN UNCOUPLED POSITION

FIG. 10

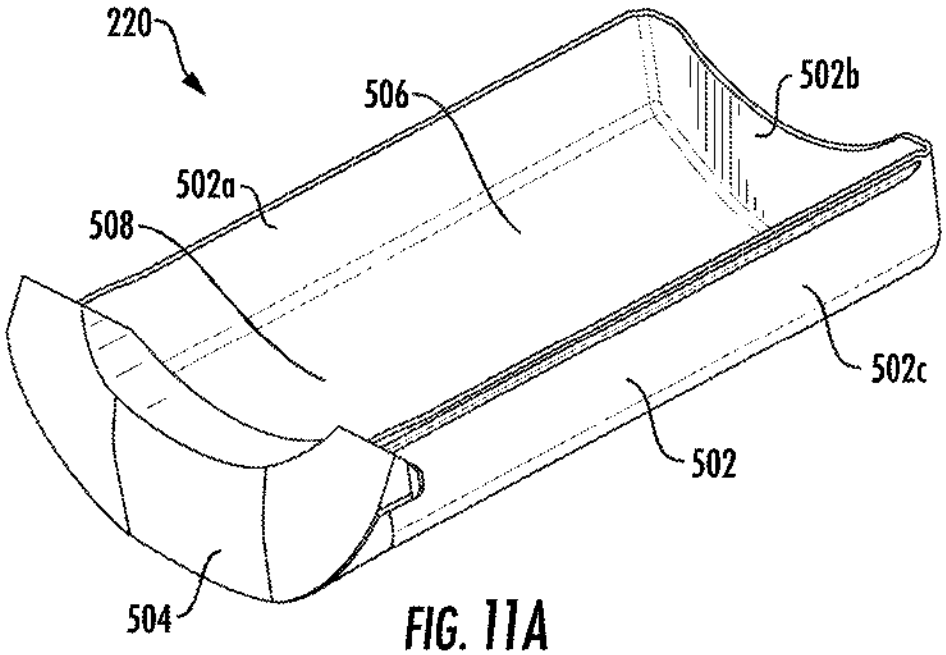


FIG. 11A

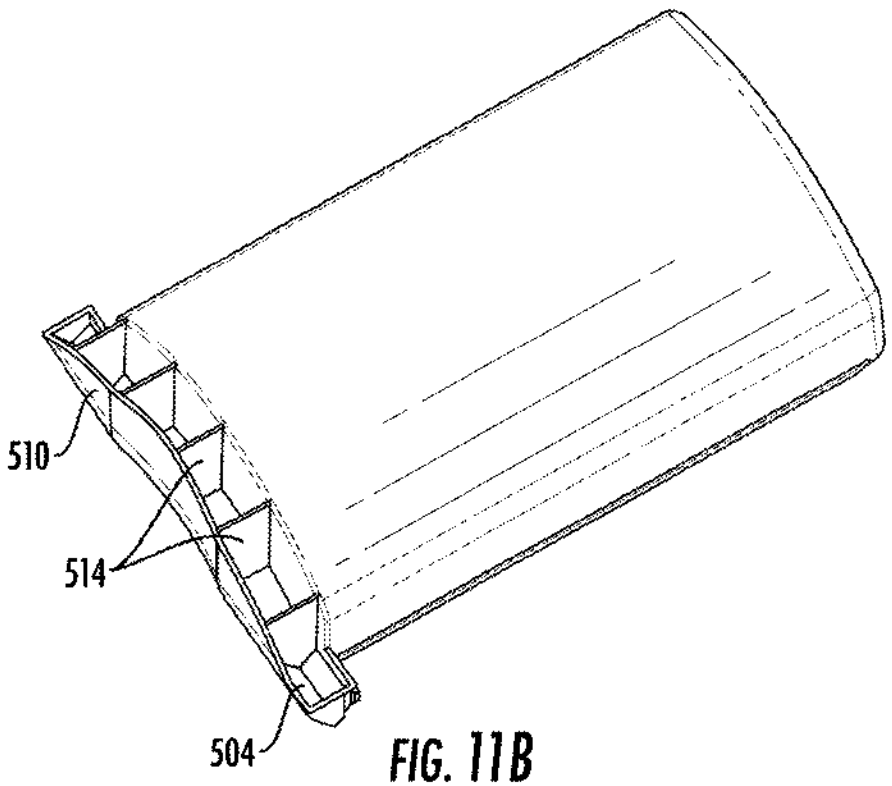


FIG. 11B

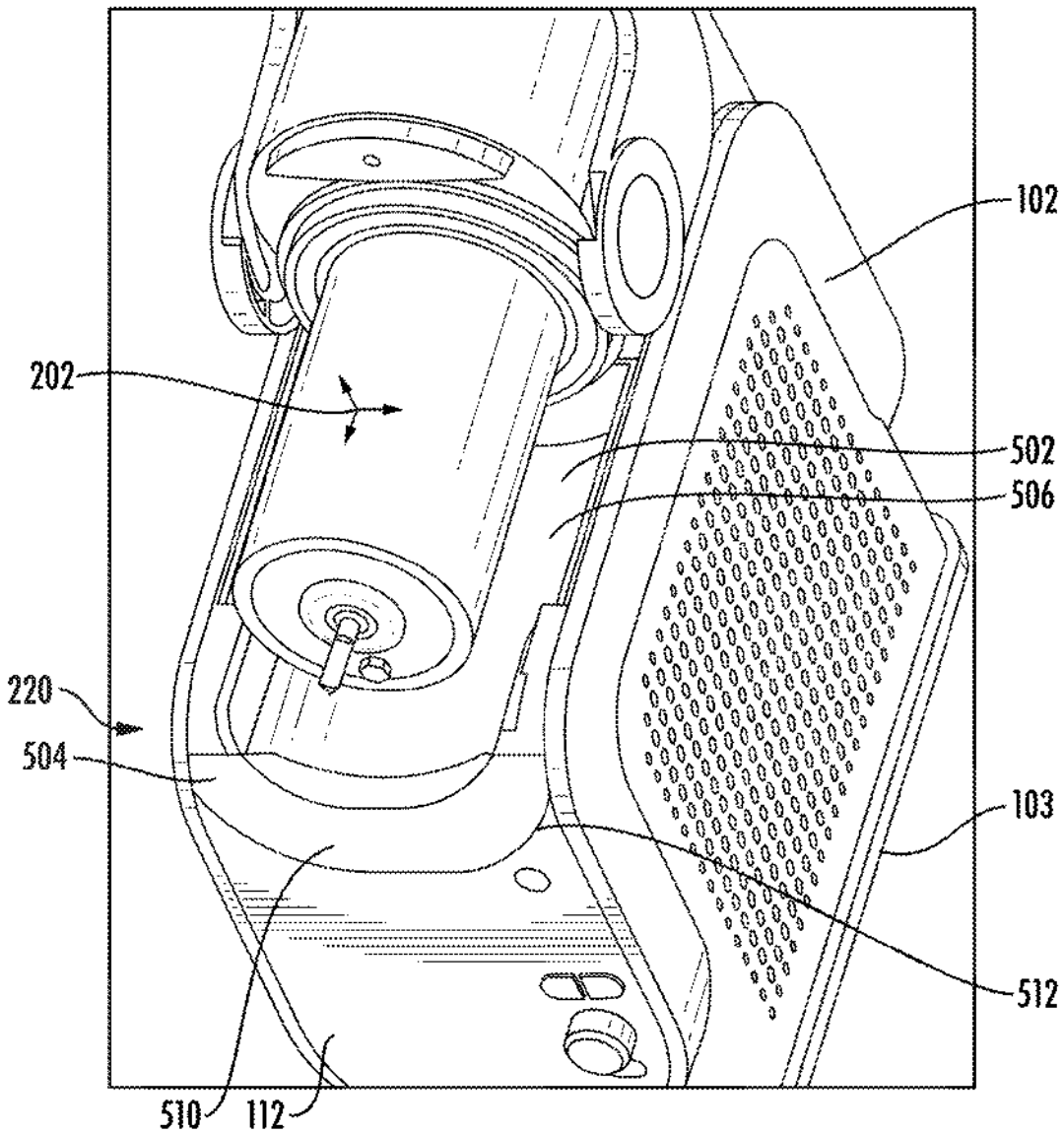


FIG. 11C

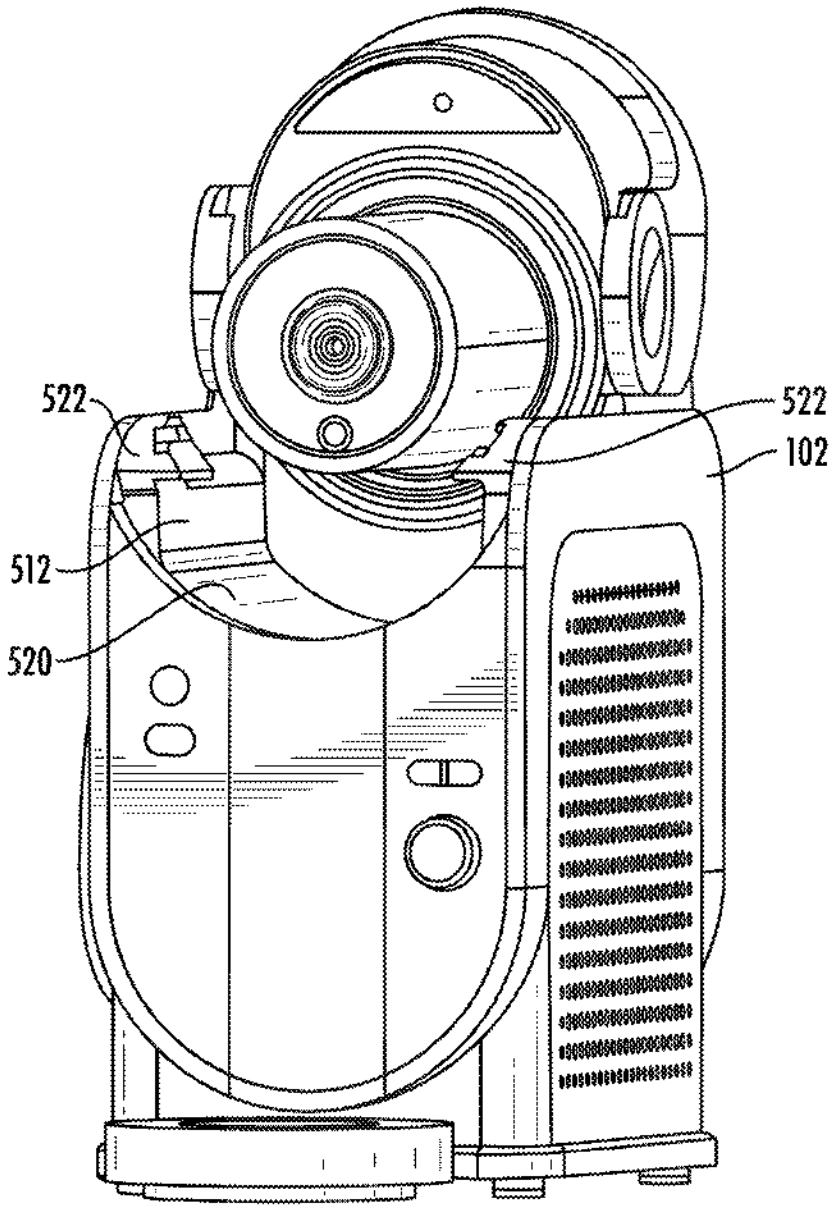


FIG. 11D

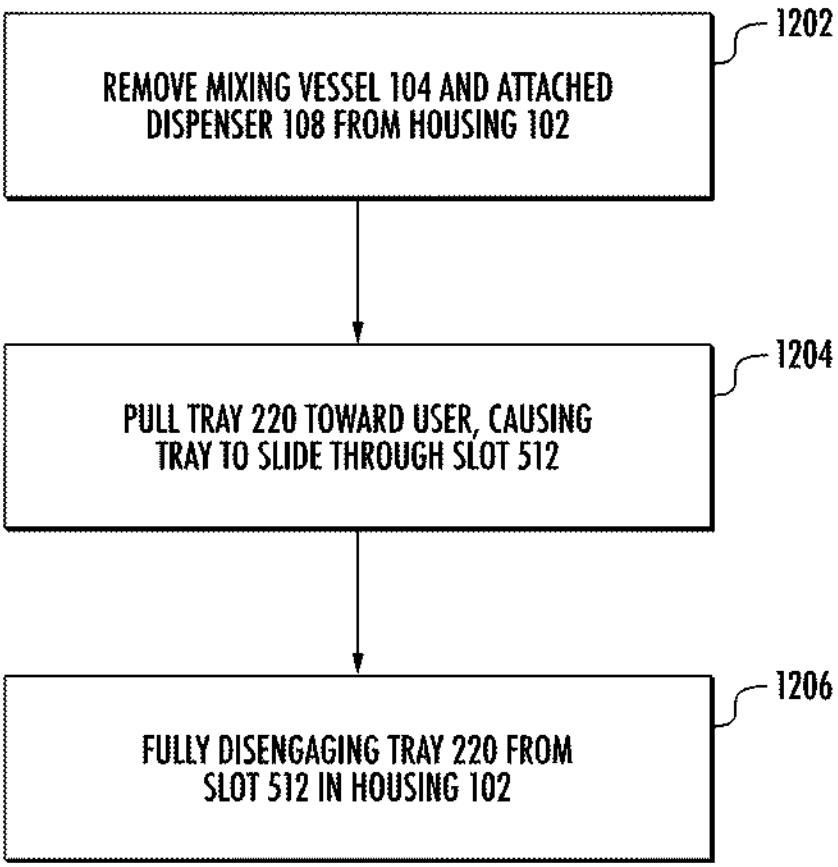

1202
REMOVE MIXING VESSEL 104 AND ATTACHED DISPENSER 108 FROM HOUSING 102
1204
PULL TRAY 220 TOWARD USER, CAUSING TRAY TO SLIDE THROUGH SLOT 512
1206
FULLY DISENGAGING TRAY 220 FROM SLOT 512 IN HOUSING 102

FIG. 12

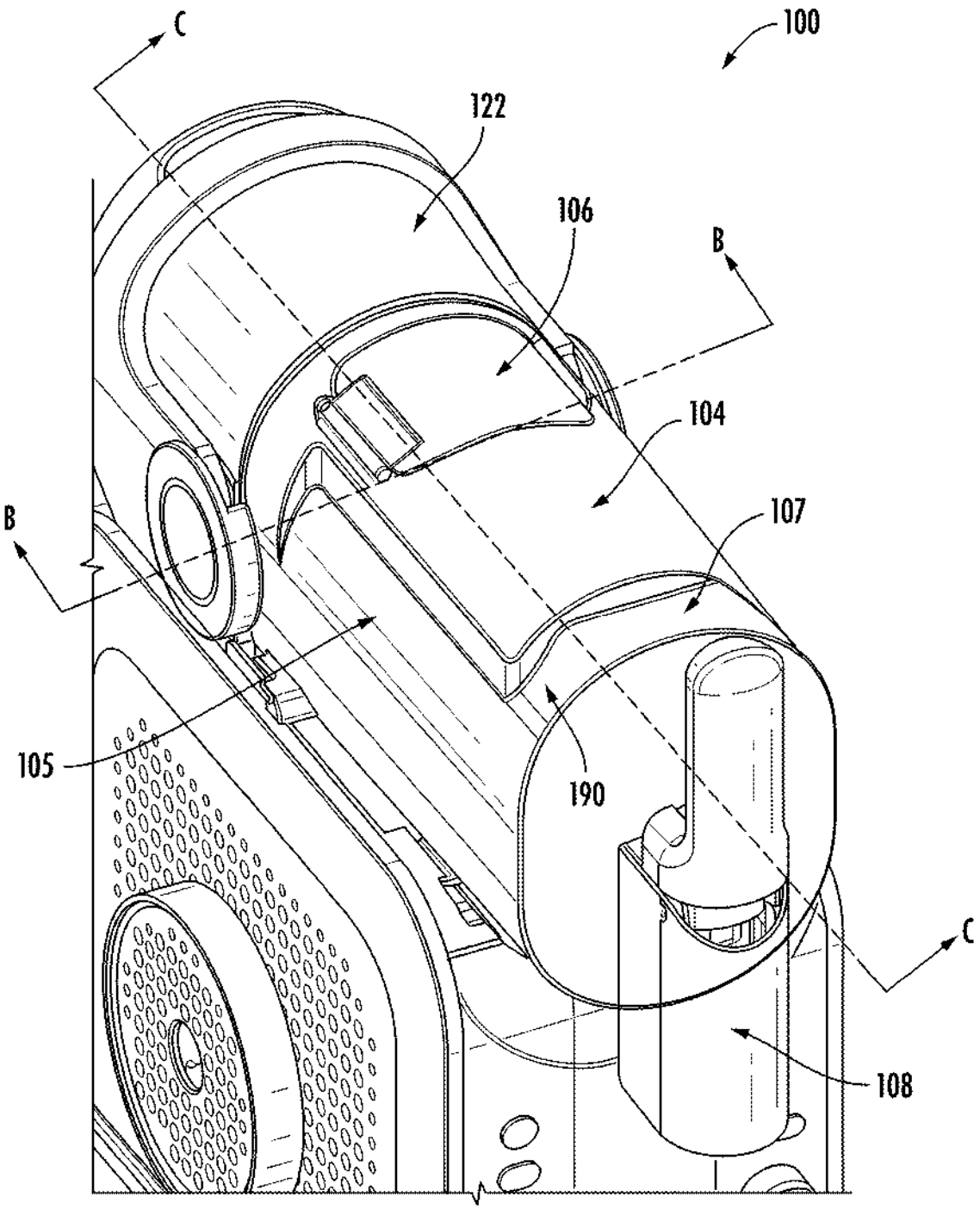


FIG. 13A

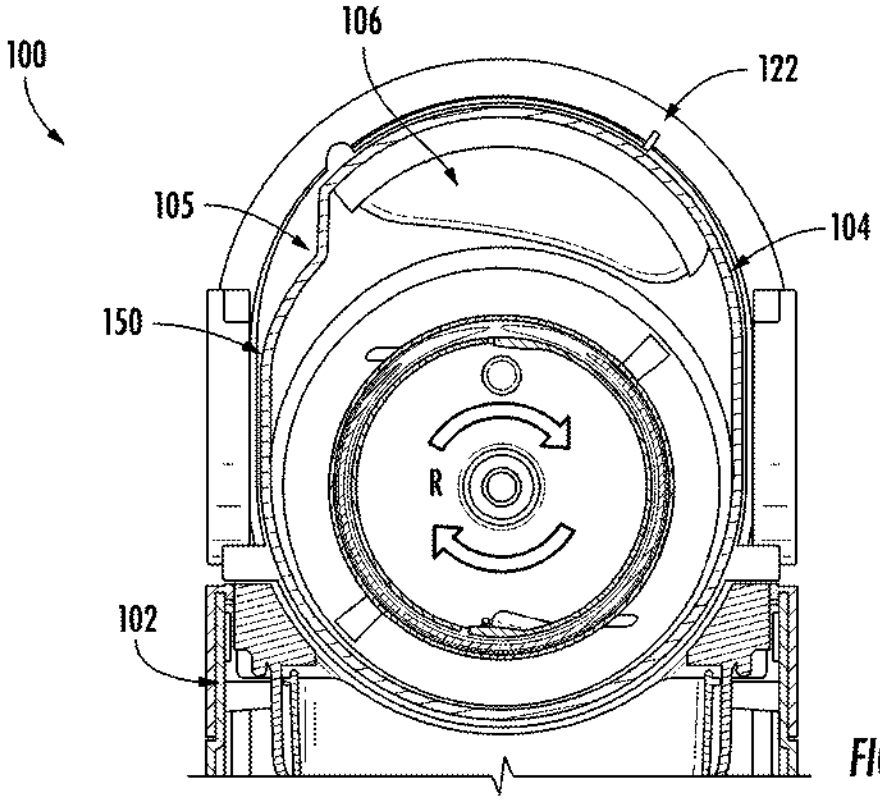


FIG. 13B

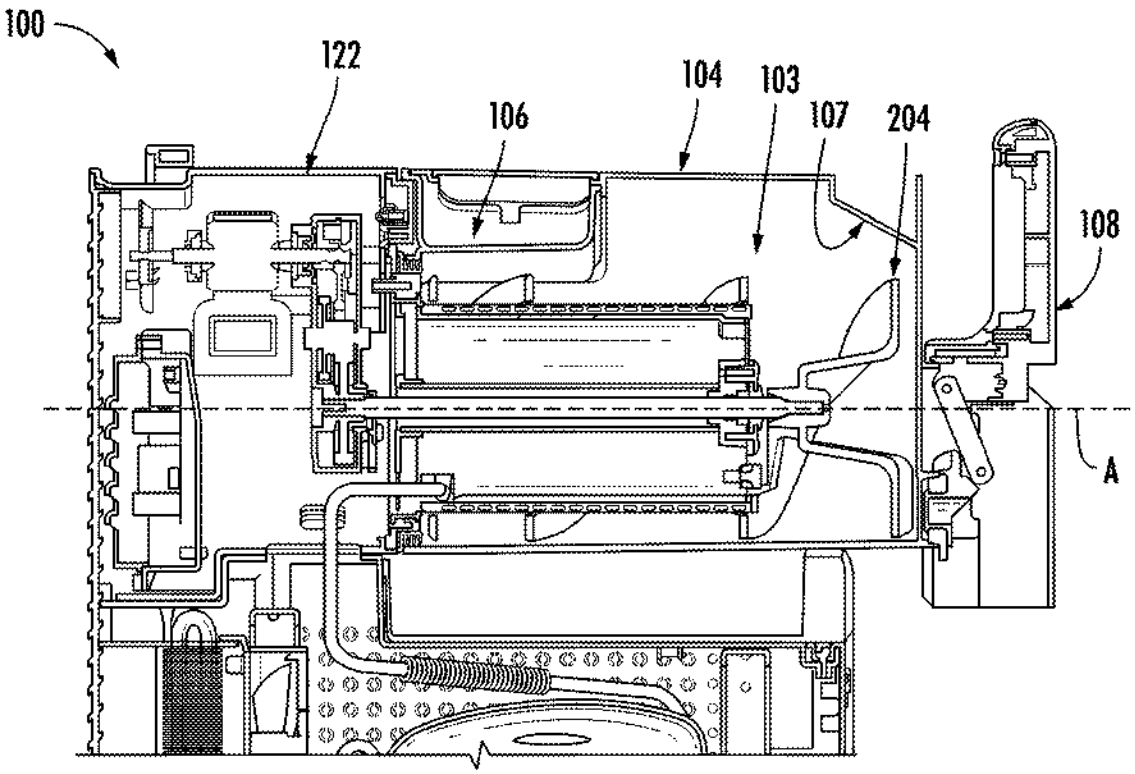


FIG. 13C

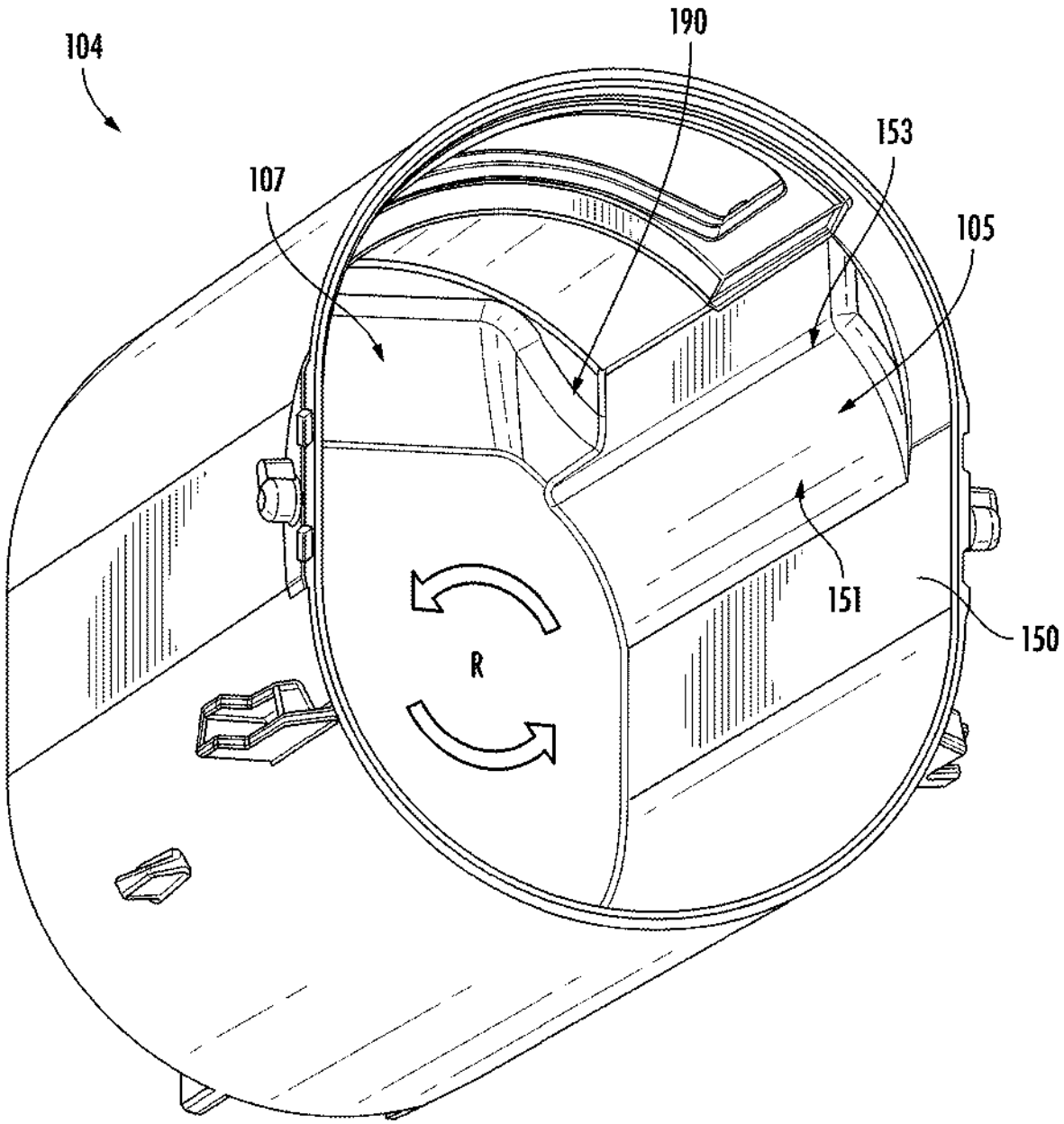


FIG. 14A

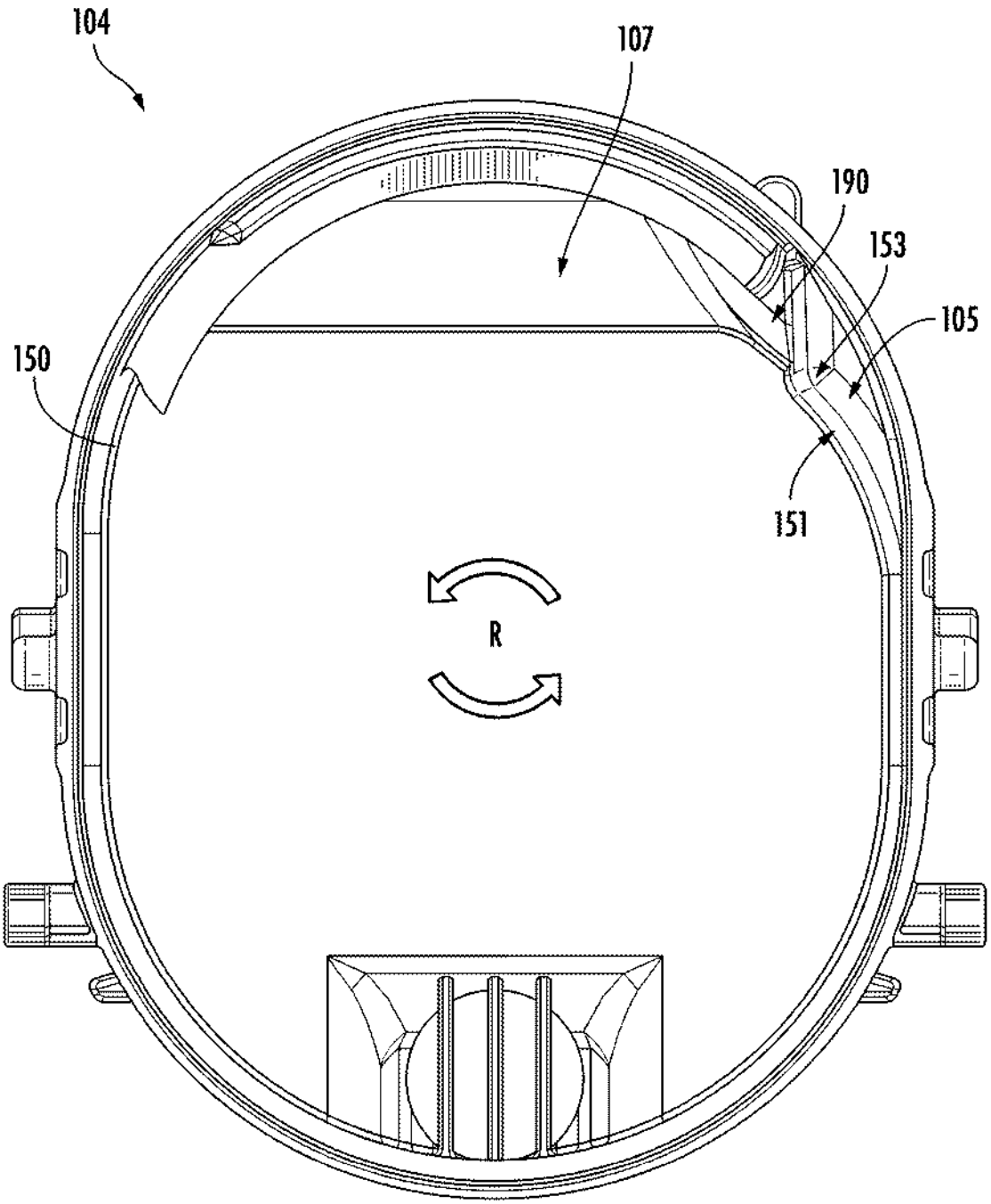


FIG. 14B

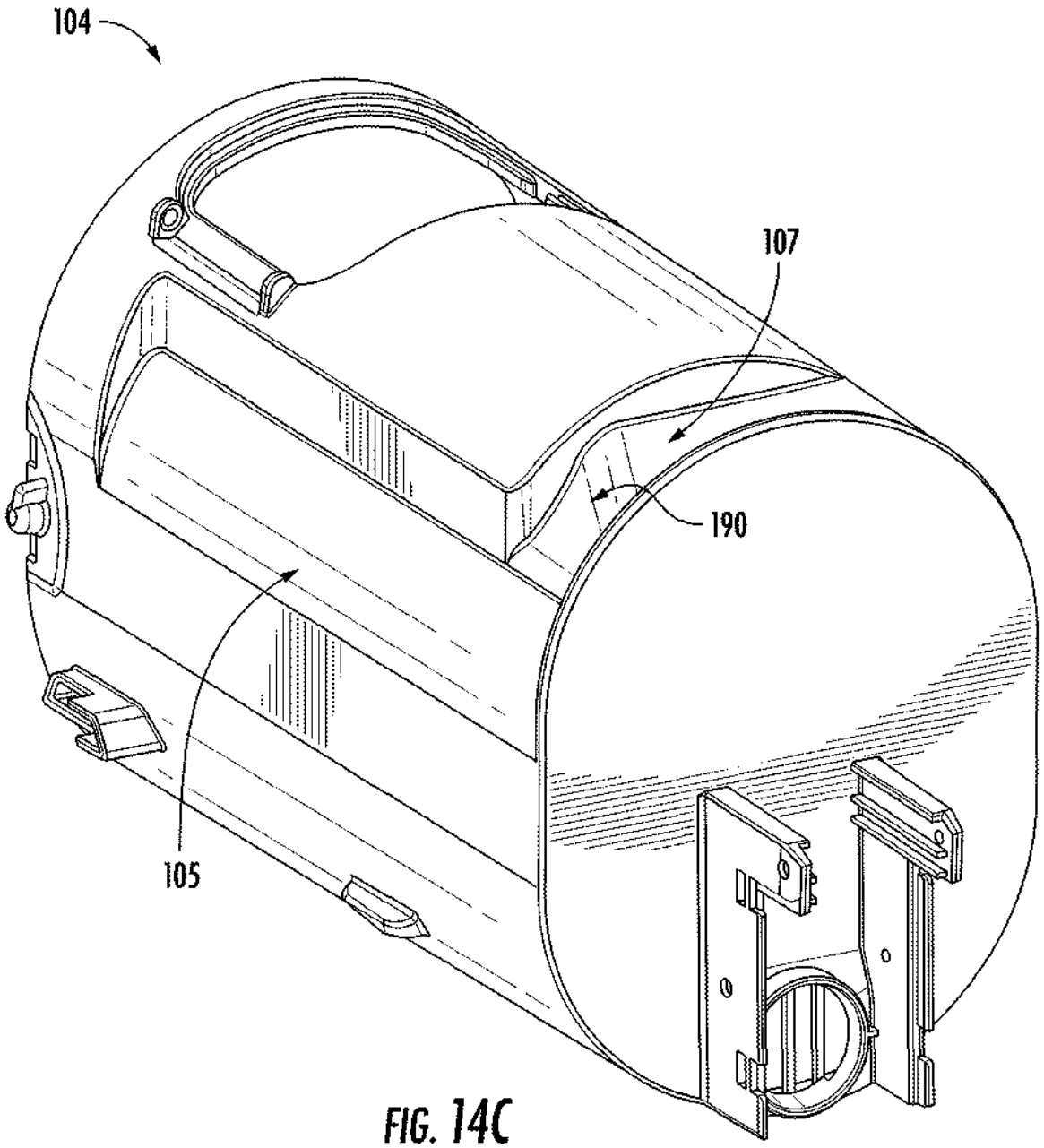


FIG. 14C

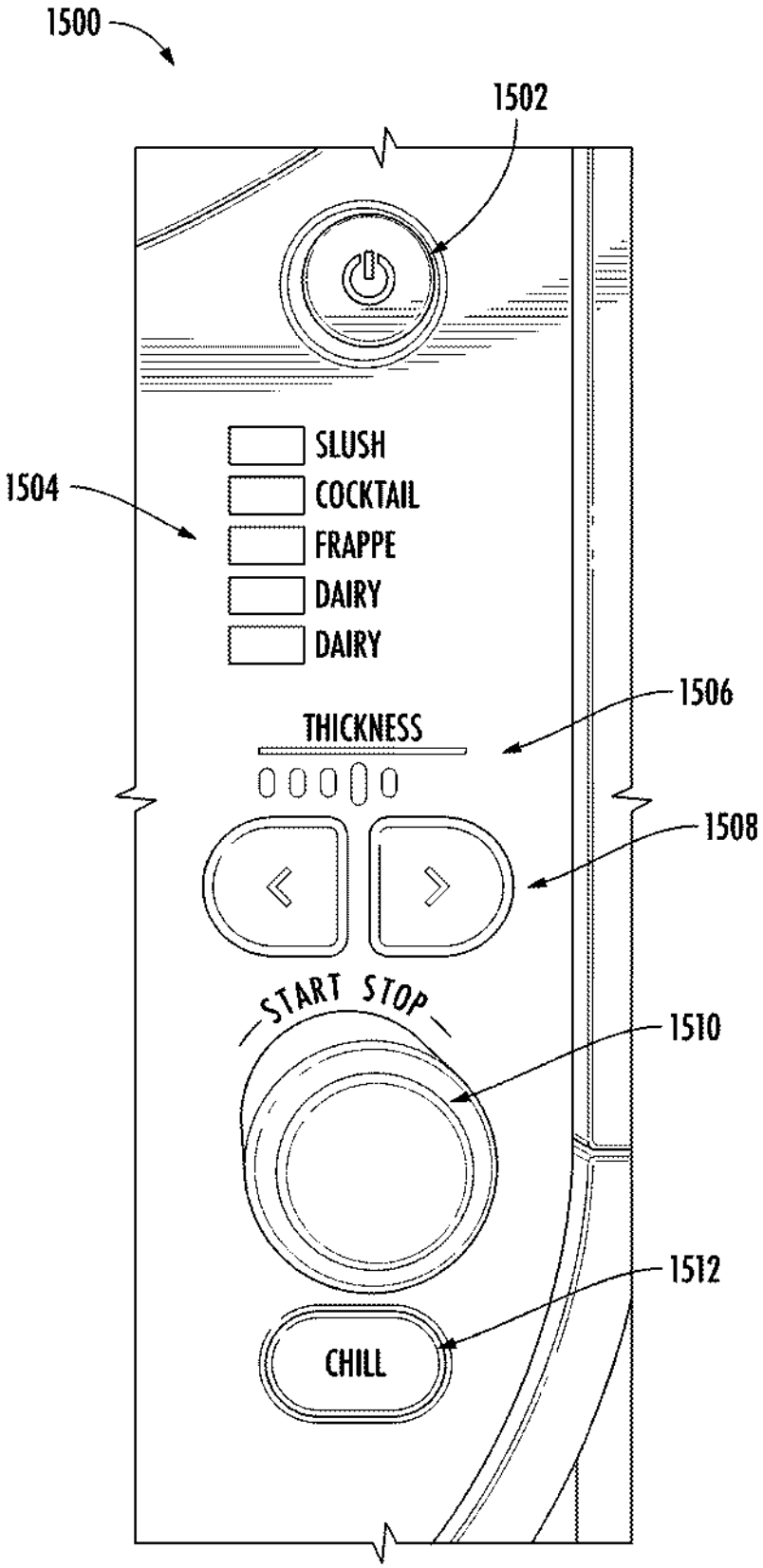

1500
1502
1504
SLUSH
COCKTAIL
FRAPPE
DAIRY
DAIRY
1506
THICKNESS
1508
START STOP
1510
1512
CHILL

FIG. 15

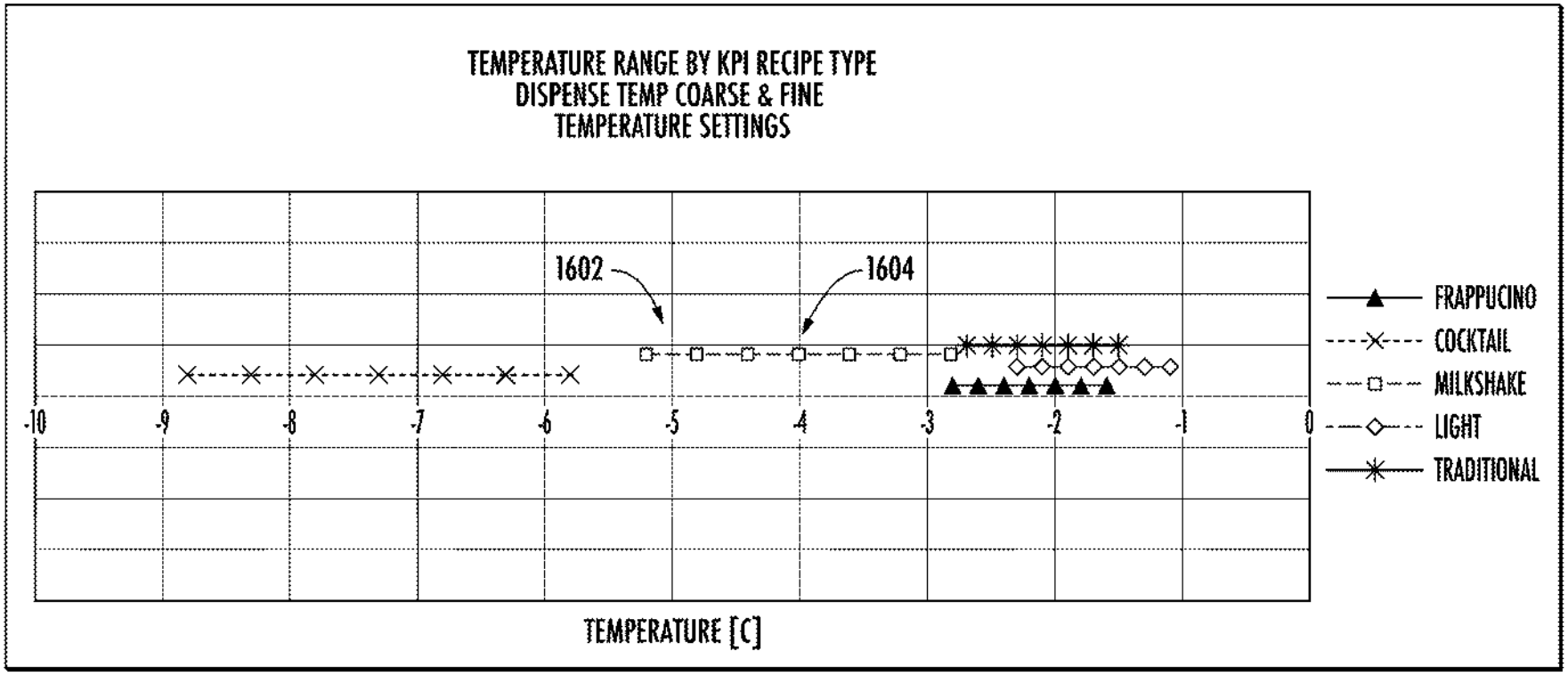

1600
TEMPERATURE RANGE BY KPI RECIPE TYPE
DISPENSE TEMP COARSE & FINE
TEMPERATURE SETTINGS
1602
1604
-10
-9
-8
-7
-6
-5
-4
-3
-2
-1
0
TEMPERATURE [C]
FRAPPUCINO
COCKTAIL
MILKSHAKE
LIGHT
TRADITIONAL

FIG. 16

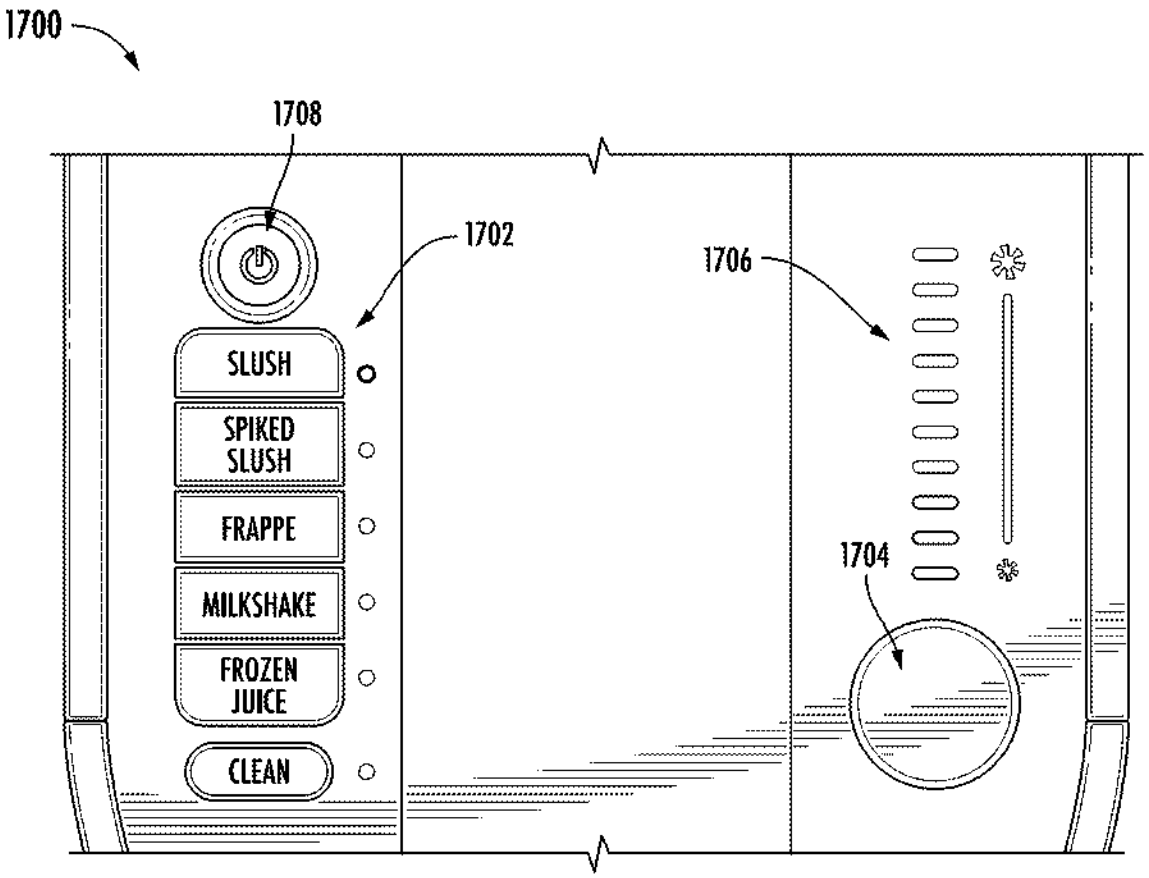

1700
1708
1702
1706
SLUSH
SPIKED SLUSH
FRAPPE
MILKSHAKE
FROZEN JUICE
CLEAN
1704

FIG. 17

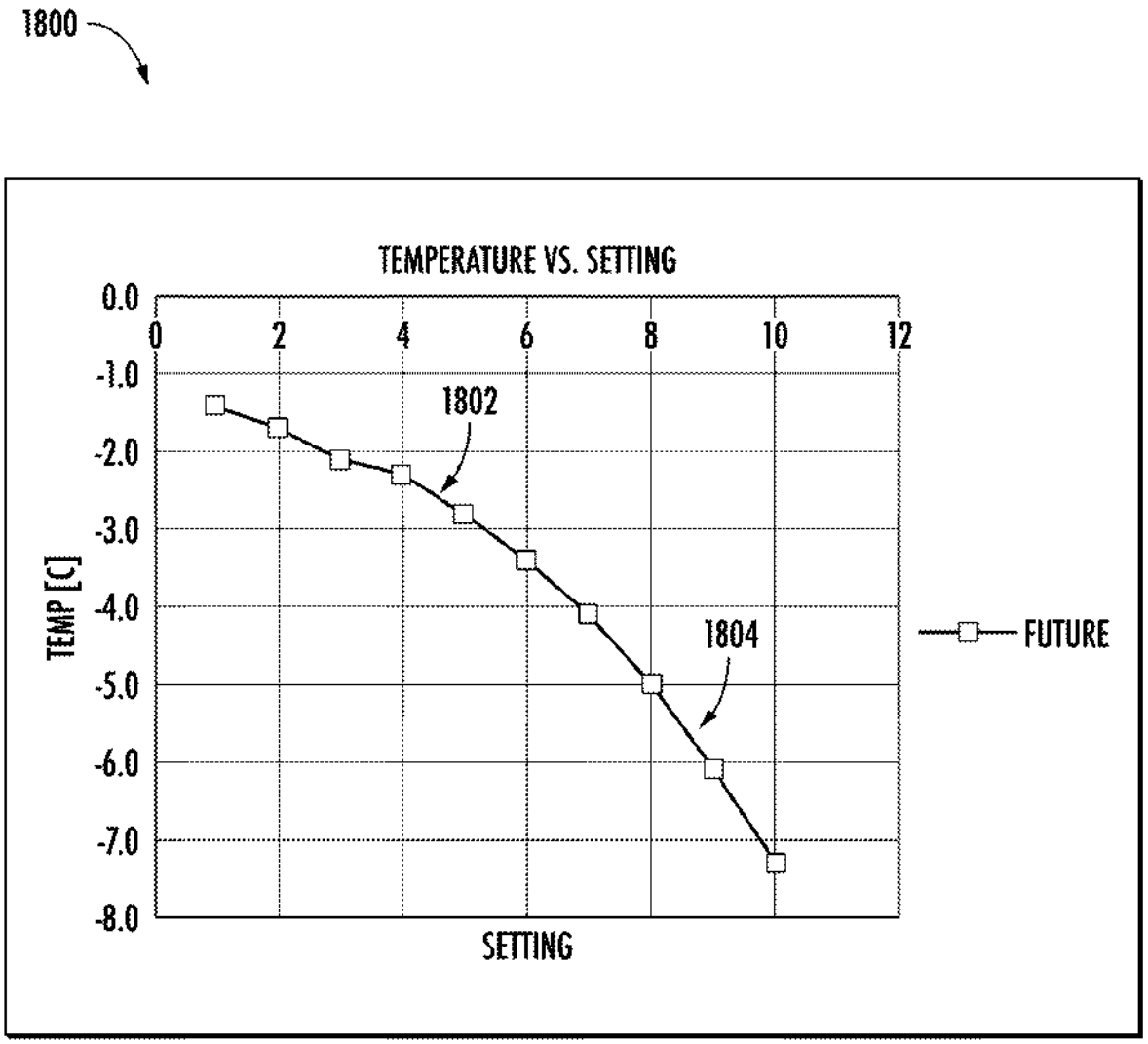
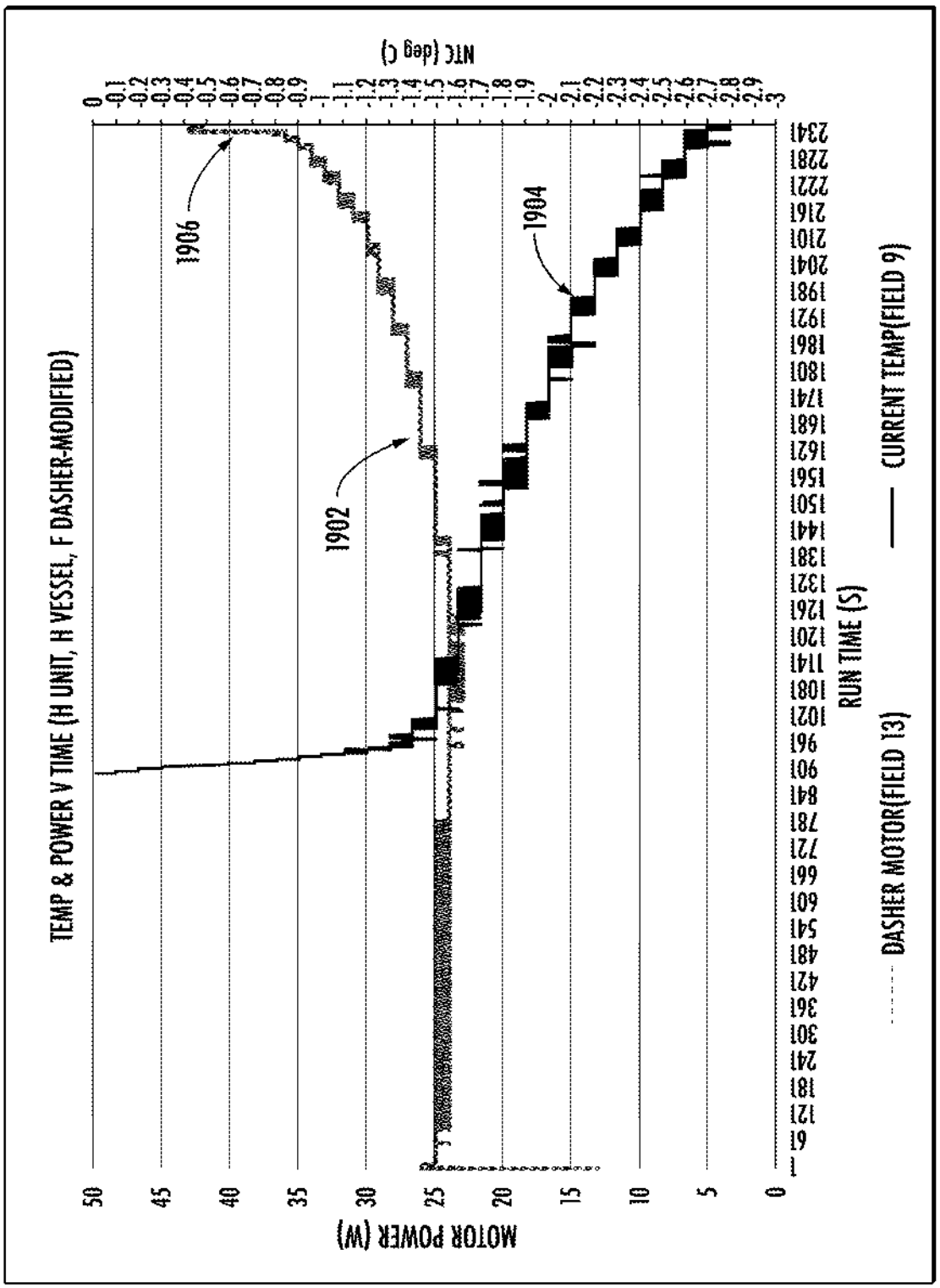

1800
TEMPERATURE VS. SETTING
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
-6.0
-7.0
-8.0
TEMP [C]
0
2
4
6
8
10
12
SETTING
1802
1804
FUTURE

FIG. 18

FIG. 19


TEMP & POWER V TIME (H UNIT, H VESSEL, F DASHER-MODIFIED)
NTC (deg C)
MOTOR POWER (W)
RUN TIME (S)
CURRENT TEMP(FIELD 9)
DASHER MOTOR(FIELD 13)
1902
1904
1906
1900

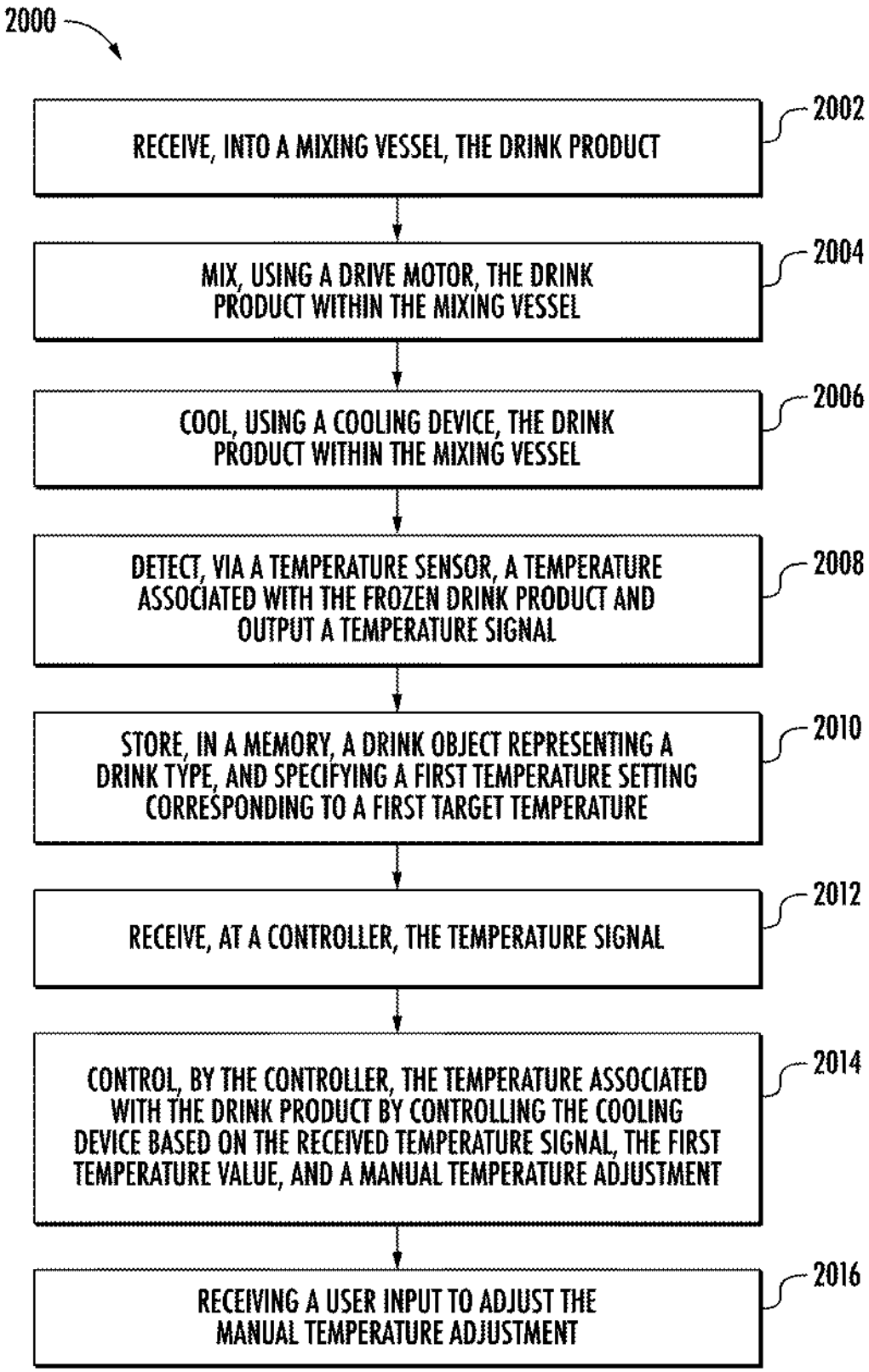

2000
RECEIVE, INTO A MIXING VESSEL, THE DRINK PRODUCT
2002
MIX, USING A DRIVE MOTOR, THE DRINK PRODUCT WITHIN THE MIXING VESSEL
2004
COOL, USING A COOLING DEVICE, THE DRINK PRODUCT WITHIN THE MIXING VESSEL
2006
DETECT, VIA A TEMPERATURE SENSOR, A TEMPERATURE ASSOCIATED WITH THE FROZEN DRINK PRODUCT AND OUTPUT A TEMPERATURE SIGNAL
2008
STORE, IN A MEMORY, A DRINK OBJECT REPRESENTING A DRINK TYPE, AND SPECIFYING A FIRST TEMPERATURE SETTING CORRESPONDING TO A FIRST TARGET TEMPERATURE
2010
RECEIVE, AT A CONTROLLER, THE TEMPERATURE SIGNAL
2012
CONTROL, BY THE CONTROLLER, THE TEMPERATURE ASSOCIATED WITH THE DRINK PRODUCT BY CONTROLLING THE COOLING DEVICE BASED ON THE RECEIVED TEMPERATURE SIGNAL, THE FIRST TEMPERATURE VALUE, AND A MANUAL TEMPERATURE ADJUSTMENT
2014
RECEIVING A USER INPUT TO ADJUST THE MANUAL TEMPERATURE ADJUSTMENT
2016

FIG. 20

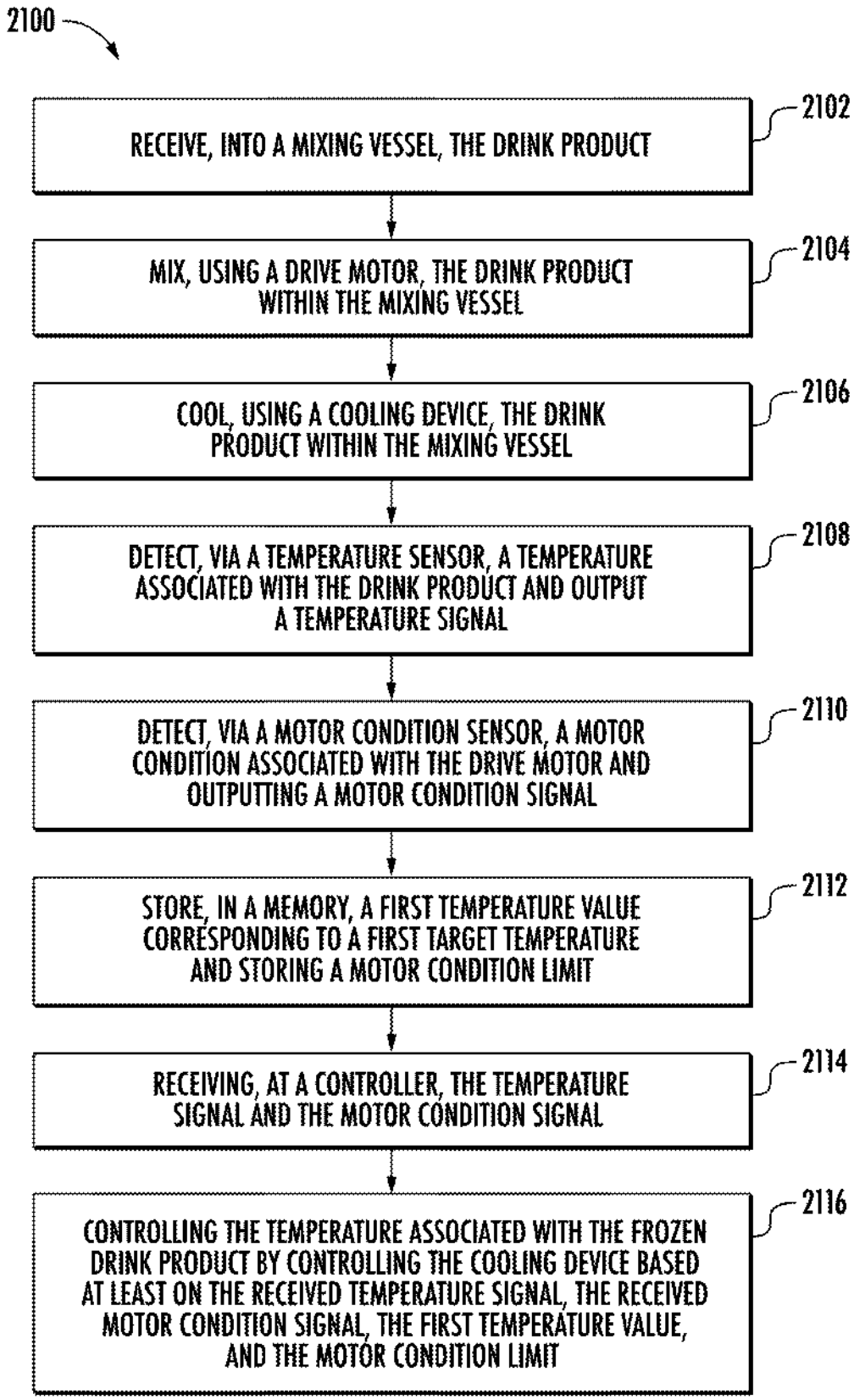

2100
RECEIVE, INTO A MIXING VESSEL, THE DRINK PRODUCT
2102
MIX, USING A DRIVE MOTOR, THE DRINK PRODUCT WITHIN THE MIXING VESSEL
2104
COOL, USING A COOLING DEVICE, THE DRINK PRODUCT WITHIN THE MIXING VESSEL
2106
DETECT, VIA A TEMPERATURE SENSOR, A TEMPERATURE ASSOCIATED WITH THE DRINK PRODUCT AND OUTPUT A TEMPERATURE SIGNAL
2108
DETECT, VIA A MOTOR CONDITION SENSOR, A MOTOR CONDITION ASSOCIATED WITH THE DRIVE MOTOR AND OUTPUTTING A MOTOR CONDITION SIGNAL
2110
STORE, IN A MEMORY, A FIRST TEMPERATURE VALUE CORRESPONDING TO A FIRST TARGET TEMPERATURE AND STORING A MOTOR CONDITION LIMIT
2112
RECEIVING, AT A CONTROLLER, THE TEMPERATURE SIGNAL AND THE MOTOR CONDITION SIGNAL
2114
CONTROLLING THE TEMPERATURE ASSOCIATED WITH THE FROZEN DRINK PRODUCT BY CONTROLLING THE COOLING DEVICE BASED AT LEAST ON THE RECEIVED TEMPERATURE SIGNAL, THE RECEIVED MOTOR CONDITION SIGNAL, THE FIRST TEMPERATURE VALUE, AND THE MOTOR CONDITION LIMIT
2116

FIG. 21

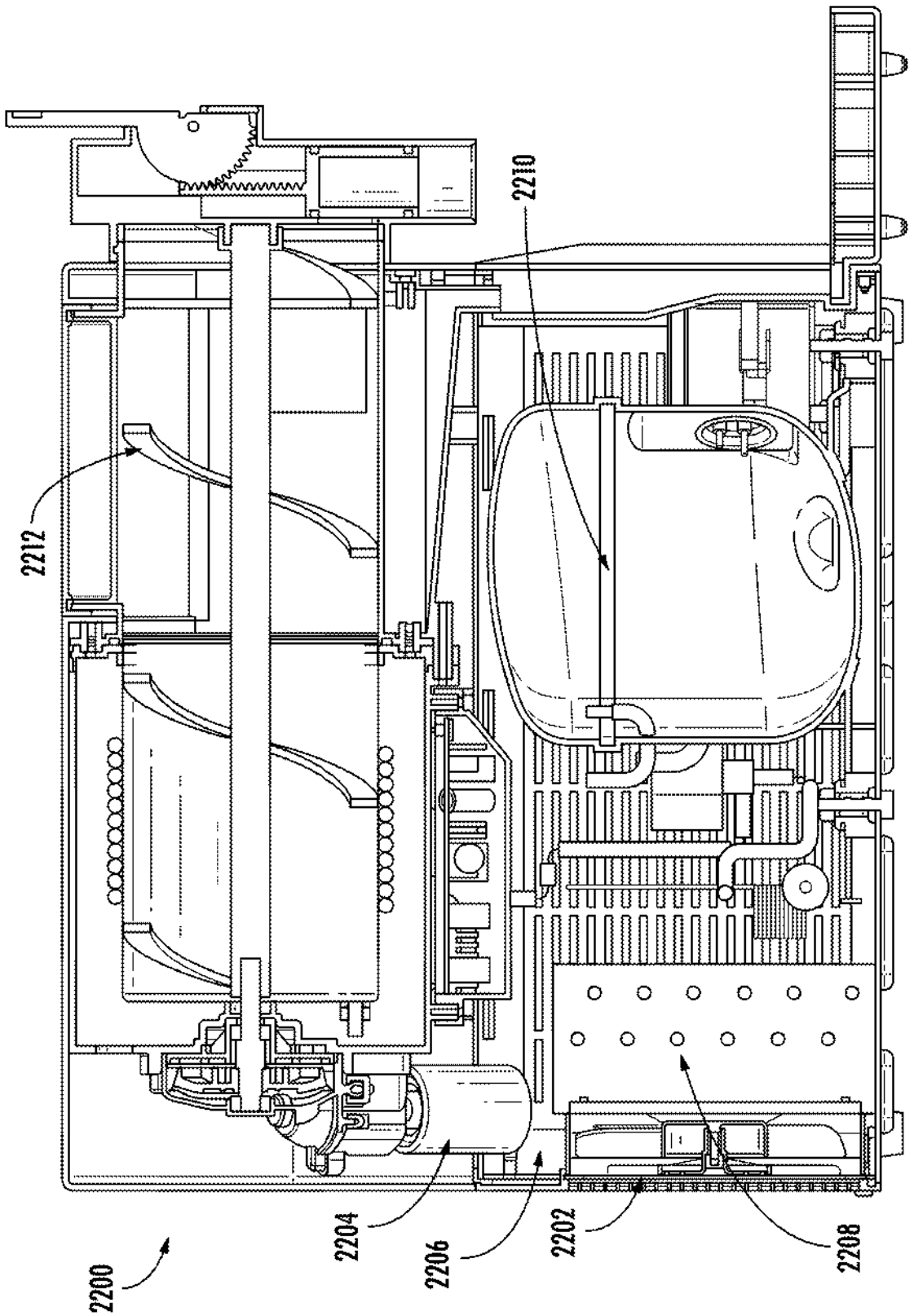


FIG. 22A

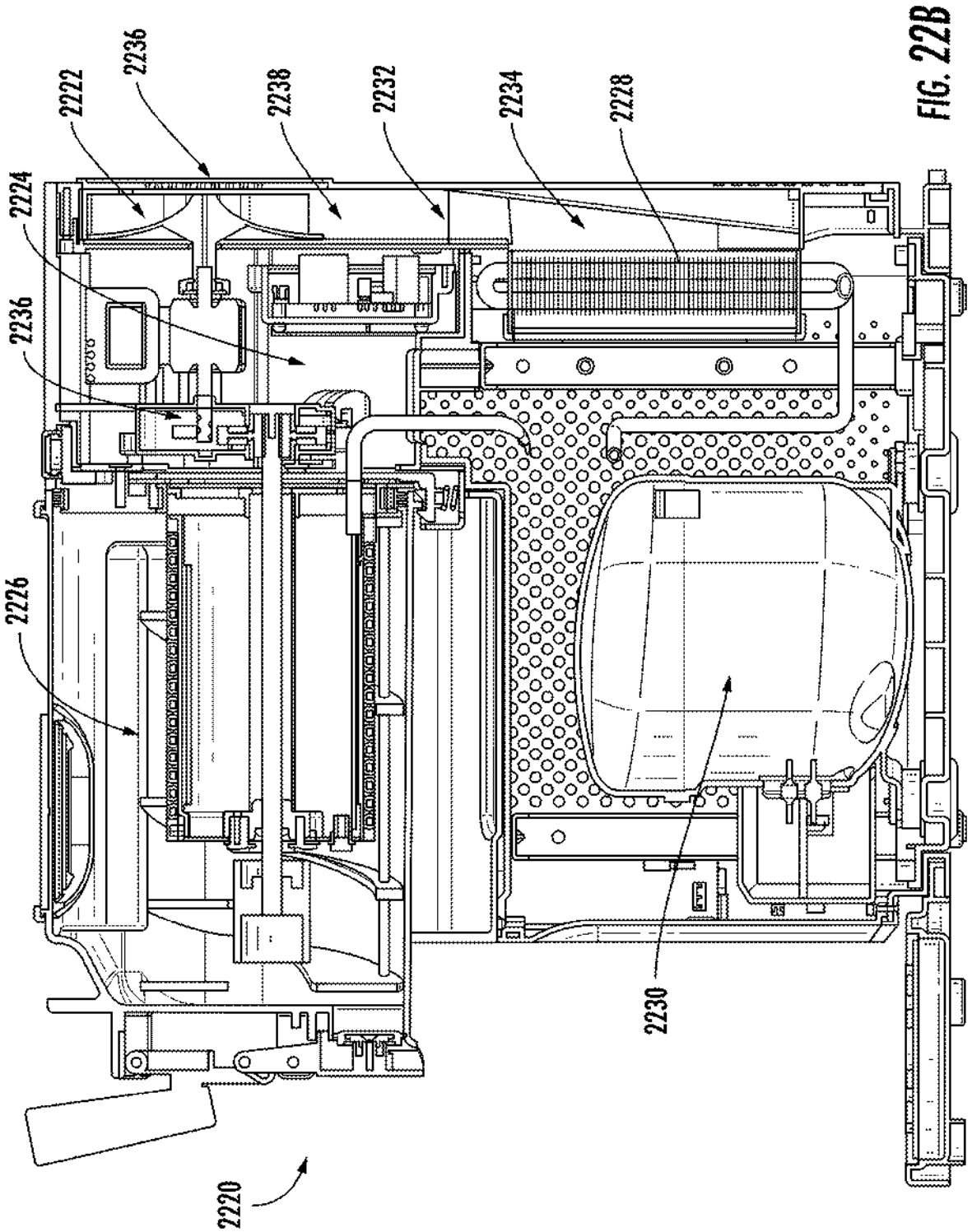


FIG. 22B

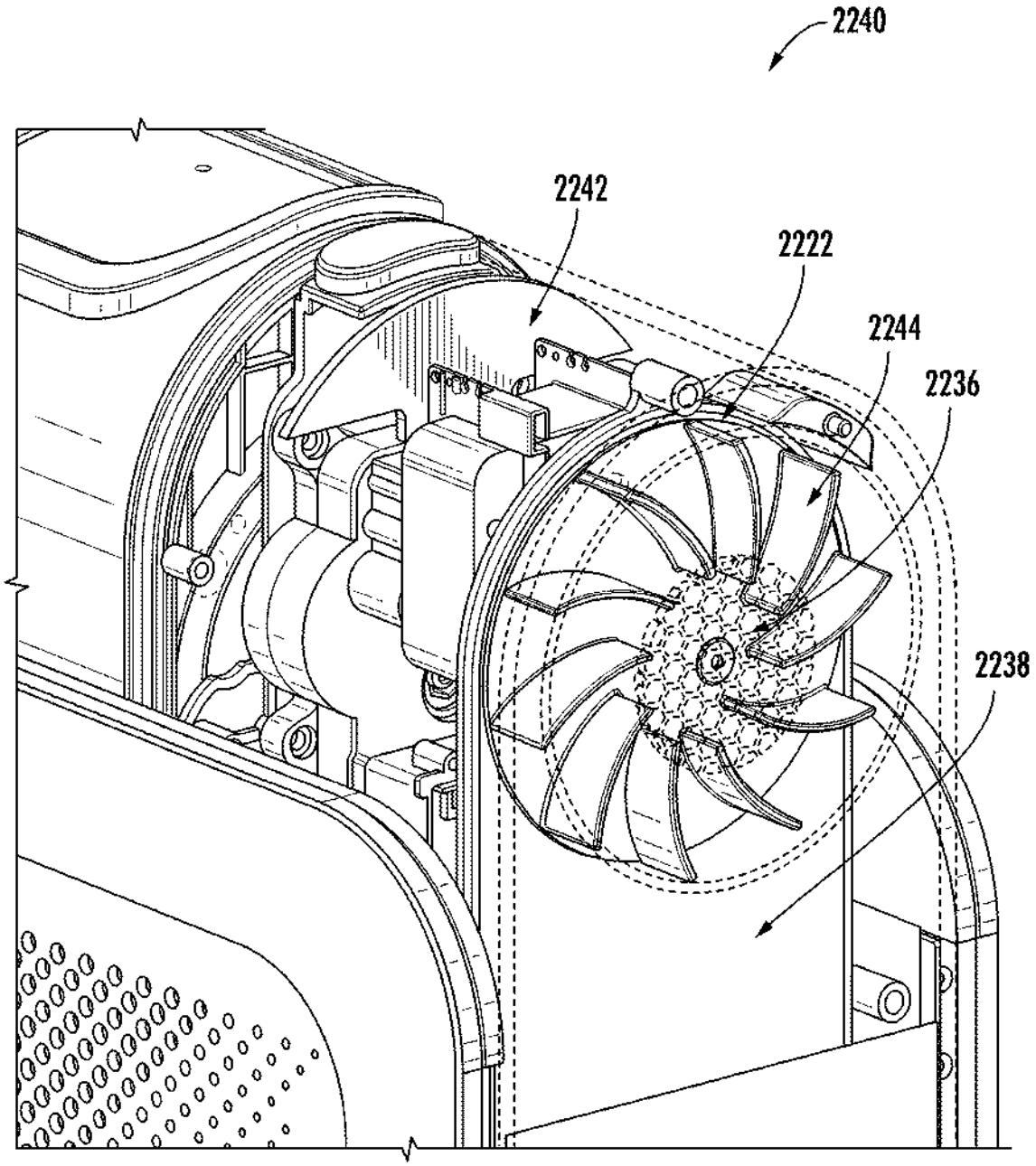


FIG. 22C

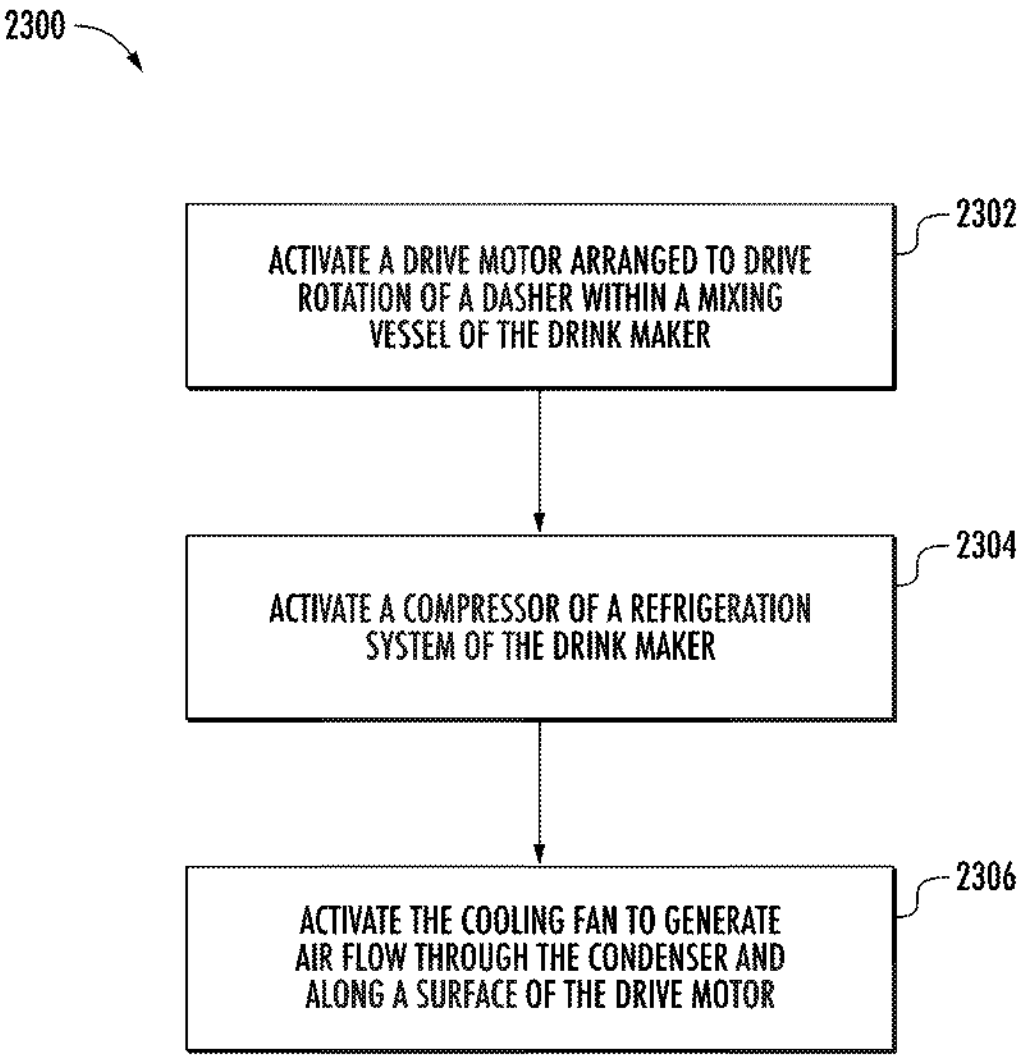

2300
ACTIVATE A DRIVE MOTOR ARRANGED TO DRIVE ROTATION OF A DASHER WITHIN A MIXING VESSEL OF THE DRINK MAKER
2302
ACTIVATE A COMPRESSOR OF A REFRIGERATION SYSTEM OF THE DRINK MAKER
2304
ACTIVATE THE COOLING FAN TO GENERATE AIR FLOW THROUGH THE CONDENSER AND ALONG A SURFACE OF THE DRIVE MOTOR
2306

FIG. 23

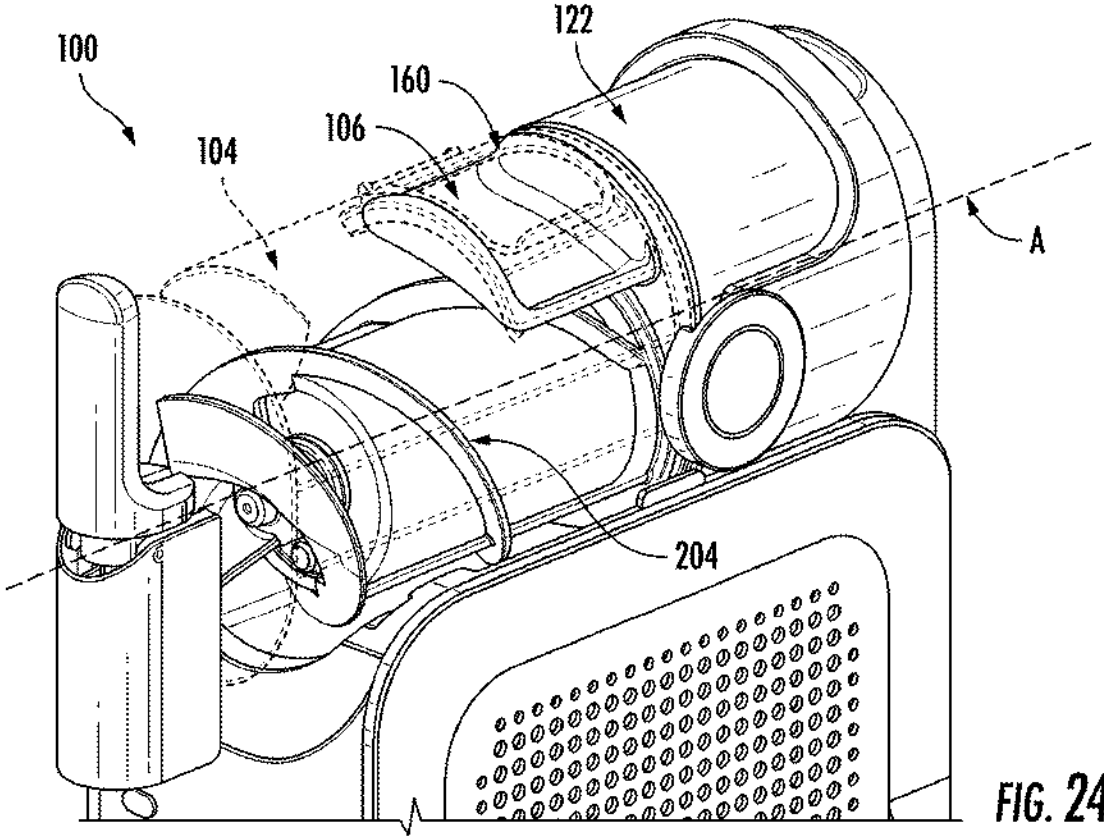


FIG. 24A

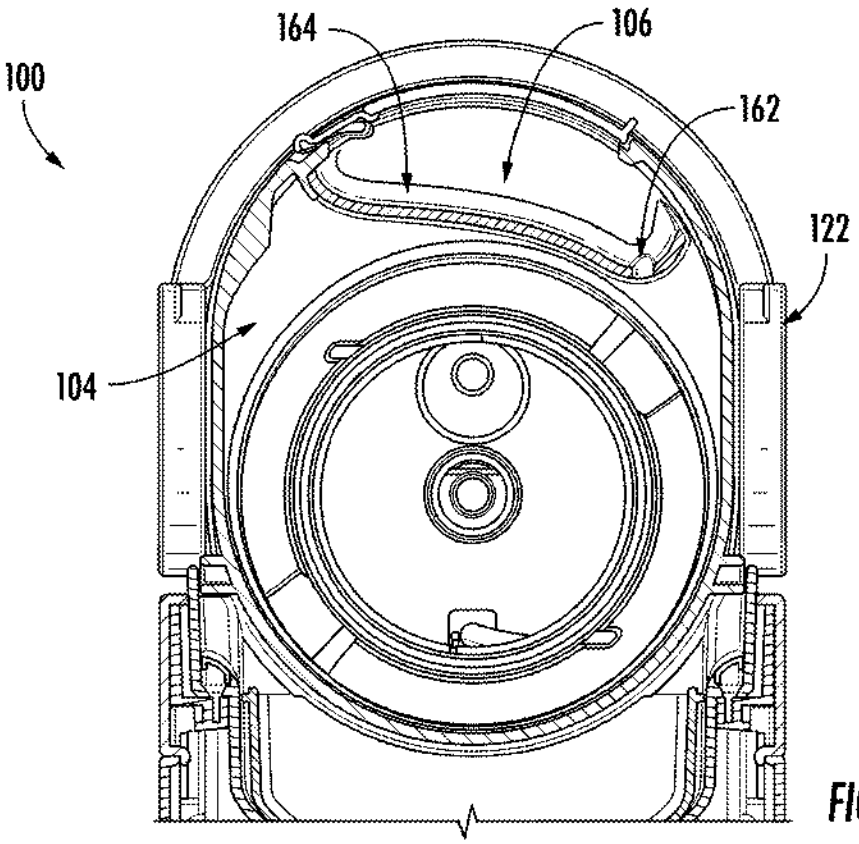


FIG. 24B

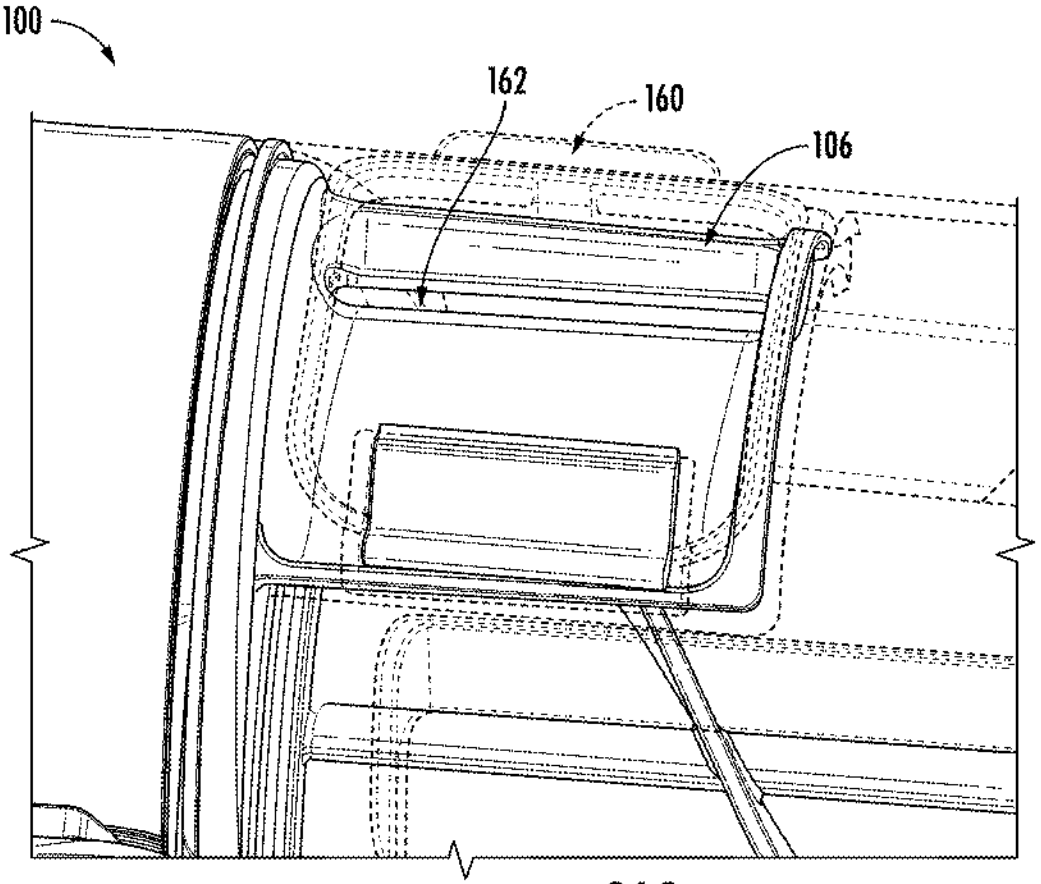


FIG. 24C

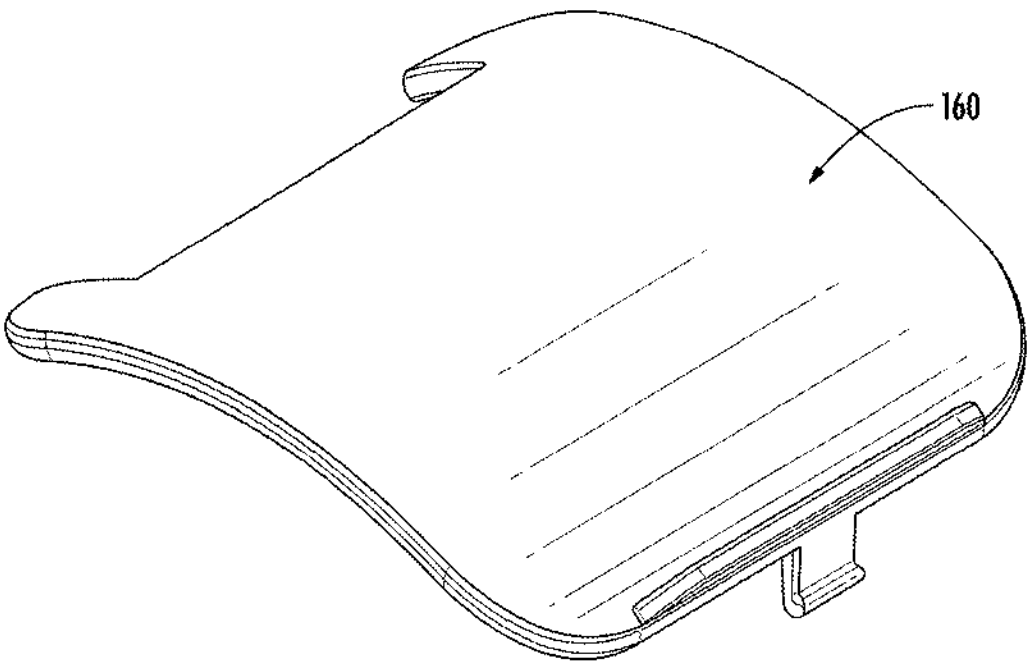


FIG. 25

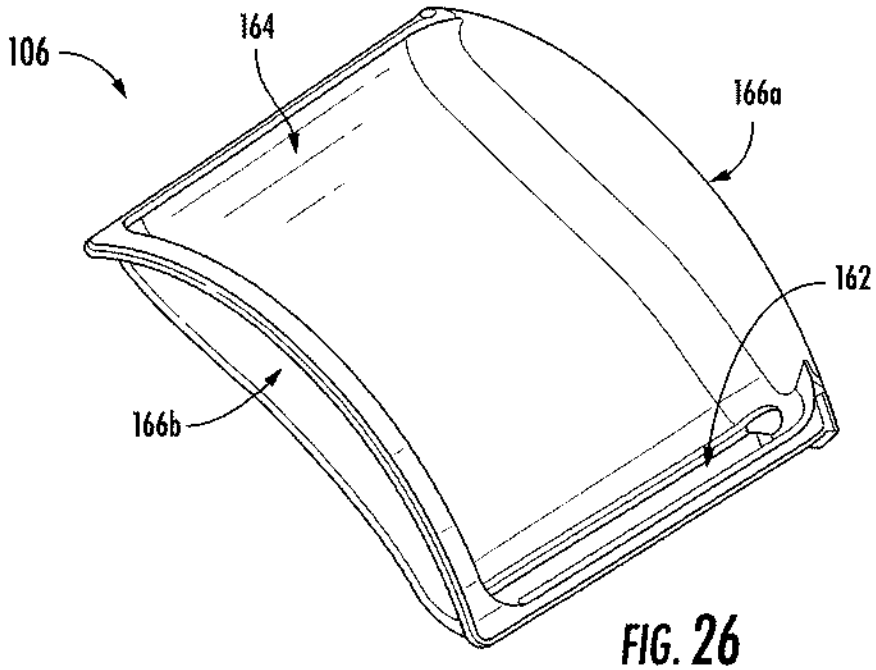


FIG. 26

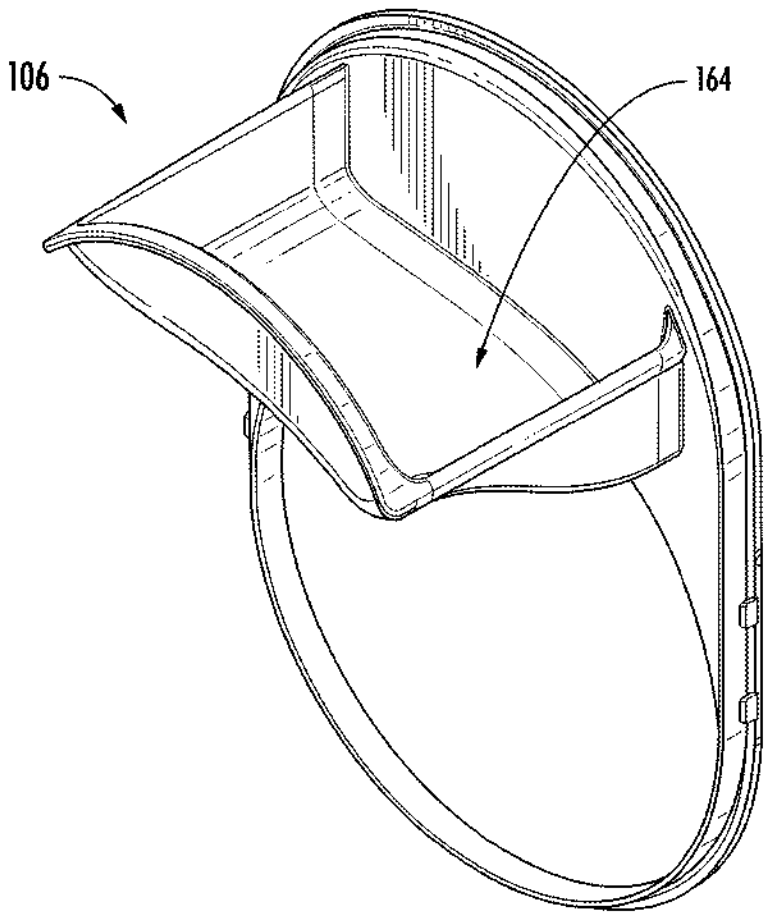


FIG. 27A

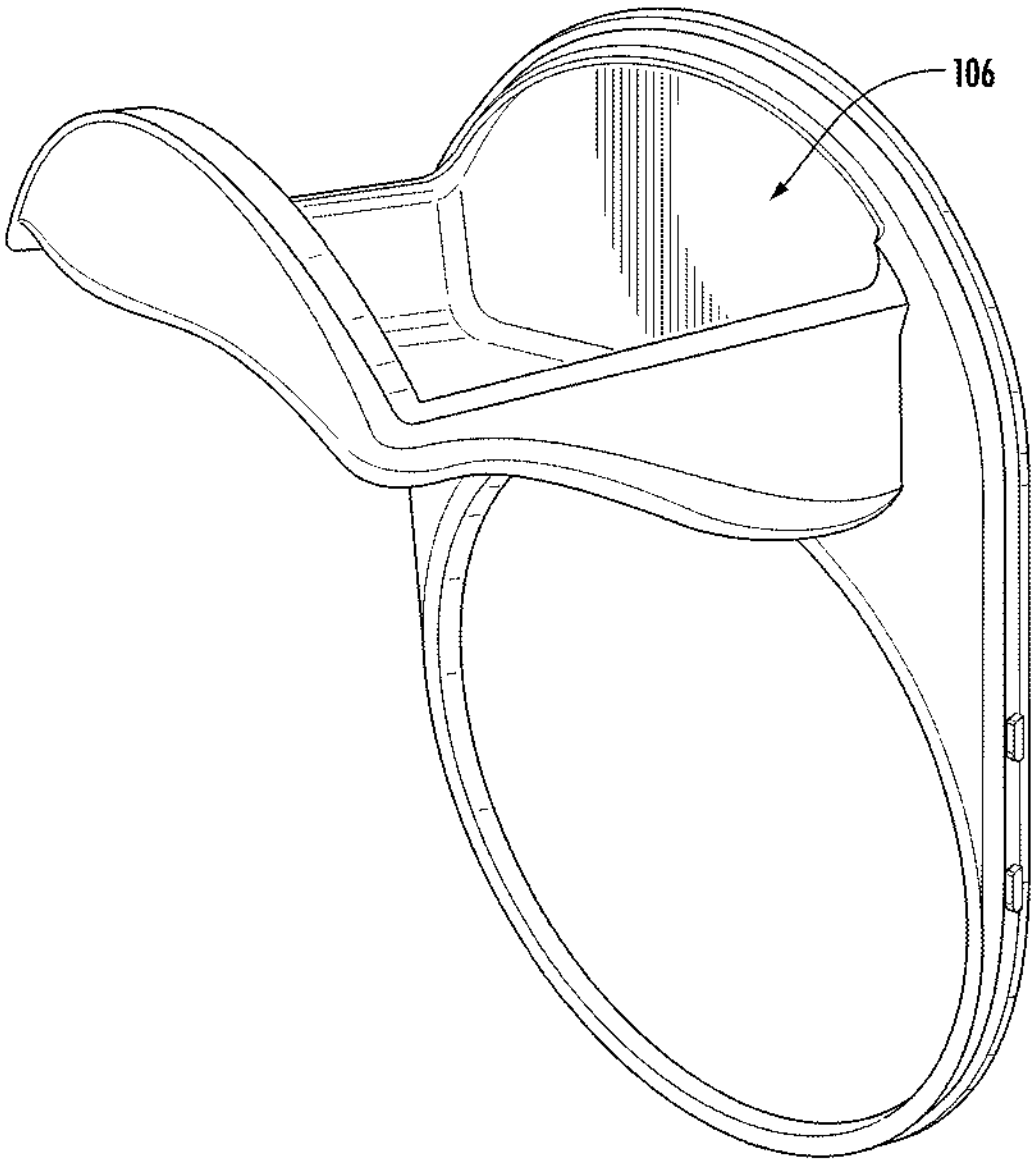


FIG. 27B

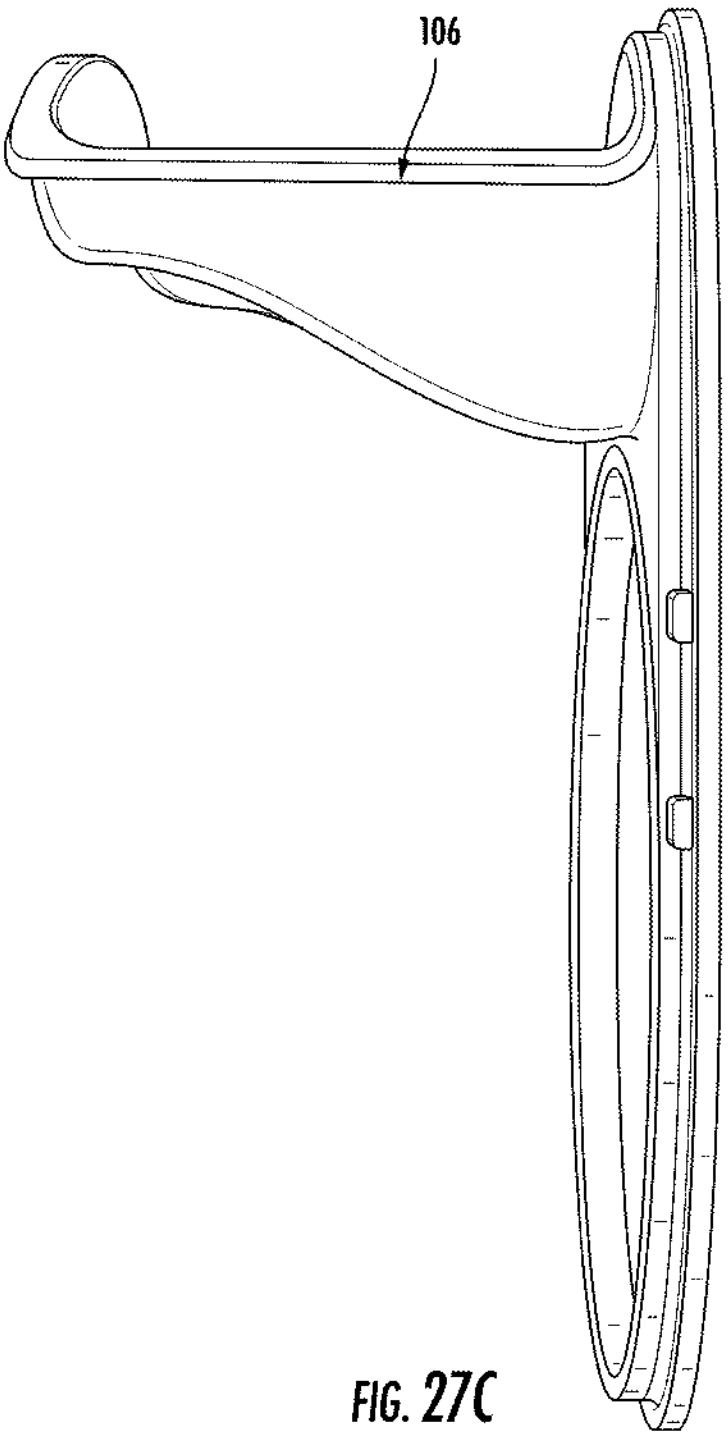


FIG. 27C

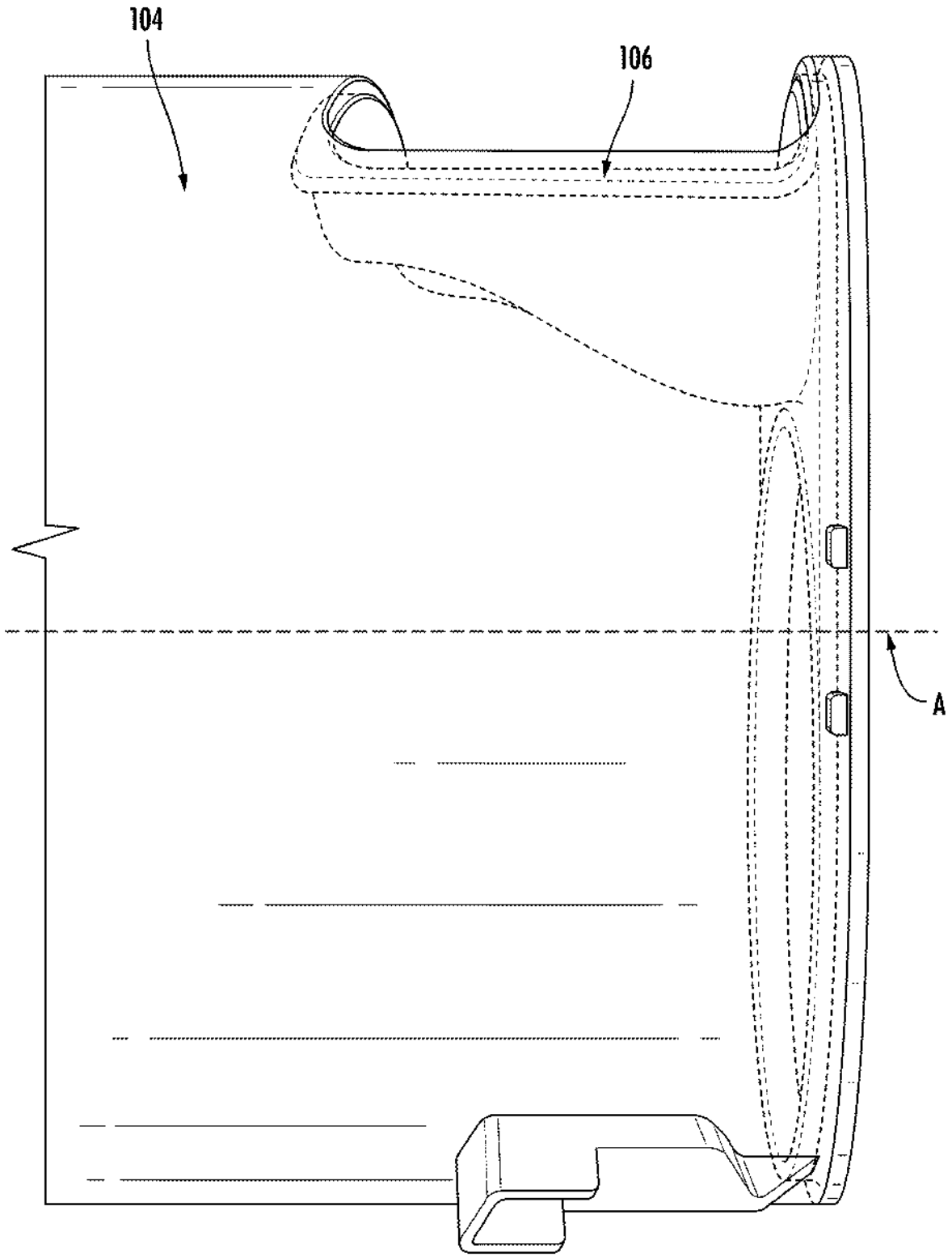


FIG. 27D

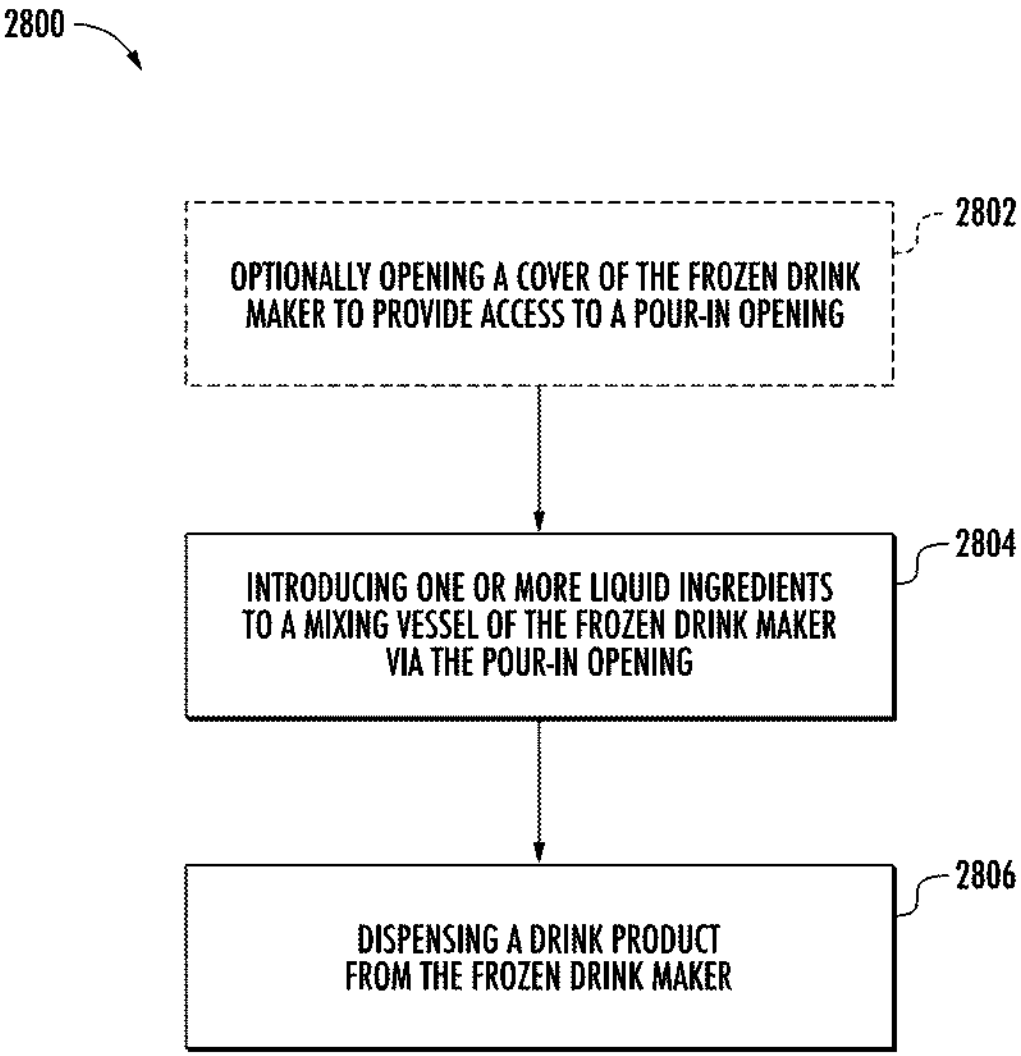

2800
2802
OPTIONALLY OPENING A COVER OF THE FROZEN DRINK MAKER TO PROVIDE ACCESS TO A POUR-IN OPENING
2804
INTRODUCING ONE OR MORE LIQUID INGREDIENTS TO A MIXING VESSEL OF THE FROZEN DRINK MAKER VIA THE POUR-IN OPENING
2806
DISPENSING A DRINK PRODUCT FROM THE FROZEN DRINK MAKER

FIG. 28

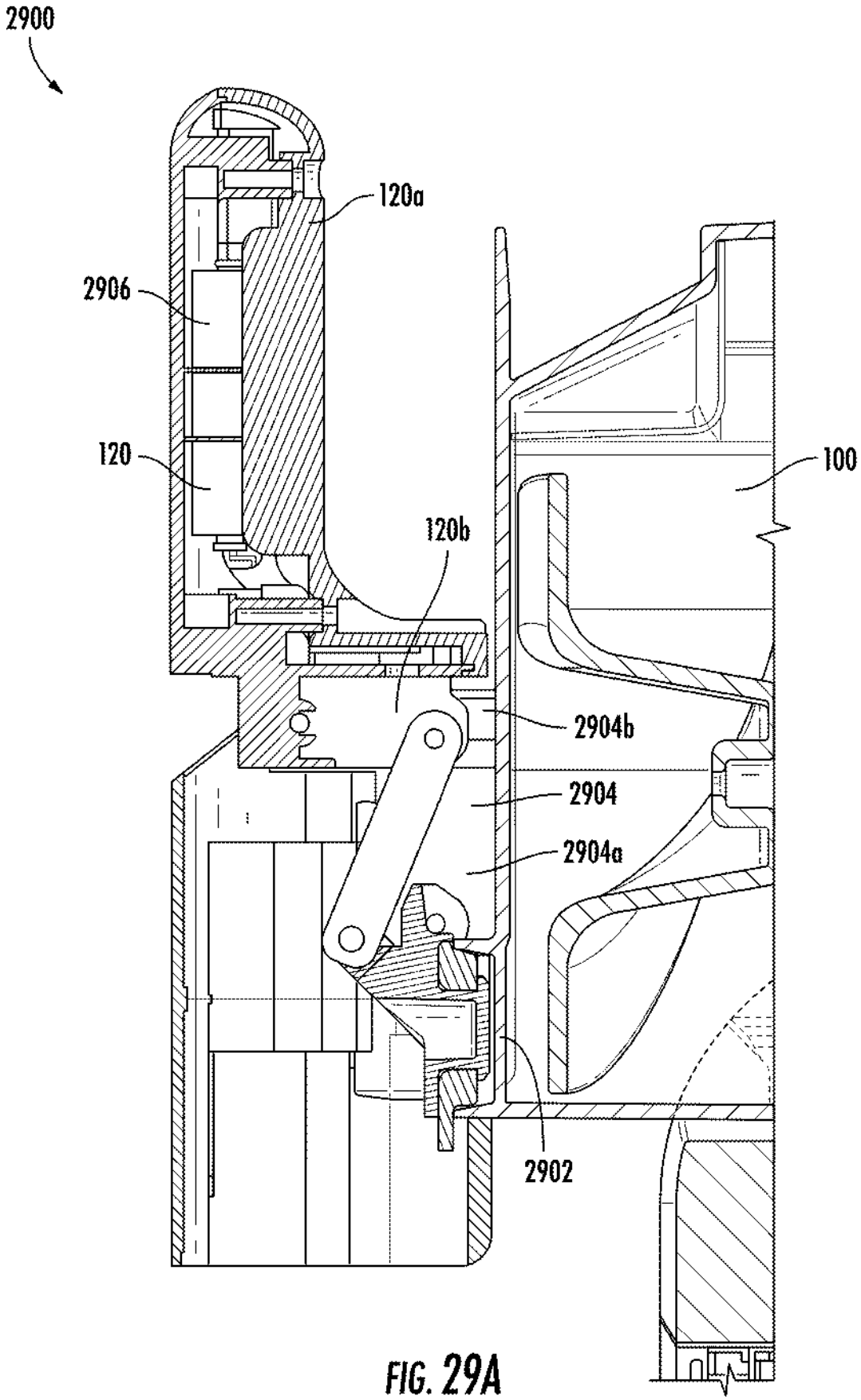


FIG. 29A

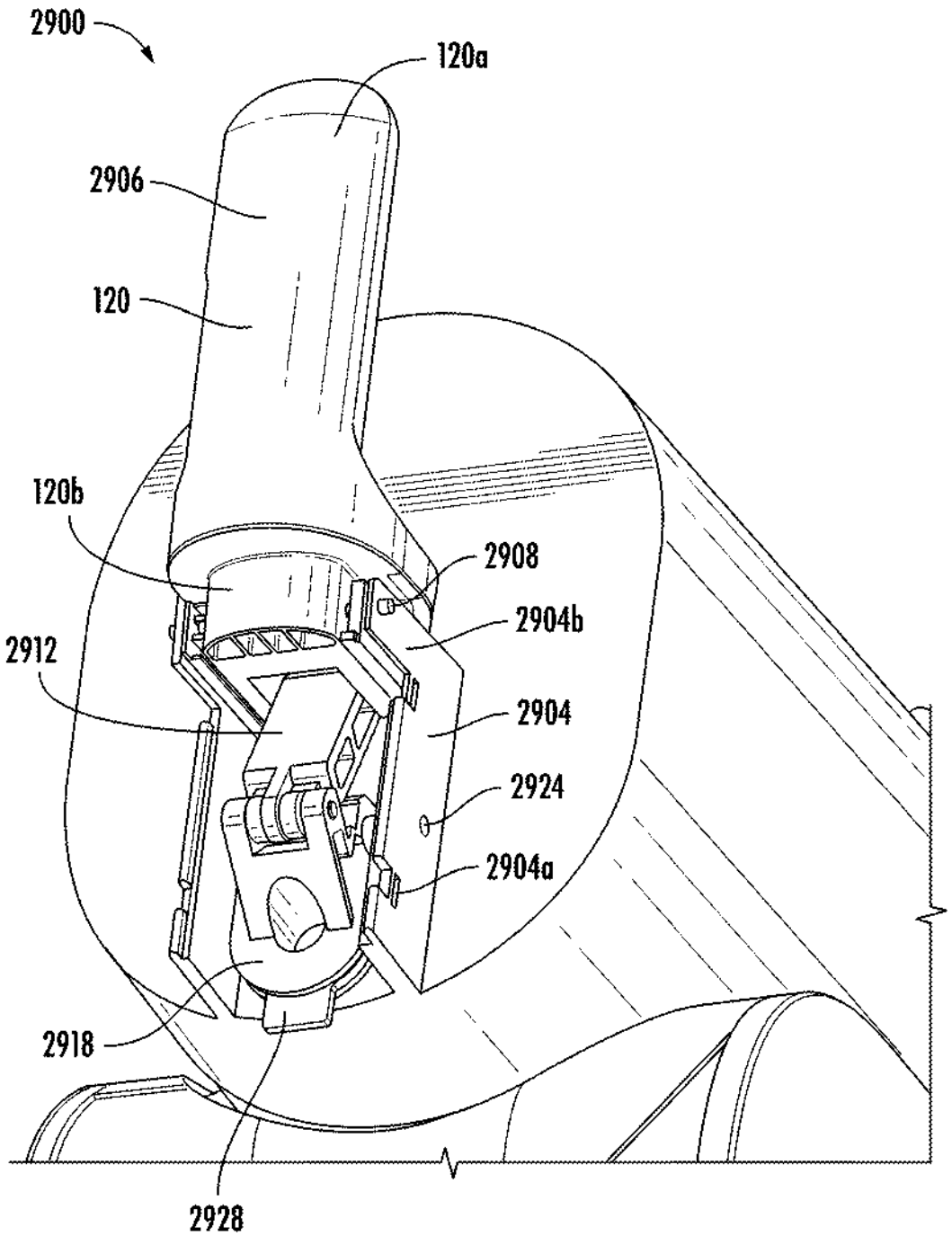

2900
120a
2906
120
120b
2908
2904b
2912
2904
2924
2904a
2918
2928

FIG. 29B

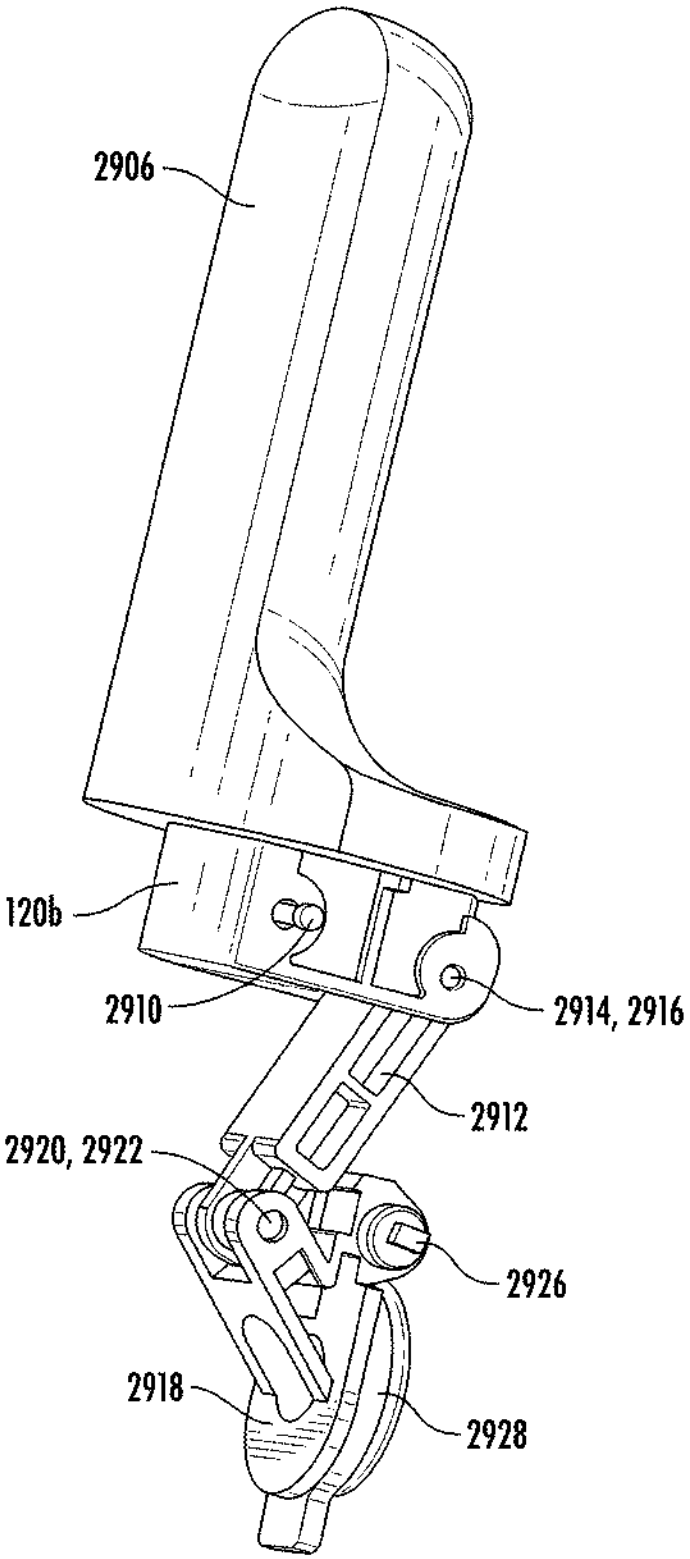


FIG. 29C

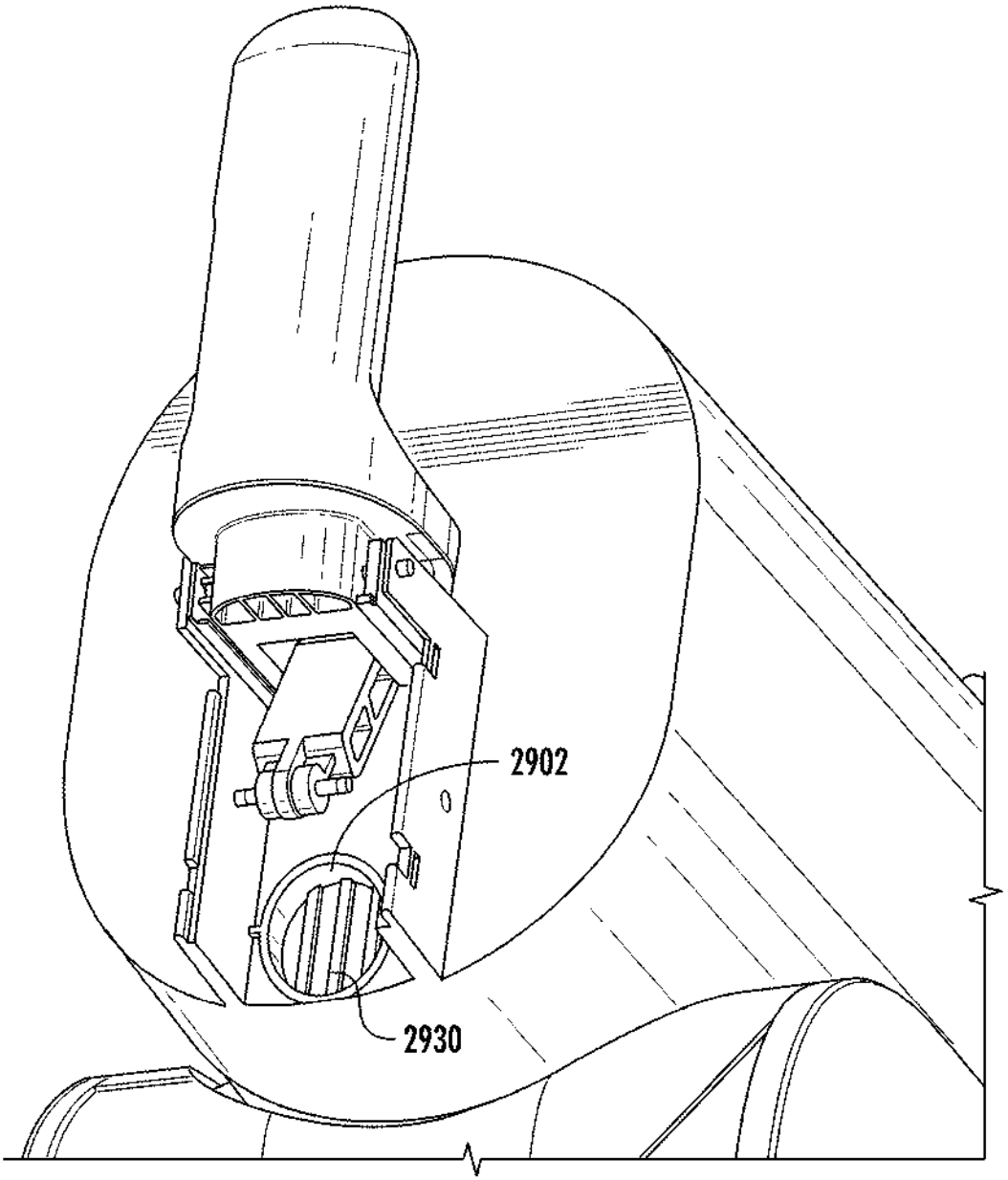


FIG. 29D

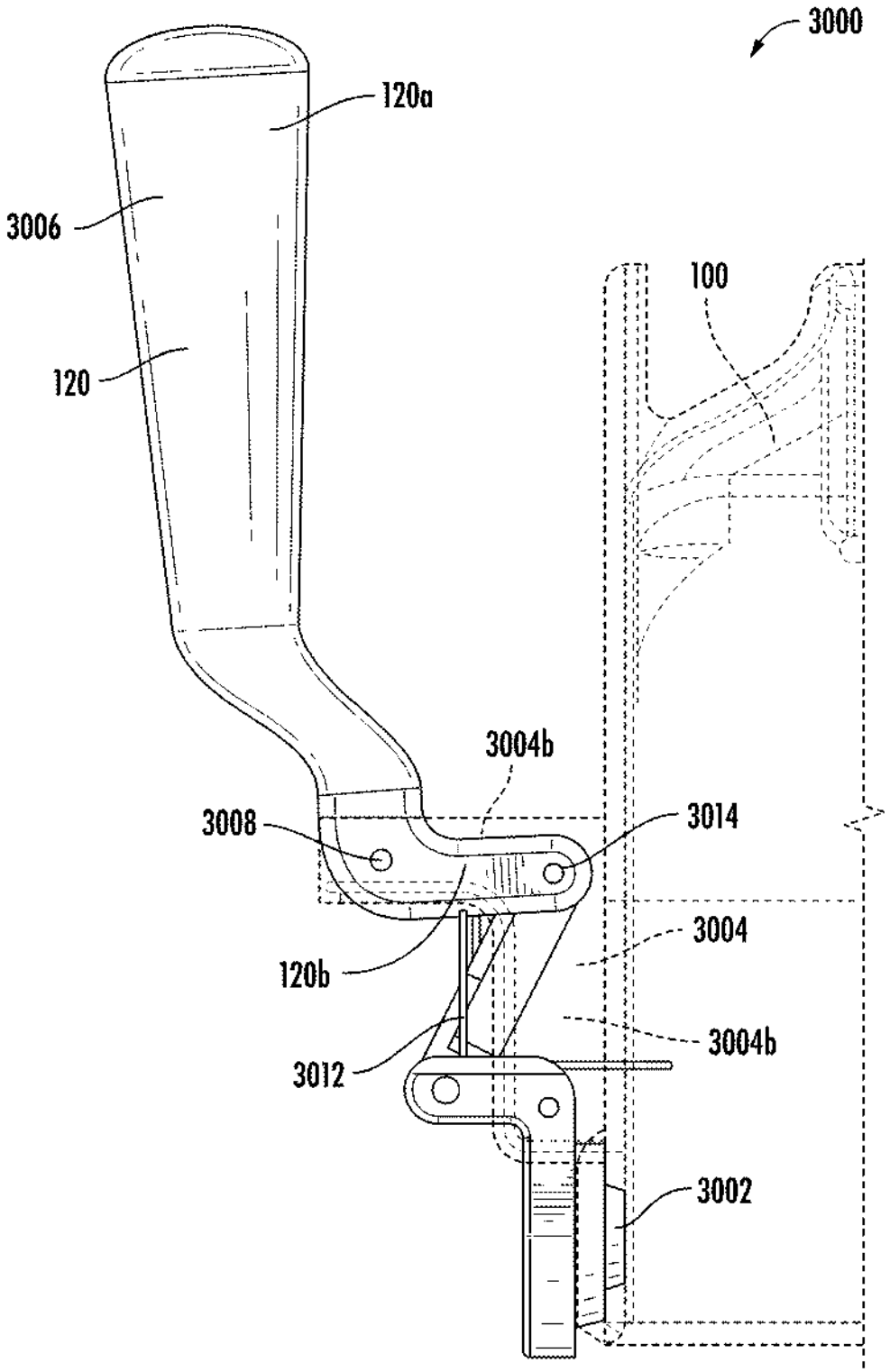

3000
120a
3006
120
100
3004b
3008
3014
3004
120b
3004b
3012
3002

FIG. 30A

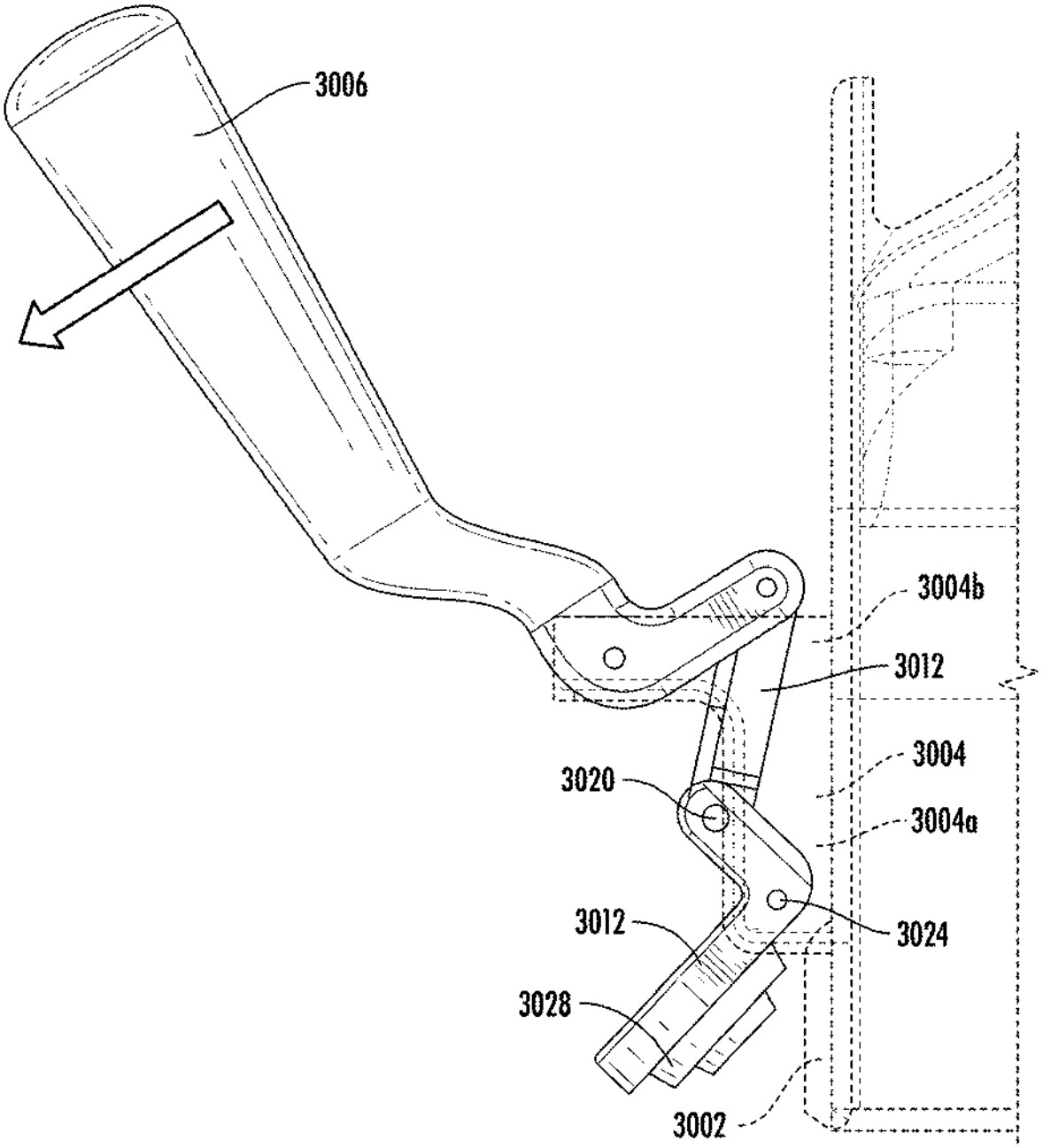


FIG. 30B

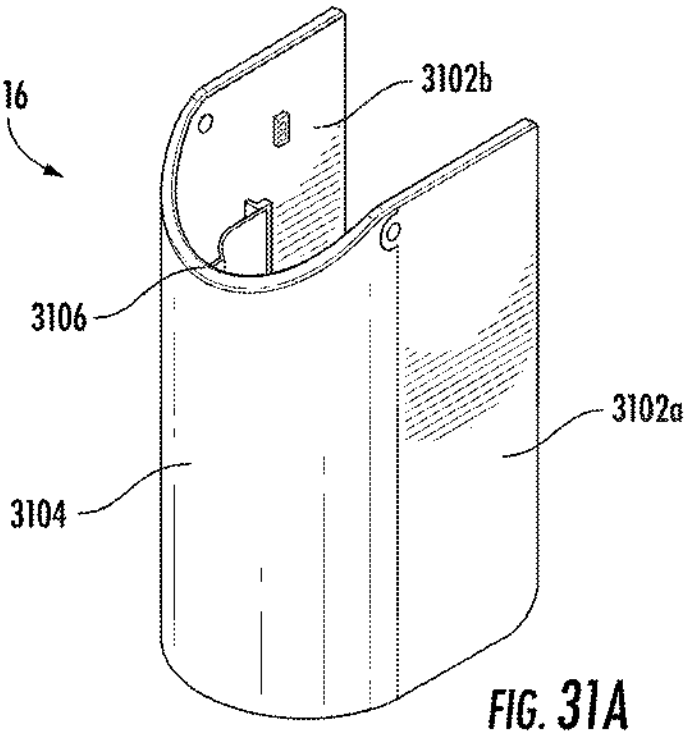


FIG. 31A

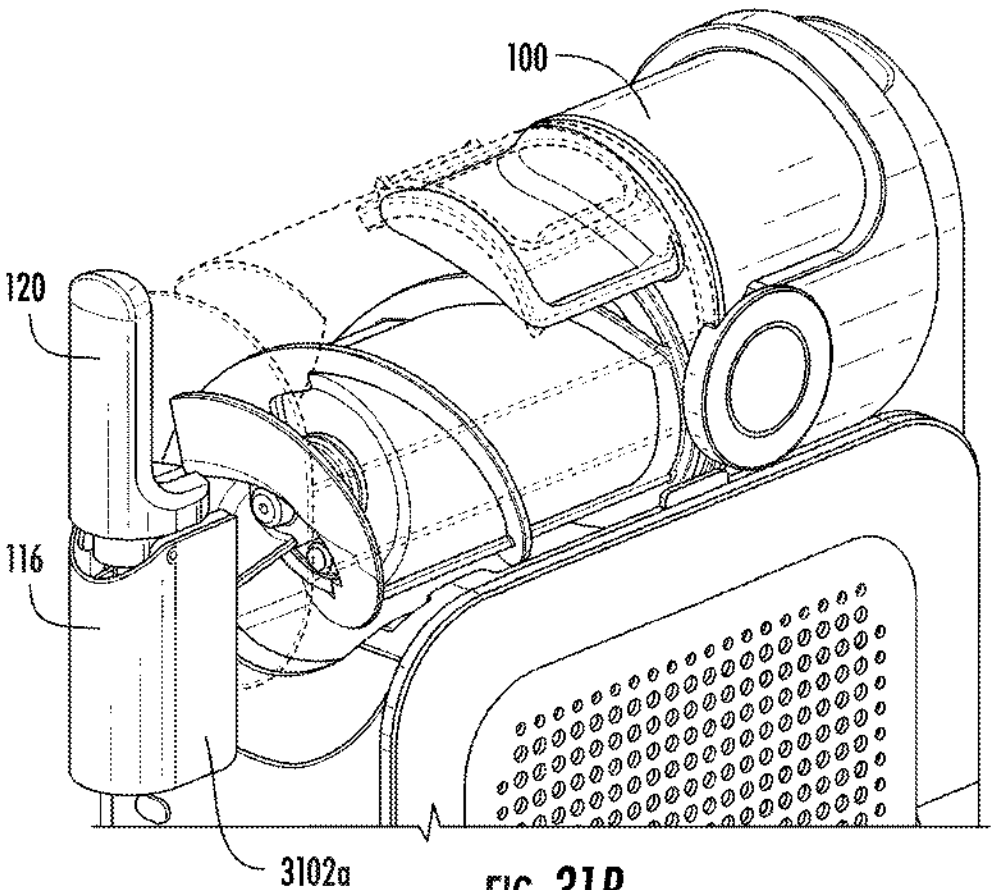


FIG. 31B

DRINK MAKER WITH DETACHABLY CONNECTABLE MIXING VESSEL

REFERENCE TO RELATED APPLICATIONS

This application is a continuation-in-part of U.S. patent application Ser. No. 18/415,817, filed on Jan. 18, 2024, the entire contents of which are incorporated herein by reference.

TECHNICAL FIELD

The present disclosure relates to a drink maker and, more particularly, to a frozen drink maker including a detachably connectable mixing vessel configured to be easily installed and uninstalled from the frozen drink maker with minimal user effort.

BACKGROUND

Frozen drink makers, which may also be referred to as semi-frozen beverage makers, or crushed-ice drink makers typically include a transparent tank or mixing vessel in which a drink product is received and processed, including being cooled, often transforming the drink product from a pure liquid (or a combination of a liquid and portions of ice) to a frozen or semi-frozen product, such as, for example, a granita, slush drink, smoothie, ice cream, or other frozen or semi-frozen product, which is then dispensed. The cooled product is typically dispensed through a tap, spigot or dispenser located at the front and near the bottom of the vessel. Thus, the term "frozen drink maker" as used herein is not limited to a device that only makes drinks or frozen drinks, but includes devices that cool received drink products to produce cooled outputs in any of a variety of frozen and semi-frozen forms. A drink product typically consists of a mixture of water or milk, a syrup flavoring powders, or other additives that give the drink product the desired taste and color.

Some existing frozen drink makers include a mixing system within the mixing vessel having a mixing blade or auger that is rotated by a motor via a drive shaft and drive assembly. Some existing frozen drink makers include a refrigeration system having a compressor, a condenser and an evaporator (i.e., chiller) for receiving refrigerant from the compressor where the evaporator is located adjacent to or within the mixing vessel to cool the drink product during processing.

Some existing frozen drink makers include a controller that controls operations of the frozen drink maker related to making drink products, including the temperature of frozen food products during processing.

SUMMARY

The application, in various implementations, addresses deficiencies associated with prior frozen drink makers, including commercial slush machine vessels, such as reducing the force required to install and uninstall a mixing vessel from the device. A unique lever is described that provides helpful mechanical advantages, allowing a user to easily and securely couple the mixing vessel onto an upper housing of the frozen drink maker with just one hand, if desired. The lever is configured to move relative to the upper housing between an uncoupled position and a coupled position. When the lever is in the coupled position, the mixing vessel is sealed against the upper housing section by a flexible seal. The flexible seal may include a face seal that interfaces a vertically aligned surface of the upper housing section to a vertically aligned side of the mixing vessel. The flexible seal may include a vessel seal portion configured to create a watertight seal between the mixing vessel and the upper housing section, and an evaporator seal portion configured to seal an evaporator within the mixing vessel. When the lever is moved to the uncoupled position, the lever uncouples the mixing vessel from the upper housing section. The lever can include a cam feature, which provides significant compression. This application describes illustrative systems, methods, and devices that permit a mixing vessel to be easily installed and uninstalled from a frozen drink maker in a more adaptive and user-friendly manner.

In some aspects, a frozen drink maker is described. The frozen drink maker includes a housing, a mixing vessel to mix a drink product, and a flexible seal. The housing includes an upper housing section and a lever moveable relative to the upper housing section between a coupled position and an uncoupled position. The flexible seal is between the upper housing section and the mixing vessel. The lever couples the mixing vessel to the upper housing section when in the coupled position and uncouples the mixing vessel from the upper housing section when in the uncoupled position. When the lever is in the coupled position, the mixing vessel is sealed against the upper housing section by the flexible seal.

In select implementations, the mixing vessel has a substantially cylindrical shape with a base having an opening formed therein, and the opening is sealed by the flexible seal when the lever is in the coupled position. In these and other implementations, the opening is substantially circular. The opening may be positioned to face horizontally when the lever is in the coupled position. The flexible seal may include a face seal that interfaces a vertically aligned surface of the upper housing section to a vertically aligned side of the mixing vessel. In select implementations, the lever includes a handle enabling a user to move the lever between the coupled position and the uncoupled position. In these and other implementations, the handle is positioned closer to the upper housing section when in the coupled position than when in the uncoupled position. In some such implementations, when moving between the coupled position and the uncoupled position, the handle moves less than 90° relative to the upper housing section. In select implementations, movement of the handle to move the lever into the coupled position activates a cam in the upper housing section that engages mating features on the mixing vessel to secure the mixing vessel to the upper housing section. In these and other implementations, the cam also includes an ejection feature to apply an ejection force to the mixing vessel when the lever is moved from the coupled position to the uncoupled position. In select implementations, the frozen drink maker also includes a drive motor and an interlock switch positioned within the upper housing section and configured to be activated and permit action of the drive motor when the mixing vessel is coupled onto the housing. In various implementations, the lever is rotatably coupled to the upper housing section.

In some aspects, methods of producing a frozen drink using a frozen drink maker device are described. The frozen drink maker device includes a housing, a mixing vessel, and a flexible seal. The housing includes an upper housing section and a lever moveable relative to the upper housing section between a coupled position and an uncoupled position. The mixing vessel is arranged to couple to the upper housing section. The flexible seal is positioned between the

upper housing section and the mixing vessel. The lever includes a handle that is moveable to place the lever into the coupled position and/or the uncoupled position. When the lever is in the coupled position, the mixing vessel is sealed against the upper housing section by the flexible seal. The methods include coupling the mixing vessel onto the upper housing section by moving the handle relative to the upper housing section to place the lever into the coupled position, operating the frozen drink maker device to produce the frozen drink, uncoupling the mixing vessel from the upper housing section by moving the handle relative to the upper housing section to place the lever into the uncoupled position.

In some implementations, coupling the mixing vessel onto the upper housing section involves moving the handle toward the upper housing section. In these and other implementations, uncoupling the mixing vessel from the upper housing section involves moving the handle away from the upper housing section and/or toward a front of the housing. In some implementations, moving the handle relative to the upper housing section to place the lever into the coupled position is accomplished with only one hand. In these and other implementations, moving the handle relative to the upper housing section to place the lever into the uncoupled position is accomplished with only one hand.

In yet another aspect, a frozen drink maker is described that includes a housing, a mixing vessel to mix a drink product, and a flexible seal. The housing includes an upper housing section and a coupling mechanism moveable relative to the upper housing section between a coupled position and an uncoupled position. The flexible seal is positioned between the upper housing section and the mixing vessel. The coupling mechanism couples the mixing vessel to the upper housing section when in the coupled position and uncouples the mixing vessel from the upper housing section when in the uncoupled position. When the coupling mechanism is in the coupled position, the mixing vessel is sealed against the upper portion of the housing by the flexible seal.

One of ordinary skill will recognize that the systems, methods, and devices described herein may apply to other types of food products such as to the making and/or processing of, without limitation, ice cream, frozen yogurt, other creams, and the like. While the present disclosure describes examples of a drink maker processing various frozen and/or semi-frozen drink products, the systems, devices, and methods described herein are not limited to such drink products and are capable of processing and/or making other types of drink products such as cooled drink products and/or chilled drink products. The terms "mix," "mixed" or "mixing" as used herein are not limited to combining multiple ingredients together, but also include mixing a drink product or liquid having a single or no added ingredients. For example, a drink product may consist of only water that is mixed by a dasher during processing, i.e., portions of the water are churned and/or intermingled as the dasher rotates. This may, for example, advantageously enable a more uniform temperature of the water and/or liquid as a whole within the mixing vessel by intermingling portions of the water and/or liquid having different temperatures.

A reading of the following detailed description and a review of the associated drawings will make apparent the advantages of these and other structures. Both the foregoing general description and the following detailed description serve as an explanation only and do not restrict aspects of the disclosure as claimed.

BRIEF DESCRIPTION OF THE DRAWINGS

Reference to the detailed description, combined with the following figures, will make the disclosure more fully understood, wherein:

FIG. **1** shows a perspective view of a frozen drink maker according to an implementation of the disclosure;

FIG. **2** shows a view of various internal components within the housing and mixing vessel of the frozen drink maker of FIG. **1** according to an implementation of the disclosure;

FIG. **3** shows a front view of the frozen drink maker of FIG. **1**, according to some implementations of the disclosure;

FIG. **4** is a block diagram of an example of a control system of the frozen drink maker of FIG. **1**, according to some implementations of the disclosure;

FIG. **5**A illustrates a side view of the frozen drink maker of FIG. **1** with the mixing vessel in a coupled position relative to the upper housing section, according to some implementations of the disclosure;

FIG. **5**B illustrates a side view of the frozen drink maker illustrated in FIG. **5**A with some features of the housing and the lever shown in partial cross-section, according to some implementations of the disclosure;

FIG. **6** shows a detailed view of a lever with cams for coupling a mixing vessel to the housing of a frozen drink maker, according to some implementations of the disclosure;

FIG. **7**A shows a rear view of a mixing vessel, according to some implementations of the disclosure;

FIG. **7**B shows a perspective view of the rear of a mixing vessel, according to some implementations of the disclosure;

FIG. **8** shows a perspective view of a flexible seal, according to some implementations of the disclosure;

FIG. **9** shows a cross-sectional view of a flexible seal, according to some implementations of the disclosure;

FIG. **10** illustrates a flow diagram for a method of using the disclosed frozen drink maker, according to some implementations of the disclosure;

FIGS. **11**A and **11**B show perspective views of a condensation collection tray of the frozen drink maker of FIG. **1** according to an implementation of the disclosure;

FIG. **11**C shows the collection tray of FIGS. **11**A and **11**B inserted into the frozen drink maker of FIG. **1** according to an implementation of the disclosure;

FIG. **11**D shows the frozen drink maker of FIG. **1** with the collection tray removed according to an implementation of the disclosure;

FIG. **12** is a flow chart illustrating a method of removing the collection tray of FIGS. **11**A and **11**B from the frozen drink maker of FIG. **1** according to an implementation of the disclosure;

FIG. **13**A shows an isometric view of the frozen drink maker with a mixing vessel having at least one internal baffle, in accordance with some implementations of the disclosure;

FIG. **13**B shows a cross-sectional view of the frozen drink maker shown in FIG. **13**A, taken along line B-B;

FIG. **13**C shows a cross-sectional view of the frozen drink maker shown in FIG. **13**A, taken along line C-C;

FIG. **14**A shows a rear isometric view of a mixing vessel for a frozen drink maker with three internal baffles, in accordance with some implementations of the disclosure;

FIG. **14**B shows a rear view of the mixing vessel shown in FIG. **14**A;

FIG. **14**C shows a front isometric view of the mixing vessel shown in FIG. **14**A;

FIG. **15** is a close-up view of a user interface according to an implementation of the disclosure;

FIG. **16** is a graph of coarse and fine temperature settings according to an implementation of the disclosure;

FIG. **17** is a close-up view of another user interface according to an implementation of the disclosure;

FIG. **18** is a graph of temperature values associated with automatic recipe temperature target temperatures and manual temperature adjustments;

FIG. **19** is a graph of drive motor current and temperature vs. time as a drink product being processing by the frozen drink maker of FIG. **1**;

FIG. **20** is a flow diagram of a process for making a cooled drink product using a food type for initial or coarse temperature and/or texture control and then using a user input to subsequently fine tune the temperature and/or texture of the drink product;

FIG. **21** is a flow diagram of a process for automatically detecting when drive motor current is too high and/or a drink product is too thick and, in response, adjusting the temperature of the drink product to reduce drive motor current and/or to increase the temperature of the drink product to reduce a thickness of the drink product;

FIG. **22**A shows an implementation of a dual-use cooling fan within the housing of a drink maker;

FIG. **22**B shows another implementation of a dual-use cooling fan within the housing of a drink maker;

FIG. **22**C shows a perspective view of the dual-use cooling fan of FIG. **22**B;

FIG. **23** is a flow diagram of a process for operating the dual-use fan;

FIG. **24**A shows a perspective view of a sample pour-in opening for a frozen drink maker, according to some implementations of the disclosure;

FIG. **24**B shows a front view of the pour-in opening shown in FIG. **24**A;

FIG. **24**C shows a left perspective view of the pour-in opening shown in FIG. **24**A;

FIG. **25** shows a perspective view of a sample cover for a pour-in opening, according to some implementations of the disclosure;

FIG. **26** shows a perspective view of a sample pour-in opening, according to some implementations of the disclosure;

FIG. **27**A shows a perspective view of a sample pour-in opening, according to some implementations of the disclosure;

FIG. **27**B shows an isometric view of a protype of the pour-in opening of FIG. **27**A;

FIG. **27**C shows a side view of the pour-in opening protype of in FIG. **27**B;

FIG. **27**D shows a photograph of the pour-in opening protype shown in FIG. **27**B affixed to a mixing vessel, according to some implementations of the disclosure;

FIG. **28** shows a sample method of using a pour-in opening, according to some implementations of the disclosure;

FIGS. **29**A-**29**D show a dispensing assembly for dispensing a drink product from the frozen drink maker according to an implementation of the disclosure;

FIGS. **30**A-**30**B show a dispensing assembly for dispensing a drink product from the frozen drink maker according to another implementation of the disclosure; and

FIGS. **31**A and **31**B show a shroud for covering the dispensing assembly of FIGS. **29**A-**29**D and FIGS. **30**A-**30**B according to an implementation of the disclosure.

DETAILED DESCRIPTION

In the following description, like components have the same reference numerals, regardless of different illustrated implementations. To illustrate implementations clearly and concisely, the drawings may not necessarily reflect appropriate scale and may have certain structures shown in somewhat schematic form. The disclosure may describe and/or illustrate structures in one implementation, and in the same way or in a similar way in one or more other implementations, and/or combined with or instead of the structures of the other implementations.

In the specification and claims, for the purposes of describing and defining the invention, the terms "about" and "substantially" represent the inherent degree of uncertainty attributed to any quantitative comparison, value, measurement, or other representation. The terms "about" and "substantially" moreover represent the degree by which a quantitative representation may vary from a stated reference without resulting in a change in the basic function of the subject matter at issue. Open-ended terms, such as "comprise," "include," and/or plural forms of each, include the listed parts and can include additional parts not listed, while terms such as "and/or" include one or more of the listed parts and combinations of the listed parts. Use of the terms "top," "bottom," "above," "below" and the like helps only in the clear description of the disclosure and does not limit the structure, positioning and/or operation of the disclosure in any manner.

The application, in various implementations, addresses deficiencies associated with prior commercial slush machines. Unfortunately, the architecture of prior commercial slush machines usually requires a significant amount of force to seat the vessel over a large radial seal, making it challenging for a user to install and uninstall the vessel from the device. In many prior commercial slush machines, the vessel is installed by engaging a catch to retain the vessel, which strains the plastic to properly position the vessel and requires significant user effort. Accordingly, there is a need for a more user-friendly architecture to install and uninstall the vessel of a frozen drink maker, such as, for example, a lever that can be used to couple and decouple the vessel to a housing of the frozen drink maker with minimal force and/or that only requires one hand to use.

FIG. **1** shows a perspective view of a frozen drink maker **100** according to an illustrative implementation of the disclosure. The frozen drink maker **100** includes a housing **102** and mixing vessel **104**. The housing **102** may include user interface **112** for receiving user inputs to control frozen drink maker **100** and/or to output or display information. User interface **112** may include one or more buttons, dials, switches, touchscreens, indicators, LEDs, and the like. User interface **112** may display status information including for example, a temperature of a drink product within mixing vessel **104**, an indicator of a recipe and/or program currently being implemented, a timer associated with the progress of a recipe and/or program in progress and/or currently being implemented. User interface **112** may provide indicators and/or warnings to users regarding, for example, when a recipe is complete or when a user is expected to perform an action associated with processing a drink product. User interface **112** may include a selectable menu of drink types (e.g., recipes) and/or programs for different types of drink products such as, without limitation, granita, smoothie, margarita, daiquiri, pina colada, slushi, cocktail, frappe, juice, diary, milk shake, cool drink, semi-frozen drink, frozen drink, and the like.

Housing **102** may include a panel (e.g., a removable panel) **114** along a side of the housing **102**. Panel **114** may include a plurality of openings that facilitate air flow to aid in cooling components within housing **102**. Housing **102** may include upper housing section **122** that is arranged to couple with a rear end of mixing vessel **104** when mixing vessel **104** is attached to housing **102**. Mixing vessel **104** may include walls, or a portion thereof, that are transparent to enable a viewer to see a drink product within mixing vessel **104** during processing. Mixing vessel **104** may include pour-in opening **106** whereby mixing vessel **104** can receive ingredients for processing a drink product within mixing vessel **104**. FIG. **1** shows pour-in opening **106** in a closed configuration with a cover sealing the pour-in opening **106**. The cover may be detachably removable or moveable to open or close opening **106**. Pour-in opening **106** may include a grate to inhibit a user from reaching into mixing vessel **104** when pour-in opening **106** is open, i.e., the cover is not installed. Mixing vessel **104** may include a dispenser assembly **108** having a user handle **120**, a spout (not shown), and a spout shroud and/or cover **116**. Dispenser assembly **108** enables a user, by pulling down on handle **120**, to open a spout, connected to a wall of mixing vessel **104**, to dispense a processed (e.g., cooled) drink product from mixing vessel **104**. The user can close the spout by pushing handle **120** back to its upright position (shown in FIG. **1**) and, thereby, stop the dispensing of the processed drink product.

Frozen drink maker **100** may include a coupling mechanism that enables a secure coupling of mixing vessel **104** to housing **102**, including upper housing section **122**. In some implementations, the coupling mechanism is a lever **110** rotatably coupled to the upper housing section **122**. FIG. **1** shows lever **110** in the coupled, locked, and/or closed position whereby mixing vessel **104** is coupled to (e.g., attached to, latched to, and/or locked to) housing **102** and upper housing section **122**. In the coupled position, lever **110** ensures that there is a water-tight seal to prevent leakage of drink product from mixing vessel **104**. Lever **110** may be placed in the coupled position by sliding mixing vessel **104** against upper housing section **122** and then rotating lever **110** in a clockwise direction until its handle rests on or about the top surface of upper housing section **122**. Mixing vessel **104** can be disengaged and/or decoupled from housing **102** and upper housing section **122** by pulling and/or rotating lever **110** in a counter-clockwise direction (from the perspective of FIG. **1**) toward the front of mixing vessel **104**, which causes lever **110** to release mixing vessel **104**. Once released and/or decoupled, mixing vessel **104** may slide in a forward direction (away from upper housing section **122**) to be fully detached and/or removed from housing **102**.

A flexible seal (illustrated in FIG. **8**) may be positioned between the mixing vessel **104** and the upper housing section **122**. The flexible seal may include a face seal portion and/or a radial seal portion. If present, the face seal portion may provide an improved seal based on compression provided by lever **110** pushing mixing vessel **104** laterally against a wall of upper housing section **122**. The mixing vessel **104** may have a substantially cylindrical shape with a base having an opening formed therein, and the opening is sealed by the flexible seal when the lever **110** is in the coupled position. An interlock switch may be implemented at the upper housing section **122** that is activated when mixing vessel **104** is coupled to upper housing section **122** that prevents activation of drive motor **208** unless vessel **104** is coupled to upper housing section **122**. This ensures that a user is not exposed to a moving dasher **204**. Frozen drink maker **100** may also include drip tray **118** being positioned below dispenser assembly **108** and arranged to collect any drink product that is not properly dispensed from mixing vessel **104** to, for example, a user cup. Drip tray **118** may be attachably removable from its operational position shown in FIG. **1**. For example, water tray **118** may mounted and/or stored on a side panel of housing **102** as illustrated in FIG. **3** as water tray **304**.

FIG. **2** shows a view **200** of various internal components within housing **102** and mixing vessel **104** of frozen drink maker **100** of FIG. **1**. Frozen drink maker **100** includes a cylindrical evaporator **202** that is surrounded by an auger and/or dasher **204**. Dasher **204** may include one or more mixing blades and/or protrusions that extend helically around evaporator and/or chiller **202**. Dasher **204** may be driven to rotate by a central drive shaft (not shown) within mixing vessel **104**. The drive shaft may be surrounded by evaporator **202**. However, in various implementations, evaporator **202** does not rotate. The drive shaft may be coupled via a gear assembly **210** to a drive motor **208**. In some implementations, drive motor **208** is an AC motor, but another type of motor may be used such as, without limitation, a DC motor. Drive motor **208** may include a motor fan **212** arranged to provide air cooling for motor **208**. While FIG. **2** shows an implementation where drive motor **208** is not coaxially aligned with the drive shaft used to rotate dasher **204**, in other implementations, motor **208** can be aligned coaxially with the drive shaft. During processing of a drink product, motor **208** may be continuously operated at a one or more speeds to drive continuous rotation of dasher **204** and, thereby, provide continuous mixing of the drink product within mixing vessel **104**. In some implementations, the rotation of the dasher **204** causes the helically arranged blades to push the cooling drink product to the front of the mixing vessel **104**. During the processing, portions of the drink product may freeze against the surface of the evaporator as a result of being cooled by the evaporator. In some implementations, the blades of the rotating dasher **204** scrape frozen portions of the drink product from the surface the evaporator while concurrently mixing and pushing the cooling drink product towards the front of the mixing vessel **104**.

Frozen drink maker **100** may include a refrigeration circuit and/or system to provide cooling of a drink product and/or to control the temperature of a drink product within mixing vessel **104**. The refrigeration circuit may include a compressor **214**, an evaporator **202**, a condenser **216**, a condenser fan **218**, a bypass valve, and conduit that carries refrigerant in a closed loop among the refrigeration circuit components to facilitate cooling and/or temperature control of a drink product in mixing vessel **104**. Operations of the refrigeration circuit may be controlled by a controller, such as controller **402**, as described further with respect to FIG. **4** later herein. Frozen drink maker **100** may also include a condensation collection tray **220** arranged to collect any liquid condensation caused by cooling from evaporator **202**. FIG. **2** shows tray **220** in the inserted position. Tray **220** may be insertably removable from a slot within housing **102** to enable collection of condensed liquid when inserted into the slot and then efficient removal to empty tray **220**, and then re-insertion into the slot for subsequent liquid collection.

FIG. **3** shows a front view **300** of frozen drink maker **100** of FIG. **1**. Frozen drink maker **100** may include user interface **112** on a front surface of housing **102**. In other implementations, user interface **112** may be located on a side, top, or back of housing **102**. Frozen drink maker may include a mount **302** on a side of housing **102** where drip tray

118 can be mounted when not in use (shown as drip tray 304 in FIG. 3) such as during transport of frozen drink maker 100. Frozen drink maker 100 may include a power interface arranged to receive AC power from a power outlet (not shown). In some implementations, frozen drink maker 100 may include one or more batteries housed within housing 102 and arranged to provide power to various components of frozen drink maker 100. Frozen drink maker 100 may also include a printed circuit board assembly (PCBA) 222 within housing 102. As will be explained with respect to FIG. 4, PCBA 222 may include a control system 400 arranged to automatically control certain operations of frozen drink maker 100.

FIG. 4 is a block diagram illustrating an example of a control system 400 of frozen drink maker 100 according to some implementations of the disclosure. Control system 400 may include a microcontroller, a processor, a system-on-a-chip (SoC), a client device, and/or a physical computing device and may include hardware and/or virtual processor(s). In some implementations, control system 400 and its elements as shown in FIG. 4 each relate to physical hardware, while in some implementations one, more, or all of the elements could be implemented using emulators or virtual machines. Regardless, electronic control system 400 may be implemented on physical hardware, such as in frozen drink maker 100.

As also shown in FIG. 4, control system 400 may include a user interface 212 and/or 112, having, for example, a keyboard, keypad, one or more buttons, dials, touchpad, or sensor readout (e.g., biometric scanner) and one or more output devices, such as displays, speakers for audio, LED indicators, and/or light indicators. Control system 400 may also include communications interfaces 410, such as a network communication unit that could include a wired communication component and/or a wireless communications component, which may be communicatively coupled to controller and/or processor 402. The network communication unit may utilize any of a variety of proprietary or standardized network protocols, such as Ethernet, TCP/IP, to name a few of many protocols, to effect communications between processor 402 and another device, network, or system. Network communication units may also comprise one or more transceivers that utilize the Ethernet, power line communication (PLC), Wi-Fi, cellular, and/or other communication methods. For example, control system 400 may send one or more communications associated with a status of frozen drink maker 100 to a mobile device of a user, e.g., send an alert to the mobile device when a recipe is complete and/or a drink product is ready for dispensing, or to indicate that the mixing vessel is low or out of a drink product.

Control system 400 may include a processing element, such as controller and/or processor 402, that contains one or more hardware processors, where each hardware processor may have a single or multiple processor cores. In one implementation, the processor 402 includes at least one shared cache that stores data (e.g., computing instructions) that are utilized by one or more other components of processor 402. For example, the shared cache may be a locally cached data stored in a memory for faster access by components of the processing elements that make up processor 402. Examples of processors include but are not limited to a central processing unit (CPU) and/or microprocessor. Controller and/or processor 402 may utilize a computer architecture base on, without limitation, the Intel® 8051 architecture, Motorola® 68HCX, Intel® 80X86, and the like. The processor 402 may include, without limitation, an 8-bit, 12-bit, 16-bit, 32-bit, or 64-bit architecture. Although not illustrated in FIG. 4, the processing elements that make up processor 402 may also include one or more other types of hardware processing components, such as graphics processing units (GPUs), application specific integrated circuits (ASICs), field-programmable gate arrays (FPGAs), and/or digital signal processors (DSPs).

FIG. 4 also illustrates that memory 404 may be operatively and communicatively coupled to controller 402. Memory 404 may be a non-transitory medium configured to store various types of data. For example, memory 404 may include one or more storage devices 408 that include a non-volatile storage device and/or volatile memory. Volatile memory, such as random-access memory (RAM), can be any suitable non-permanent storage device. The non-volatile storage devices 408 may include one or more disk drives, optical drives, solid-state drives (SSDs), tape drives, flash memory, read-only memory (ROM), and/or any other type of memory designed to maintain data for a duration time after a power loss or shut down operation. In certain configurations, the non-volatile storage devices 408 may be used to store overflow data if allocated RAM is not large enough to hold all working data. The non-volatile storage devices 408 may also be used to store programs that are loaded into the RAM when such programs are selected for execution. Data store and/or storage devices 408 may be arranged to store a plurality of drink product making and/or processing instruction programs associated with a plurality of drink product processing sequences, i.e., recipes. Such drink product making and/or processing instruction programs may include instruction for controller and/or processor 402 to: start or stop one or motors and/or compressors 414 (e.g., such as motor 208 and/or compressor 214), start or stop compressor 214 to regulate a temperature of a drink product being processed within mixing vessel 104, operate the one or more motors 414 (e.g., motor 208 and/or compressor 214) at certain periods during a particular drink product processing sequence, operate motor 208 at certain speeds during certain periods of time of a recipe, issue one or more cue instructions to user interface 412 and/or 112 that are output to a user to illicit a response, action, and/or input from the user.

Persons of ordinary skill in the art are aware that software programs may be developed, encoded, and compiled in a variety of computing languages for a variety of software platforms and/or operating systems and subsequently loaded and executed by processor 402. In one implementation, the compiling process of the software program may transform program code written in a programming language to another computer language such that the processor 402 is able to execute the programming code. For example, the compiling process of the software program may generate an executable program that provides encoded instructions (e.g., machine code instructions) for processor 402 to accomplish specific, non-generic, particular computing functions.

After the compiling process, the encoded instructions may be loaded as computer executable instructions or process steps to processor 402 from storage 408, from memory 404, and/or embedded within processor 402 (e.g., via a cache or on-board ROM). Processor 402 may be configured to execute the stored instructions or process steps in order to perform instructions or process steps to transform the electronic control system 400 into a non-generic, particular, specially programmed machine or apparatus. Stored data, e.g., data stored by a data store and/or storage device 408, may be accessed by processor 402 during the execution of computer executable instructions or process steps to instruct one or more components within control system 400 and/or

other components or devices external to system **400**. For example, the recipes may be arranged in a lookup table and/or database within data store **408** and be accessed by processor **402** when executing a particular recipe selected by a user via user interface **412** and/or **112**.

User interface **412** and/or **112** can include a display, positional input device (such as a mouse, touchpad, touchscreen, or the like), keyboard, keypad, one or more buttons, one or more dials, a microphone, speaker, or other forms of user input and output devices. The user interface components may be communicatively coupled to processor **402**. When the user interface output device is or includes a display, the display can be implemented in various ways, including by a liquid crystal display (LCD) or a cathode-ray tube (CRT) or light emitting diode (LED) display, such as an OLED display.

Sensors **406** may include one or more sensors that detect and/or monitor conditions of a drink product within mixing vessel **104**, conditions associated with a component of the frozen drink maker **100**, and/or conditions of a refrigerant within the refrigeration system. Conditions may include, without limitation, rotation, speed of rotation, and/or movement of a device or component (e.g., a motor), rate of such movement, frequency of such movement, direction of such movements, motor current, motor voltage, motor power, motor torque, temperature, pressure, fluid level in vessel **104**, position of a device or component (e.g., whether pour-in opening **106** is open or closed), and/or the presence of a device or component (e.g., whether shroud **116** is installed or not). Types of sensors may include, for example, electrical metering chips, Hall sensors, pressure sensors, temperature sensors, optical sensors, current sensors, torque sensors, voltage sensors, cameras, other types of sensors, or any suitable combination of the foregoing. Frozen drink maker **100** may include one or more temperature sensors positioned in various locations within mixing vessel **104** such as, for example, on or about the lower front area within mixing vessel **104**, on or about the upper front area within mixing vessel **104**, on or about the upper rear area within vessel **104**, within one or more coils of evaporator **202**, and/or within housing **102**.

Sensors **406** may also include one or more safety and/or interlock switches that prevent or enable operation of certain components, e.g., a motor, when certain conditions are met (e.g., enabling activation of motor **208** and/or **414** when a lid or cover for opening **106** is attached or closed and/or when a sufficient level of drink product is in vessel **104**). Persons of ordinary skill in the art are aware that electronic control system **400** may include other components well known in the art, such as power sources and/or analog-to-digital converters, not explicitly shown in FIG. **4**.

In some implementations, control system **400** and/or processor **402** includes an SoC having multiple hardware components, including but not limited to: a microcontroller, microprocessor or digital signal processor (DSP) core and/or multiprocessor SoCs (MPSoC) having more than one processor cores; memory blocks including a selection of read-only memory (ROM), random access memory (RAM), electronically erasable programmable read-only memory (EEPROM) and flash memory; timing sources including oscillators and phase-docked loops; peripherals including counter-timers, real-time timers and power-on reset generators; external interfaces, including industry standards such as universal serial bus (USB), Fire Wire, Ethernet, universal synchronous/asynchronous receiver/transmitter (USART), serial peripheral interface (SPI); analog interfaces including analog-to-digital converters (ADCs) and digital-to-analog converters (DACs); and voltage regulators and power management circuits.

A SoC includes both the hardware, described above, and software controlling the microcontroller, microprocessor and/or DSP cores, peripherals and interfaces. Most SoCs are developed from pre-qualified hardware blocks for the hardware elements (e.g., referred to as modules or components which represent an IP core or IP block), together with software drivers that control their operation. The above listing of hardware elements is not exhaustive. A SoC may include protocol stacks that drive industry-standard interfaces like a universal serial bus (USB).

Once the overall architecture of the SoC has been defined, individual hardware elements may be described in an abstract language called RTL which stands for register-transfer level. RTL is used to define the circuit behavior. Hardware elements are connected together in the same RTL language to create the full SoC design. In digital circuit design, RTL is a design abstraction which models a synchronous digital circuit in terms of the flow of digital signals (data) between hardware registers, and the logical operations performed on those signals. RTL abstraction is used in hardware description languages (HDLs) like Verilog and VHDL to create high-level representations of a circuit, from which lower-level representations and ultimately actual wiring can be derived. Design at the RTL level is typical practice in modern digital design. Verilog is standardized as Institute of Electrical and Electronic Engineers (IEEE) 1364 and is an HDL used to model electronic systems. Verilog is most commonly used in the design and verification of digital circuits at the RTL level of abstraction. Verilog may also be used in the verification of analog circuits and mixed-signal circuits, as well as in the design of genetic circuits. In some implementations, various components of control system **400** are implemented on a PCB such as PCB **222**.

In operation in certain implementations, a user fills mixing vessel **104** via pour-in opening **106** with ingredients associated with a drink product. The user selects the type of drink product to be processed via user interface **112**, e.g., the user selects the recipe for "margarita." In some implementations, the user selects the product type and/or recipe before filling the mixing vessel **104** and the user interface **112** provides one or more indicators or queues (visible and/or audible) that instruct the user to add ingredients to mixing vessel **104**. Mixing vessel **104** may include one or more fill sensors that detect when a sufficient amount or level of ingredients and/or fluid is within mixing vessel **104**. The one or more fill sensors may provide a signal to processor **402** that indicates when vessel **104** is sufficiently filled or not filled. Processor **402** may prevent operations of the frozen drink maker **100** (e.g., prevent activation of motor **208** and/or other components) if the fill sensor(s) **406** indicate that vessel **104** is not sufficiently filled. A lid sensor may be associated with opening **106** whereby the lid sensor sends an open and/or closed signal to processor **402** that indicates whether opening **106** is open or closed. Processor **402** may prevent operations of the frozen drink maker **100** if the lid sensor indicates that opening **106** is open and/or not closed. Depending on the sensed condition, user interface **112** may provide an indication regarding the condition, e.g., that vessel **104** is sufficiently filled or not sufficiently filled and/or that opening **106** is not closed, to enable a user to take appropriate action(s).

Once mixing vessel **104** is filled with ingredients, the user may provide an input, e.g., a button press, to start processing of the drink product based on the selected recipe. Processing

may include activation of motor **208** to drive rotation of dasher **204** and/or blade **206** to effect mixing of the ingredients of the drink product. Processing may also include activation of the refrigeration system including activation of compressor **214** and condenser fan **218**. The compressor **214** facilitates refrigerant flow through one or more coils of evaporator **202** and through condenser **216** to provide cooling and/or temperature control of the drink product within mixing vessel **104**. Processor **402** may control operations of various components such as motor **208** and compressor **214**. To regulate temperature at a particular setting associated with a recipe, processor **402** may activate/start and/or deactivate/stop compressor **214** to start and/or stop refrigerant flow through the coil(s) of evaporator **202** and, thereby, start or stop cooling of the drink product within mixing vessel **104**.

By cooling a drink product to a particular temperature, slush and/or ice particles may be formed within the drink product. Typically, the amount of particles and/or texture of a drink product corresponds to a temperature of the drink product, i.e., the cooler the temperature—the larger the amount of particles (and/or the larger the size of particles) and/or the more slushi the drink product. User interface **112** may enable a user to fine tune and/or adjust a preset temperature associated with a recipe to enable a user to adjust the temperature and/or texture of a drink product to a more desirable temperature and/or texture.

Processor **402** may perform processing of the drink product for a set period of time in one or more phases and/or until a desired temperature and/or texture is determined. Processor **402** may receive one or more temperature signals from one or more temperature sensors **408** within mixing vessel **104** to determine the temperature of the drink product. Processor **402** may determine the temperature of the drink product by determining an average temperature among temperatures detected by multiple temperature sensors **408**. Processor **402** may determine the temperature of the drink product based on the detected temperature from one sensor **408** within mixing vessel **104** and/or based on a temperature of the refrigerant detected by a refrigerant temperature sensor **408**. Once a phase and/or sequence of a recipe is determined to be completed by processor **402**, processor **402** may, via user interface **116**, provide a visual and/or audio indication that the recipe is complete and ready for dispensing. In response, a user may place a cup or container below dispenser assembly **108** and pull handle **120** rotationally downward towards the user to open a spout located at the lower front wall of mixing vessel **104**, resulting in dispensing of the drink product into the cup or container. Once filled, the user can close the spout by pushing handle **120** back rotationally upward away from the user to its upright position shown in FIG. **2**. In implementations where handle **120** is spring-biased to the closed position, the user can release their hold of handle **120** and, thereby, allow a spring force to move handle **120** back rotational upward away from the user to the upright and closed position.

As previously mentioned, the frozen drink maker **100** includes an upper housing section **122** arranged to couple with a rear end of the mixing vessel **104** when the mixing vessel **104** is attached to the housing **102**. The frozen drink maker **100** also includes a lever **110** that enables the mixing vessel **104** to be coupled (e.g., locked, attached to, and/or affixed to) to the housing **102** (i.e., the upper housing section **122**). The lever **110** also enables the mixing vessel **104** to be unlocked and decoupled from the housing **102** (i.e., the upper housing section **122**). Features of the lever **110** are shown in FIGS. **5**A and **5**B. FIG. **5**A illustrates a side view of the frozen drink maker **100**, with the mixing vessel **104** in a coupled position relative to the upper housing section **122**. FIG. **5**B illustrates a side view of the frozen drink maker **100** illustrated in FIG. **5**A, with some features of the housing **102** and the lever **110** shown in partial cross-section.

As shown in FIGS. **5**A and **5**B, the lever **110** includes a handle **111** that can be gripped by a user and moved relative to the upper housing section **122**. The handle **111** can be moved into the position shown in FIGS. **5**A and **5**B to couple the mixing vessel **104** into place on the frozen drink maker **100** and can be moved away from the upper housing section **122** and/or toward a front of the housing **102** to decouple the mixing vessel **104** from the frozen drink maker **100**. When the handle **111** is moved relative to the upper housing section **122**, it activates a cam **113**, which engages mating features on the mixing vessel **104** to either couple or uncouple the mixing vessel **104** relative to the upper housing section **122**. In some implementations, the handle **111** moves less than 90° relative to the upper housing section **122** when moving between the coupled position and the uncoupled position.

FIG. **6** shows a detailed view of a handle **111** with two cams **113***a*, **113***b* positioned on opposing sides. The handle **111** may include one, two, three, four, or more cams **113**, if desired. As the handle **111** is moved, the cams **113**, **113***b* rotate with respect to the upper housing section **122**. FIG. **7**A shows a rear view of a mixing vessel **104**. The mixing vessel **104** includes protrusions **115***a*, **115***b* on opposing outer sides, near the rear bottom of the mixing vessel **104**. The protrusions **115***a*, **115***b* are shaped and positioned to engage with the cams **113***a*, **113***b* on the handle **111**. In particular, the cams **113***a* and **113***b* have channels and/or cam paths **109***a* and **109***b* through which the protrusions **115***a* and **115** slide respectively. As the cams **113***a* and **113***b* rotate toward the back of the housing **102**, the protrusions **115***a* and **115***b* slide along cam paths **109***a* and **109***b* and are pulled toward the upper housing section **122** and the rear of the housing **102**, causing the mixing vessel **104** to press against the upper housing section **122** and form a water-tight seal with the housing **102**. When the cams **113***a*, **113***b* are rotated toward the front of the frozen drink maker **100**, the protrusions **115***a*, **115***b* are pushed away from the upper housing section **122**, causing the mixing vessel **104** to be decoupled from contact with the upper housing section **122**.

The cam **113** may be an over-center cam, as shown in FIG. **5**B and FIG. **6**, or the cam **113** may have alternative geometry. In the disclosed frozen drink maker **100**, the cam **113** retains the mixing vessel **104** on the housing **102** when the lever **110** is in the coupled position. As previously discussed, the mixing vessel **104** may have an overall cylindrical or approximately cylindrical shape and may include an opening **117** (shown in FIG. **7**B) at its rear end that couples to the upper housing section **122**. As shown in FIG. **7**B, the opening may be in a rear panel **119** of the mixing vessel **104**. The opening **117** may be positioned to face horizontally when the mixing vessel **104** is in the coupled position on the upper housing section **122**.

To move the lever **110** into a coupled position, the handle **111** is moved toward the upper housing section **122**. When the mixing vessel **104** is in a coupled position on the upper housing section **122**, the lever **110**, in cooperation with a flexible seal **121**, seals the opening **117**. FIG. **8** shows a flexible seal **121** configured in accordance with an implementation of the present disclosure. The flexible seal **121** may be formed of any elastomeric material, such as natural or synthetic rubber, silicone, neoprene, chloroprene, polyisoprene, polybutadiene, or combinations thereof. The flexible seal **121** may be independent of the housing **102**. If

desired, the flexible seal **121** may be affixed to the upper housing section **122**. The flexible seal **121** may be a single member including a face seal portion **123** and/or a radial seal portion **125**, as shown in FIG. **8**. However, in other embodiments, the face seal portion **123** and the radial seal portion **125** may be implemented with distinct flexible seals **121**.

The face seal portion **123** has an annular shape with a primary dimension that is vertically aligned to form a vertically aligned seal between a horizontal face of the upper housing section **122** and a horizontal edge of the mixing vessel **104**. When in the coupled position, the face seal portion **125** interfaces a vertically aligned surface of the upper housing section **122** to a vertically aligned side of the mixing vessel **104**. The radial seal portion **125** includes multiple flexible annular ribs, as shown in FIG. **8**. The radial seal portion **125** forms a radial seal relative to the horizontal axis of the vessel **104**, sealing against an inside (i.e., cylindrical) surface of the vessel **104**. The flexible seal **121** may include at least one of a radial seal portion **125** and a face seal portion **123**.

Previously known frozen drink makers do not include both a face seal and a radial seal for a mixing vessel. If present, the face seal portion **123** of the flexible seal **121** may provide an improved seal based on compression provided by the handle **111** pushing the mixing vessel **104** laterally against a wall of upper housing section **122**. The cam **113** also allows high force on the face seal portion **123** to be easily achieved and maintained. Since the face seal portion **123** serves as the primary seal in some implementations, the radial seal portion **125** size can be reduced, thereby lowering the mixing vessel's resistance to seating and improving ease of use.

In some implementations, the flexible seal **121** may serve as the seal for the vessel **104** and/or the evaporator **202**. For example, FIG. **9** shows a cross-sectional view of a sample flexible seal **121** having a vessel seal portion **127** and an evaporator seal portion **129**. The vessel seal portion **127** of the flexible seal **121** creates a watertight seal between the mixing vessel **104** and the upper housing section **122**. The evaporator seal portion **129** of the flexible seal **121** seals the evaporator **202** within the mixing vessel **104**.

To move the lever **110** from a coupled position to an uncoupled position, the handle **111** is moved away from the upper housing section **122** and/or toward a front of the housing **102**, which causes the mixing vessel **104** to slide in a forward direction (away from upper housing section **122**) to be fully detached and/or removed from the housing **102**. If desired, the cam **113** may include an ejection feature to apply an ejection force to the mixing vessel **104** to eject past the radial seal portion **125**.

In other aspects, methods of using a frozen drink maker **100** as disclosed here are described. FIG. **10** illustrates a method **800** of producing a frozen drink using a frozen drink maker device. The frozen drink maker device includes a housing having an upper housing section and a lever configured to move relative to the upper housing section between a coupled position and an uncoupled position, and a mixing vessel arranged to couple to the upper housing section. The lever includes a handle that is moveable to place the lever into the coupled position and/or the uncoupled position. As shown in FIG. **10**, method **800** includes coupling the mixing vessel onto the upper housing section by moving the handle relative to the upper housing section to place the lever into the coupled position (block **802**). When in the coupled position, at least one of a face seal and a radial seal are formed between the mixing vessel and the upper housing section. Method **800** also includes operating the frozen drink maker device to produce the frozen drink (block **804**). Method **800** further includes uncoupling the mixing vessel from the upper housing section by moving the handle relative to the upper housing section to place the lever into an uncoupled position (block **806**).

In some implementations, coupling the mixing vessel onto the upper housing section involves moving the handle toward the upper housing section. In these and other implementations, uncoupling the mixing vessel from the upper housing section involves moving the handle away from the upper housing section and/or toward a front of the housing. Moving the handle relative to the upper housing section to place the lever into the coupled position may be accomplished by a user with only one hand. In these and other implementations, moving the handle relative to the upper housing section to place the lever into the uncoupled position may be accomplished by a user with only one hand. In select implementations, moving the handle relative to the upper housing section to position the lever from the coupled position to the uncoupled position requires moving the handle less than 90° relative to the upper housing section.

FIGS. **11**A and **11**B show perspective views of the collection tray **220** according to an illustrative implementation of the disclosure. The collection tray **220** may generally comprise a collection portion **502** and a handle **504** that may be used to insert the tray **220** into and remove the tray **220** from the housing **102**. The collection portion **502** may comprise three walls **502***a,b,c* extending generally upwards from an evaporator-facing surface **506**. Together with the handle **504**, the walls **502***a,b,c* and the surface **506** may define a chamber **508** for collecting liquid, including condensation falling from the evaporator **202**, spills, and water poured into the mixing vessel **104** to clean the inside of the mixing vessel **104**. A shape of the collection portion **502**, including the evaporator-facing surface **506**, may correspond to an outer shape of the evaporator **202**. For example, the shape of the evaporator-facing surface **506** may be semi-cylindrical to correspond to the cylindrical shape of the evaporator **202**, as shown in FIG. **11**A. However, the disclosure contemplates other suitable shapes, such as rectangular, of the collection portion **502**. The chamber **508** may have a liquid volume capacity of about 16 ounces. However, the disclosure contemplates a liquid volume capacity of more or fewer than 16 ounces. As shown in FIG. **11**B, an underside of the handle **504** may define one or more ribs **514** for adding structural integrity between a user-facing surface **510** of the handle **504** and the main body of the tray **220**. The tray **220** may be made from dishwasher-safe materials for easy cleaning.

FIG. **11**C shows the collection tray **220** inserted into the housing **102** of the frozen drink maker **100** according to an illustrative implementation of the disclosure. For ease of illustration, the housing **102** is shown with the mixing vessel **104** and attached dispenser assembly **108** removed. When fully inserted, the user-facing surface **510** of the handle **504** may sit flush with the user interface **112** of the housing **102**. In the inserted position, the tray **220** may be spaced vertically above a bottom side **103** of the housing **102**. Once liquid is collected in the chamber **508**, the user may remove the tray **220** for disposal of the collected liquid and cleaning of the tray **220**.

FIG. **11**D shows the housing **102** with the collection tray **220** removed according to an implementation of the disclosure. As shown in FIG. **11**D, the housing **102** may include a top surface **520** for supporting the collection tray **220** when the tray **220** is inserted into the housing **102**. A shape of the top surface **520** may be semi-cylindrical to correspond to the

semi-cylindrical shape of the evaporator-facing surface **506**. The housing **102** may also include one or more rails **522** defining one or more slots **512** between the rails **522** and the top surface **520**. The rails **522** may help guide the user in inserting the tray **220** into the slots **512** when installing the tray **220** to the housing **102**.

In some implementations, to remove the collection tray **220** (e.g., for emptying and/or cleaning the tray **220**), the user must first remove the mixing vessel **104** and the attached dispenser **108** (FIG. **1**). The user may then remove the collection tray **220** by pulling the collection tray **220** toward the user. This movement may cause the collection tray **220** to slide along the slots **512** until it is completely disengaged from the housing **102**. Conversely, to insert the collection tray **220** into the housing **102**, the user may insert the tray **220** into the housing **102** by inserting the collection portion **502** into the slots **512** underneath the evaporator **202** (FIG. **2**) such that the evaporator-facing surface **506** faces the evaporator **202**. In some implementations, after the collection tray **220** has been inserted into the housing **102**, the mixing vessel **104** with the attached dispenser **108** may be inserted onto the housing **102** and fastened and sealed against the housing **102**. FIG. **12** is a flow chart illustrating a method of removing the collection tray **220** from the housing **102** as described above. FIG. **12** includes removing the mixing vessel **104** and attached dispenser **108** from the housing **102** (block **1202**), pulling the tray **220** toward the user, causing the tray to slide through slot **512** (block **1204**), and fully disengaging the tray **220** from the slot **512** in housing **102** (block **1206**).

FIGS. **13A-13C** show a sample frozen drink maker **100** with a mixing vessel **104** coupled to a housing **102** (specifically, the upper housing section **122**) and a dispenser assembly **108**, according to some implementations. The mixing vessel **104** has a curved sidewall defining a substantially cylindrical chamber within. In select implementations, the mixing vessel **104** is shaped as an ovoid or approximately as an ovoid (i.e., a cylinder with an ovular cross-section), or as an elliptic cylinder (i.e., a cylinder with an elliptic cross-section), or an approximate elliptic cylinder. When coupled to the housing **102**, the front of the mixing vessel **104** contacts the dispenser assembly **108** and the rear of the mixing vessel **104** abuts the upper housing section **122**. Within the mixing vessel **104**, the front face of the chamber may have a substantially ovular shape or a substantially circular shape. The rear of the mixing vessel **104** chamber may include an opening configured to form a seal with the upper housing section **122**. The opening at the rear of the mixing vessel **104** may have a substantially circular shape or a substantially ovular shape. The mixing vessel **104** is sized to accommodate a dasher **204** that rotates about a center axis (shown as center axis "A" in FIG. **13C**). FIG. **13B** shows a possible direction of dasher **204** rotation ("R"). The mixing vessel **104** may be shaped such that a distance from the center axis (A) of the dasher **204** to the top of the vessel chamber is less than 6 inches, less than 8 inches, less than 10 inches, less than 12 inches, less than 14 inches, or less than 16 inches.

FIGS. **14A-14C** show an example of the mixing vessel **104** with at least one internal baffle configured to control slush flow within the mixing vessel **104**. As shown in FIGS. **13A**, **13B**, and **14A-14B**, the mixing vessel **104** includes a side baffle **105** extending laterally along a sidewall **150** of the vessel chamber. In some implementations, the side baffle **105** extends from the front of the vessel chamber (or approximate thereto) to the rear of the vessel chamber (or approximate thereto). In some implementations, the side baffle **105** extends along the chamber sidewall in a direction parallel to the center axis (A) of the dasher **204**. In some implementations, the side baffle **105** is positioned on a left side (when viewed from the front) of the chamber sidewall (e.g., in embodiments in which the dasher rotates in a clockwise direction). FIGS. **14A** and **14C** illustrate a clockwise direction of dasher rotation (R) when viewed from the front. The side baffle **105** may be positioned slightly above the center axis (A) of the dasher **204**, in some implementations.

The side baffle **105** may include a curved surface **151** that conforms to the pathway of the dasher **204**, as shown in FIGS. **14A** and **14B**. For example, when viewed along the center axis (A) of the dasher, the side baffle **105** may protrude inwardly relative the ovular (e.g., elliptical) cross-section of the chamber sidewall **150**, where, starting from a bottom end of the side baffle **105** at which the curved surface **151** of the side baffle **105** is vertical or substantially vertical, the curved surface **151** may slope gradually inward until reaching an inflection point **153**. After reaching the inflection point **153**, the curved surface **151** may slope more sharply vertically until the top end of the side baffle **105** is reached and, thereafter, the curved surface **151** of the side baffle **105** returns to a curvature in conformance with the ovular cross-section of the chamber sidewall **150**. The radial direction of the curved surface **151** of the side baffle **105** from its bottom to the inflection point **153** is generally aligned with the radial movement of the dasher **204** and thus the contents of the vessel chamber **104**. The cross-sectional geometry of the side baffle **105** described above directs the contents of the vessel away from a top of the vessel chamber (i.e., at a lower radial trajectory than if the side baffle **105** was not present, such as the right side of the vessel chamber as shown in FIG. **13B**). If the side baffle **105** was not present, contents of the vessel chamber could flow unimpeded up the sidewall **150** to a top interior surface of the vessel chamber, which would leave these contents excluded from mixing and/or allow them to escape from the mixing vessel **104**. The side baffle **105** thus reduces the amount of frozen material that could otherwise form on the top interior surface of the mixing vessel **104** as a result of its contents being rotated upwards.

As shown in FIGS. **13B**, **13C**, and **14A-14C**, the mixing vessel **104** may include a front baffle **107**. If present, the front baffle **107** may be positioned at a front top portion of the vessel chamber **103** (illustrated in FIG. **13B**). In some implementations, the front baffle **107** extends along the front face of the vessel chamber between the right sidewall and the left sidewall of the vessel chamber. The rotation of the dasher **204** pushes vessel contents towards the front of the vessel chamber, where, if left unchecked, contents could build up near the top front, perhaps even creating a frozen mass detrimental to the mixing process. Viewing from the cross-section of FIG. **13C**, the front baffle **107** may form an angle relative the front face of the vessel chamber (e.g., 100°-150°, 100°-125°, or 105°-120°), which redirects vessel contents that have been forced into the top front of the mixing vessel **104** towards the rear of the vessel chamber. In some implementations, the front baffle **107** may include a curved surface extending upwardly from the front face of the vessel chamber toward a top of the vessel chamber. In some such implementations, the angle the front baffle **107** forms relative to the front face of the vessel chamber varies from a lower angle (e.g., 5°-20°) at a section of front baffle **107** proximate to the front face of the vessel chamber to a higher angle (e.g., 75°-90°) at a section of front baffle proximate to the top of the vessel chamber.

The front baffle **107** is configured to urge contents away from the top surface of the vessel chamber to avoid buildup and overflow on the top of the mixing vessel **104**. The front baffle **107** thus reduces the amount of frozen material that could otherwise form on the top front interior surface of the mixing vessel **104** as a result of the action of the dasher **204**.

As shown in FIGS. **13**C and **14**A-**14**C, the mixing vessel **104** may include a corner baffle **190**. The corner baffle **190** may be positioned at a front top side of the vessel chamber. The corner baffle **190** joins or connects the side baffle **105** and the front baffle **107**. Thus, if the side baffle **105**, front baffle **107**, and corner baffle **190** are each present, the corner baffle **190** physically joins the side baffle **105** to the front baffle **107**. As shown in FIGS. **14**A-**14**B, the side baffle **105** and the front baffle **107** are orthogonal to each other and if these baffles terminated in a hard corner without a corner baffle **190**, slush may not be properly directed. Connecting the side baffle **105** and the front baffle **107** with a corner baffle **190** allows slush to easily flow out of the corner between the side baffle **105** and the front baffle **107**.

The corner baffle **190** has a curved surface **155** that extends from the side baffle **105** to the front baffle **107**. The curved surface **155** may be convex, as shown in FIG. **14**A. Along its length, the corner baffle **190** extends into the vessel chamber at a relatively constant distance. In other words, the depth of the corner baffle **190** may be relatively constant along the length of the corner baffle **190**. The side of the vessel chamber in which the corner baffle **190** is positioned (e.g., the left side or the right side) can be selected based on the direction in which the dasher **204** rotates within the mixing vessel **104**. In particular, the corner baffle **190** may be positioned such that the dasher **204** is directed toward the corner baffle **190** while moving upwardly within the vessel chamber. For example, in select implementations, the corner baffle **190** is positioned at the left top front of the vessel chamber when the dasher is arranged to rotate in a clockwise direction. This positioning may advantageously force slush downward toward the dasher **204** when it contacts the corner baffle **190** as the slush moves upwardly with the dasher **204**, thereby reducing slush buildup on the sidewall and the top of the mixing vessel **104**.

It should be understood that, in some implementations, the disclosed mixing vessel **104** includes one, two, three, or more internal baffles positioned within the vessel chamber. In other words, the mixing vessel **104** may include the side baffle **105**, the front baffle **107**, and/or the corner baffle **190**. The side baffle **105**, front baffle **107**, and/or corner baffle **190** can reduce slush buildup on the sidewalls and top of the vessel chamber, which is important for commercial frozen drink makers as well as household frozen drink makers with significantly less headspace than commercial units.

FIG. **15** is a close-up view **1500** of a user interface such as user interface **112**. According to view **1500**, user interface **112** may include a power button **1502**, drink type indicator panel **1504**, manual temperature adjustment and/or temperature offset indicator **1506**, a manual temperature adjustment interface **1508**, a drink type control dial **1510**, and a chill button **1512**. A user may turn frozen drink maker **100** on or off using power button **1502**. A user may select a drink type to process a type of drink product by turning dial **1510** until a selected drink type is indicated via panel **1504**. The user may select, for example, a slushi, cocktail, a frappe, a juice, or a dairy/milkshake drink type. Dial **1510** may also include a push button feature that enables a user to start or stop processing of a drink type by pressing dial **1510**. Manual temperature adjustment interface **1508** may include left and right buttons that enable a user to adjust a temperature within a temperature offset band such as temperature offset band **1602** of FIG. **16** for a milkshake recipe. A user may select chill button **1512** to initiate a chill program and/or recipe whereby drink maker **100** and/or controller **402** maintains the drink product within mixing vessel **104** at a cool temperature without forming a frozen or semi-frozen drink product. In some implementations, the same cool temperature is maintained for any drink type. For example, the controller **402** may receive a signal indicative of the selection of the chill button **1512**, and reduce the temperature to, and maintain the temperature at or near, a predefined temperature (e.g., in a range) that should not result in any drink type freezing. In another embodiment, the controller **402** may receive a signal indicative of the selection of the chill button **1512** and a selection of a drink type from drink type control dial **1510**, and reduce the temperature to, and maintain the temperature at or near, a predefined temperature (e.g., in a range) defined for that particular drink type (e.g., as specified by a drink type object in memory) that should not result in that drink type freezing.

FIG. **16** is a graph **1600** of coarse and fine temperature settings associated with processing a drink product, where such temperature settings may be stored as temperature values in memory, as described elsewhere herein. For example, when a user selects a dairy and/or milkshake recipe and starts a frozen drink processing sequence and/or recipe using dial **1510**, controller **402** will control processes of the dairy/milkshake recipe to adjust the temperature of the drink product to a coarse temperature setting **1604** at −4 degrees Celsius in graph **1600**. A user before, during, or after the coarse temperature setting **1604** is reached, may fine tune or adjust the coarse target temperature of the drink type by setting a temperature offset using manual temperature adjustment interface **1508**. The user may push the left arrow button to decrease the recipe target temperature in increments of about 0.4 degrees Celsius to about −5.2 degrees Celsius. As the temperature decreases, the thickness and/or amount of frozen drink particles increases. Hence, the manual temperature adjustment indicator **1506** may include a "thickness" label. But different labels may be used such as "temperature offset" or "temperature adjust", and the like.

The user may push the right arrow button to increase the recipe target temperature in increments of about 0.4 degrees Celsius to about −2.8 degrees Celsius. As the temperature increases, the thickness and/or amount of frozen drink particles decreases. The manual temperature adjustment indicator **1506** may include one or more light indicators that are illuminated in a configuration corresponding to the selected temperature offset. For example, the manual temperature adjustment indicator **1506** may have a center light indicator that indicates that a 0 degree Celsius offset is selected (i.e., no offset). The offset indicator **1506** may include light indicators corresponding to each increment of offset selected above or below the coarse setting (e.g., the 0 degree Celsius offset point). FIG. **16** also shows temperature offset and/or manual adjustment bands associated with various types of drink products, such as Milkshake, Frappuccino, Cocktail, Light, and Traditional. Each of the temperature bands may include a center, coarse, and/or target drink type temperature and user-selectable fine tune offset temperatures above and below the drink type target temperature. In some implementations, the temperature offset band associated with one recipe is different than that temperature offset band of a different recipe, resulting in the temperature offset increments being different between the different recipes.

FIG. **17** is a close-up view **1700** of another user interface according to an implementation of the disclosure. According to view **1700**, user interface **112** may include a power button **1708**, drink type selector/indicator panel **1702**, manual temperature adjustment and/or temperature offset indicator **1706**, and a manual temperature adjustment dial **1704**. A user may turn drink maker **100** on or off using power button **1708**. A user may select a drink type to process a type of drink product by pressing a button associated with a selected drink type, e.g., SLUSHI. The selection of a particular drink type may be indicated by illumination of a light indicator associated with the selected drink type button. For example, FIG. **17** shows that the SLUSHI drink type has been selected by illumination of the white LED indicator next to the SLUSHI button. The user may select, for example, a slush drink, spiked slushi or cocktail, a frappe, a frozen juice, or a dairy/milkshake drink type. Manual temperature adjustment dial **1704** may be rotated clockwise or counter-clockwise to set the temperature value and/or target temperature setting within a universal range of drink product temperature values. For example, manual temperature adjustment indicator **1706** may include 10 temperature values or settings corresponding to target temperatures such as illustrated in FIG. **18**.

FIG. **18** is a graph **1800** of temperature values associated with automatic recipe temperature target temperatures and manual temperature adjustments. Graph **1800** shows temperature values 1 through 10 where setting #1 is at −1.3 degrees Celsius and setting #10 is at −7.2 degree Celsius. The ten temperature settings of graph **1800** correspond to the ten light indicators of manual temperature adjustment indicator **1706**. In operation, when a user selects a drink type, e.g., a MILKSHAKE, by pressing the corresponding button in drink type selector/indicator panel **1702**, the button's adjacent indicator illuminates. Also, if the coarse or automatic temperature value associated with a milkshake is about −4.0 degrees Celsius, which corresponds the setting #7 in graph **1800**, then seven indicators (i.e., light bars) will be illuminated in manual adjustment indicator **1706**. The light bars may be dimmed or flash periodically until the target temperature is reached and/or detected by controller **402**. Interface **112** may emit an audible sound, e.g., a beep or beep sequence when a target temperature is reached. A dimmed or flashing illumination may be changed to a brighter and/or steady illumination when a target temperature is reached. In some implementations, once a target temperature is reached, controller **402** will cycle compressor **214** on and off to keep a temperature of the drink product within a target temperature range above and/or below the target temperature. For example, the range may be greater than or equal to about 0.2, 0.3, 0.5, or 1.0 degrees Celsius above and below the drink product target temperature. As long as the temperature remains within the target temperature range, controller **402** will not initiate an alert (e.g., audible output) or change in status of any indicators of indicator **1706**.

If the user wants to further decrease the target temperature and/or increase the target thickness of the milkshake to setting #10 of FIG. **18**, the user can turn dial **1704** until all 10 light indicators are illuminated. If the user wants to increase the target temperature to setting #3 of FIG. **18** and/or reduce the target thickness of the milkshake, the user can turn dial **1704** until three indicators bars of indicator **1706** are illuminated as illustrated in FIG. **17**. While FIG. **17** shows an interface using a dial **1704** to manually adjust temperature, other types of interfaces may be used such as, without limitation, up/down buttons, a touch screen, or a slider switch.

FIG. **18** also illustrates how each increment of temperature change between each of the temperature settings #1 to #10 may be nonlinear to account for adequate changes in thickness of a cooled or frozen drink product. As temperature decreases, it requires a larger change in temperature to cause a material or proportional change in the amount of frozen drink particles within or the thickness of a drink product. For example, temperature increment **1802** (between settings #4 and #5) is about 0.6 degrees Celsius, while temperature increment **1804** (between setting #8 and #9), in a lower temperature range, is about −1.0 degrees Celsius. In other implementations, the increment of temperature change between settings may be constant, resulting a linear temperature range. While a range including 10 temperature values or settings is illustrated in FIGS. **17** and **18**, any number of settings and/or temperature ranges may be implemented.

FIG. **19** is a graph **1900** of drive motor **208** current and temperature of a drink product vs. time as the drink product is being processed by frozen drink maker **100** of FIG. **1**. Graph **1900** shows changes in drive motor current **1902** and corresponding drink product temperatures **1904** over time as a drink product is being made. Graph **1900** illustrates how the current **1902** applied to drive motor **208** increases as the temperature **1904** decreases, causing the thickness of the drink product to increase, which results in an increased resistance of the drink product to the rotation of the dasher **204** which, in turn, requires increased motor power and/or current **1902** to drive dasher **204** against the resistance. When the current **1902**, or power, or torque, reaches or exceeds a threshold or motor condition limit **1906**, e.g., about 40 Watts and/or about 0.3 amps current, controller **402** may deactivate the cooling circuit, i.e., stop coolant and/or refrigerant flow to evaporator **202**, to allow the temperature **1904** to increase and, thereby reduce the thickness of the drink product to reduce the current **1902** of drive motor **208** to below the motor condition limit **1906**. Controller **402** may automatically adjust the temperature setting associated with a particular drink type, which may have been fine-tuned by a user selection of a manual temperature adjustment and/or temperature offset, to a new temperature setting corresponding to a second target temperature, where the magnitude of the motor current **1902** is lower than the motor condition limit **1906**. The second target temperature may set to be, for example, 0.25, 0.5, 0.75, 1, 1.25, 1.5, or 2.0 degrees Celsius above (by a relatively small offset) the initial and/or first target temperature. In this way, controller **402** prevents an overcurrent condition and possible damage to drive motor **208**. This may also enable operation of drink maker **100** and dasher **204** to continue by preventing excessive buildup of ice within mixing vessel **104**, i.e., prevents drive motor **208** from stalling. Otherwise, drive motor **208** would stall and drink maker **100** would be jammed up, blocking slush output from mixing vessel **104** and requiring a user to defrost and/or unblock mixing vessel **104** before normal operations can be resumed. Hence, this stall preventions enables drink maker **100** to provide some slush output. Further, an excessive current or power condition of drive motor **208** caused by an object blocking rotations of dasher **204** can also be prevented. Controller **402** may perform actions in addition to stopping drive motor **208**, such as shutting down compressor **214**. Graph **1900** also shows how controller **402** may continuously and/or periodically monitor temperature associated with a drink product within mixing vessel **104** via

temperature sensor(s) **406** to enable continuously control of components such as compressor **214**, and other components, of frozen drink maker **100** to enable automatic control of the temperature of a drink product.

FIG. **20** is a flow diagram of a process **2000** for making a cooled drink product using a recipe for initial or coarse temperature and/or texture control and then using a user input to fine tune the temperature and/or texture of the drink product. In certain implementations, process **2000** includes: receiving, into mixing vessel **104**, a drink product (Step **2002**); mixing, using a mixer and/or dasher **204** driven by drive motor **208**, the drink product within mixing vessel **104** (Step **2004**); cooling, using a cooling circuit such as a refrigeration circuit including evaporator **202**, the drink product within mixing vessel **104** (Step **2006**); detecting, via temperature sensor(s) **406**, a temperature associated with the drink product and outputting a temperature signal (Step **2008**); storing, in a memory **408**, a drink object representing a drink type, the drink object specifying a first temperature value and/or setting corresponding to a first target temperature (Step **2010**); receiving, at controller **402**, the temperature signal (Step **2012**); controlling, by controller **402**, the temperature associated with the drink product by controlling the cooling circuit, e.g., by activating or deactivating compressor **214** to initiate or stop refrigerant flow through evaporator **202**, based on the received temperature signal, the first temperature value, and/or a manual temperature adjustment (Step **2014**); and receiving a user input to adjust the manual temperature adjustment (Step **2016**). The user input may be indicative of a desired thickness corresponding to the manual temperature adjustment. In some implementations, the manual adjustment may be customized per drink type. In certain implementations, the manual adjustment is universal for all drink types. In some implementations, the manual adjustment is finer and/or for a smaller range specific to a drink type (e.g., corresponding to FIG. **16**) and in other implementations coarser and/or for a larger range not specific to a drink type—i.e., spanning multiple (e.g., all) drink types, thereby enabling a user greater latitude in adjusting thickness and/or temperature.

FIG. **21** is a flow diagram of a process **2100** for automatically detecting when drive motor current is too high and/or a drink product is too thick and, in response, adjusting the temperature of the drink product to reduce drive motor current and/or to increase the temperature of the drink product to reduce a thickness of the drink product. In certain implementations, process **2100** includes: receiving, in mixing vessel **104**, the drink product (Step **2102**); mixing, using a mixer and/or dasher **204** driven by drive motor **208**, the drink product within mixing vessel **104** (Step **2104**); cooling, using a cooling circuit such as evaporator **202**, the drink product within mixing vessel **104** (Step **2106**); measuring, via temperature sensor(s) **406**, a temperature associated with the drink product and outputting a temperature signal (Step **2108**); measuring, via motor condition sensor(s) **406**, a motor condition associated with drive motor **208** and outputting a motor condition signal (Step **2110**); storing, in memory **408**, a first temperature value corresponding to a first target temperature and storing a motor condition limit (Step **2112**); receiving, at controller **402**, the temperature signal and the motor condition signal (Step **2114**); and controlling the temperature associated with the drink product by controlling the cooling circuit, e.g., by activating or deactivating compressor **214** to initiate or stop the refrigerant flow through evaporator **202**, based at least on the received temperature signal, the received motor condition signal, the first temperature setting, and the motor condition limit (Step **2116**).

In some implementations, controller **402** may stop and/or deactivate drive motor **208** to stop rotation of dasher **204** when the motor condition signal exceeds a motor knockdown threshold, i.e., the motor current or power is too high and/or high enough to damage drive motor **208**, which may be caused by an excessive buildup of ice within mixing vessel **104**. Excessive ice build up may be caused, for example, by filling mixing vessel with only water or a liquid predominantly consisting of water. Shutdown of drive motor **208** may also prevent damage to dasher **204** caused by excessive buildup hard ice. Controller **402** may perform other actions in additional to deactivating drive motor **208** or alternatively such as issuing an alert, via user interface **112**, to a user to add more ingredients such as sugar or alcohol to the drink product or issuing an alert to the user to turn off drink maker **100**. A different motor shutdown threshold for motor **208** may be set higher than the motor knockdown threshold limit. In this way, controller **104** may attempt to increase temperature in mixing vessel **104** when a motor knockdown threshold limit is reached, but only shut down and/or stop drive motor **208** when a motor shutdown threshold is reached to prevent damage to drive motor **208**. Controller **104** may take action based on determining whether the motor knockdown threshold limit or the motor shutdown limit has been reached or exceeded for a period of time, e.g., 0.5, 1.0, 1.5, 2.0, 5 seconds or more. By observing motor current and/or power for a period of time, a false positive and/or reading of current and/or power may be eliminated.

FIG. **22A** shows a dual-use cooling fan **2202** within a housing of a drink maker **2200** including a refrigeration system having a condenser **2208** and compressor **2210**. Drink maker **2200** also includes a drive motor **2204** configured to drive rotation of dasher **2212** during processing of a drink product. Dual-use cooling fan **2202** draws an air flow through condenser **2208** and directs the air flow, via an air channel **2206**, toward drive motor **2204**. The air flow passes over and adjacent to condenser coils as it passes through condenser **2208** to cool the refrigerant passing through condenser **2208** within a closed loop refrigeration system. The air flow also passes along a surface and/or surfaces of drive motor **2204** to effect cooling of drive motor **2204**. While FIG. **22A** shows a configuration where drive motor **2204** and condenser **2208** are positioned at about right angles with respect to dual-use cooling fan **2202**, other configurations, arrangements, or orientations may be implemented such that dual-use cooling fan **2202** provides a cooling air flow to condenser **2208** and drive motor **2204**.

In some implementations, a drink maker, such as drink maker **2200**, includes a mixing vessel, like mixing vessel **104**, arranged to receive a drink product. The drink maker **2200** includes a mixing component such as dasher **2212** or another type of mixing component, driven by drive motor **2212**, that is arranged to mix the drink product within the mixing vessel **104**. A refrigeration system is arranged to cool the drink product within mixing vessel **104** that includes a condenser, such as condenser **2208**. Cooling fan **2202**, i.e., a dual-use cooling fan, is configured to concurrently cool the drive motor **2204** and the condenser **2208**. Cooling fan **2202** may provide air flow through condenser **2208** to cool refrigerant flowing through condenser **2208**. Cooling fan **2202** may provide air flow along a surface of drive motor **2204** to cool the drive motor **2204**. Cooling fan **2202**, drive motor **2204**, and condenser **2208** may be positioned such

that air generated by cooling fan **2202** passes serially through condenser **2208** and along a surface of the drive motor **2204**.

A first portion of air generated by cooling fan **2202** may cool condenser **2208** and a second portion of air generated by cooling fan **2202** may cool drive motor **2204**. Condenser **2208** may include a plurality of coils that carry coolant and/or refrigerant within a closed loop of the refrigeration circuit. When cooling fan **2202** provides air flow through condenser **2208** to cool refrigerant flowing through condenser **2208**, the air flow may travel adjacent to and/or around the plurality of coils. A cooling channel **2206** may extend between cooling fan **2202** and drive motor **2204** where cooling channel **2206** provides cooling air flow between cooling fan **2202** and drive motor **2204**. Cooling channel **2206** may be at least partially formed by a duct and/or ducting. The ducting may include plastic, metals, composite materials, and the like. A cooling channel may extend between cooling fan **2202** and condenser **2208**, where the cooling channel provides cooling air flow between cooling fan **2202** and condenser **2208**. The cooling channel may be at least partially formed by a duct. Cooling fan **2202** and **2222** may include a centrifugal fan, a cross-flow fan, a tangential fan, a volute fan, a backward curved fan, a forward curved fan, a blower fan, a squirrel-cage fan, and/or an axial fan.

In some implementations, a cooling fan, such as cooling fan **2202**, is configured for cooling a drive motor, such as drive motor **2204**, and a condenser, such as condenser **2208**, within a housing of a drink maker. Cooling fan **2202** may include an air inlet configured to receive an air flow, an impeller configured to generate the air flow; and an air outlet configured to output the air flow through condenser **2208** and along a surface of the drive motor **2204**.

FIG. **22**B shows another implementation of a dual-use cooling fan **2222** within the housing of a drink maker **2220** including a drive motor **2224**, a dasher **2226**, a compressor **2230**, and a condenser **2228**. The drive motor **2224** is coupled to and drives rotation of the dasher and also drives rotation of the cooling fan **2222** via gears **2236**. Cooling fan **2222** includes an air outlet **2238** that directs air flow from cooling fan **2222** through air channel **2232** which may include ducting **2234** that directs air flow through condenser **2228** to cool refrigerant flowing through condenser **2238**.

FIG. **22**C shows a perspective view **2240** of the dual-use cooling fan **2222** within housing **2242** of drink maker **2220**. Cooling fan **2222** may be a centrifugal fan and/or another type of fan as described herein. Cooling fan **2222** may include an impeller **2244** that draws air flow into cooling fan **2222** via inlet **2236** and then expels air downward at about a right angle via outlet **2238** with respect to inlet **2236**. The air flow exiting outlet **2238** flows downward past drive motor **2224**, including along a surface of drive motor **2224**, and through air channel **2232**, which may include ducting **2234** that directs the air flow through condenser **2228** (adjacent to and/or around coils of condenser **2228**) to effect cooling of refrigerant passing through the coils.

FIG. **23** is a flow diagram of a process **2300** for operating dual-use cooling fan **2202** or **2222** of FIGS. **22**A and **22**B respectively. Process **2300** facilitates concurrently cooling condenser **2208** (or condenser **2228**) and drive motor **2204** (or drive motor **2224**) within a housing of a drink maker using a cooling fan **2202** or **2222** respectively by: activating drive motor **2204** (or drive motor **2224**) that is arranged to drive rotation of dasher **2212** (or dasher **2226**) within a mixing vessel of a drink maker (Step **2302**); activating compressor **2208** (or compressor **2230**) of a refrigeration circuit of the drink maker (Step **2304**); and activating cooling fan **2202** (or cooling fan **2222**) to concurrently generate air flow through condenser **2208** (or condenser **2228**) and along a surface of drive motor **2204** (or drive motor **2224**) (Step **2306**).

As previously mentioned, the frozen drink maker **100** may include pour-in opening **106** through which the mixing vessel **104** can receive ingredients to be mixed to produce a drink product. An illustrative pour-in-opening **106** for a frozen drink maker **100** is shown in FIGS. **24**A-**24**C. The frozen drink maker **100** includes a mixing vessel **104** with a substantially cylindrical chamber and a housing **102** with an upper housing section **122**. FIG. **24**A shows a perspective side view of the pour-in opening **106**. FIG. **24**B shows a front view of the pour-in opening **106** of FIG. **24**A, and FIG. **24**C shows a perspective view of the pour-in opening **106** of FIG. **24**A from the left side of the mixing vessel **104** (when viewed from the front view). The pour-in opening **106** may facilitate the addition of fluids, liquids, slush, or other ingredients to the mixing vessel **104** while the dasher **204** is active as well as minimizing spillage and preventing finger insertion during use.

In some implementations, the pour-in opening **106** may include a cover **160** to seal the pour-in opening **106**, as shown in FIGS. **24**A and **24**C. A detailed perspective view of a sample cover **160** for the pour-in opening **106** is shown in FIG. **25**. If present, the cover **160** may be hingedly connect to an upper section of the mixing vessel **104**. The cover **160** may be moved between an open position in which the pour-in opening **106** is accessible to a user and a closed position in which the pour-in opening **106** is not accessible to a user. Although not illustrated in the accompanying figures, the pour-in opening **106** may also include a grate to restrict objects from entering the aperture **162**. If present, a grate may reduce the risk of solids greater than a certain size and/or having one or more certain shapes entering the mixing vessel **104**, which can cause damage.

FIG. **26** shows a perspective view of a sample pour-in opening **106**. The pour-in opening **106** includes a surface **164** that inclines radially with respect to a center axis of a dasher **204** (shown as axis "A" in FIG. **24**A). The incline **164** reduces possible splashing as the vessel is filled. The incline **164** also prevents slush contained within the mixing vessel **104** from being pushed out of the pour-in opening **106**. The surface **164** has an aperture **162**. Although FIG. **26** shows only one aperture **162**, additional apertures may also be present. The aperture **162** is in fluid communication with an interior chamber of a mixing vessel **104**. In some implementations, the aperture **162** extends laterally along the surface **164** in a direction parallel to the center axis "A" of the dasher **204**. The aperture **162** may be shaped as a slot, as shown in FIG. **26**, or may have a different shape. If shaped as a slot, the aperture **162** may be longer or wider than shown in FIGS. **24**A-**24**C and/or may have a different ratio of length to width than shown. Further, the aperture **162**, as a slot or another oblong shape, may have its major axis aligned parallel or perpendicular to the axis of the mixing vessel **104**, or at any other angle relative to the axis of the mixing vessel **104**. The aperture **162**, for example, in the form of a slot, may be sized small enough (at least in width) to not allow passage of a human finger, at least not the entire length of a human finger, to thereby prevent a user from sticking one or more fingers into mixing vessel **104**.

The pour-in opening **106** may optionally include one or more lips **166***a*, **166***b* extending up from a perimeter of the surface **164** to form a well that feeds into the aperture **162**, as shown in FIG. **26**. One or more lips **166***a*, **166***b* may

reduce overflow spill when a liquid is poured into the mixing vessel **104**. If desired, the pour-in opening **106** may also include a grate (not illustrated) covering at least a portion of the aperture **162**. For safety concerns, users should not contact the dasher **204** while it is rotating. The geometry of the pour-in opening **106** (including the aperture **162** as described above) may inhibit or prevent a user from reaching into mixing vessel **104** even when the cover **160** is in an open position and/or the dasher **204** is rotating.

The pour-in opening **106** may be positioned on a top of the mixing vessel **104**, near its rear end, as shown in FIGS. **24**A-**24**C, opposite the dispenser assembly. Positioning the pour-in opening **106** near the rear of the mixing vessel **104** avoids interference with slush circulation in the front of the frozen drink maker **100**, which can lead to waste and non-homogeneous texture. With the pour-in opening **106** positioned at the rear of the mixing vessel **104**, the front ⅔ of the vessel has a continuous and smooth internal shape to provide good slush flow and minimize migration of the slush out of the top. By positioning the pour-in opening **106** near the rear of the vessel **104**, the opening **106** is located in a position where there is less possible buildup of frozen and/or slush materials, enabling less obstructed pouring and reducing possible buildup of ice and/or slush material at the opening **106** during processing.

The surface **164** of the pour-in opening **106** is sloped to direct incoming ingredients to enter the mixing vessel **104** in an entry direction, which is the same as the direction of dasher **204** rotation. This prevents the rotating frozen mixture from exiting the vessel **104** through the pour-in opening **106**. In some implementations, when the dasher **204** is rotating in a clockwise direction when viewed from the front of the frozen drink maker **100**, the opening **106** is positioned on the right side of the vessel **104**. The aperture **162** may be positioned to extend laterally along the surface **164** in a direction parallel to the center axis (A) of the dasher **204**, whereas in other implementations, when the dasher **204** is rotating in a counter-clockwise direction when viewed from the front of the frozen drink maker **100**, the opening **106** is positioned on the left side of the vessel **104**.

FIGS. **27**A-**27**D illustrate a sample pour-in opening **106** in which the surface **164** of the pour-in opening is shaped to slope downwardly toward a rear of the mixing vessel. In some such implementations, one or more apertures **162** may be positioned at a bottom portion of surface **164**. Shaping surface **164** to include a rearward slope can increase the volume capacity of the pour-in opening **106** and reduce spillage. In implementations in which the surface **164** of the pour-in opening **106** is sloped relative to the center axis (A) of the dasher **204**, the surface **164** may be shaped such that a section of surface **164** closest to a front of the mixing vessel is positioned farther away from the center axis (A) of the dasher **204** than a section of surface **164** closest to a rear of the mixing vessel.

FIG. **28** illustrates a sample method **2800** of using a pour-in opening **106** for a frozen drink maker. As shown in FIG. **28**, method **2800** includes optionally opening a cover of the frozen drink maker to provide access to the pour-in opening (block **2802**). Method **2800** also includes introducing one or more liquid ingredients to a mixing vessel of the frozen drink maker via the pour-in opening (block **2804**). The one or more liquid ingredients may be added to the mixing vessel while the vessel is actively mixing (e.g., while the dasher is rotating). Method **2800** further includes dispensing a drink product from the frozen drink maker (block **2806**). The drink product may be dispensed while the dasher is rotating, if desired.

FIGS. **29**A-**29**D show a dispensing assembly **2900** for dispensing a drink product from the frozen drink maker **100** according to a first illustrative implementation of the disclosure. As shown in FIG. **29**A, the dispensing assembly **2900** may include a dispenser housing **2904** for housing the component parts of the dispensing assembly **2900**. The housing **2904** may have a first portion **2904***a* attached to an outer surface of the frozen drink maker **100** adjacent to a spout **2902** and a second portion **2904***b* spaced apart from the spout **2902** and extending outward from the outer surface. In some implementations, the housing **2904** may have an inverted L-shape. However, the disclosure contemplates other suitable shapes of the housing **2904**. The handle **120** of the frozen drink maker **100** may have an upper portion **120***a* in the form of a user-actuatable lever **2906** and a lower portion **120***b* attached to the second portion **2904***b* of the housing **2904**.

As shown in FIGS. **29**B and **29**C, the lever **2906** may be rotatable relative to the second portion **2904***b* of the housing **2904** about a first pivot member **2908**. In some implementations, the first pivot member **2908** may be a rod or pin **2910** extending through the second portion **2904***b* of the housing **2904** and the lower portion **120***b* of the handle **120**. However, the disclosure contemplates other suitable types of pivot members **2908**. A link member **2912** may operatively couple to the lower portion **120***b* of the handle **120**. In some implementations, the link member **2912** may be insertable into the lower portion **120***b* of the handle **120**. The link member **2912** may be rotatable relative to the lever **2906** about a second pivot member **2914**. In some implementations, the second pivot member **2914** may be a rod or pin **2916** extending through the link member **2912** and through the lower portion **120***b* of the handle **120**. However, the disclosure contemplates other suitable types of pivot members **2916**. A bracket member **2918** may operatively couple to the link member **2912** and may be attached to the first portion **2904***a* of the housing **2904**. In some implementations, the link member **2912** may be insertable into a portion bracket member **2918**. The bracket member **2918** may be rotatable relative to the link member **2912** about a third pivot member **2920**. In some implementations, the third pivot member **2920** may be a rod or pin **2922** extending through the bracket member **2918** and the link member **2912**. However, the disclosure contemplates other suitable types of pivot members **2920**. The bracket member **2918** may also be rotatable relative to the first portion **2904***a* of the housing **2904** about a fourth pivot member **2924**. In some implementations, the fourth pivot member **2924** may be a rod or pin **2926** extending through the first portion **2904***a* of the housing **2904** and the bracket member **2918**. However, the disclosure contemplates other suitable types of pivot members **2924**. A seal **2928** may attach to the bracket member **2918**. The seal **2928** may be configured to seal the spout **2902** to prevent inadvertent dispensing of the drink product. In some implementations, the seal **2928** may be a lip seal that covers the spout **2902**. However, other suitable types of seals **2928** are contemplated by this disclosure. For example, in some implementations, the seal **2928** may be, or may include, a plug that is made out of one or more relatively dense materials having a relatively high durometer and that extends into the spout **2902** to seal the spout **2902**. The spout **2902** may include a safety grate **2930** or other mechanism to prevent the user from inadvertently inserting his or her fingers into the spout **2902** (FIG. **29**D).

To dispense the drink product, in some implementations, actuation of the lever **2906** by the user may cause the link member **2912** to move upward relative to the housing **2904**.

Because the bracket member **2918** is attached to both the link member **2912** and to the housing **2904**, a portion of the bracket member **2918** may move upward with the link member **2912** while the remainder of the bracket member **2918** is forced to pivot about fourth pivot member **2924**. This in turn may cause the seal **2928** to move into an open position. When the seal **2928** moves into the open position, the seal **2928** may uncover the spout **2902** to dispense the drink product. Advantageously, in the open position, the seal **2928** may be angled at about 45-60 degrees with respect to the spout **2902** to direct the drink product downward toward the beverage cup. Release of the lever **2906** by the user may allow the components to return to their unactuated position, allowing the seal **2928** to again close the spout **2902**.

FIGS. **30**A and **30**B show a dispensing assembly **3000** for dispensing a drink product from the frozen drink maker **100** according to a second illustrative implementation of the disclosure. Dispensing assembly **3000** may be substantially similar to dispensing assembly **2900**. For example, as shown in FIG. **30**A, the dispensing assembly **3000** may include a dispenser housing **3004** for housing the component parts of the dispensing assembly **3000**. The housing **3004** may have a first portion **3004***a* attached to an outer surface of the frozen drink maker **100** adjacent to a spout **3002** and a second portion **3004***b* spaced apart from the spout **3002** and extending outward from the outer surface. The handle **120** may have an upper portion **120***a* in the form of a user-actuatable lever **3006** and a lower portion **120***b* attached to the second portion **3004***b* of the housing **3004**. The lever **3006** may be rotatable relative to the second portion **3004***b* of the housing **3004** about a first pivot member **3008**. A link member **3012** may operatively couple to the lower portion **120***b* of the handle **120**. The link member **3012** may be rotatable relative to the lever **3006** about a second pivot member **3014**.

As shown in FIG. **30**B, a bracket member **3018** may operatively couple to the link member **3012** and may be attached to the first portion **3004***a* of the housing **3004**. In some implementations, the bracket member **3018** may have an inverted L-shape, as shown. However, the disclosure contemplates other suitable shapes of the bracket member **3018**. The bracket member **3018** may be rotatable relative to the link member **3012** about a third pivot member **3020**. The bracket member **3018** may also be rotatable relative to the first portion **3004***a* of the housing **3004** about a fourth pivot member **3024**. A seal **3028** may attach to the bracket member **3018**. The seal **3028** may be configured to seal the spout **3002** in a closed position. In some implementations, the seal **3028** may be a lip seal that covers the spout **3002**. However, in some implementations, the seal **3028** may be, or may include, a plug that is made out of one or more relatively dense materials having a relatively high durometer and that extends into the spout **3002** to seal the spout **3002**.

To dispense the drink product, in some implementations, actuation of the lever **3006** by the user may cause the link member **3012** to move upward relative to the housing **3004**. Because the bracket member **3018** is attached to both the link member **3012** and to the housing **3004**, a portion of the bracket member **3018** may move upward with the link member **3012** while the remainder of the bracket member **3018** is forced to pivot about fourth pivot member **3024**. This in turn may cause the seal **3028** to move into an open position. When the seal **3028** moves into the open position, the seal **3028** may uncover the spout **3002** to dispense the drink product. Advantageously, in the open position, the seal **3028** may be angled at about 45-60 degrees with respect to the spout **3002** to direct the drink product downward toward the beverage cup. Release of the lever **3006** by the user may allow the components to return to their unactuated position, allowing the seal **3028** to again close the spout **3002**.

Advantageously, unlike other dispenser mechanisms, the dispensing assemblies **2900**, **3000** of this disclosure do not rely on leverage against the outer surface of the frozen drink maker **100** to open the seal **2928**, **3028**. This may reduce wear and tear of the component parts of the dispensing assembly **2900**, **3000** and on the outer surface of the frozen drink maker **100**. Furthermore, because the seal **2928**, **3028** moves both horizontally and vertically with respect to the spout **2902**, **3002** to unseal the spout **2902**, **3002**, the open position of the seal **2928**, **3028** may provide less obstruction to the flow of the drink product from the spout **2902**, **3002**.

FIGS. **31**A and **31**B illustrate in greater detail the spout cover or shroud **116** for covering a portion of the dispensing assembly **2900**, **3000** according to an illustrative implementation of the disclosure. As shown in FIG. **31**A, the shroud **116** may include a first panel section **3102***a* and a second panel section **3102** extending substantially parallel to one another. A front section **3104** may extend between the panel sections **3102***a*, **3102***b*. In some implementations, the panel sections **3102***a*, **3102***b* may be substantially flat, while the front section **3104** may be curved, as shown. In some implementations, the front section **3104** may include an arcuate upper edge **3106** configured such that actuation of the handle **120** is not impeded. However, the disclosure contemplates other suitable shapes of the upper edge **3106**, such as the rectilinear shape shown in FIG. **1**. As shown in FIG. **31**B, the panel sections **3102***a*, **3102***b* may be configured to form a removable snap fit with the dispenser housing **2904**, **3004**. A length of the shroud **116** may be selected to cover the component parts of the dispensing assemblies **2900**, **3000** other than the handle **120** to improve the aesthetic appearance of the frozen drink maker **100**. The shroud **116** may also aid in directing the drink product downward toward the beverage cup. The shroud **116** may be made of a dishwasher safe material for easy cleaning.

In some implementations, at least the front section **3104** of the shroud **116** may be vertically moveable relative to the dispensing assembly **2900**, **3000**. For example, in some implementations, the front section **3104** may be moveable relative to the first panel section **3102***a* and the second panel section **3102***b*. In some implementations, the front section **3104** may be hingedly connected to the first and second panel sections **3102***a*, **3102***b* or may be vertically slidable relative the first and second panel sections **3102***a*, **3102***b*. Such movement may be useful when dispensing a non-frozen, water-based beverage to prevent the beverage from dispensing at too lateral of a trajectory from the spout **2902**, **3002**. Such a lateral trajectory may result in at least a portion of the beverage not dispensing into a receiving vessel located below the spout **2902**, **3002**.

It should be appreciated that the various implementations described herein are not limited to making frozen or semi-frozen drinks, but may be applied to produce a cold and/or cooled drink product that is cooler than a received drink product, but not frozen or semi-frozen. For example, in some implementations, the same or similar mechanisms and/or techniques may be used as part of a cold drink machine and/or cooled drink maker to produce, maintain and dispense cold drinks.

As discussed with respect to FIG. **4**, actions associated with configuring or controlling a frozen drink maker such as frozen drink maker **100** and processes described herein can be performed by one or more programmable processors executing one or more computer programs to control or to

perform all or some of the operations described herein. All or part of the frozen drink maker **100** systems and processes can be configured or controlled by special purpose logic circuitry, such as, an FPGA and/or an ASIC or embedded microprocessor(s) localized to the instrument hardware.

Non-transitory machine-readable storage media suitable for embodying computer program instructions and data include all forms of non-volatile storage area, including by way of example, semiconductor storage area devices, such as EPROM (erasable programmable read-only memory), EEPROM (electrically erasable programmable read-only memory), and flash storage area devices; magnetic disks, such as internal hard disks or removable disks; magneto-optical disks; and CD-ROM (compact disc read-only memory) and DVD-ROM (digital versatile disc read-only memory).

Elements of different implementations described may be combined to form other implementations not specifically set forth previously. Elements may be left out of the systems described previously without adversely affecting their operation or the operation of the system in general. Furthermore, various separate elements may be combined into one or more individual elements to perform the functions described in this specification.

The disclosure describes a removeable collection tray that may be disposed within the unit underneath the vessel/evaporator. The tray may be configured to collect condensation dripping off the vessel or spills resulting from filling the vessel. The tray may also be used to collect water from cleaning between uses. The tray of this disclosure may be sized to collect up to 16 ounces of liquid. The tray may also be made of a dishwasher safe material for easy cleaning.

This application describes illustrative systems, methods, and devices that provide a removeable condensation tray below vessel to reduce cleaning concerns and increase ease of use.

In some implementations, a removeable collection tray for a frozen drink maker includes a collection chamber for receiving liquid, and a handle. The collection chamber is configured to be removably inserted into a slot in a housing of the frozen drink maker adjacent an evaporator. In some implementations, the collection chamber is vertically spaced from a bottom side of the housing when inserted into the slot. In some implementations, the collection chamber includes an evaporator-facing surface. The evaporator-facing surface has a shape corresponding to an outer surface of the evaporator. In some implementations, the shape is semi-cylindrical. In some implementations, the handle, the evaporator-facing surface, and three other side walls define the collection chamber. In some implementations, the collection chamber has a liquid volume capacity of 16 ounces. In some implementations, the removeable collection tray is made from a dishwasher-safe material. In some implementations, a user-facing surface of the handle is flush with a user interface of the housing when the collection chamber is fully inserted into the slot. In some implementations, an underside of the handle has one or more ribs for adding structural integrity between the handle and the collection chamber. In some implementations, the slot is defined between at least one rail and a top surface of the housing.

In some implementations, a method of removing a collection tray from a frozen drink maker includes removing a mixing vessel from a housing of the frozen drink maker and, after the removing of the mixing vessel from the housing, removing the collection tray from the housing. In some implementations, removing the mixing vessel from the housing includes removing the mixing vessel and an attached dispenser from the housing. In some implementations, removing the collection tray from the housing includes pulling the handle toward the user. In some implementations, pulling the handle toward the user includes sliding the collection tray along a slot in the housing toward the user. In some implementations, the method also includes fully disengaging the collection tray from the slot in the housing.

The application, in various implementations, addresses deficiencies associated with controlling slush flow within a mixing vessel of a frozen drink maker. This application describes illustrative systems, methods, and devices that use one or more internal baffles positioned within the mixing vessel to direct slush flow for thorough mixing and to prevent blockage within the mixing vessel. The one or more internal baffles control flow of contents within the mixing vessel can also reduce waste (e.g., waste caused by slush sticking to the vessel instead of dispensing through the spout).

In a first aspect, a mixing vessel for a frozen drink maker is described and the mixing vessel has at least one internal baffle. The mixing vessel includes a curved sidewall defining a substantially cylindrical vessel chamber therein. The vessel chamber includes a front, a rear, a right side, a left side, and a top. The mixing vessel also includes a corner baffle configured to control slush flow within the vessel chamber. The corner baffle is positioned at the front top of the vessel chamber on either the right side or the left side.

The mixing vessel may be configured to accommodate a dasher that rotates within the vessel chamber about a center axis and the corner baffle may be positioned such that the dasher is directed toward the corner baffle while moving upwardly within the vessel chamber. In these and other implementations, the corner baffle is positioned on the left side of the vessel chamber and the dasher is arranged to rotate in a clockwise direction. In select implementations, a distance from the center axis of the dasher to the top of the vessel chamber is less than 16 inches.

The corner baffle may extend out from the front into the vessel chamber at a relatively constant distance. In some implementations, the mixing vessel also includes a side baffle extending laterally along the vessel chamber from the front to the rear. The side baffle may include a curved surface that protrudes inwardly relative to a cross-section of the vessel chamber when viewed along a center axis of the vessel chamber. In these and other implementations, the side baffle is positioned on the left side or the right side of the vessel chamber. The side baffle and the corner baffle may both be positioned on either the left side or the right side of the vessel chamber. In some implementations, the mixing vessel also includes a front baffle positioned at the front of the vessel chamber extending across the top. In these and other implementations, the front baffle forms an angle of between 100°-150° relative the front of the vessel chamber. In various implementations in which the front baffle is present, the mixing vessel also includes a side baffle extending laterally along the vessel chamber from the front to the rear, and the corner baffle has a curved surface that extends from the side baffle to the front baffle. The substantially cylindrical vessel chamber may have an oval-shaped cross-section.

In another aspect, a mixing vessel for a frozen drink maker is described and the mixing vessel has at least three internal baffles. The mixing vessel includes a curved sidewall defining a substantially cylindrical vessel chamber therein. The vessel chamber includes a front, a rear, a right side, a left side, and a top. The mixing vessel includes a

corner baffle positioned at the front top of the vessel chamber on either the right side or the left side. The mixing vessel also includes a side baffle extending laterally along the vessel chamber from the front to the rear. The mixing vessel further includes a front baffle positioned at the front of the vessel chamber extending across the top.

In some implementations, the side baffle and the corner baffle are both positioned on either the left side or the right side of the vessel chamber. In these and other implementations, the mixing vessel is configured to accommodate a dasher that rotates within the vessel chamber about a center axis. The corner baffle and the side baffle are positioned such that the dasher is directed toward the corner baffle and the side baffle while moving upwardly within the vessel chamber. In these and other implementations, the corner baffle and the side baffle are positioned on the left side of the vessel chamber and the dasher is arranged to rotate in a clockwise direction. In select implementations, a distance from the center axis of the dasher to the top of the vessel chamber is less than 16 inches. The corner baffle may extend out from the front into the vessel chamber at a relatively constant distance.

In yet another aspect, a frozen drink maker is described. The frozen drink maker includes a mixing vessel, a housing, a dasher, and a disperser assembly. The mixing vessel has a front, a rear, and a curved sidewall defining a vessel chamber therein. The housing has an upper housing section abutting the rear of the mixing vessel. The dasher is arranged to rotate within the mixing vessel about a center axis. The disperser assembly is at the front of the mixing vessel. The mixing vessel includes at least two internal baffles configured to control slush flow within the vessel chamber.

In some implementations, the mixing vessel includes at least three internal baffles configured to control slush flow within the vessel chamber. In some such implementations, the at least three internal baffles include: (1) a corner baffle positioned at a front top of the vessel chamber on either a right side or a left side, (2) a side baffle extending laterally along the vessel chamber from the front to the rear, and (3) a front baffle positioned at the front of the vessel chamber extending across the top. In these and other implementations, the dasher rotates in a clockwise direction, and the corner baffle and the side baffle are positioned on a left side of the vessel chamber when viewed from a front of the frozen drink maker.

The application, in various implementations, addresses deficiencies associated with controlling temperatures of drink products using recipes in a more adaptive and user-specific manner.

This application describes illustrative systems, methods, and devices that enable a drink maker to automatically control a temperature of a drink product based on a preset recipe target temperature stored in memory, while further allowing a user to adjust the preset temperature via a user input to enable the frozen drink maker to more flexibly achieve desired temperatures and/or textures tailored to the preferences of different users. The application also describes illustrative systems, methods, and devices that enable a drink maker to automatically control a temperature of a drink product based on a preset recipe target temperature stored in memory, while further monitoring a condition of a drive and/or dasher motor, such as current or power, and, if the current or power is too high, increasing the temperature of the drink product to reduce the thickness of the drink product and, thereby, reduce the current and/or power used by the drive and/or dasher motor to prevent damage to the drive motor.

In one aspect, a drink maker includes a mixing vessel arranged to receive a drink product and a dasher, driven by a drive motor, that is arranged to mix the drink product within the mixing vessel. The drink maker also includes a cooling circuit and/or device arranged to cool the drink product within the mixing vessel, a temperature sensor arranged to measure a temperature associated with the drink product and output a temperature signal, and a memory arranged to store a drink object representing a drink type, the drink object specifying a first temperature value corresponding to a first target temperature. A controller, in communication with the memory, is arranged to: i) receive the temperature signal, and ii) control the temperature associated with the drink product by controlling the cooling circuit based on the received temperature signal, the first temperature value, and/or a manual temperature adjustment and/or temperature offset. The frozen drink maker also includes a user interface arranged to receive a user input to adjust the manual temperature adjustment.

The temperature associated with the drink product may include a temperature of the drink product, a temperature of a cooling element used to cool the drink product, and/or a temperature of a refrigerant used to cool the drink product. The controller may adjust the first target temperature by adding the manual temperature adjustment to the first target temperature. The manual temperature adjustment may include positive or negative temperature value. The manual temperature adjustment may include a range of temperatures at, above, and below the first target temperature. The manual temperature adjustment may be adjustable in increments of greater than or equal to 0.1, 0.2, 0.3, 0.4, 0.5, 1, and/or 2 degrees Celsius.

In some implementations, the memory includes a plurality of recipes, each of the recipes including a temperature value corresponding to a target temperature. The cooling circuit and/or device may include a refrigeration circuit including an evaporator. The evaporator may be part of the closed loop refrigeration circuit and/or system including a condenser and a compressor. The controller may be configured to control the temperature associated with the drink product by activating the compressor to circulate refrigerant through the evaporator to cool the drink product and deactivating the compressor to stop a flow of refrigerant through the evaporator to stop cooling of the drink product. The controller may control the temperature associated with the drink product by comparing the received temperature signal to the first temperature value, adjusted based on the manual temperature adjustment, and, in response, activating or deactivating the cooling circuit to match the received temperature signal to the first temperature value, adjusted by the manual temperature adjustment, and, thereby, adjust the temperature associated with the drink product to about the target temperature adjusted by the manual temperature adjustment. In some implementations, the cooling circuit includes a thermal energy cooling (TEC) system implementing, for example, the Peltier effect.

In another aspect, a method for making a drink product includes: receiving, into a mixing vessel, the drink product; mixing, using a dasher driven by a drive motor, the drink product within the mixing vessel; cooling, using a cooling circuit, the drink product within the mixing vessel; measuring, via a temperature sensor, a temperature associated with the drink product and outputting a temperature signal; storing, in a memory, a drink object representing a drink type, the drink object specifying a first temperature value corresponding to a first target temperature; receiving, at a controller, the temperature signal; controlling, by the con-

troller, the temperature associated with the drink product by controlling the cooling circuit based on the received temperature signal, the first temperature value, and a manual temperature adjustment; and receiving a user input to adjust the manual temperature adjustment.

In a further aspect, a drink maker includes a mixing vessel arranged to receive a drink product and a dasher, driven by a drive motor, arranged to mix the drink product within the mixing vessel. The drink maker also includes a cooling circuit arranged to cool the drink product within the mixing vessel, a temperature sensor arranged to measure a temperature associated with the drink product and output a temperature signal, a motor condition sensor arranged to measure a motor condition associated with the drive motor and output a motor condition signal, and a memory arranged to store a first temperature value corresponding to a first target temperature and store a motor condition limit. A controller, in communication with the memory, is arranged to: i) receive the temperature signal, ii) receive the motor condition signal, and ii) control the temperature associated with the drink product by controlling the cooling circuit based at least on the received temperature signal, the received motor condition signal, the first temperature value, and the motor condition limit.

In some implementations, the controller deactivates the cooling circuit when a magnitude (e.g., a current or power level) of the received motor condition signal is equal to or greater than the motor condition limit. The controller may determine a second temperature value corresponding to a second target temperature, where the magnitude of the received motor condition signal is lower than the motor condition limit. The controller may control the temperature associated with the drink product by controlling the cooling circuit based on the second temperature value. In some implementations, the controller deactivates the cooling circuit until when the temperature associated with the drink product is about equal to the second target temperature.

The motor condition may include current, power, torque, speed of rotation, acceleration of rotation, noise, and/or thermal output. The motor condition sensor may include a motor current sensor, motor voltage sensor, motor torque sensor, motor rotation sensor, acoustic sensor, and/or temperature sensor. A user interface may be arranged to receive a user input to adjust a manual temperature adjustment. The controller may control the temperature associated with the drink product by controlling the cooling circuit based on the received temperature signal, the received motor condition signal, the first temperature value, the motor condition limit, and/or the manual temperature adjustment. The controller may adjust the first target temperature by adding the manual temperature adjustment to the first target temperature.

In yet a further aspect, a method for making a drink product includes: receiving, in a mixing vessel, the drink product; mixing, using a dasher driven by a drive motor, the drink product within the mixing vessel; cooling, using a cooling circuit, the drink product within the mixing vessel; measuring, via a temperature sensor, a temperature associated with the drink product and output a temperature signal; measuring, via a motor condition sensor, a motor condition associated with the drive motor and outputting a motor condition signal; storing, in a memory, a first temperature value corresponding to a first target temperature and storing a motor condition limit; receiving, at a controller, the temperature signal and the motor condition signal; and controlling the temperature associated with the drink product by controlling the cooling circuit based on the received temperature signal, the received motor condition signal, the first temperature value, and/or the motor condition limit.

The application, in various implementations, addresses deficiencies associated with cooling components of a drink maker.

This application describes illustrative systems, methods, and devices whereby a dual-use cooling fan concurrently provides cooling air flow to both a drive motor used to drive rotation of a dasher and a condenser used to cool refrigerant of a refrigeration circuit and/or system of the drink maker.

In one aspect, a drink maker includes a mixing vessel arranged to receive a drink product and a dasher, driven by a drive motor, arranged to mix the drink product within the mixing vessel. A refrigeration circuit is arranged to cool the drink product within the mixing vessel including a condenser. A cooling fan is configured to concurrently cool the drive motor and the condenser. In some implementations, the cooling fan is driven by the drive motor either directly or via a gear assembly, and therefore is activated when the drive motor is activated.

The cooling fan may provide air flow through the condenser to cool refrigerant flowing through the condenser. The cooling fan may provide air flow along a surface of the drive motor to cool the drive motor. The cooling fan, drive motor, and condenser may be positioned such that air flow generated by the cooling fan passes serially through the condenser and along a surface of the drive motor. A first portion of air flow generated by the cooling fan may cool the condenser and a second portion of air flow generated by the cooling fan may cool the drive motor. In another implementation, air flow generated by the cooling fan passes in parallel through the condenser and along a surface of the drive motor such that a first portion of the air flow passes through the condenser, while a second portion of the air flow passes along a surface of the drive motor. The condenser may include one or more coils wound in a serpentine arrangement. Each of the one or more coils may include a plurality of thermal transfer fins. When the cooling fan provides air flow through the condenser to cool refrigerant flowing through the condenser, the air flow may travel adjacent to and/or around the plurality of coils.

A cooling channel may extend between the cooling fan and the drive motor, where the cooling channel provides cooling air flow between the cooling fan and the drive motor. The cooling channel may be at least partially formed by a duct. A cooling channel may extend between the cooling fan and the condenser, where the cooling channel provides cooling air flow between the cooling fan and the condenser. The cooling channel may be at least partially formed by a duct. The cooling may include a centrifugal fan, a cross-flow fan, a tangential fan, a volute fan, a backward curved fan, a forward curved fan, a blower fan, a squirrel-cage fan, and/or an axial fan.

In another aspect, a cooling fan is configured for cooling a drive motor and a condenser within a housing of a drink maker, where the drive motor is configured to drive rotation of a dasher within a mixing vessel of the drink maker and the condenser is configured to cool a refrigerant circulating within a refrigeration system of the drink maker. The cooling fan includes an air inlet configured to receive an air flow from the ambient environment, an impeller configured to generate the air flow, and an air outlet configured to output the air flow through the condenser and along a surface of the drive motor. The cooling fan may include an air channel arranged to direct the air flow through the condenser and along the surface of the drive motor. The air channel may be at least partially formed by an air duct. The cooling fan may

include a centrifugal fan, a cross-flow fan, a tangential fan, a volute fan, a backward curved fan, a forward curved fan, a blower fan, a squirrel-cage fan, and/or an axial fan.

In a further aspect, a method for concurrently cooling a condenser and a drive motor within a housing of a drink maker using a cooling fan includes: activating the drive motor that is arranged to drive rotation of a dasher within a mixing vessel of the drink maker; activating a compressor of a refrigeration system of the drink maker; and activating the cooling fan to concurrently generate air flow through the condenser and along a surface of the drive motor. In some implementations, the cooling fan is coupled to and/or driven to rotate by the drive motor. The method may include receiving a user input to activate the drive motor, compressor, and the cooling fan. The user input may initiate a recipe and/or computer program, controlled by a controller, that automatically activates the drive motor, compressor, and the cooling fan.

One of ordinary skill will recognize that the systems, methods, and devices described herein may apply to other types of food products such as to the making and/or processing of, without limitation, ice cream, frozen yogurt, other creams, and the like. While the present disclosure describes examples of a drink maker processing various frozen and/or semi-frozen drink products, the systems, devices, and methods described herein are not limited to such drink products and are capable of processing and/or making other types of drink products such as cooled drink products and/or chilled drink products. The terms "mix," "mixed" or "mixing" as used herein are not limited to combining multiple ingredients together, but also include mixing a drink product or liquid having a single or no added ingredients. For example, a drink product may consist of only water that is mixed by a dasher during processing, i.e., portions of the water are churned and/or intermingled as the dasher rotates. This may, for example, advantageously enable a more uniform temperature of the water and/or liquid as a whole within the mixing vessel by intermingling portions of the water and/or liquid having different temperatures.

The application, in various implementations, addresses deficiencies associated with fluid inlets for frozen drink makers. Previous frozen drink makers are typically sized for commercial applications. Commercial frozen drink makers have significant headspace above the slush in the vessel. In a commercial frozen drink maker, liquid ingredients can be roughly poured into an open top of the vessel without concern of losing liquids due to splashing or ingredient expansion generated by impact force.

This application describes illustrative systems, methods, and devices that address shortcomings of how liquids are added to a vessel for a frozen drink maker. In particular, a pour-in opening for a frozen drink maker is described that allows liquid ingredients to be added to the vessel in a controlled manner, thereby minimizing or preventing slush overflow. The disclosed pour-in opening can be used with both commercial frozen drink makers or residential frozen drink makers having a smaller vessel capacity and less available headspace than commercial units. The pour-in opening advantageously avoids external splatter and spillage of liquid ingredients as they are added to the vessel and prevents finger insertion (to protect users from moving componentry within the vessel). The pour-in opening also prevents slush contained within the vessel from being pushed out of the vessel.

In some aspects, a pour-in opening for a frozen drink maker is described. The frozen drink maker has a dasher configured to rotate within a mixing vessel about a center axis. The pour-in opening includes a surface that inclines radially with respect to the center axis of the dasher. The pour-in opening also includes an aperture positioned on the surface in fluid communication with an interior of the mixing vessel. The surface may be sloped to direct fluids entering the mixing vessel to enter in the direction of dasher rotation. In some implementations, the aperture extends laterally along the surface in a direction parallel to the center axis of the dasher. The aperture may be shaped as a slot. In some implementations, the surface incline directs ingredients to enter the mixing vessel in an entry direction and the entry direction is the same as a rotation direction of the dasher. In some such implementations, the rotation direction of the dasher is clockwise when viewed from a front of the frozen drink maker. In these and other implementations, the aperture is positioned on a right side of the mixing vessel when viewed from the front of the frozen drink maker. A grate may cover at least a portion of the aperture, if desired. In these and other implementations, there may also be a cover moveable between an open position in which the pour-in opening is accessible to a user and a closed position in which the pour-in opening is not accessible to the user. In select implementations, the pour-in opening may also include a lip extending up from a perimeter of the surface to form a well that feeds into the aperture. The pour-in opening may be located approximate to a rear of the mixing vessel when viewed from a front of the frozen drink maker. In these and other implementations, a rotation of the dasher moves contents of the mixing vessel from the rear of the mixing vessel to a front of the mixing vessel.

In another aspect, a vessel for a frozen drink maker is described. The vessel includes a chamber and a pour-in opening. The chamber is a substantially cylindrical chamber sized to accommodate a dasher configured to rotate within the vessel about a center axis. The pour-in opening is positioned on a top section of the vessel. The pour-in opening includes a surface and an aperture. The surface inclines radially with respect to the center axis of the dasher. The aperture is positioned on the surface in fluid communication with the chamber. In some implementations, the pour-in opening is positioned at a rear of the vessel. In these and other implementations, the surface of the pour-in opening inclines radially to direct incoming ingredients to enter the vessel in an entry direction, and the entry direction is the same as a rotation direction of the dasher. In select implementations, the rotation direction of the dasher is clockwise and the aperture is positioned on a right side of the vessel when viewed from a front of the vessel. In some implementations, the vessel also includes a cover positioned over the pour-in opening and the cover is moveable between an open position in which the pour-in opening is accessible to a user and a closed position in which the pour-in opening is not accessible to the user.

In further aspects, a frozen drink maker is described. The frozen drink maker includes a mixing vessel having a substantially cylindrical chamber, a dasher configured to rotate within the mixing vessel about a center axis, and a pour-in opening positioned on a top of the mixing vessel. The pour-in opening has a surface that inclines radially with respect to the center axis of the dasher and an aperture positioned on the surface in fluid communication with the chamber. In some implementations, the center axis of the dasher extends in a horizontal direction. In these and other implementations, the aperture extends laterally along the surface in a direction parallel to the center axis of the dasher. The surface inclines radially to direct incoming ingredients

to enter the mixing vessel in an entry direction, and the entry direction is the same as a rotation direction of the dasher. In select implementations, the rotation direction of the dasher is clockwise when viewed from a front of the frozen drink maker and the aperture is positioned on a right side of the mixing vessel when viewed from the front of the frozen drink maker.

The disclosure describes a low-maintenance dispensing system for a frozen drink maker that uses a lip seal rather than a plunger seal. The dispensing mechanism includes several pivoting linkages that operate to swing the seal up when a user actuates a dispensing lever. In the open position, the seal is angled about 45-60 degrees with respect to the spout, which helps to direct the dispensed drink product downward. The spout opening also includes a safety grate to prevent the user from inadvertently inserting his or her fingers into the spout.

This application describes illustrative systems, methods, and devices that provide a dispensing assembly for dispensing a drink product through a spout of a frozen drink maker.

In some exemplary implementations, a dispensing assembly for a frozen drink maker of this disclosure includes a housing having a first portion attached to an outer surface of the frozen drink maker adjacent to a spout, and a second portion spaced apart from the spout and extending outward from the outer surface. A lever attaches to the second portion of the housing. The lever is rotatable relative to the second portion of the housing about a first pivot member. A seal operatively couples to the lever. The seal is configured to seal the spout in a closed position. Rotation of the lever causes the seal to move into an open position to allow dispensing of a drink product through the spout.

In some implementations, a link member operatively couples to the lever. The link member is rotatable relative to the lever about a second pivot member. A bracket member operatively couples to the link member and attaches to the first portion of the housing. The bracket member is rotatable relative to the link member about a third pivot member and rotatable relative to the first portion of the housing about a fourth pivot member. The seal is attached to the bracket member.

In some implementations, the second pivot member is a pin extending through the lever and through the link member. In some implementations, the third pivot member is a pin extending through the bracket member and through the link member. In some implementations, the fourth pivot member is a pin extending through the first portion of the housing and through the bracket member. In some implementations, the seal is angled at about 45-60 degrees with respect to the spout when the seal is in the open position. In some implementations, the spout includes a grate configured to prevent a user from inserting fingers into the spout. In some implementations, the first pivot member includes a pin extending through the second portion of the housing and through the lever. In some implementations, the seal is a lip seal. In some implementations, the bracket member is L-shaped. In some implementations, the housing is L-shaped.

In some implementations, a method of dispensing a drink product through a spout of a frozen drink maker of this disclosure includes rotating a lever about a first pivot member relative to a second portion of a housing of a dispensing assembly. The housing further includes a first portion attached to an outer surface of the frozen drink maker adjacent to the spout and the second portion spaced apart from the spout and extending outward from the outer surface. Rotating the lever causes a seal operatively coupled to the lever to move into an open position to allow dispensing of the drink product through the spout. The seal is configured to seal the spout in a closed position.

In some implementations, the dispensing assembly further includes a link member operatively coupled to the lever, and rotating the lever causes the link member to rotate relative to the lever about a second pivot member. In some implementations, the dispensing assembly further includes a bracket member operatively coupled to the link member and attached to the first portion of the housing, and rotating the lever causes the bracket member to rotate relative to the link member about a third pivot member and to rotate relative to the first portion of the housing about a fourth pivot member. In some implementations, the seal is attached to the bracket member.

The disclosure describes a shroud for attaching to a dispensing assembly of a frozen drink maker. The shroud is configured to direct the drink product downward toward a beverage cup without interfering with the movement of the dispenser lever. The shroud also hides components of the dispensing assembly for a more pleasing aesthetic appearance and is removable for easy cleaning.

This application describes illustrative systems, methods, and devices that provide a shroud for attaching to a dispensing assembly for directing a drink product downward toward a beverage cup.

In some implementations, a shroud for a dispenser assembly of a frozen drink maker of this disclosure includes a first panel section and a second panel section extending substantially parallel to the first panel section. A front section extends between the first and second panel sections. The first and second panel sections are configured to form a removable snap fit with a dispenser housing of the dispenser assembly.

In some implementations, the front section is curved. In some implementations, a vertical position of at least the front section of the shroud is adjustable relative to the dispenser assembly. In some implementations, the front section defines an upper edge. A shape of the upper edge is configured to allow actuation of a handle of the dispenser assembly. In some implementations, a shape of the upper edge is arcuate. In some implementations, a shape of the upper edge is rectilinear. In some implementations, a length of the shroud is selected to cover component parts of the dispenser assembly. In some implementations, a length and shape of the shroud is selected to direct a drink product dispensed from a spout of the frozen drink maker downward. In some implementations, the shroud is made from a dishwasher safe material. In some implementations, the front section is moveable relative to the first panel section and the second panel section. In some implementations, the front section is hingedly connected to the first panel section and the second panel section. In some implementations, the front section is vertically slidable relative to the first panel section and the second panel section. In some implementations, the first panel section is flat. In some implementations, the second panel section is flat.

What is claimed is:

1. A frozen drink maker comprising:

a housing comprising an upper housing section and a lever moveable relative to the upper housing section between a coupling position and an uncoupling position;

a mixing vessel to receive a drink product, the mixing vessel having:

a first end with a first opening and a second end with a second opening configured to dispense the drink product; and

a pour-in opening located on the mixing vessel between the first end and the second end;

a dasher configured to rotate in the mixing vessel;

a motor to drive the dasher;

an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and

a flexible seal arranged proximate to the upper housing section,

wherein the lever controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position, and

wherein, when the lever is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.

2. The frozen drink maker of claim **1**, wherein the mixing vessel comprises a wall having the first opening formed therein, and the first opening is sealed against the upper housing section by the flexible seal when the lever is in the coupling position.

3. The frozen drink maker of claim **1**, wherein the mixing vessel comprises a wall having the first opening formed therein, and wherein the flexible seal comprises a face seal that interfaces a vertically aligned surface of the upper housing section to an edge of the first end of the mixing vessel.

4. The frozen drink maker of claim **1**, wherein the flexible seal comprises a vessel seal portion configured to create a watertight seal between the mixing vessel and the upper housing section, and an evaporator seal portion configured to seal the evaporator within the mixing vessel.

5. The frozen drink maker of claim **1**, wherein when moving between the coupling position and the uncoupling position, the lever rotates less than 90° relative to the upper housing section.

6. The frozen drink maker of claim **1**, further comprising an interlock switch, wherein the interlock switch is positioned within the upper housing section and configured to be activated and permit action of the motor when the mixing vessel is coupled to the housing.

7. The frozen drink maker of claim **1**, wherein the pour-in opening is on a top of the mixing vessel.

8. The frozen drink maker of claim **1**, wherein the lever comprises a handle enabling a user to move the lever between the coupling position and the uncoupling position.

9. The frozen drink maker of claim **8**, wherein an uppermost portion of the handle is positioned closer to the upper housing section when in the coupling position than when in the uncoupling position.

10. The frozen drink maker of claim **1**, wherein movement of the lever to move the lever into the coupling position activates a cam in the upper housing section that engages at least one mating feature on the mixing vessel to secure the mixing vessel to the upper housing section.

11. The frozen drink maker of claim **10**, wherein the cam further comprises an ejection feature to apply an ejection force to the mixing vessel when the lever is moved from the coupling position to the uncoupling position.

12. The frozen drink maker of claim **1**, further comprising a collection tray configured to be removably placed in or on the housing at least partly below the mixing vessel, the collection tray comprising a collection chamber for receiving liquid from an exterior surface of the mixing vessel.

13. The frozen drink maker of claim **12**, further comprising a channel formed between the exterior surface of the mixing vessel and the housing, wherein the liquid received by the collection chamber travels from the exterior surface of the mixing vessel, through the channel, and to the collection chamber.

14. The frozen drink maker of claim **12**, wherein the collection tray is configured to be removably placed at least partly in a slot of the housing positioned below the mixing vessel.

15. The frozen drink maker of claim **12**, wherein a curvature of a user-facing surface of a handle of the collection tray is configured to correspond to a curvature of a user-facing front edge of the mixing vessel.

16. The frozen drink maker of claim **12**, wherein the housing further comprises at least one rail configured to guide a placement of the collection tray when the collection tray is placed in or on the housing.

17. The frozen drink maker of claim **16**, wherein the at least one rail is further configured to guide a placement of the mixing vessel when the mixing vessel is placed on the housing for coupling to the housing.

18. A frozen drink maker comprising:

a housing comprising an upper housing section and a coupling mechanism rotatably moveable relative to the upper housing section between a coupling position and an uncoupling position, wherein the coupling mechanism comprises a lever;

a mixing vessel to receive a drink product, the mixing vessel having:

a first end with a first opening and a second end with a second opening configured to dispense the drink product; and

a pour-in opening located on the mixing vessel between the first end and the second end;

a dasher configured to rotate in the mixing vessel;

a motor to drive the dasher;

an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and

a flexible seal arranged proximate to the upper housing section,

wherein the coupling mechanism controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position, and

wherein, when the coupling mechanism is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.

19. The frozen drink maker of claim **18**, wherein the flexible seal comprises a vessel seal portion configured to create a watertight seal between the mixing vessel and the upper housing section, and an evaporator seal portion configured to seal the evaporator within the mixing vessel.

20. The frozen drink maker of claim **18**, wherein the housing further comprises at least one rail configured to guide a placement of the mixing vessel when the mixing vessel is placed on the housing for coupling to the housing.

21. The frozen drink maker of claim **18**, wherein the pour-in opening is on a top of the mixing vessel.

22. The frozen drink maker of claim **18**, further comprising a collection tray configured to be removably placed in or on the housing at least partly below the mixing vessel, the collection tray comprising a collection chamber for receiving liquid from an exterior surface of the mixing vessel.

23. The frozen drink maker of claim 22, further comprising a channel formed between the exterior surface of the mixing vessel and the housing, wherein the liquid received by the collection chamber travels from the exterior surface of the mixing vessel, through the channel, and to the collection chamber.

24. A frozen drink maker comprising:

a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;

a mixing vessel to receive a drink product, the mixing vessel having:

a first end with a first opening and a second end with a second opening configured to dispense the drink product; and

a pour-in opening located on the mixing vessel between the first end and the second end;

a dasher configured to rotate in the mixing vessel;

a motor to drive the dasher;

an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and

a flexible seal arranged proximate to the upper housing section,

wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position, and

wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.

25. The frozen drink maker of claim 24, wherein the flexible seal comprises a vessel seal portion configured to create a watertight seal between the mixing vessel and the upper housing section, and an evaporator seal portion configured to seal the evaporator within the mixing vessel.

26. The frozen drink maker of claim 24, further comprising an interlock switch, wherein the interlock switch is positioned within the upper housing section and configured to be activated and permit action of the motor when the mixing vessel is coupled to the housing.

27. The frozen drink maker of claim 24, further comprising a compressor, a condenser, and a condenser fan.

28. The frozen drink maker of claim 24, wherein the pour-in opening is on a top of the mixing vessel.

29. The frozen drink maker of claim 24, wherein the flexible seal is arranged between the upper housing section and the first end of the mixing vessel when the mixing vessel is in a coupling position.

30. The frozen drink maker of claim 24, wherein the housing comprises a lever moveable relative to the upper housing section, wherein moving the lever to a first position moves the cam feature into the coupling position, and wherein, when in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling of the mixing vessel to the upper housing section.

31. The frozen drink maker of claim 30, wherein the mixing vessel comprises a wall having the first opening formed therein, wherein the first opening is sealed against the upper housing section by the flexible seal when the lever is in the first position, and wherein the flexible seal comprises a face seal that interfaces a vertically aligned surface of the upper housing section to an edge of the first end of the mixing vessel.

32. The frozen drink maker of claim 30, wherein the cam feature further comprises an ejection feature to apply an ejection force to the mixing vessel when the lever is moved from the first position to a second position.

* * * * *

EXHIBIT 1

Exhibit 1
Claim Chart Comparing the Keenstar Frozen Drink Maker to U.S. Patent No. 12,593,855

Below is a chart that applies asserted exemplary independent claim 24 and 30 of U.S. Patent No. 12,593,855 (the "'855 Patent") to the accused Keenstar Frozen Drink Maker (the "Accused Product"). This Accused Product was purchased at the following listings:

- www.amazon.com/dp/B0F7KL8BX9 (ASIN B0F7KL8BX9)
- https://www.amazon.com/dp/B0DTHB6L3K (ASIN B0DTHB6L3K)
- https://www.amazon.com/dp/B0F9L29XPC (ASIN B0F9L29XPC)

Inspection of the Accused Products purchased at each of the foregoing listings confirms that each is identical. The following contentions use photographs taken of one of the Accused Products, but each feature shown is identically present in all purchased Accused Products.

The arguments and evidence cited in the chart below are representative and Plaintiffs reserve the right to rely on additional arguments and evidence to show that the above-identified accused product infringes exemplary independent claim 24 and 30 of the '855 Patent.

Claim Element	**Accused Product**
24[Pre.]: A frozen drink maker comprising:	

Exhibit 1
Claim Chart Comparing the Keenstar Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

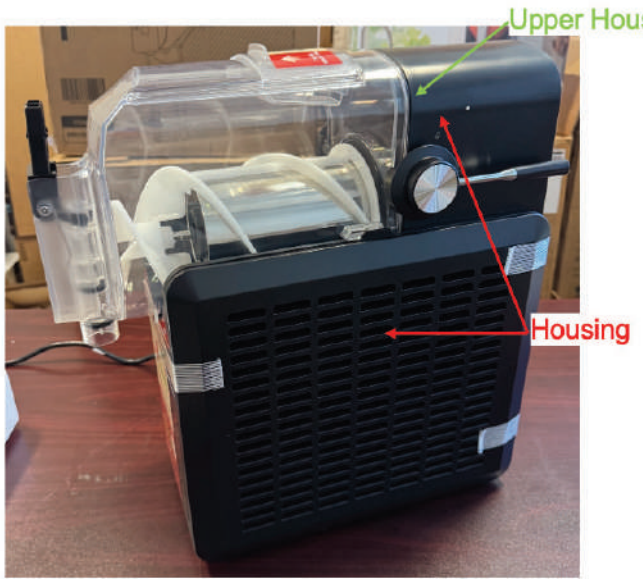
Claim Element	Accused Product
	Accused Product Packaging.
24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;	 Photograph of Accused Product (annotated). The cam feature of the Accused Product is moveable between a coupling position and uncoupling position.

Exhibit 1
Claim Chart Comparing the Keenstar Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

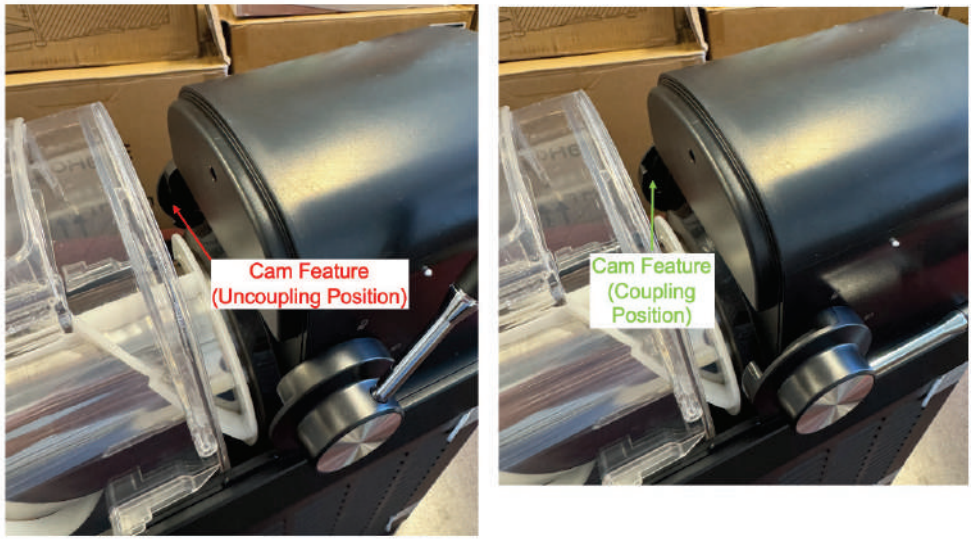
Claim Element	Accused Product
	 Photographs of Accused Product (annotated).

Exhibit 1
Claim Chart Comparing the Keenstar Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

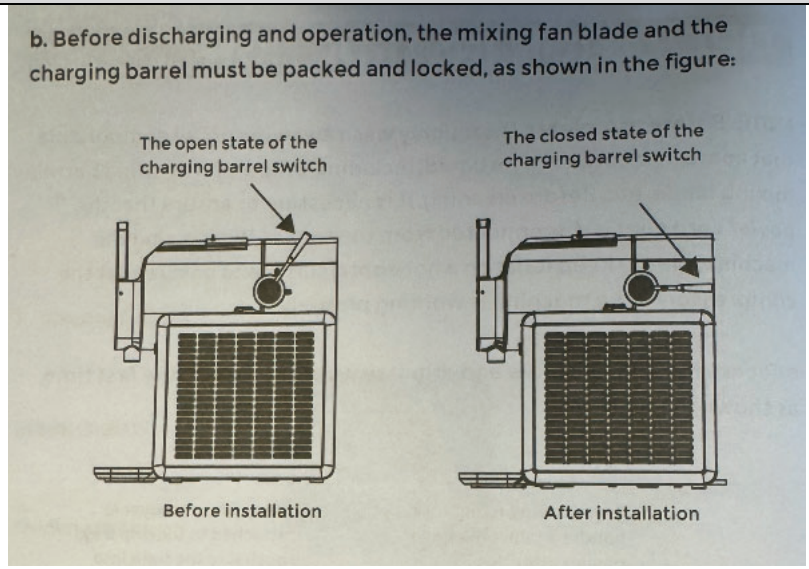
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 1
Claim Chart Comparing the Keenstar Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

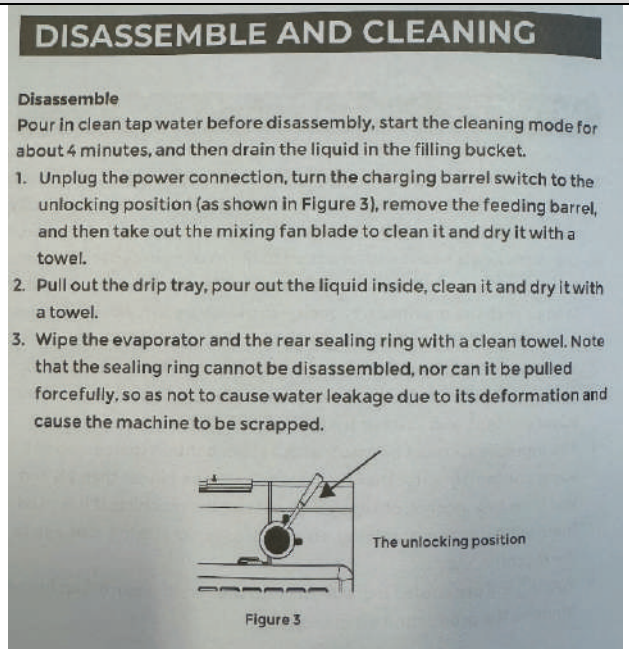
Claim Element	Accused Product
	 Accused Product Instruction Manual.
24[b]: a mixing vessel to receive a drink product, the mixing vessel having:	The mixing vessel is configured to receive a drink product.

Exhibit 1
Claim Chart Comparing the Keenstar Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

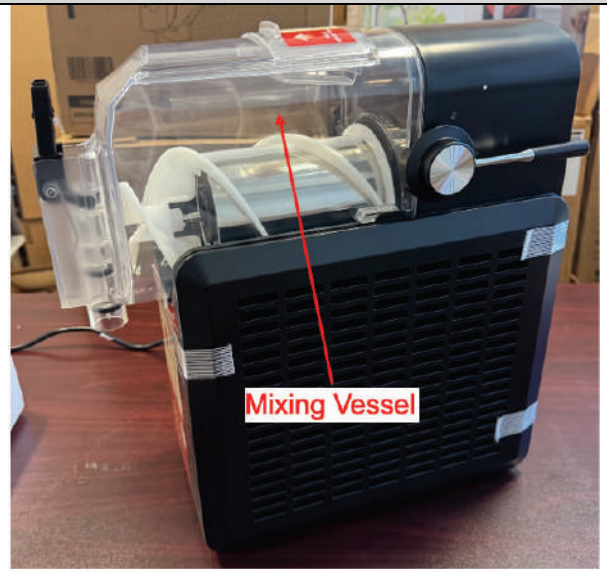
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and	Photograph of Accused Product (annotated).

Exhibit 1
Claim Chart Comparing the Keenstar Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

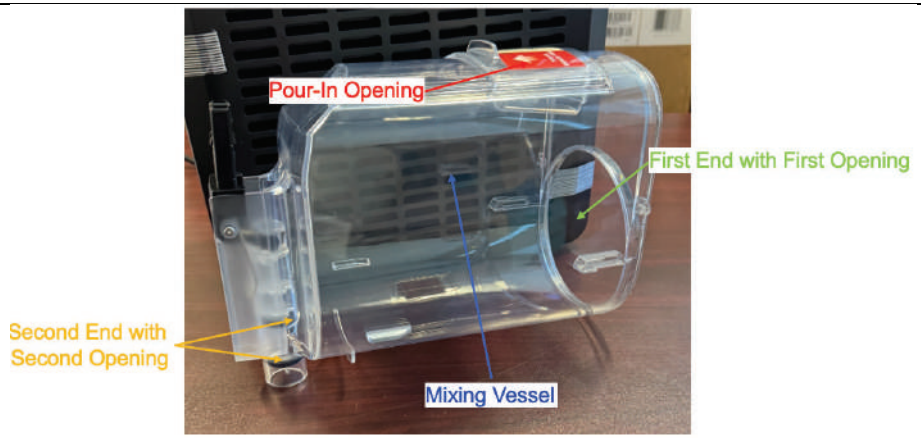
Claim Element	Accused Product
	The second opening of the mixing vessel of the Accused Product is configured to dispense a drink product.
24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;	 Photograph of Accused Product (annotated).
24[c]: a dasher configured to rotate in the mixing vessel;	The dasher of the Accused Product is configured to rotate in the mixing vessel to stir the drink product.

Exhibit 1
Claim Chart Comparing the Keenstar Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

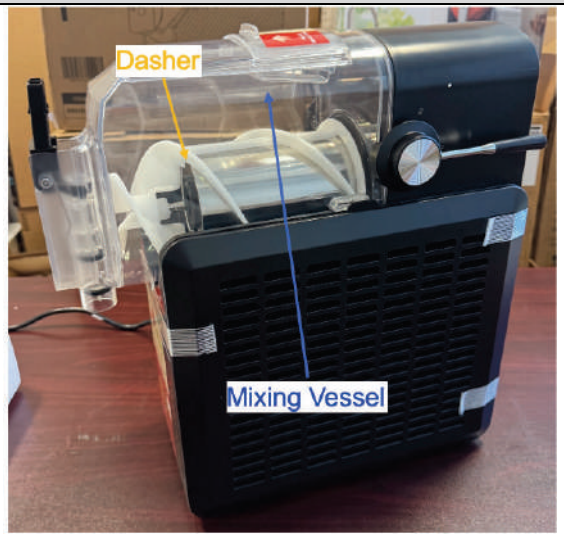
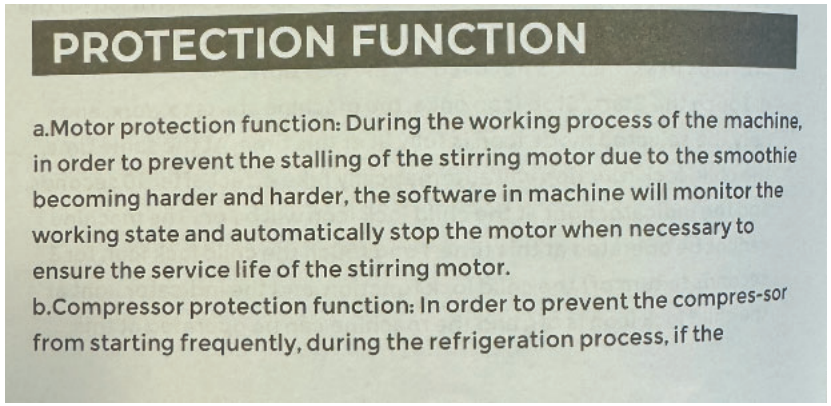
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
24[d]: a motor to drive the dasher;	The Accused Product includes a motor that drives the dasher to rotate it to stir the drink product. 

Exhibit 1

Claim Chart Comparing the Keenstar Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

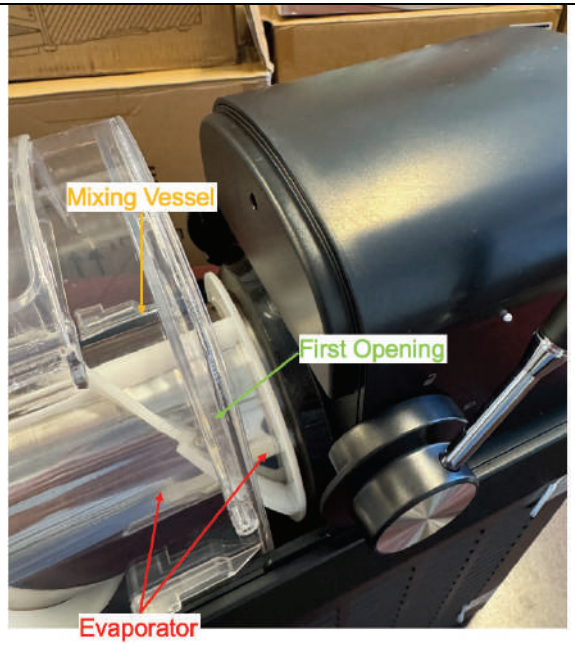
Claim Element	Accused Product
	Accused Product Instruction Manual. As confirmed by product testing, during operation a motor of the frozen drink maker drives the dasher to rotate.
24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and	 Photograph of Accused Product (annotated). The evaporator is received through the first opening of the mixing vessel.

Exhibit 1

Claim Chart Comparing the Keenstar Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

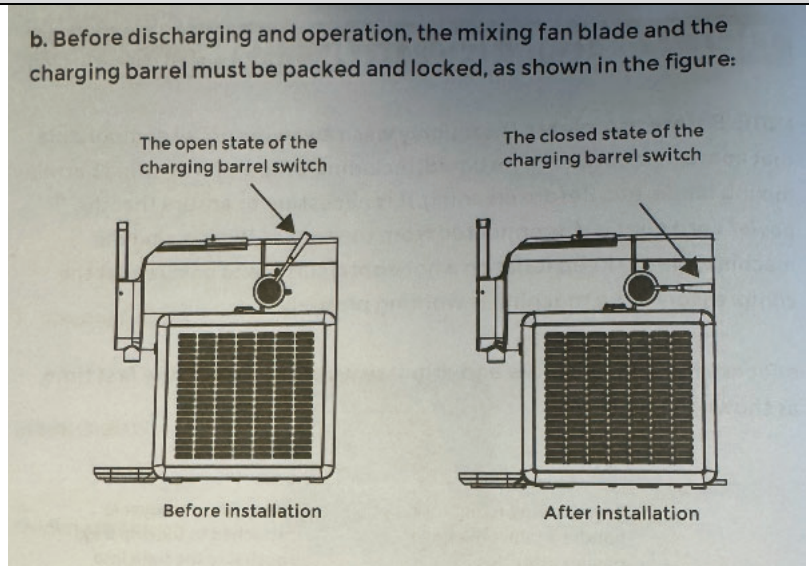
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 1

Claim Chart Comparing the Keenstar Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

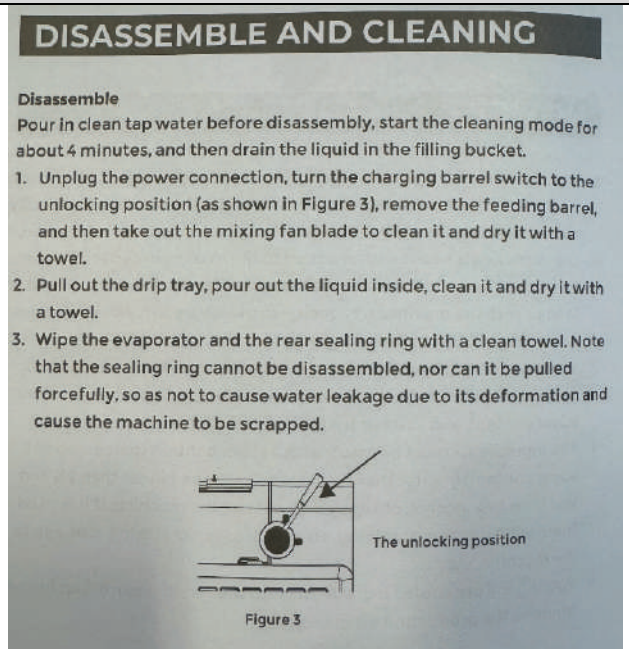
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 1

Claim Chart Comparing the Keenstar Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
24[f]: a flexible seal arranged proximate to the upper housing section;	 Photograph of Accused Product (annotated). As confirmed by product testing, the flexible seal comprises a flexible material.
24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position, and	The cam feature of the Accused Product controls the coupling of the mixing vessel to the upper housing section when in the coupling position and uncouples the mixing vessel from the upper housing section when in the uncoupling position.

Exhibit 1

Claim Chart Comparing the Keenstar Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

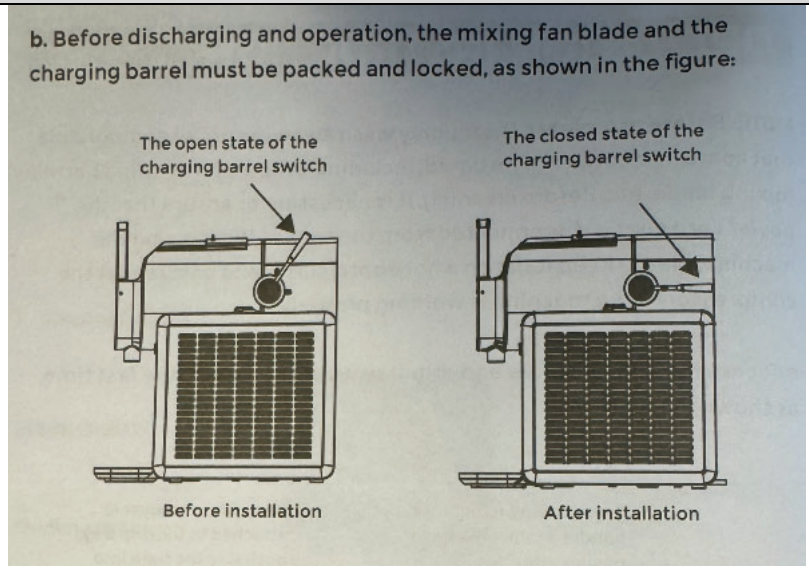
Claim Element	**Accused Product**
	 Accused Product Instruction Manual.

Exhibit 1

Claim Chart Comparing the Keenstar Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

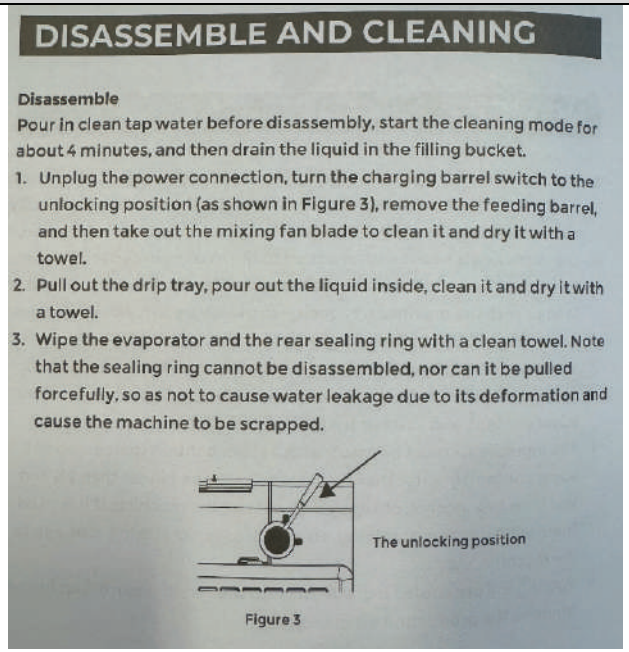
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 1

Claim Chart Comparing the Keenstar Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

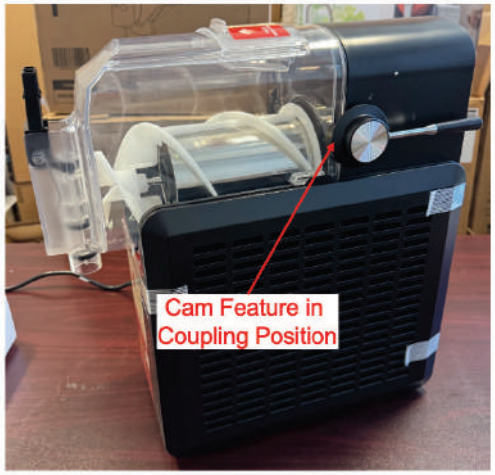
Claim Element	**Accused Product**
	 Photographs of Accused Product (annotated). *Id.*, Cl. 24[a].
24[h]: wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.	When the cam feature of the Accused Product is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal about the first opening.

Exhibit 1

Claim Chart Comparing the Keenstar Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

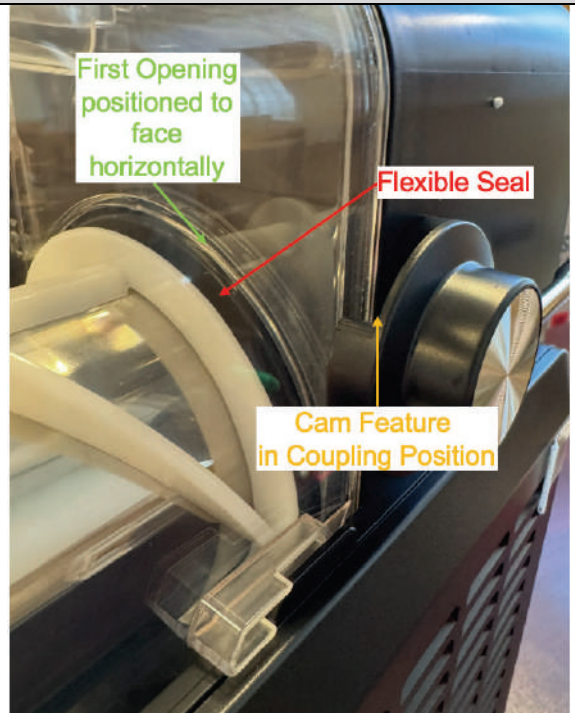
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
30. The frozen drink maker of claim 24, wherein the housing comprises a lever moveable relative to the upper housing section, wherein moving the lever to a first position moves the cam feature into the coupling position, and wherein, when in the coupling position, the cam feature	The lever of the Accused Product is moveable relative to the upper housing section.

Exhibit 1

Claim Chart Comparing the Keenstar Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

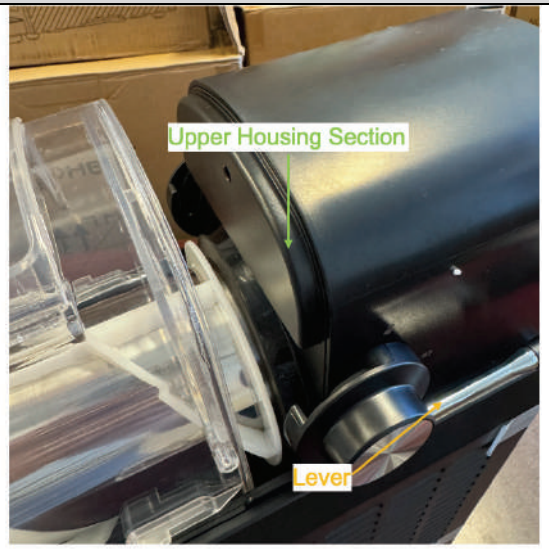
Claim Element	Accused Product
engages at least one mating feature on the mixing vessel to control coupling of the mixing vessel to the upper housing section.	 Photographs of Accused Product (annotated). Moving the lever of the Accused Product to a first position moves the cam feature into the coupling position. When in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling the mixing vessel to the upper housing section.

Exhibit 1

Claim Chart Comparing the Keenstar Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

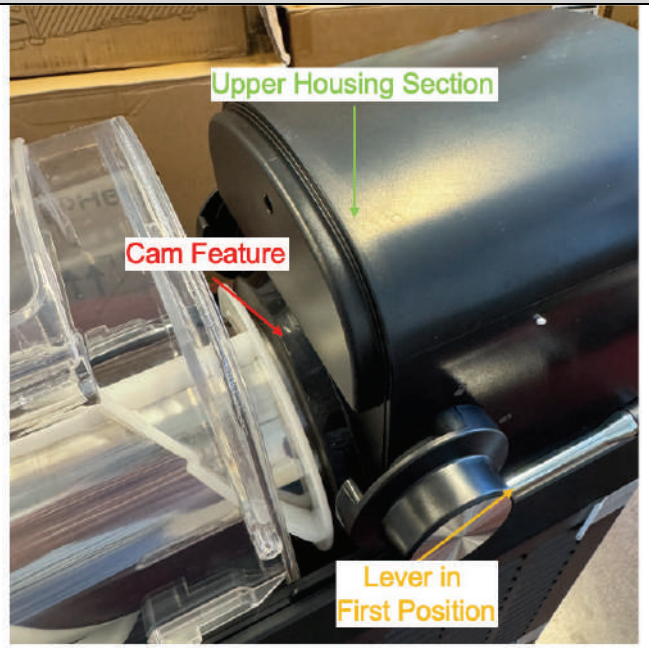
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 1

Claim Chart Comparing the Keenstar Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

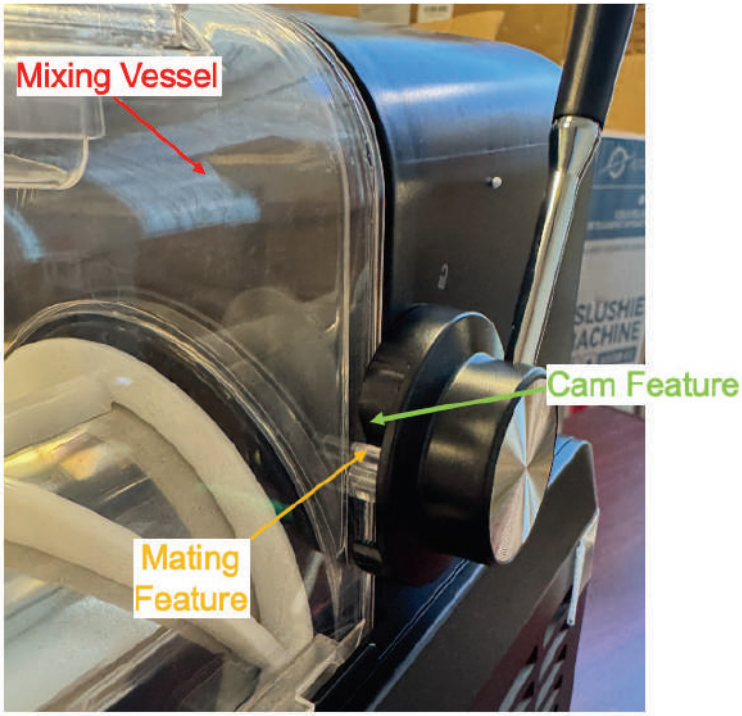
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

EXHIBIT 2

Exhibit 2
Claim Chart Comparing the Luma Frozen Drink Maker to U.S. Patent No. 12,593,855

Below is a chart that applies asserted exemplary independent claim 24 and 30 of U.S. Patent No. 12,593,855 (the "'855 Patent") to the accused Luma Frozen Drink Maker ("Accused Product"), purchased at the following listing: https://www.amazon.com/dp/B0F1WC59N5 (ASIN B0F1WC59N5).

The arguments and evidence cited in the chart below are representative and Plaintiffs reserve the right to rely on additional arguments and evidence to show that the above-identified accused product infringes exemplary independent claim 24 and 30 of the '855 Patent.

Claim Element	Accused Product
24[Pre.]: A frozen drink maker comprising:	 Accused Product Packaging.

Exhibit 2
Claim Chart Comparing the Luma Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;	 Photograph of Accused Product (annotated). The cam feature of the Accused Product is moveable between a coupling position and uncoupling position.

Exhibit 2
Claim Chart Comparing the Luma Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

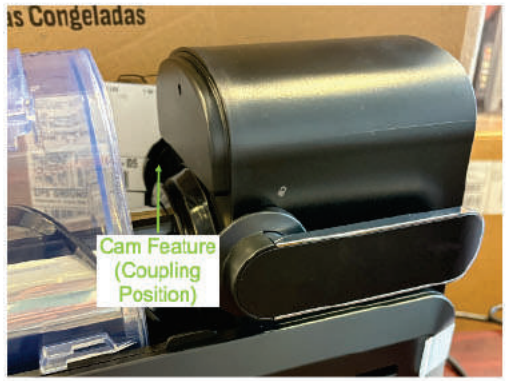
Claim Element	Accused Product
	 Photographs of Accused Product (annotated).

Exhibit 2
Claim Chart Comparing the Luma Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

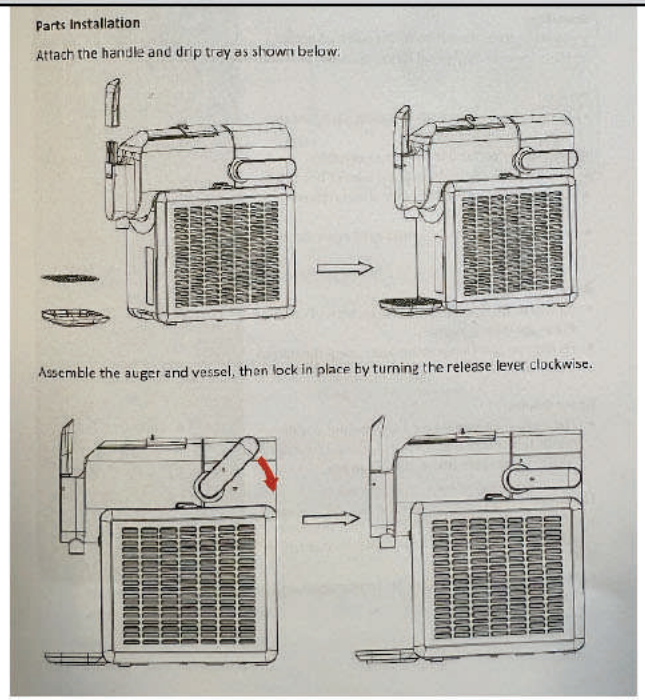
Claim Element	Accused Product
	 Accused Product Instruction Manual.
24[b]: a mixing vessel to receive a drink product, the mixing vessel having:	The mixing vessel is configured to receive a drink product.

Exhibit 2
Claim Chart Comparing the Luma Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 2
Claim Chart Comparing the Luma Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

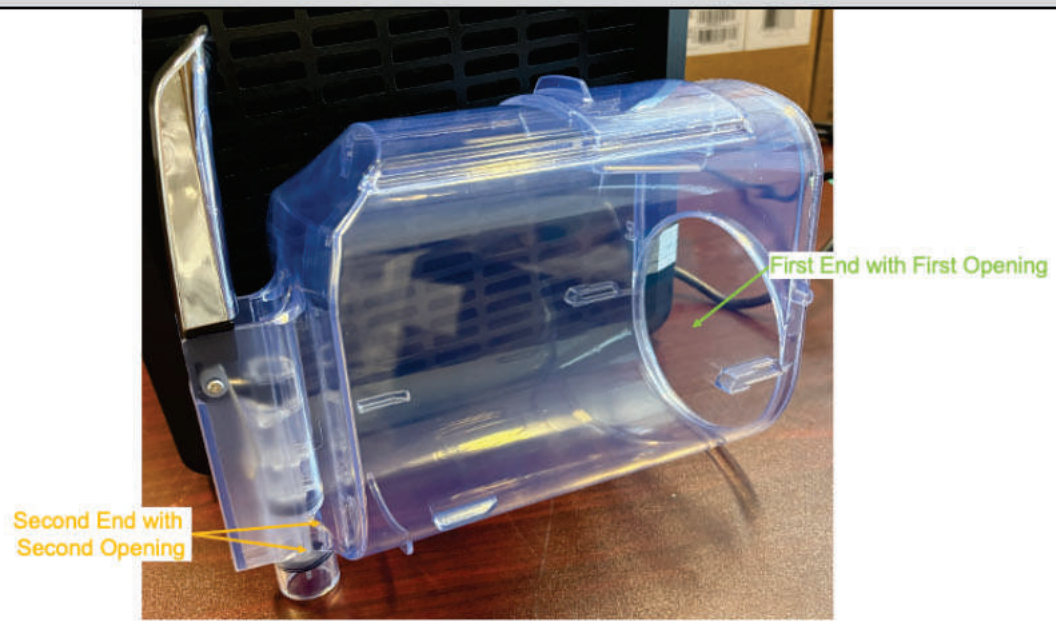
Claim Element	Accused Product
24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and	 Photograph of Accused Product (annotated). The second opening of the mixing vessel of the Accused Product is configured to dispense a drink product.

Exhibit 2
Claim Chart Comparing the Luma Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

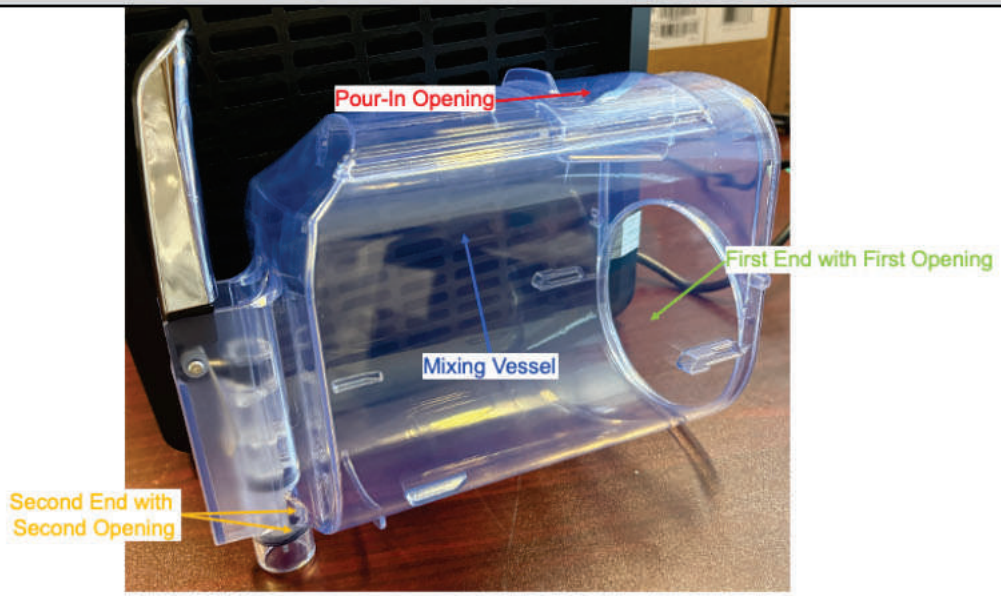
Claim Element	Accused Product
24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;	 Photograph of Accused Product (annotated).
24[c]: a dasher configured to rotate in the mixing vessel;	The dasher of the Accused Product is configured to rotate in the mixing vessel to stir the drink product.

Exhibit 2
Claim Chart Comparing the Luma Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
24[d]: a motor to drive the dasher;	The Accused Product includes a motor that drives the dasher to rotate it to stir the drink product.

Exhibit 2

Claim Chart Comparing the Luma Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

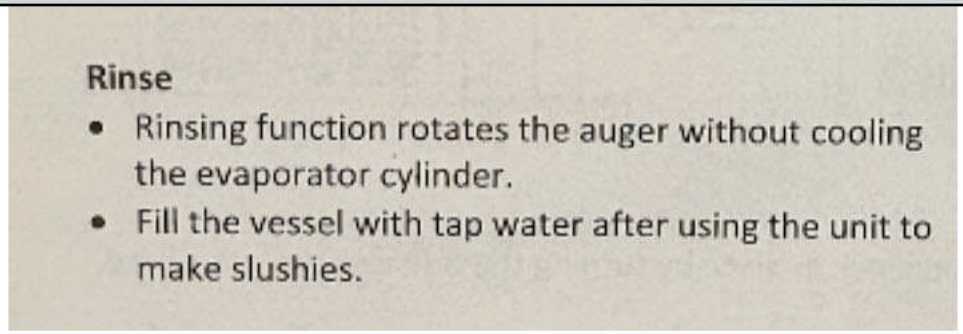
Claim Element	Accused Product
	 Accused Product Instruction Manual. As confirmed by product testing, during operation a motor of the frozen drink maker drives the dasher to rotate.

Exhibit 2

Claim Chart Comparing the Luma Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and	 Photograph of Accused Product (annotated). The evaporator is received through the first opening of the mixing vessel.

Exhibit 2

Claim Chart Comparing the Luma Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

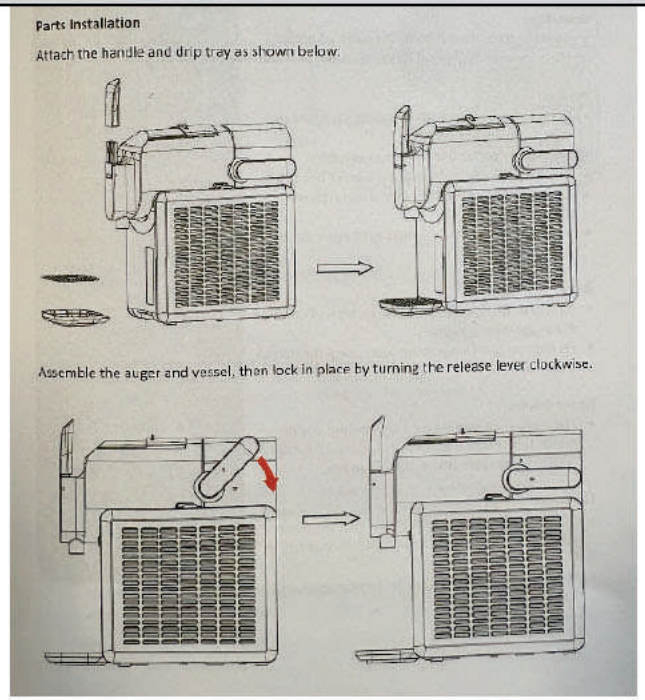
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 2

Claim Chart Comparing the Luma Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

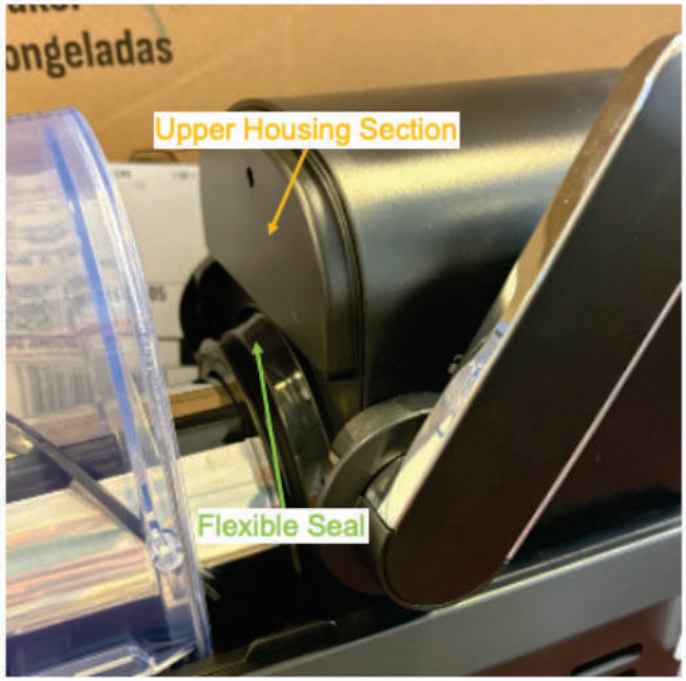
Claim Element	Accused Product
24[f]: a flexible seal arranged proximate to the upper housing section;	 Photograph of Accused Product (annotated). As confirmed by product testing, the flexible seal comprises a flexible material.
24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position, and	The cam feature of the Accused Product controls the coupling of the mixing vessel to the upper housing section when in the coupling position and uncouples the mixing vessel from the upper housing section when in the uncoupling position.

Exhibit 2

Claim Chart Comparing the Luma Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

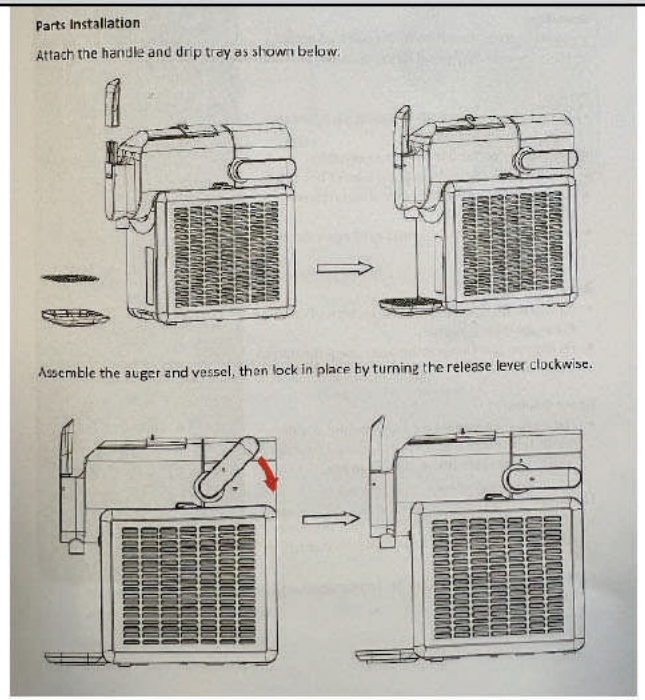
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 2

Claim Chart Comparing the Luma Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	Photographs of Accused Product (annotated). *Id.*, Cl. 24[a].
24[h]: wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.	When the cam feature of the Accused Product is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal about the first opening.

Exhibit 2

Claim Chart Comparing the Luma Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

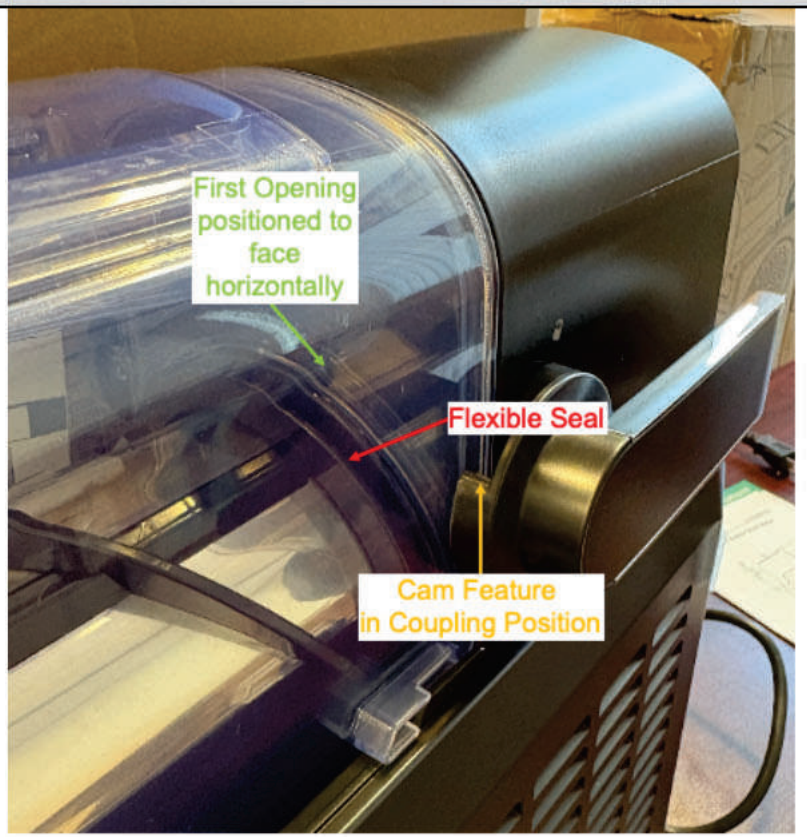
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
30. The frozen drink maker of claim 24, wherein the housing comprises a lever moveable relative to the upper housing section, wherein moving the lever to a first position moves the	The lever of the Accused Product is moveable relative to the upper housing section.

Exhibit 2

Claim Chart Comparing the Luma Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
cam feature into the coupling position, and wherein, when in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling of the mixing vessel to the upper housing section.	Photographs of Accused Product (annotated). Moving the lever of the Accused Product to a first position moves the cam feature into the coupling position. When in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling the mixing vessel to the upper housing section.

Exhibit 2

Claim Chart Comparing the Luma Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

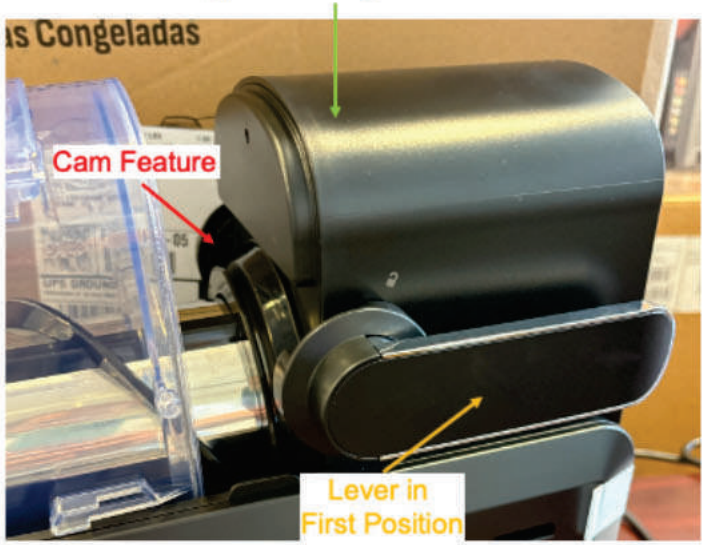
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 2

Claim Chart Comparing the Luma Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

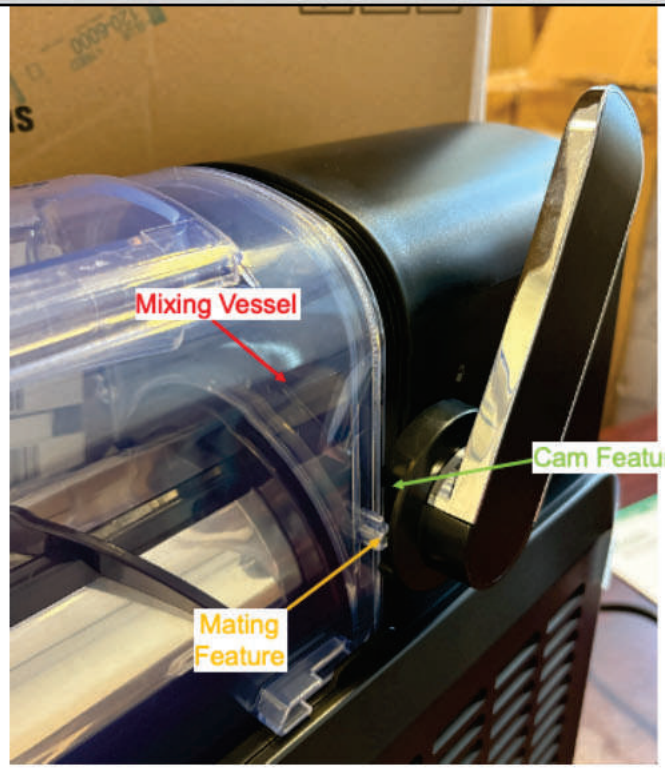
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

EXHIBIT 3

Exhibit 3
Claim Chart Comparing the Relexnow Frozen Drink Maker to U.S. Patent No. 12,593,855

Below is a chart that applies asserted exemplary independent claim 24 of U.S. Patent No. 12,593,855 (the "'855 Patent") to the accused Relexnow Frozen Drink Maker (the "Accused Product"). This Accused Product was purchased at the following listings:

- https://www.amazon.com/dp/B0DSW3XJ3Q (ASIN B0DSW3XJ3Q)
- https://www.amazon.com/dp/B0F6MFZCH6 (ASIN B0F6MFZCH6)
- https://www.amazon.com/dp/B0FX8JWND5 (ASIN B0FX8JWND5)
- https://www.amazon.com/dp/B0GJ3JR6H5 (ASIN B0GJ3JR6H5)

Inspection of the Accused Products purchased at each of the foregoing listings confirms that each is identical. The following contentions use photographs taken of one of the Accused Products, but each feature shown is identically present in all purchased Accused Products.

The arguments and evidence cited in the chart below are representative and Plaintiffs reserve the right to rely on additional arguments and evidence to show that the above-identified accused product infringes exemplary independent claim 24 and 30 of the '855 Patent.

Exhibit 3
Claim Chart Comparing the Relexnow Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

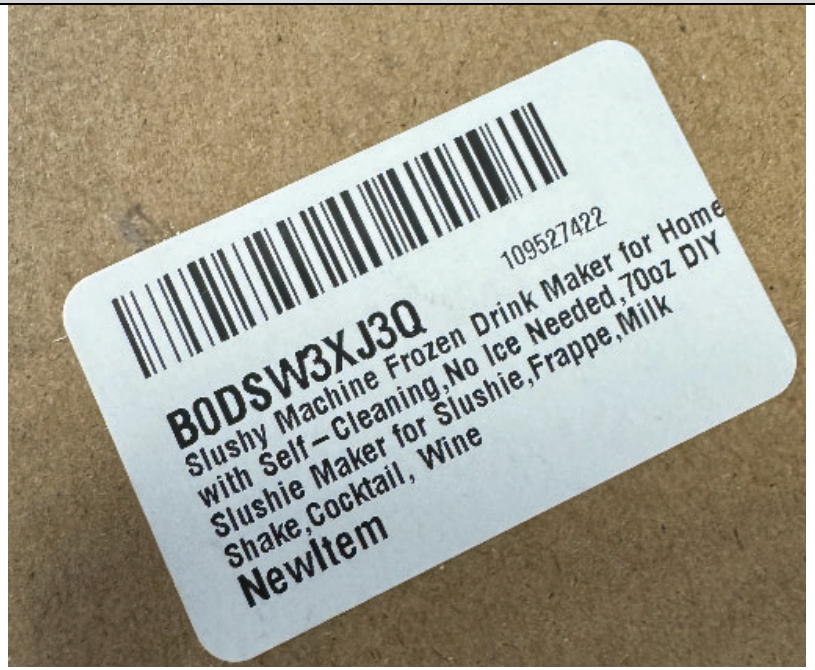
Claim Element	Accused Product
24[Pre.]: A frozen drink maker comprising:	 Accused Product Packaging.

Exhibit 3
Claim Chart Comparing the Relexnow Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Photograph of Accused Product.

Exhibit 3
Claim Chart Comparing the Relexnow Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;	 Photograph of Accused Product (annotated). The cam feature of the Accused Product is moveable between a coupling position and uncoupling position.

Exhibit 3
Claim Chart Comparing the Relexnow Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

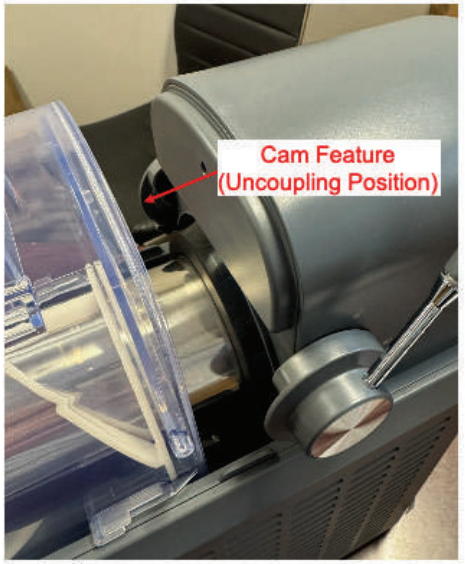
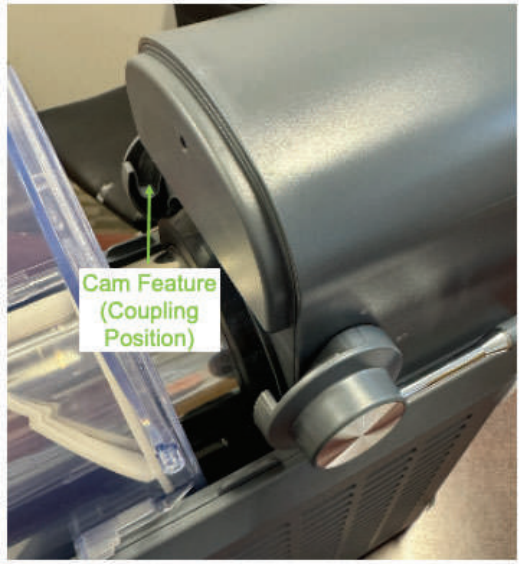
Claim Element	Accused Product
	  Photographs of Accused Product (annotated).

Exhibit 3
Claim Chart Comparing the Relexnow Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

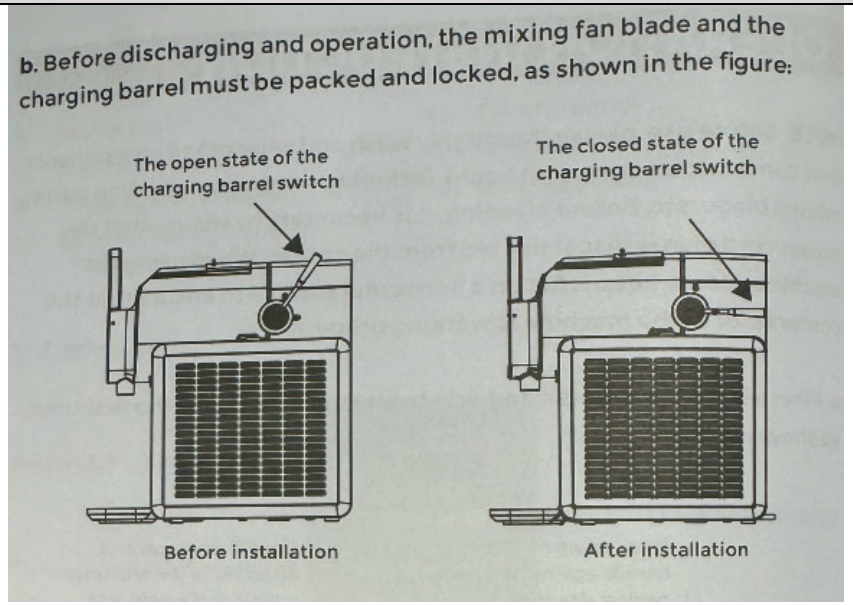
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 3
Claim Chart Comparing the Relexnow Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

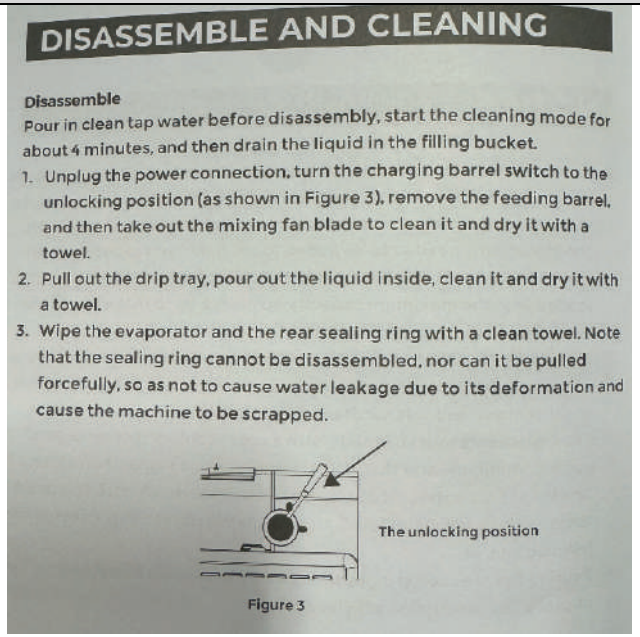
Claim Element	Accused Product
	 Accused Product Instruction Manual.
24[b]: a mixing vessel to receive a drink product, the mixing vessel having:	The mixing vessel is configured to receive a drink product.

Exhibit 3
Claim Chart Comparing the Relexnow Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	Photograph of Accused Product (annotated).

Exhibit 3

Claim Chart Comparing the Relexnow Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

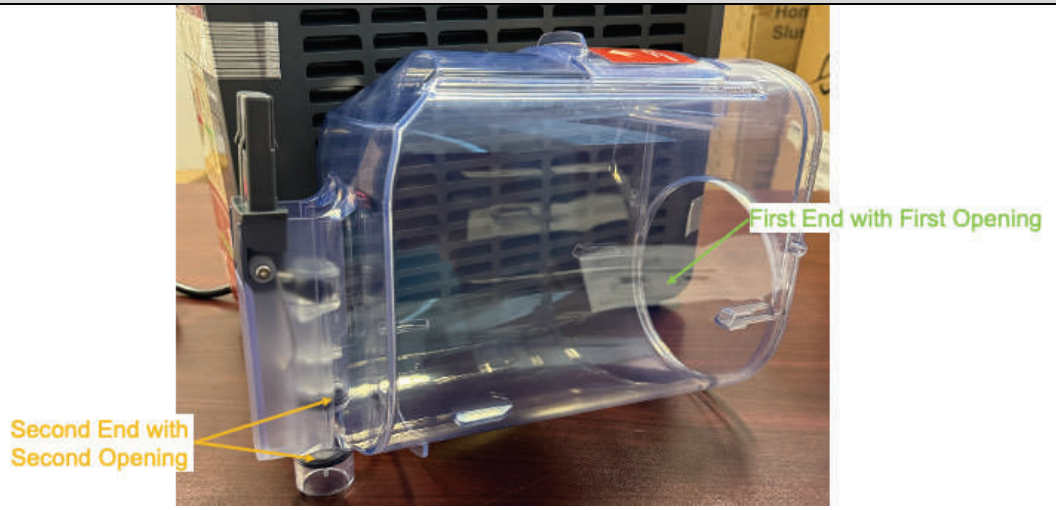
Claim Element	Accused Product
24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and	 Photograph of Accused Product (annotated). The second opening of the mixing vessel of the Accused Product is configured to dispense a drink product.

Exhibit 3

Claim Chart Comparing the Relexnow Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

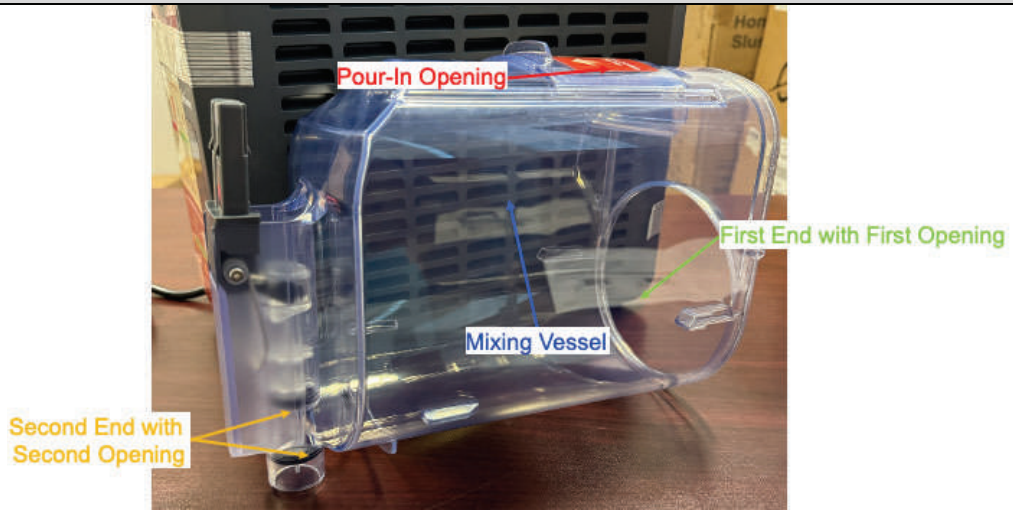
Claim Element	**Accused Product**
24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;	 Photograph of Accused Product (annotated).
24[c]: a dasher configured to rotate in the mixing vessel;	The dasher of the Accused Product is configured to rotate in the mixing vessel to stir the drink product.

Exhibit 3

Claim Chart Comparing the Relexnow Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

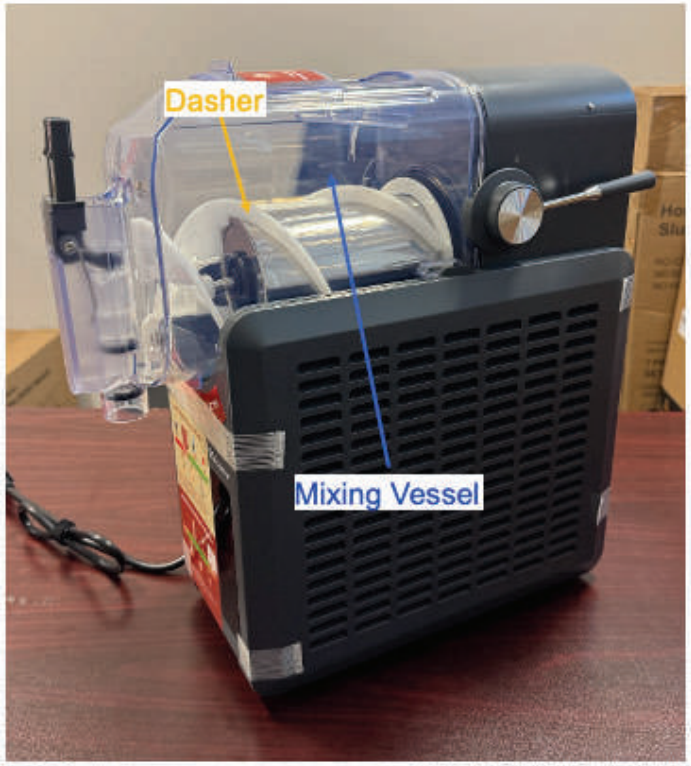
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
24[d]: a motor to drive the dasher;	The Accused Product includes a motor that drives the dasher to rotate it to stir the drink product. As confirmed by product testing, during operation a motor of the frozen drink maker drives the dasher to rotate.

Exhibit 3

Claim Chart Comparing the Relexnow Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

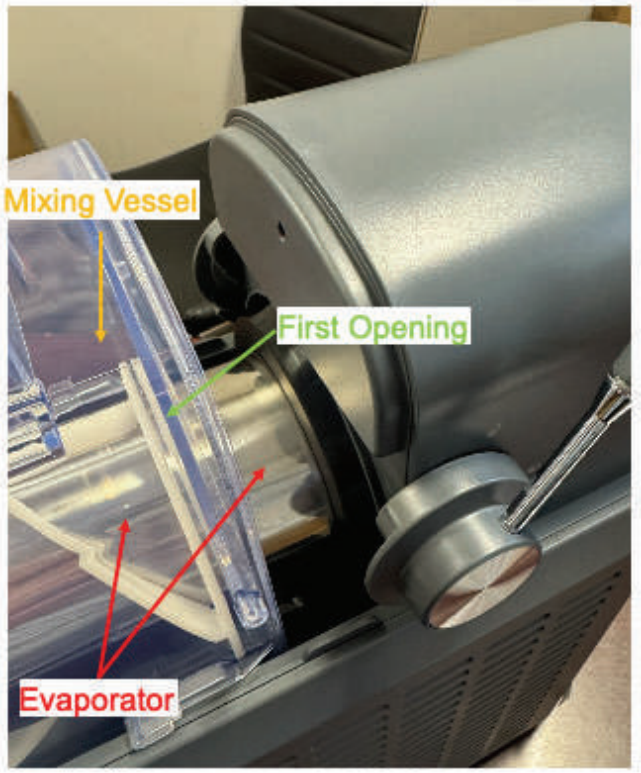
Claim Element	Accused Product
24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and	 Photograph of Accused Product (annotated). The evaporator is received through the first opening of the mixing vessel.

Exhibit 3

Claim Chart Comparing the Relexnow Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

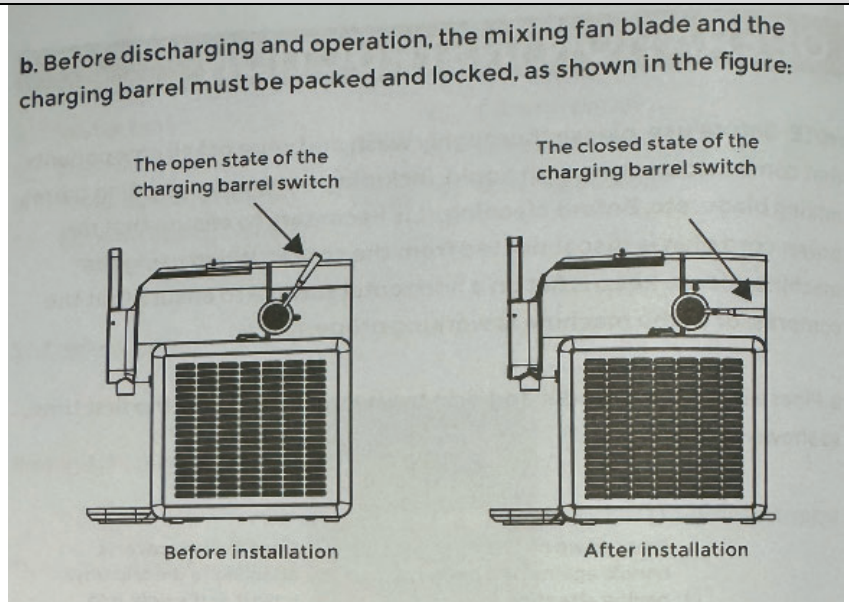
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 3

Claim Chart Comparing the Relexnow Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

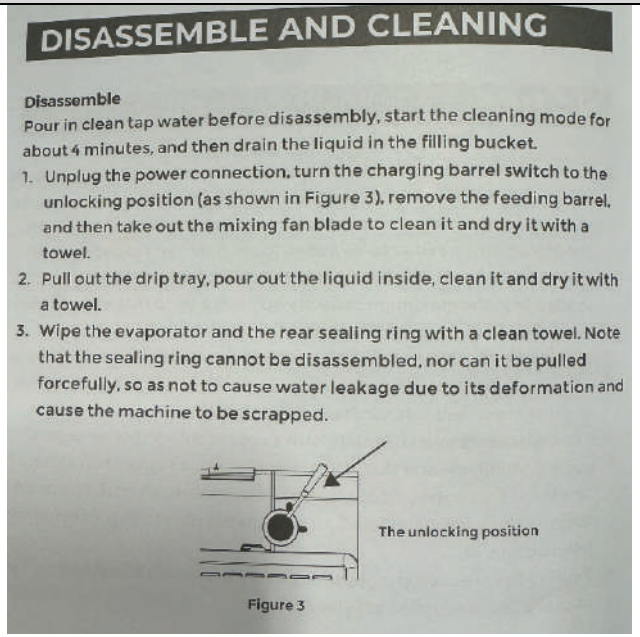
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 3

Claim Chart Comparing the Relexnow Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
24[f]: a flexible seal arranged proximate to the upper housing section;	 Photograph of Accused Product (annotated). As confirmed by product testing, the flexible seal comprises a flexible material.
24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper	The cam feature of the Accused Product controls the coupling of the mixing vessel to the upper housing section when in the coupling position and uncouples the mixing vessel from the upper housing section when in the uncoupling position.

Exhibit 3

Claim Chart Comparing the Relexnow Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

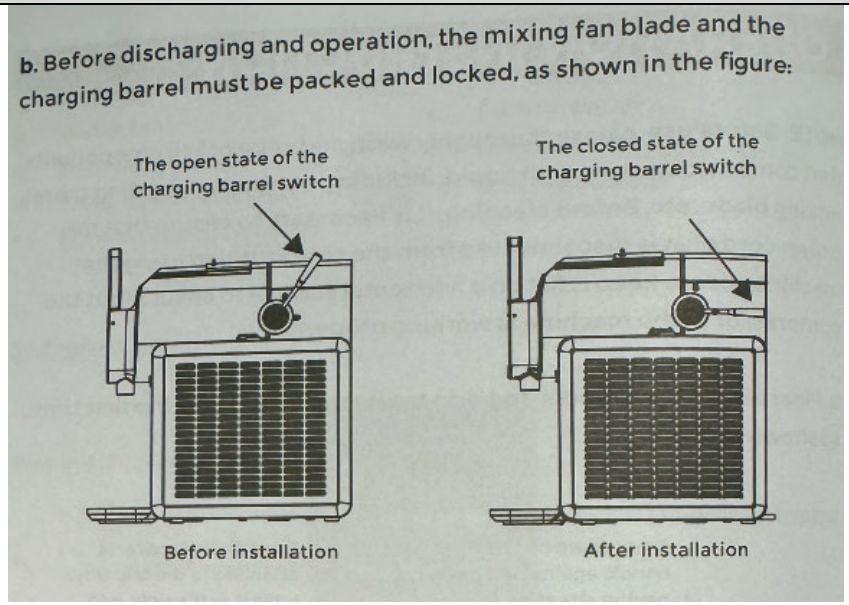
Claim Element	**Accused Product**
housing section when in the uncoupling position, and	 Accused Product Instruction Manual.

Exhibit 3

Claim Chart Comparing the Relexnow Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

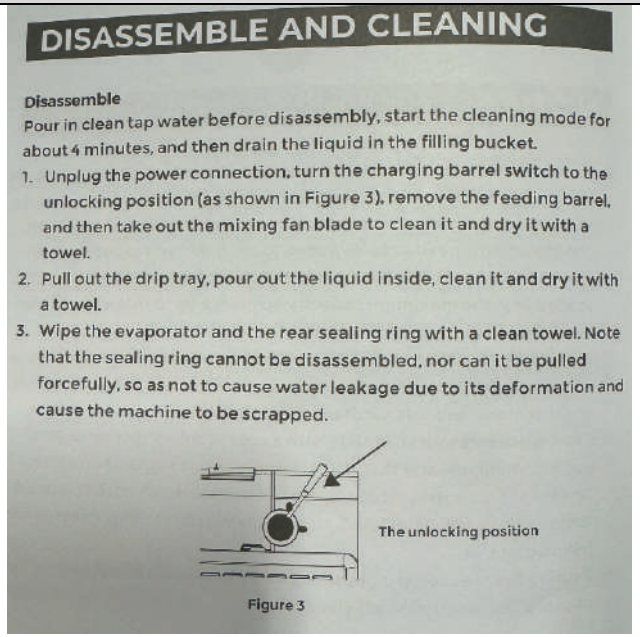
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 3

Claim Chart Comparing the Relexnow Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

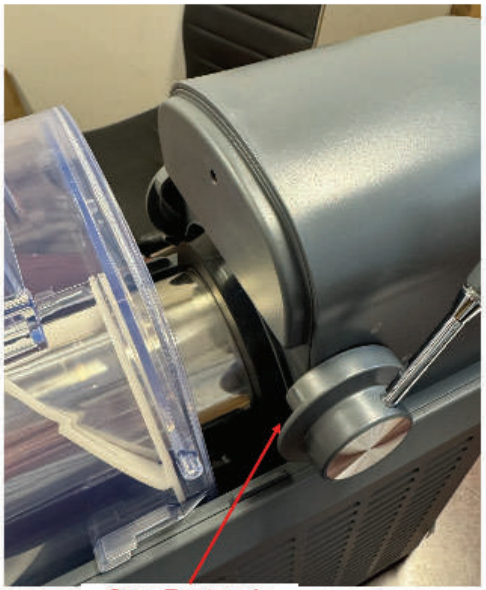
Claim Element	**Accused Product**
	 Photographs of Accused Product (annotated). *Id.*, Cl. 24[a].
24[h]: wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.	When the cam feature of the Accused Product is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal about the first opening.

Exhibit 3

Claim Chart Comparing the Relexnow Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

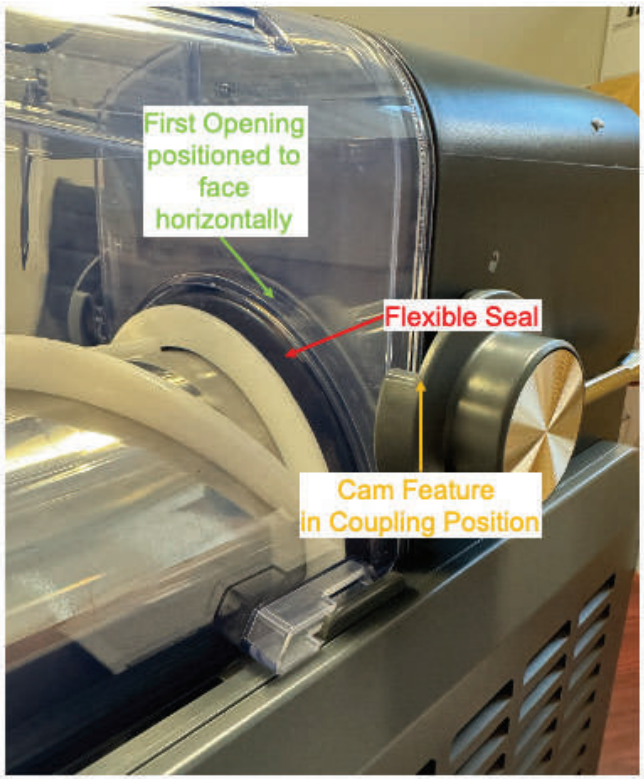
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
30. The frozen drink maker of claim 24, wherein the housing comprises a lever moveable relative to the upper housing section, wherein moving the lever to a first position moves the cam feature into the coupling	The lever of the Accused Product is moveable relative to the upper housing section.

Exhibit 3

Claim Chart Comparing the Relexnow Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

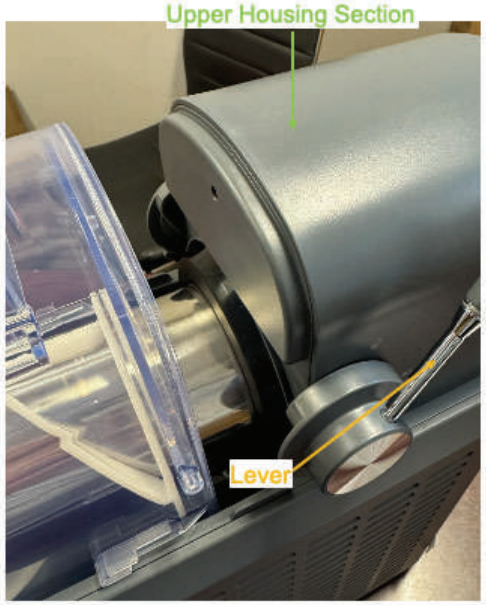
Claim Element	Accused Product
position, and wherein, when in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling of the mixing vessel to the upper housing section.	 Photographs of Accused Product (annotated). Moving the lever of the Accused Product to a first position moves the cam feature into the coupling position. When in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling the mixing vessel to the upper housing section.

Exhibit 3

Claim Chart Comparing the Relexnow Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

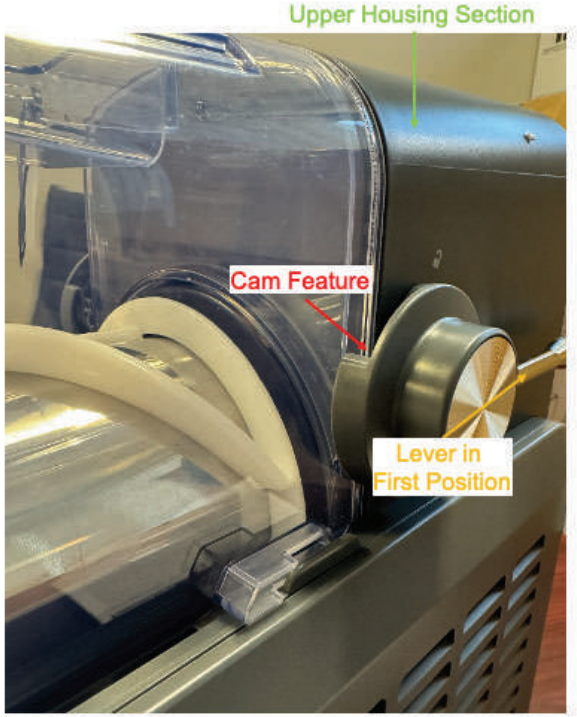
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 3

Claim Chart Comparing the Relexnow Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

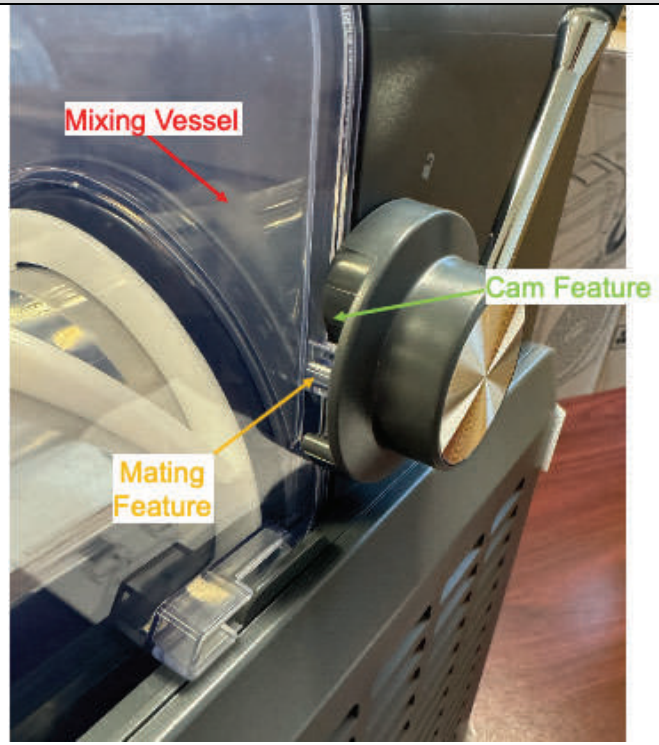
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

EXHIBIT 4

Exhibit 4
Claim Chart Comparing the Bizaura Frozen Drink Maker to U.S. Patent No. 12,593,855

Below is a chart that applies asserted exemplary independent claim 24 and 30 of U.S. Patent No. 12,593,855 (the "'855 Patent") to the accused Bizaura Frozen Drink Maker ("Accused Product"), purchased at the following listing: https://www.walmart.com/ip/BIZAURA-Slushie-Machine-Slushy-Maker-Bundle-Slushy-Machine-Home-Ice-Need-Professional-Frozen-Drink-Maker-6-Presets-Milkshakes-Frapp-s-Slush-Bonus-Ins/17857317050 (SKU 17857317050).

The arguments and evidence cited in the chart below are representative and Plaintiffs reserve the right to rely on additional arguments and evidence to show that the above-identified accused product infringes exemplary independent claim 24 and 30 of the '855 Patent.

Claim Element	**Accused Product**
24[Pre.]: A frozen drink maker comprising:	 Accused Product Packaging.
24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;	

Exhibit 4
Claim Chart Comparing the Bizaura Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

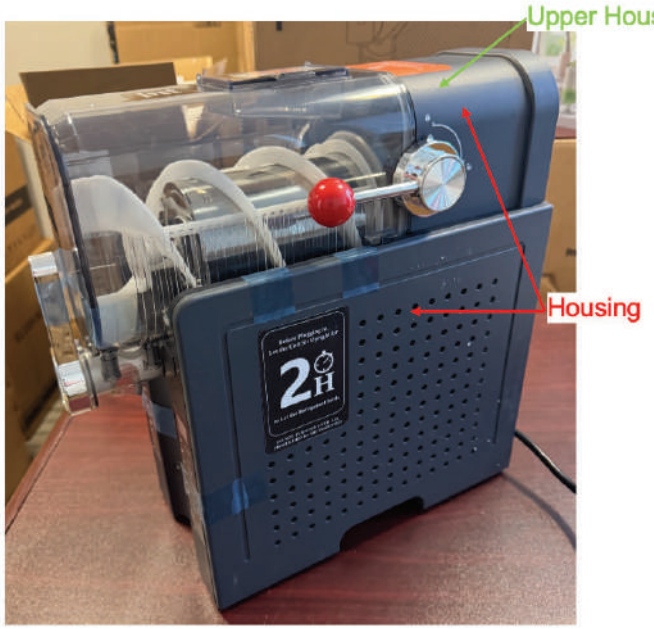
Claim Element	Accused Product
	 Photograph of Accused Product (annotated). The cam feature of the Accused Product is moveable between a coupling position and uncoupling position.

Exhibit 4
Claim Chart Comparing the Bizaura Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	Photographs of Accused Product (annotated).

Exhibit 4
Claim Chart Comparing the Bizaura Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

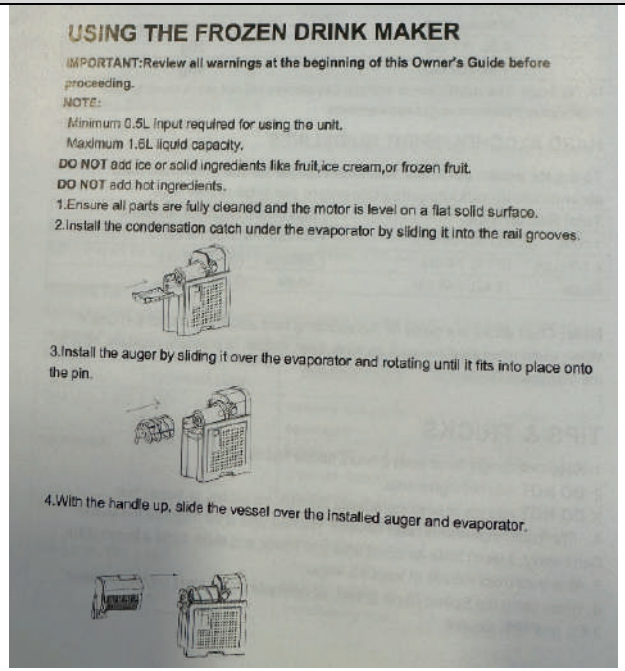
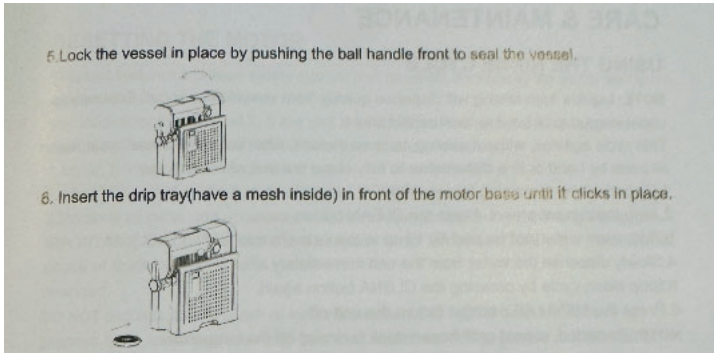
Claim Element	Accused Product
	 Accused Product Instruction Manual.  Accused Product Instruction Manual.

Exhibit 4
Claim Chart Comparing the Bizaura Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	**Accused Product**
24[b]: a mixing vessel to receive a drink product, the mixing vessel having:	The mixing vessel is configured to receive a drink product. Photograph of Accused Product (annotated).

Exhibit 4
Claim Chart Comparing the Bizaura Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

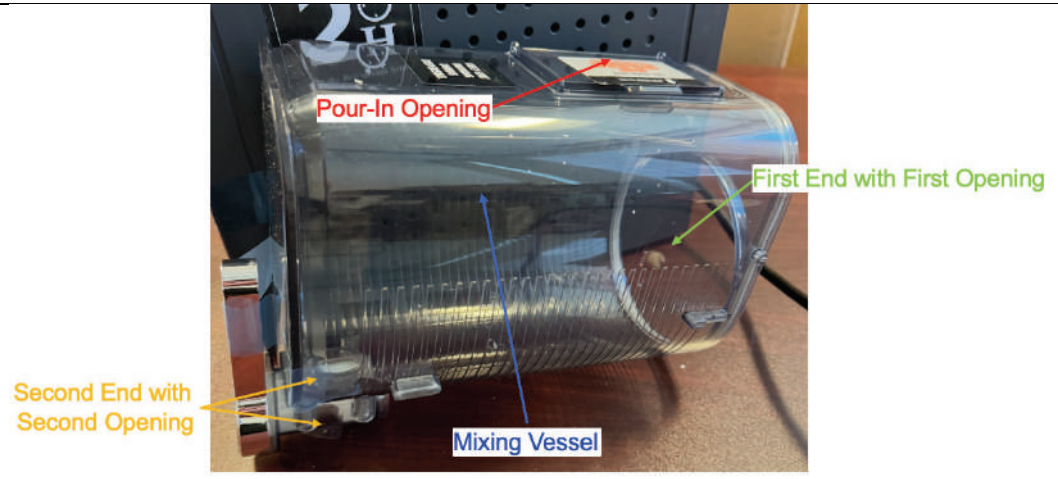
Claim Element	Accused Product
24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and	 Photograph of Accused Product (annotated). The second opening of the mixing vessel of the Accused Product is configured to dispense a drink product.
24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;	 Photograph of Accused Product (annotated).

Exhibit 4
Claim Chart Comparing the Bizaura Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
24[c]: a dasher configured to rotate in the mixing vessel;	The dasher of the Accused Product is configured to rotate in the mixing vessel to stir the drink product. Photograph of Accused Product (annotated).
24[d]: a motor to drive the dasher;	The Accused Product includes a motor that drives the dasher to rotate it to stir the drink product.

Exhibit 4
Claim Chart Comparing the Bizaura Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

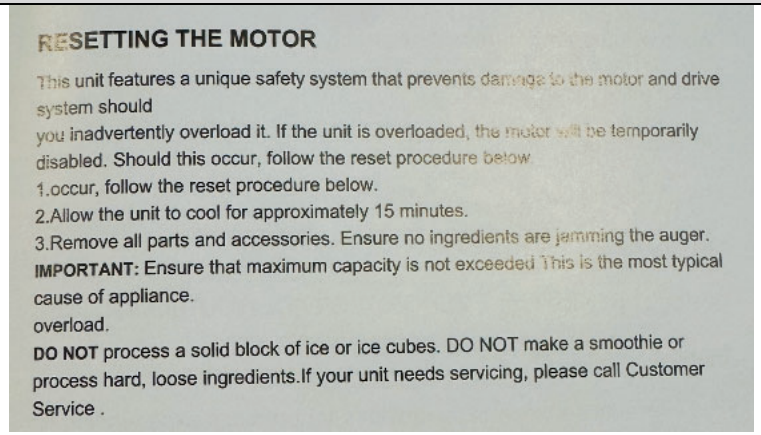
Claim Element	Accused Product
	 Accused Product Instruction Manual. As confirmed by product testing, during operation a motor of the frozen drink maker drives the dasher to rotate.

Exhibit 4

Claim Chart Comparing the Bizaura Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

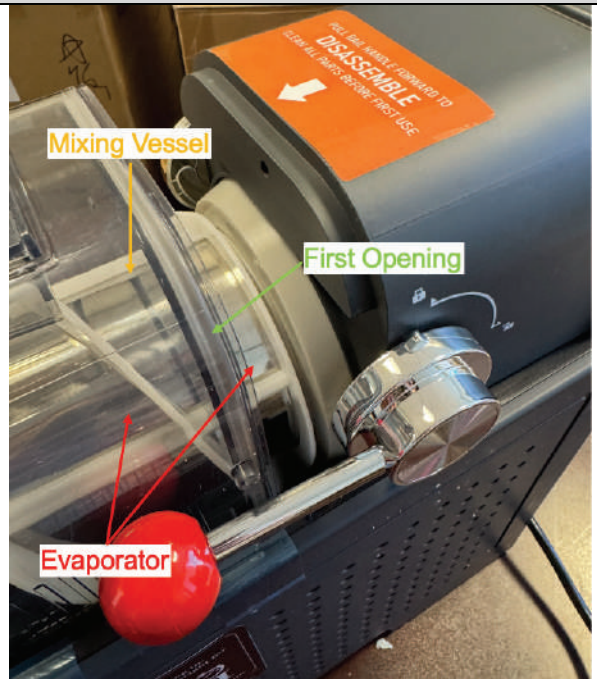
Claim Element	Accused Product
24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and	 Photograph of Accused Product (annotated). The evaporator is received through the first opening of the mixing vessel.

Exhibit 4

Claim Chart Comparing the Bizaura Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

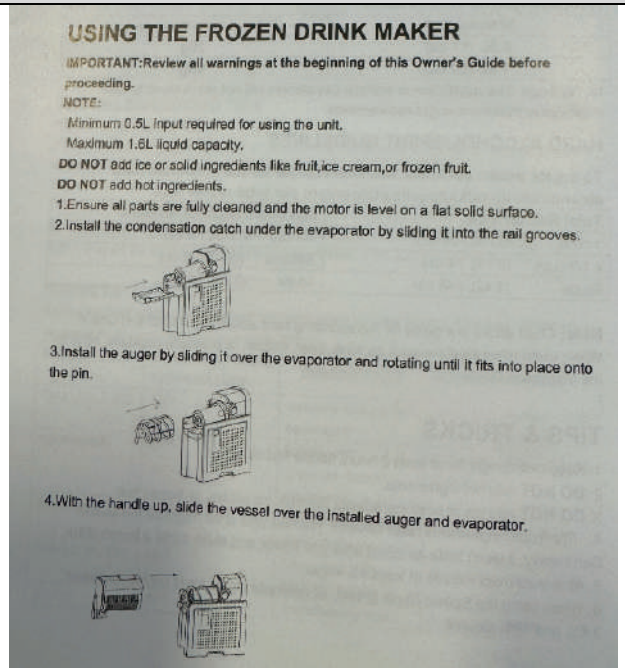
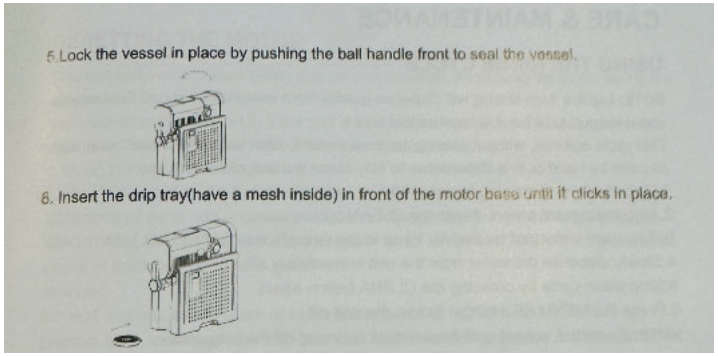
Claim Element	Accused Product
	 Accused Product Instruction Manual.  Accused Product Instruction Manual.

Exhibit 4

Claim Chart Comparing the Bizaura Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
24[f]: a flexible seal arranged proximate to the upper housing section;	 Photograph of Accused Product (annotated). As confirmed by product testing, the flexible seal comprises a flexible material.
24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper	The cam feature of the Accused Product controls the coupling of the mixing vessel to the upper housing section when in the coupling position and uncouples the mixing vessel from the upper housing section when in the uncoupling position.

Exhibit 4

Claim Chart Comparing the Bizaura Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

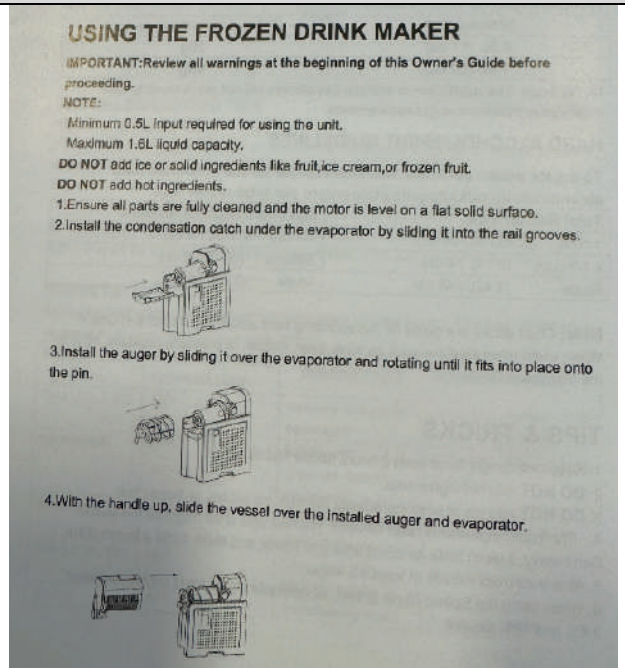
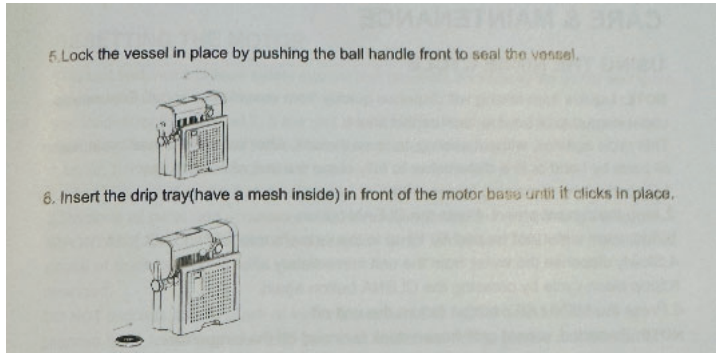
Claim Element	Accused Product
housing section when in the uncoupling position, and	 Accused Product Instruction Manual.  Accused Product Instruction Manual.

Exhibit 4

Claim Chart Comparing the Bizaura Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	Photographs of Accused Product (annotated). *Id.*, Cl. 24[a].
24[h]: wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.	When the cam feature of the Accused Product is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal about the first opening.

Exhibit 4

Claim Chart Comparing the Bizaura Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

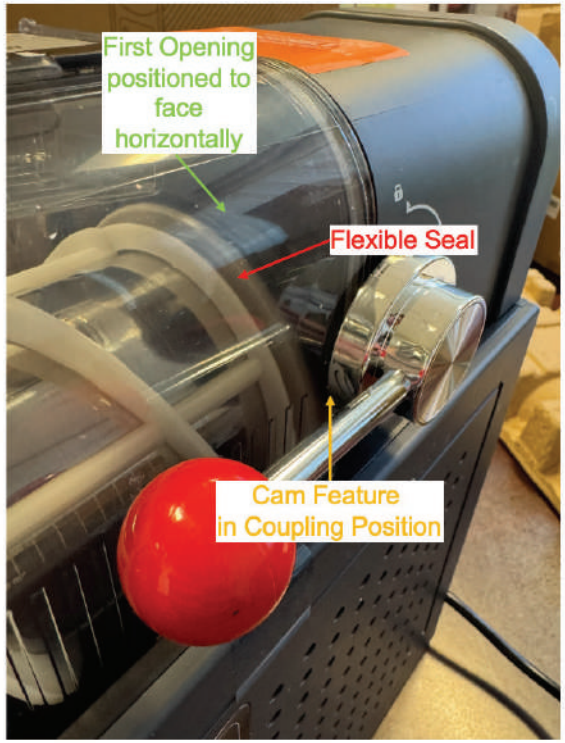
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
30. The frozen drink maker of claim 24, wherein the housing comprises a lever moveable relative to the upper housing section, wherein moving the lever to a first position moves the cam feature into the coupling position, and wherein, when in the	The lever of the Accused Product is moveable relative to the upper housing section.

Exhibit 4

Claim Chart Comparing the Bizaura Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling of the mixing vessel to the upper housing section.	 Photographs of Accused Product (annotated). Moving the lever of the Accused Product to a first position moves the cam feature into the coupling position. When in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling the mixing vessel to the upper housing section.

Exhibit 4

Claim Chart Comparing the Bizaura Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

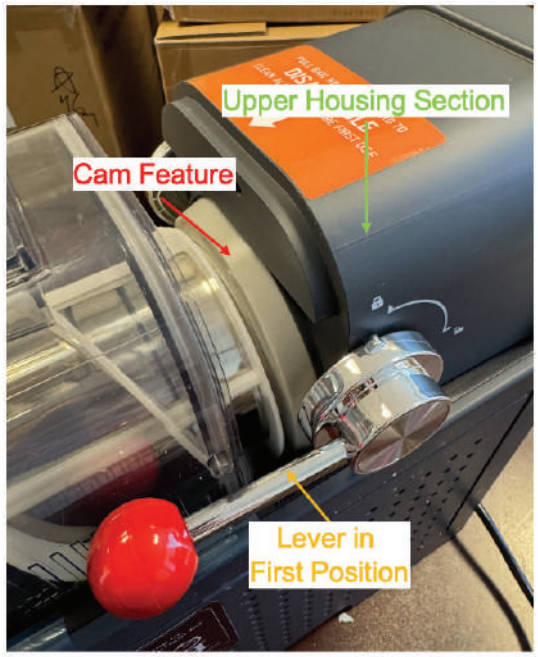
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 4

Claim Chart Comparing the Bizaura Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

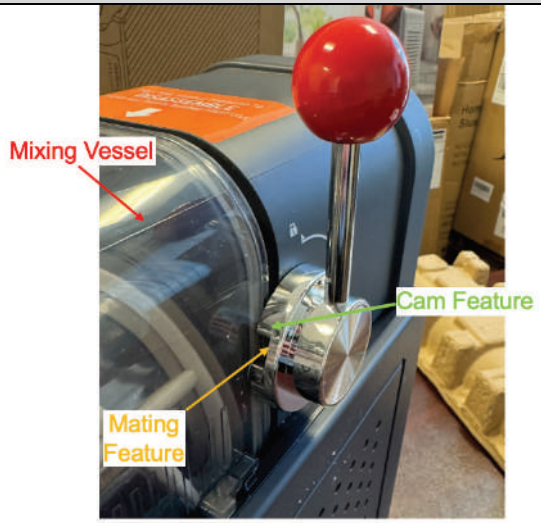
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

EXHIBIT 5

Exhibit 5
Claim Chart Comparing the BKPPM Frozen Drink Maker to U.S. Patent No. 12,593,855

Below is a chart that applies asserted exemplary independent claim 24 and 30 of U.S. Patent No. 12,593,855 (the "'855 Patent") to the accused BKPPM Frozen Drink Maker ("Accused Product"), purchased at the following listing: https://www.amazon.com/dp/B0DT429T6D) (ASIN B0DT429T6D).

The arguments and evidence cited in the chart below are representative and Plaintiffs reserve the right to rely on additional arguments and evidence to show that the above-identified accused product infringes exemplary independent claim 24 and 30 of the '855 Patent.

Claim Element	**Accused Product**
24[Pre.]: A frozen drink maker comprising:	 Accused Product Packaging.

Exhibit 5
Claim Chart Comparing the BKPPM Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Accused Product Packaging.

Exhibit 5
Claim Chart Comparing the BKPPM Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

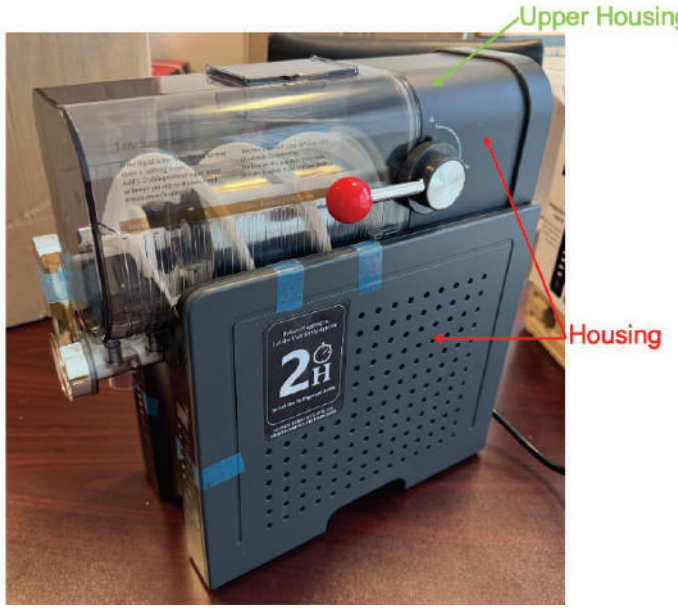
Claim Element	Accused Product
24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;	 Photograph of Accused Product (annotated). The cam feature of the Accused Product is moveable between a coupling position and uncoupling position.

Exhibit 5
Claim Chart Comparing the BKPPM Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	Photographs of Accused Product (annotated).

Exhibit 5
Claim Chart Comparing the BKPPM Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 5
Claim Chart Comparing the BKPPM Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

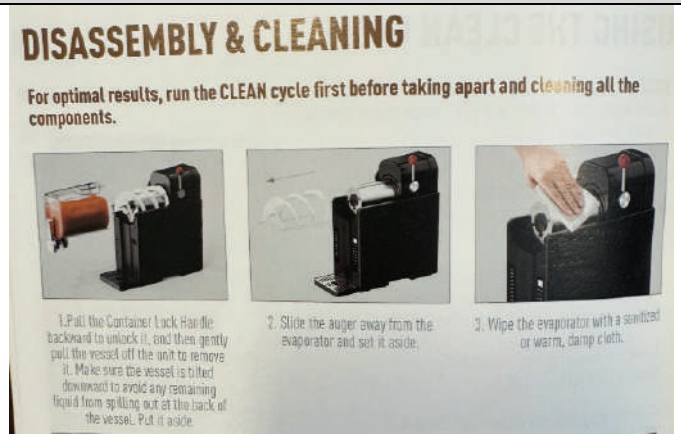
Claim Element	Accused Product
	 Accused Product Instruction Manual.
24[b]: a mixing vessel to receive a drink product, the mixing vessel having:	The mixing vessel is configured to receive a drink product.

Exhibit 5
Claim Chart Comparing the BKPPM Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

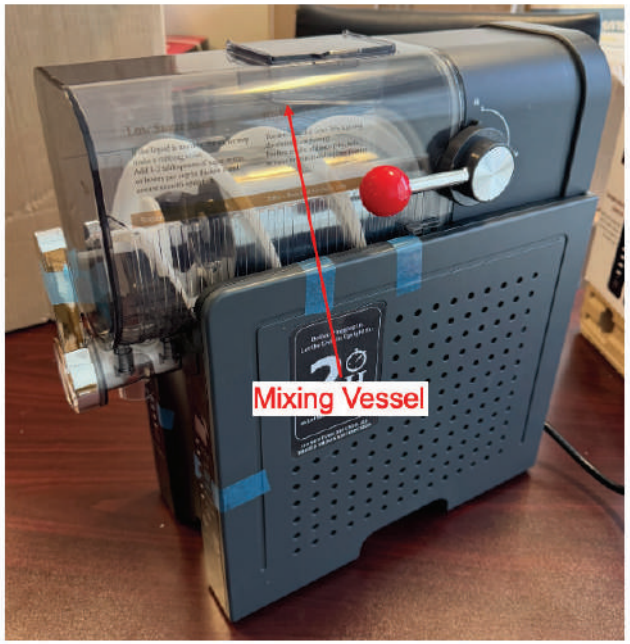
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 5
Claim Chart Comparing the BKPPM Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

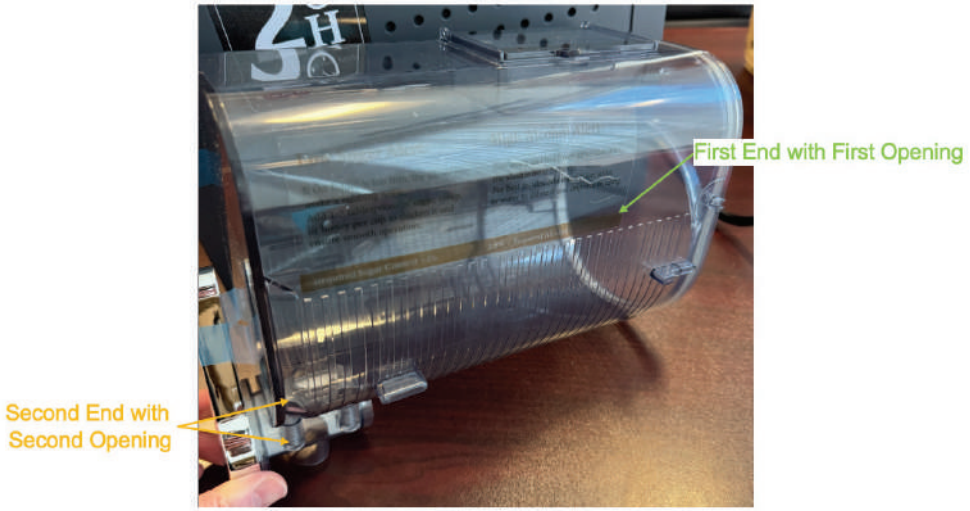
Claim Element	Accused Product
24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and	 Photograph of Accused Product (annotated). The second opening of the mixing vessel of the Accused Product is configured to dispense a drink product.

Exhibit 5

Claim Chart Comparing the BKPPM Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

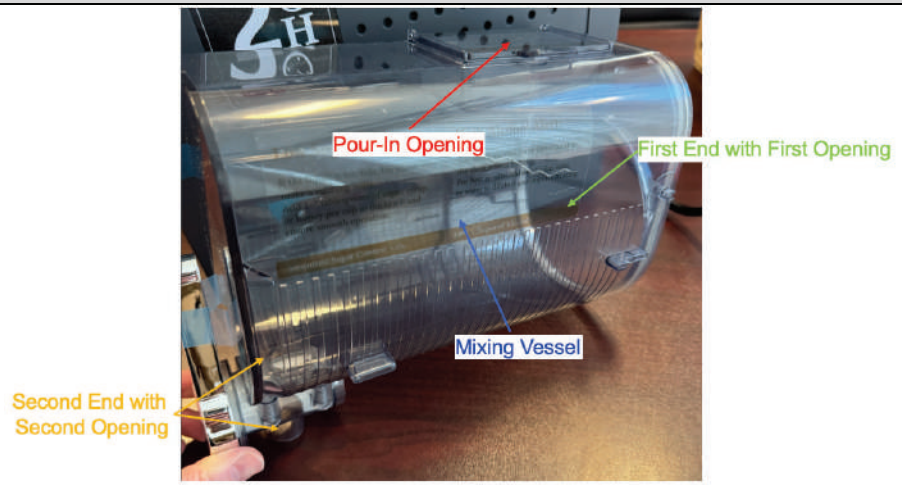
Claim Element	**Accused Product**
24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;	 Photograph of Accused Product (annotated).
24[c]: a dasher configured to rotate in the mixing vessel;	The dasher of the Accused Product is configured to rotate in the mixing vessel to stir the drink product.

Exhibit 5

Claim Chart Comparing the BKPPM Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

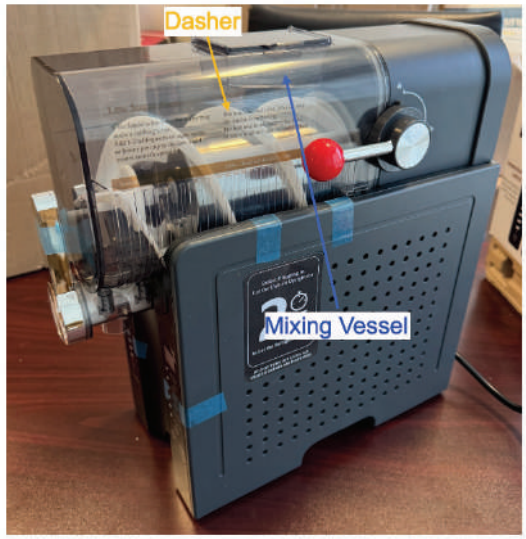
Claim Element	**Accused Product**
	 Photograph of Accused Product (annotated).
24[d]: a motor to drive the dasher;	The Accused Product includes a motor that drives the dasher to rotate it to stir the drink product.

Exhibit 5

Claim Chart Comparing the BKPPM Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

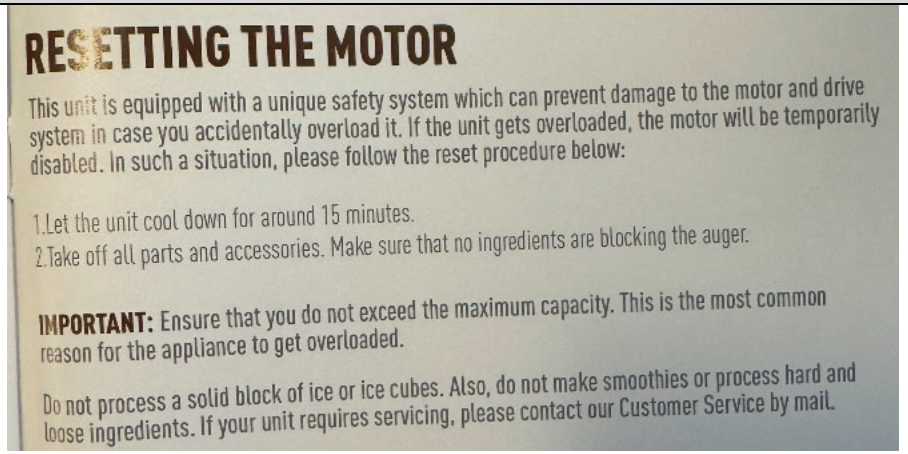
Claim Element	Accused Product
	 Accused Product Instruction Manual. As confirmed by product testing, during operation a motor of the frozen drink maker drives the dasher to rotate.

Exhibit 5

Claim Chart Comparing the BKPPM Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

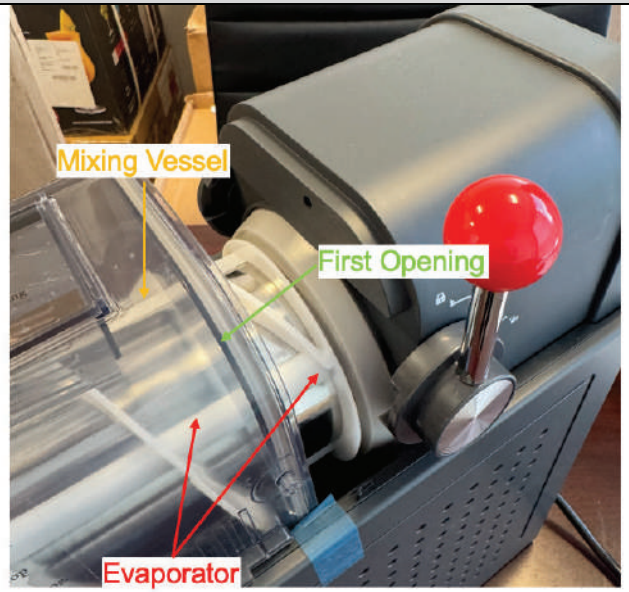
Claim Element	Accused Product
24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and	 Photograph of Accused Product (annotated). The evaporator is received through the first opening of the mixing vessel.

Exhibit 5

Claim Chart Comparing the BKPPM Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 5

Claim Chart Comparing the BKPPM Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

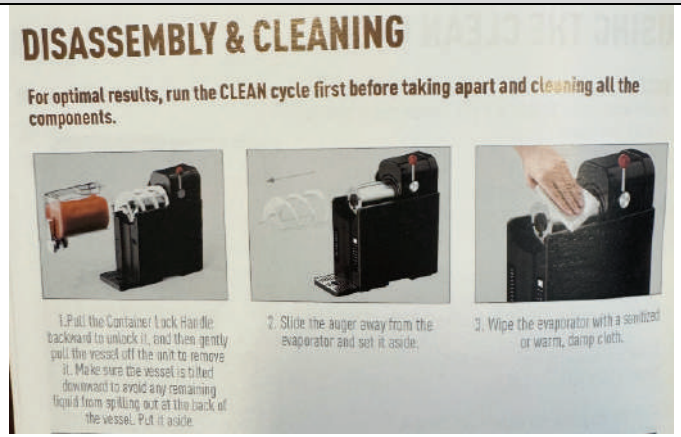
Claim Element	Accused Product
	 Accused Product Instruction Manual.
24[f]: a flexible seal arranged proximate to the upper housing section;	 Photograph of Accused Product (annotated).

Exhibit 5

Claim Chart Comparing the BKPPM Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	As confirmed by product testing, the flexible seal comprises a flexible material.
24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position, and	The cam feature of the Accused Product controls the coupling of the mixing vessel to the upper housing section when in the coupling position and uncouples the mixing vessel from the upper housing section when in the uncoupling position. Accused Product Instruction Manual.

Exhibit 5

Claim Chart Comparing the BKPPM Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

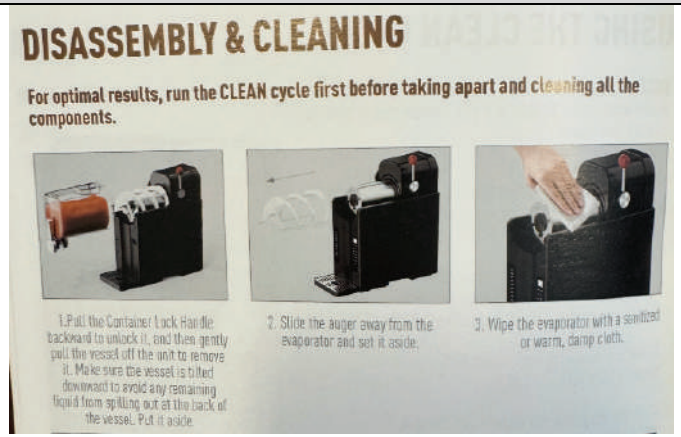
Claim Element	Accused Product
	 Accused Product Instruction Manual. Photographs of Accused Product (annotated).

Exhibit 5

Claim Chart Comparing the BKPPM Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

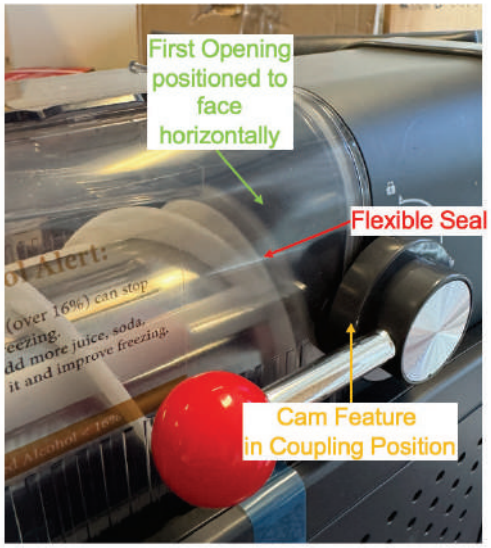
Claim Element	Accused Product
	Id., Cl. 24[a].
24[h]: wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.	When the cam feature of the Accused Product is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal about the first opening.  Photograph of Accused Product (annotated).
30. The frozen drink maker of claim 24, wherein the housing comprises a lever moveable relative to the upper housing section, wherein moving the lever to a first position moves the	The lever of the Accused Product is moveable relative to the upper housing section.

Exhibit 5

Claim Chart Comparing the BKPPM Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

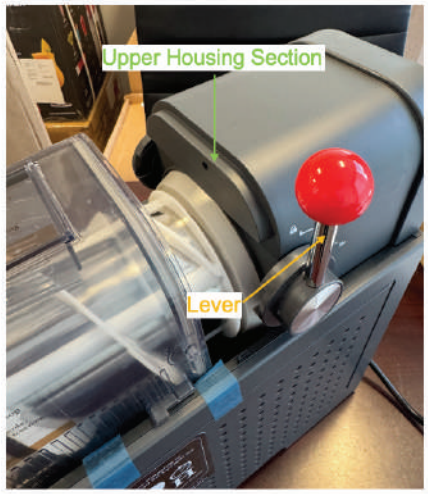
Claim Element	Accused Product
cam feature into the coupling position, and wherein, when in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling of the mixing vessel to the upper housing section.	 Photographs of Accused Product (annotated). Moving the lever of the Accused Product to a first position moves the cam feature into the coupling position. When in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling the mixing vessel to the upper housing section.

Exhibit 5

Claim Chart Comparing the BKPPM Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 5

Claim Chart Comparing the BKPPM Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

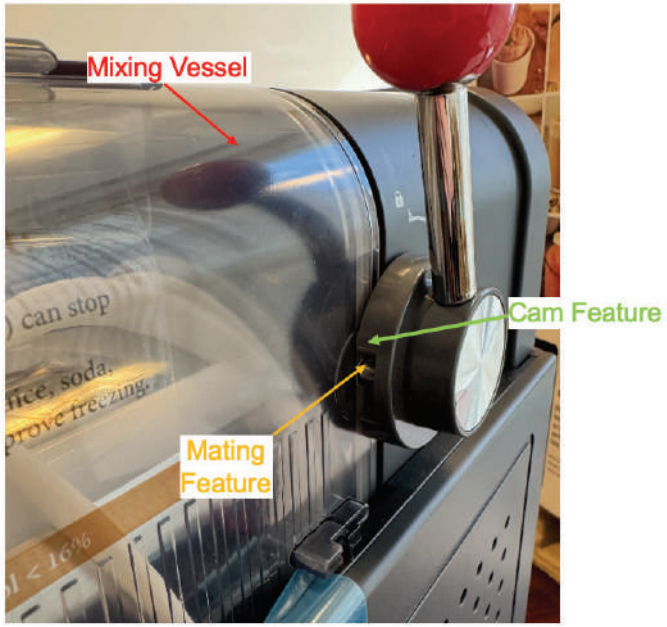
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

EXHIBIT 6

Exhibit 6
Claim Chart Comparing the Garvee Frozen Drink Maker to U.S. Patent No. 12,593,855

Below is a chart that applies asserted exemplary independent claim 24 and 30 of U.S. Patent No. 12,593,855 (the "'855 Patent") to the accused Garvee Frozen Drink Maker (the "Accused Product"). This Accused Product was purchased at the following listings:

- www.amazon.com/dp/B0GN38T8WB (ASIN B0GN38T8WB)
- https://www.amazon.com/dp/B0GS8VMV1P (ASIN B0GS8VMV1P)
- www.amazon.com/dp/B0GKPHKJ1Q (ASIN B0GKPHKJ1Q)
- www.amazon.com/dp/B0G122V5QH (ASIN B0G122V5QH)

Inspection of the Accused Products purchased at each of the foregoing listings confirms that each is identical, varying only in color. The following contentions use photographs taken of one of the Accused Products, but each feature shown is identically present (with the exception of color) in all purchased Accused Products.

The arguments and evidence cited in the chart below are representative and Plaintiffs reserve the right to rely on additional arguments and evidence to show that the above-identified accused product infringes exemplary independent claim 24 and 30 of the '855 Patent.

Claim Element	**Accused Product**
24[Pre.]: A frozen drink maker comprising:	 Accused Product Packaging.

Exhibit 6
Claim Chart Comparing the Garvee Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

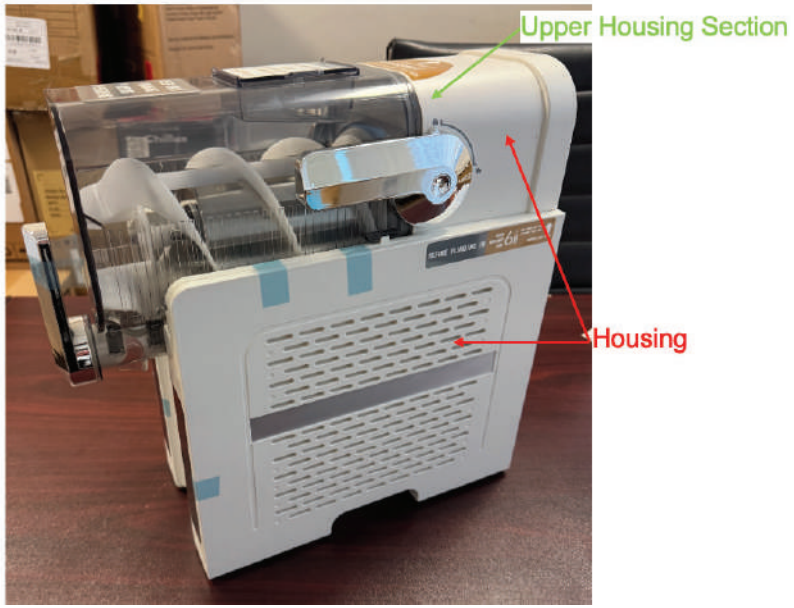
Claim Element	Accused Product
24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;	 Photograph of Accused Product (annotated). The cam feature of the Accused Product is moveable between a coupling position and uncoupling position.

Exhibit 6
Claim Chart Comparing the Garvee Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Photographs of Accused Product (annotated).

Exhibit 6
Claim Chart Comparing the Garvee Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

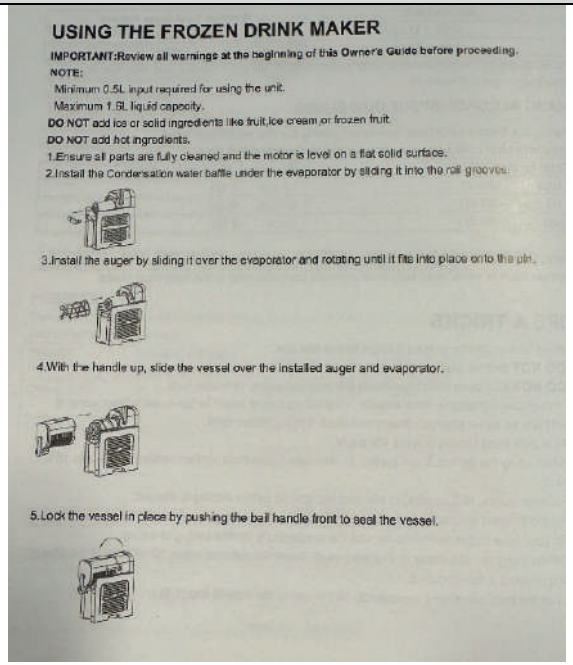
Claim Element	**Accused Product**
	 Accused Product Instruction Manual.
24[b]: a mixing vessel to receive a drink product, the mixing vessel having:	The mixing vessel is configured to receive a drink product.

Exhibit 6
Claim Chart Comparing the Garvee Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

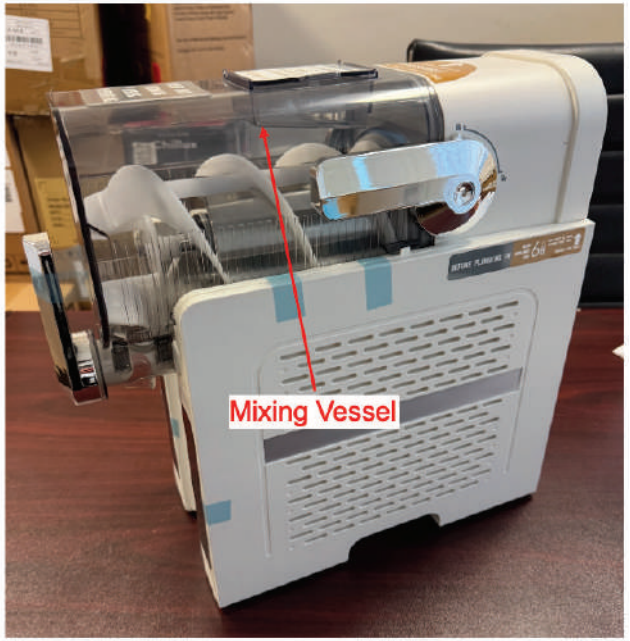
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 6
Claim Chart Comparing the Garvee Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

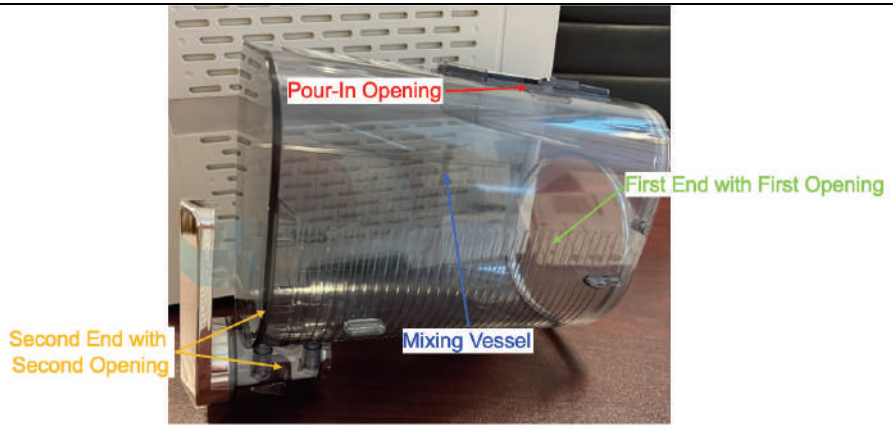
Claim Element	Accused Product
24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and	 Photograph of Accused Product (annotated). The second opening of the mixing vessel of the Accused Product is configured to dispense a drink product.
24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;	 Photograph of Accused Product (annotated).

Exhibit 6
Claim Chart Comparing the Garvee Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

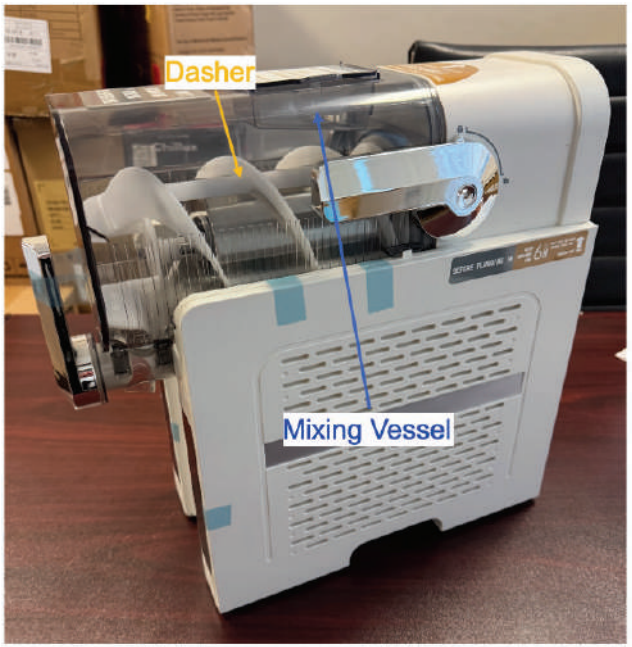
Claim Element	**Accused Product**
24[c]: a dasher configured to rotate in the mixing vessel;	The dasher of the Accused Product is configured to rotate in the mixing vessel to stir the drink product.  Photograph of Accused Product (annotated).
24[d]: a motor to drive the dasher;	The Accused Product includes a motor that drives the dasher to rotate it to stir the drink product.

Exhibit 6
Claim Chart Comparing the Garvee Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

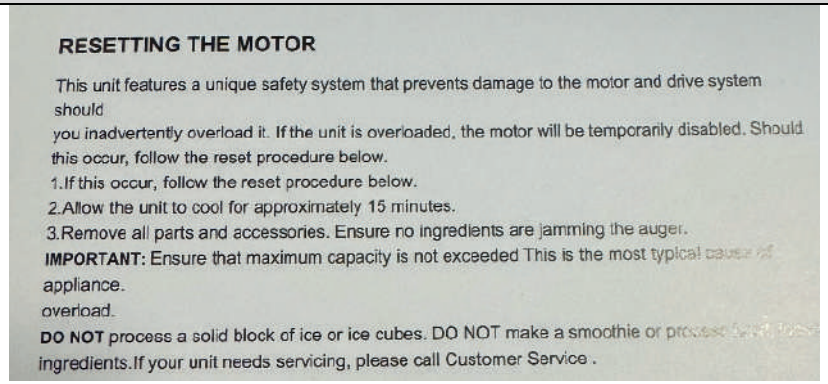
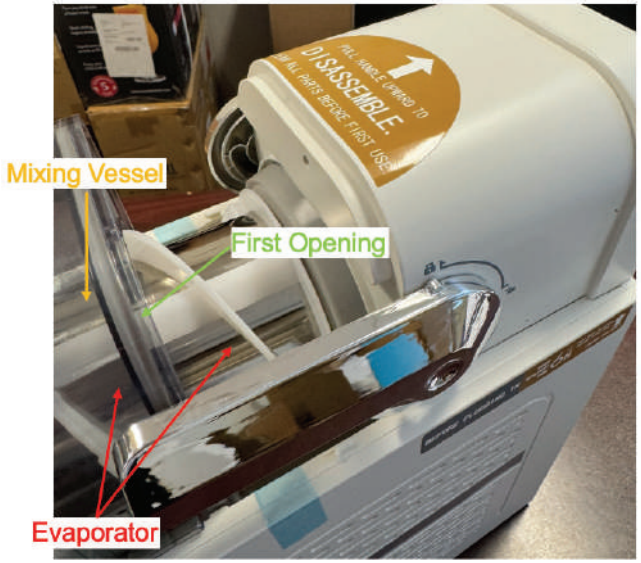
Claim Element	Accused Product
	 Accused Product Instruction Manual. As confirmed by product testing, during operation a motor of the frozen drink maker drives the dasher to rotate.
24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and	

Exhibit 6

Claim Chart Comparing the Garvee Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

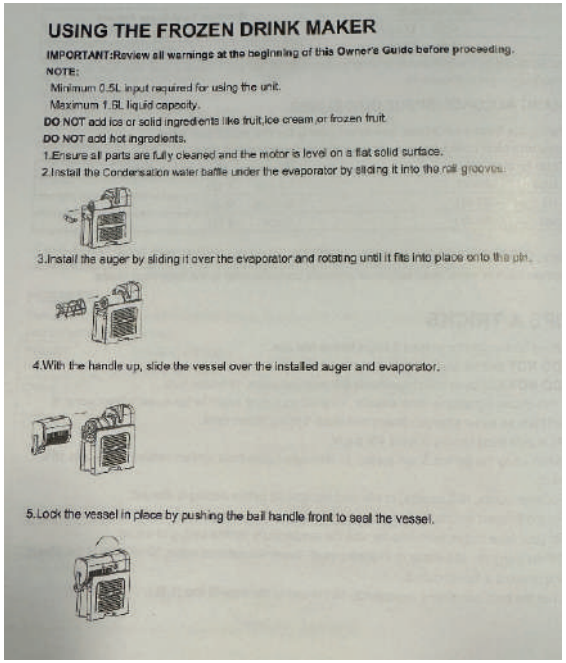
Claim Element	Accused Product
	Photograph of Accused Product (annotated). The evaporator is received through the first opening of the mixing vessel.  Accused Product Instruction Manual.

Exhibit 6

Claim Chart Comparing the Garvee Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

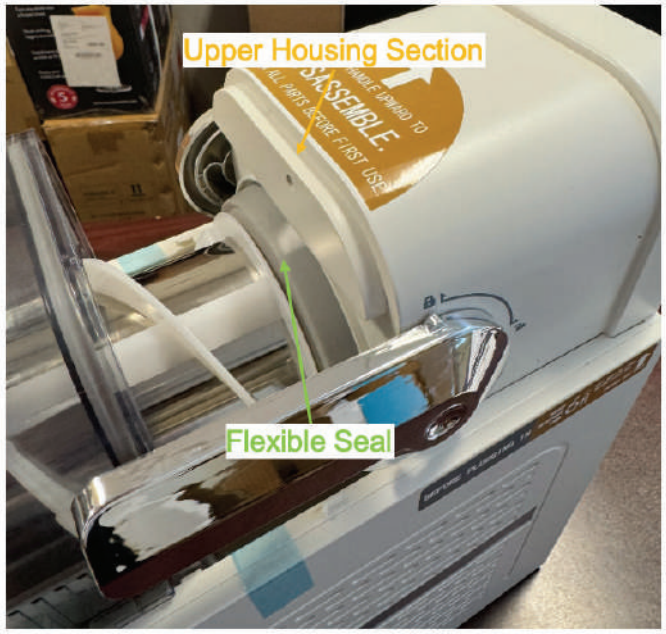
Claim Element	Accused Product
24[f]: a flexible seal arranged proximate to the upper housing section;	 Photograph of Accused Product (annotated). As confirmed by product testing, the flexible seal comprises a flexible material.
24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position, and	The cam feature of the Accused Product controls the coupling of the mixing vessel to the upper housing section when in the coupling position and uncouples the mixing vessel from the upper housing section when in the uncoupling position.

Exhibit 6

Claim Chart Comparing the Garvee Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

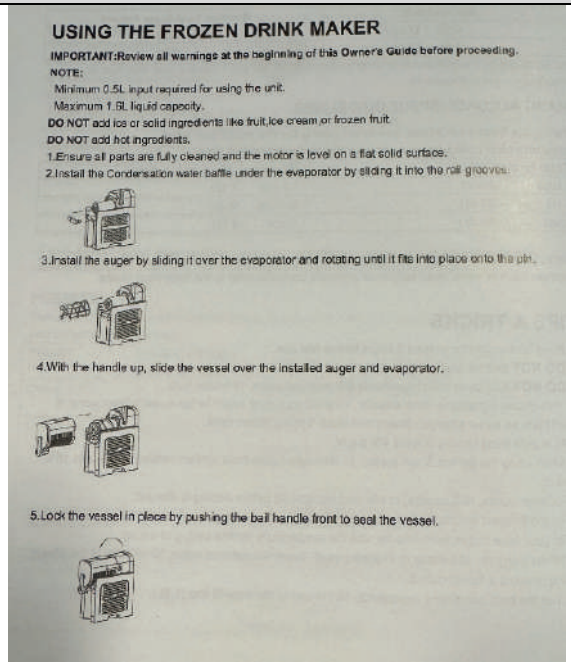
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 6

Claim Chart Comparing the Garvee Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	**Accused Product**
	Photographs of Accused Product (annotated). *Id.*, Cl. 24[a].
24[h]: wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.	When the cam feature of the Accused Product is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal about the first opening.

Exhibit 6

Claim Chart Comparing the Garvee Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

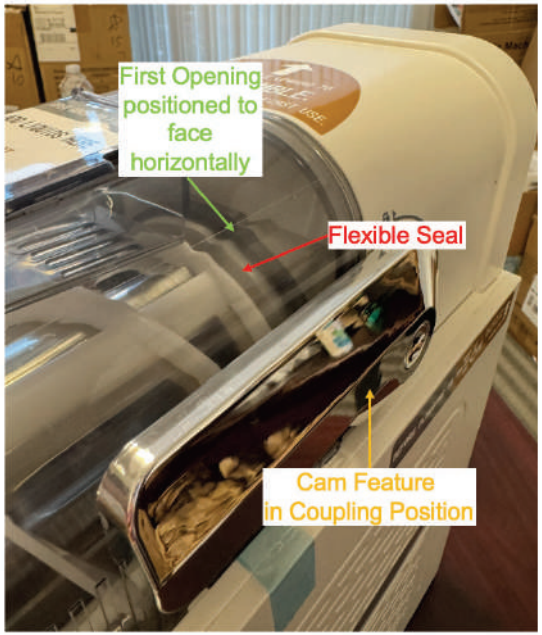
Claim Element	**Accused Product**
	 Photograph of Accused Product (annotated).
30. The frozen drink maker of claim 24, wherein the housing comprises a lever moveable relative to the upper housing section, wherein moving the lever to a first position moves the cam feature into the coupling position, and wherein, when in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control	The lever of the Accused Product is moveable relative to the upper housing section.

Exhibit 6

Claim Chart Comparing the Garvee Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
coupling of the mixing vessel to the upper housing section.	 Photographs of Accused Product (annotated). Moving the lever of the Accused Product to a first position moves the cam feature into the coupling position. When in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling the mixing vessel to the upper housing section.

Exhibit 6

Claim Chart Comparing the Garvee Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

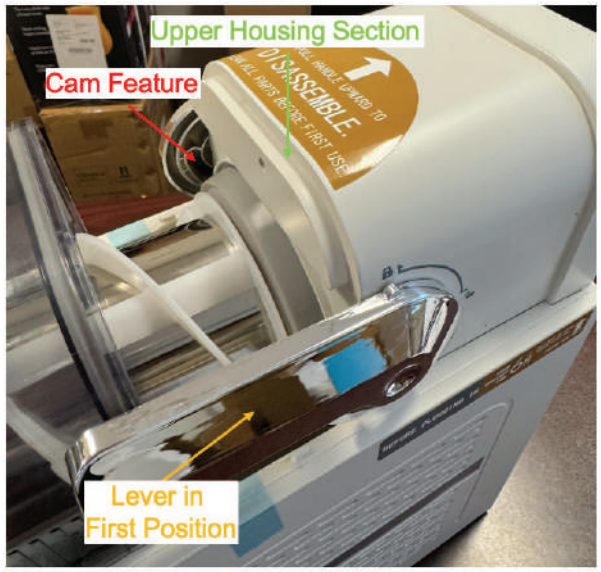
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 6

Claim Chart Comparing the Garvee Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

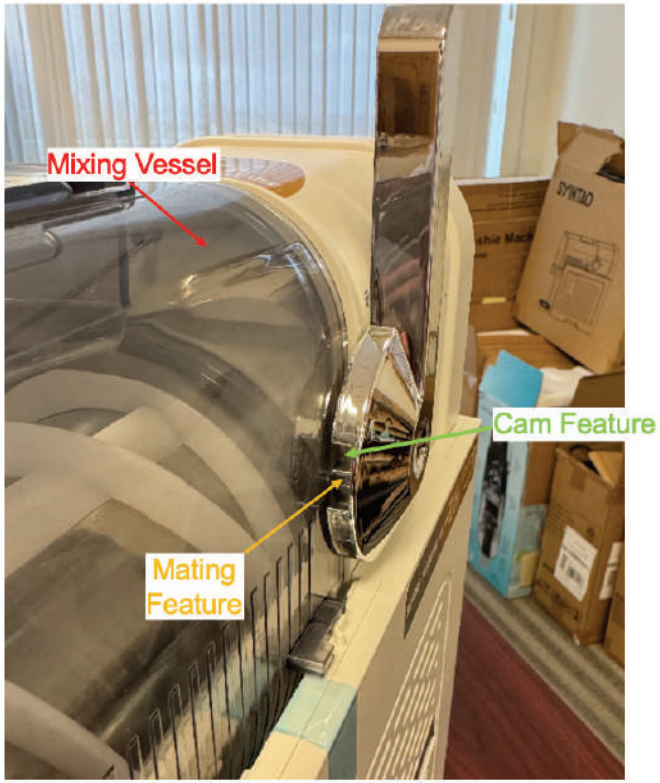
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

EXHIBIT 7

Exhibit 7
Claim Chart Comparing the Generic (Wizaura) Frozen Drink Maker to U.S. Patent No. 12,593,855

Below is a chart that applies asserted exemplary independent claim 24 and 30 of U.S. Patent No. 12,593,855 (the "'855 Patent") to the accused Generic (Wizaura) Frozen Drink Maker ("Accused Product"), purchased at the following listing: www.amazon.com/dp/B0G4CGGSZ6 (ASIN B0G4CGGSZ6).

The arguments and evidence cited in the chart below are representative and Plaintiffs reserve the right to rely on additional arguments and evidence to show that the above-identified accused product infringes exemplary independent claim 24 and 30 of the '855 Patent.

Claim Element	**Accused Product**
24[Pre.]: A frozen drink maker comprising:	 Accused Product Packaging.

Exhibit 7
Claim Chart Comparing the Generic (Wizaura) Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;	 Photograph of Accused Product (annotated). The cam feature of the Accused Product is moveable between a coupling position and uncoupling position.

Exhibit 7
Claim Chart Comparing the Generic (Wizaura) Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	Photographs of Accused Product (annotated).

Exhibit 7
Claim Chart Comparing the Generic (Wizaura) Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

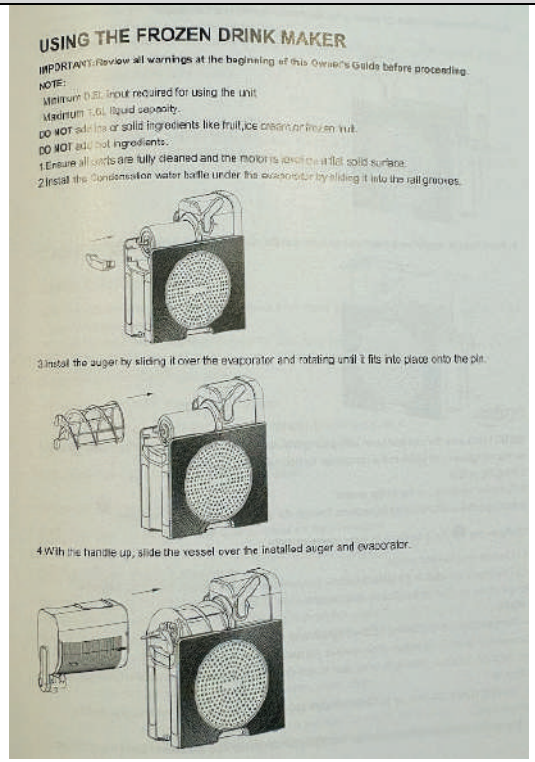
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 7
Claim Chart Comparing the Generic (Wizaura) Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

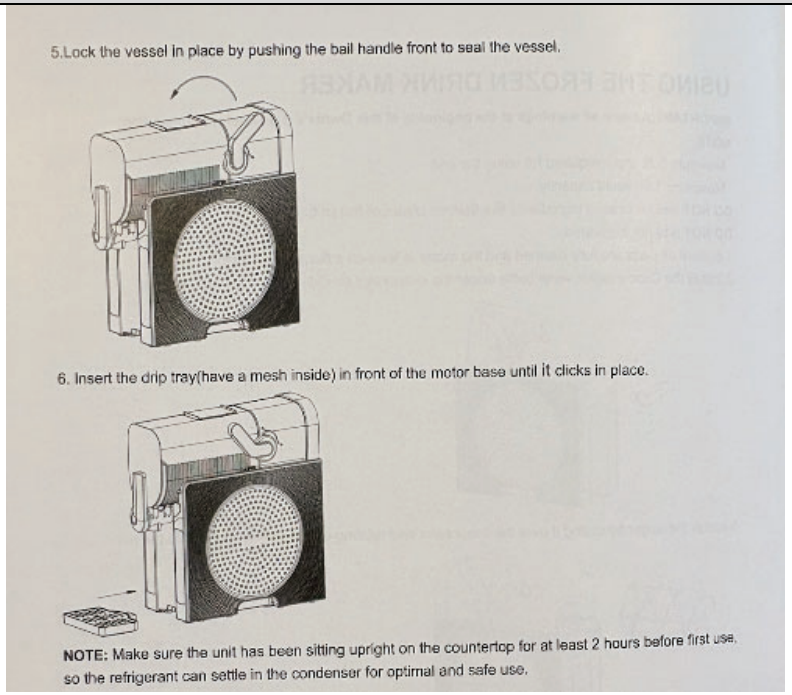
Claim Element	Accused Product
	 Accused Product Instruction Manual.
24[b]: a mixing vessel to receive a drink product, the mixing vessel having:	The mixing vessel is configured to receive a drink product.

Exhibit 7
Claim Chart Comparing the Generic (Wizaura) Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	Photograph of Accused Product (annotated).

Exhibit 7
Claim Chart Comparing the Generic (Wizaura) Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

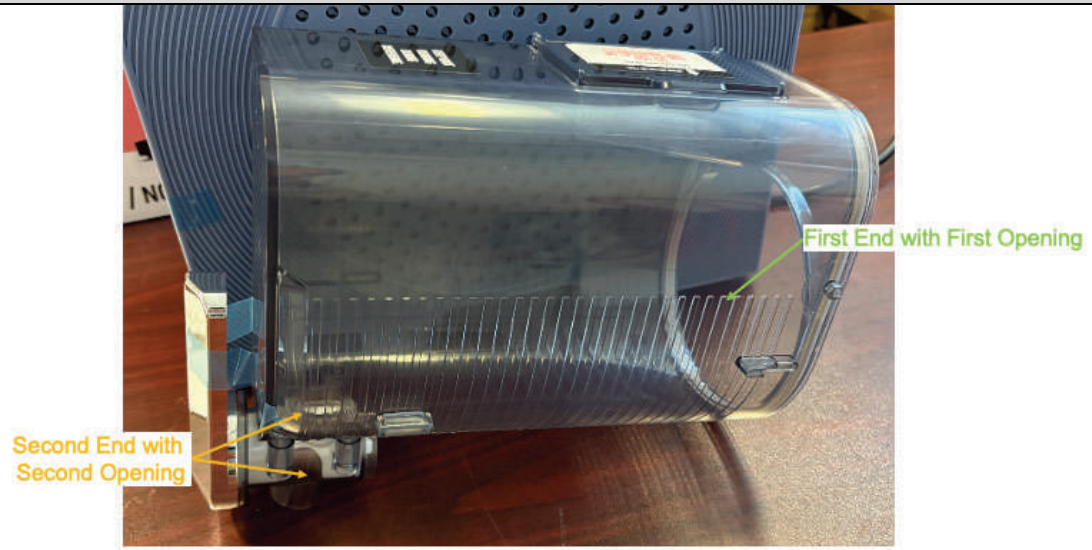
Claim Element	Accused Product
24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and	 Photograph of Accused Product (annotated). The second opening of the mixing vessel of the Accused Product is configured to dispense a drink product.

Exhibit 7
Claim Chart Comparing the Generic (Wizaura) Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

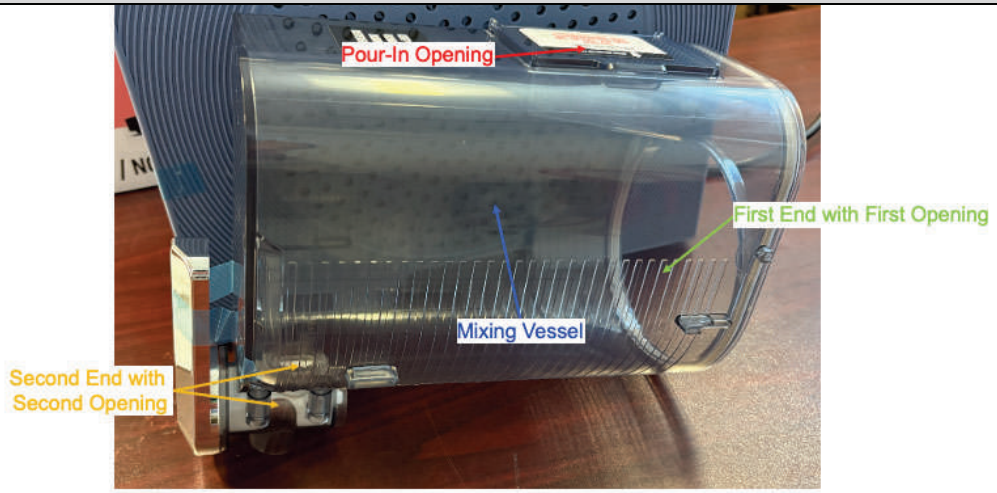
Claim Element	Accused Product
24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;	 Photograph of Accused Product (annotated).
24[c]: a dasher configured to rotate in the mixing vessel;	The dasher of the Accused Product is configured to rotate in the mixing vessel to stir the drink product.

Exhibit 7

Claim Chart Comparing the Generic (Wizaura) Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	**Accused Product**
	 Photograph of Accused Product (annotated).
24[d]: a motor to drive the dasher;	The Accused Product includes a motor that drives the dasher to rotate it to stir the drink product.

Exhibit 7

Claim Chart Comparing the Generic (Wizaura) Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

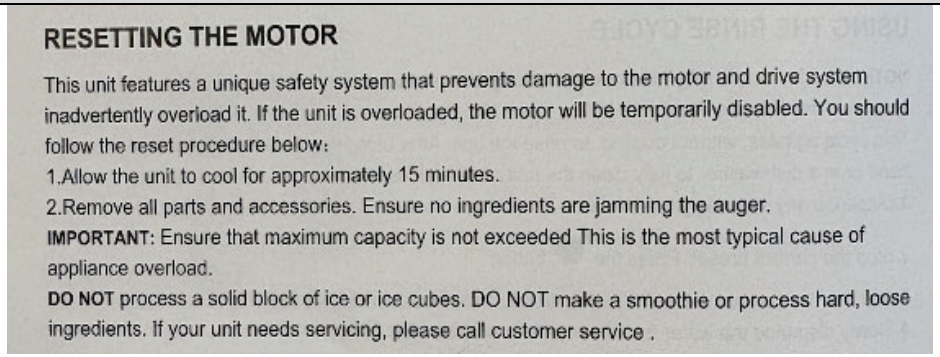
Claim Element	Accused Product
	 Accused Product Instruction Manual. As confirmed by product testing, during operation a motor of the frozen drink maker drives the dasher to rotate.

Exhibit 7

Claim Chart Comparing the Generic (Wizaura) Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

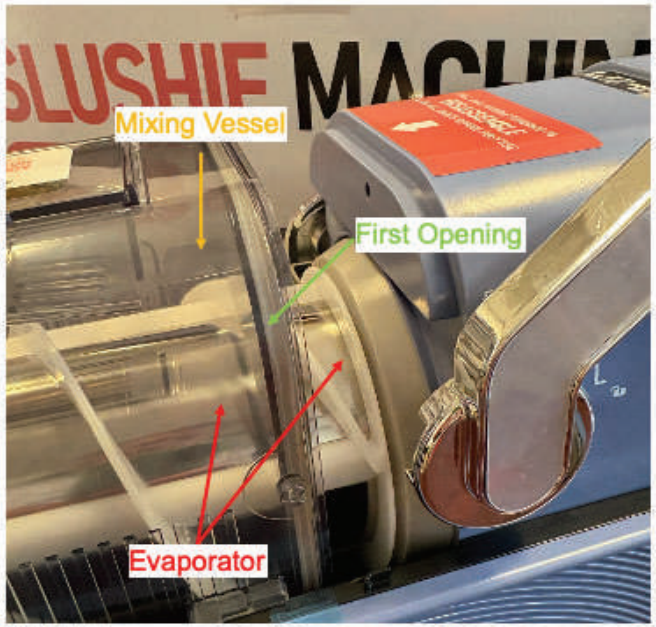
Claim Element	Accused Product
24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and	 Photograph of Accused Product (annotated). The evaporator is received through the first opening of the mixing vessel.

Exhibit 7

Claim Chart Comparing the Generic (Wizaura) Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

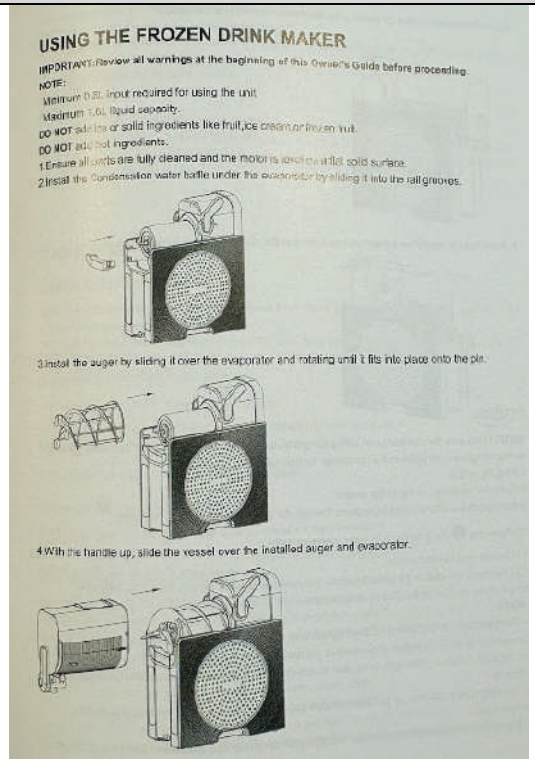
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 7

Claim Chart Comparing the Generic (Wizaura) Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

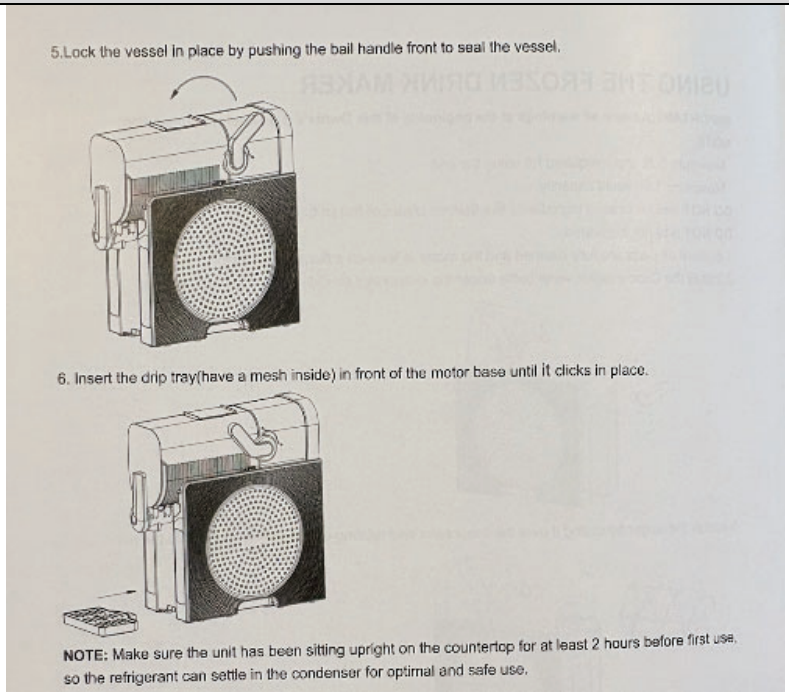
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 7

Claim Chart Comparing the Generic (Wizaura) Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

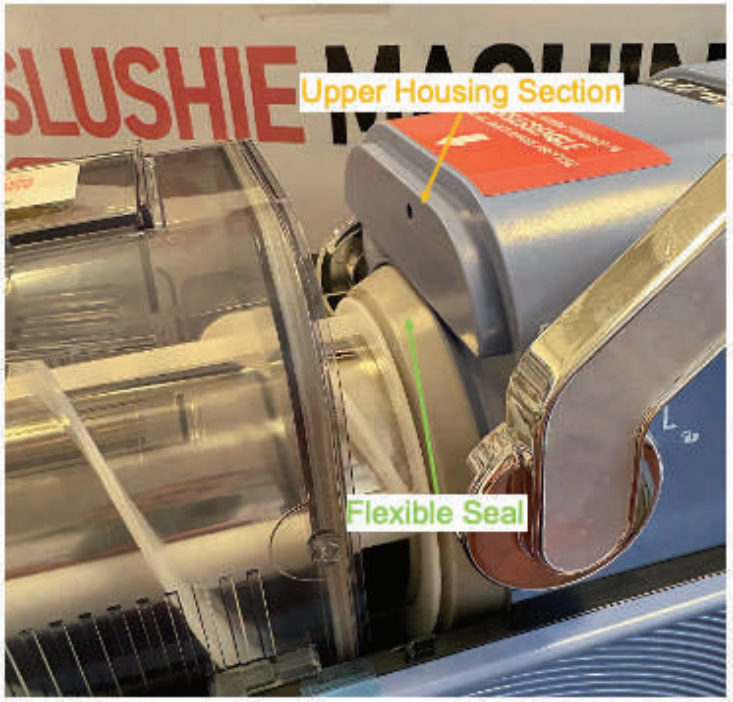
Claim Element	Accused Product
24[f]: a flexible seal arranged proximate to the upper housing section;	 Photograph of Accused Product (annotated). As confirmed by product testing, the flexible seal comprises a flexible material.
24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper	The cam feature of the Accused Product controls the coupling of the mixing vessel to the upper housing section when in the coupling position and uncouples the mixing vessel from the upper housing section when in the uncoupling position.

Exhibit 7

Claim Chart Comparing the Generic (Wizaura) Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

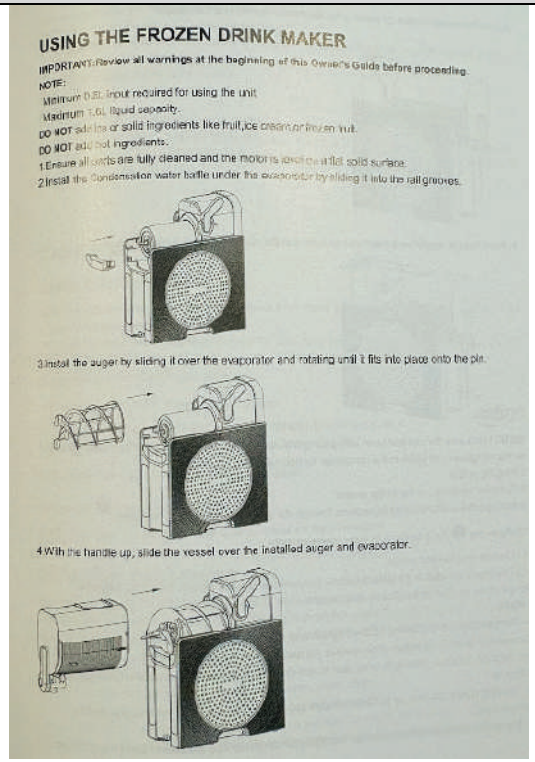
Claim Element	Accused Product
housing section when in the uncoupling position, and	 Accused Product Instruction Manual.

Exhibit 7

Claim Chart Comparing the Generic (Wizaura) Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

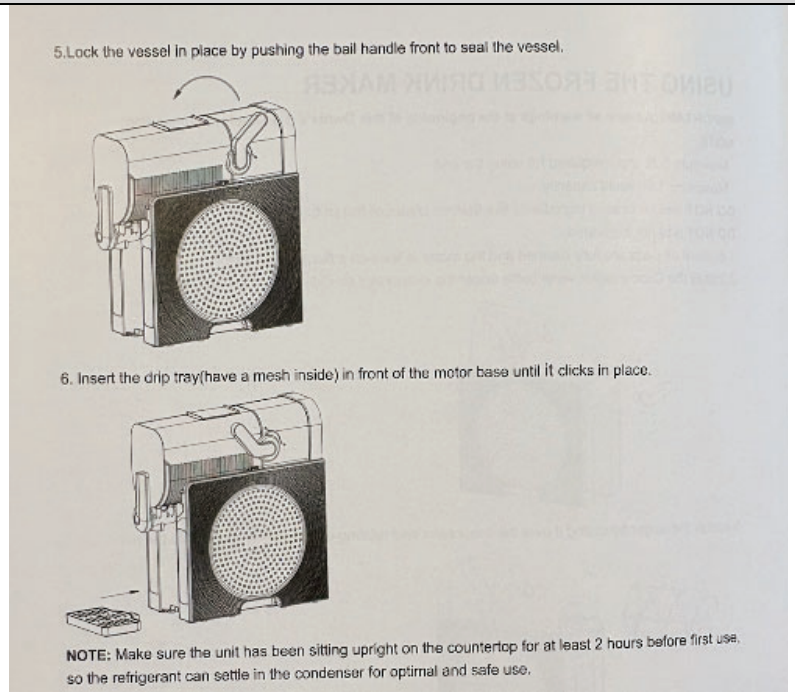
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 7

Claim Chart Comparing the Generic (Wizaura) Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

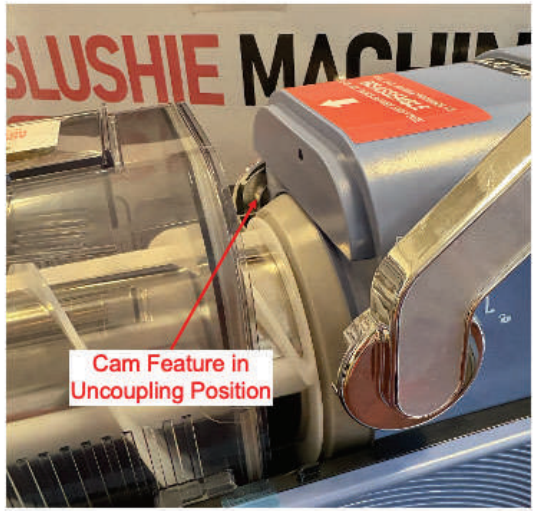
Claim Element	**Accused Product**
	 Photographs of Accused Product (annotated). *Id.*, Cl. 24[a].
24[h]: wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.	When the cam feature of the Accused Product is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal about the first opening.

Exhibit 7

Claim Chart Comparing the Generic (Wizaura) Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

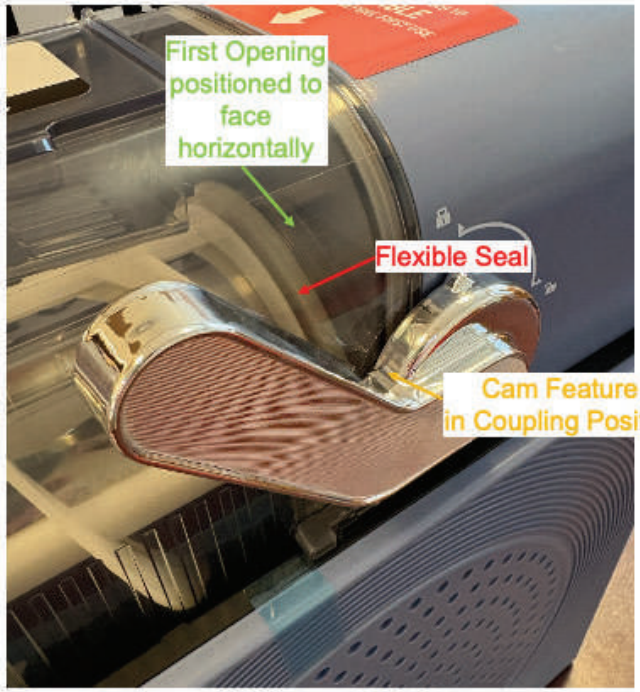
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
30. The frozen drink maker of claim 24, wherein the housing comprises a lever moveable relative to the upper housing section, wherein moving the lever to a first position moves the cam feature into the coupling position, and wherein, when in the coupling position, the cam feature engages at least one mating feature	The lever of the Accused Product is moveable relative to the upper housing section.

Exhibit 7

Claim Chart Comparing the Generic (Wizaura) Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
on the mixing vessel to control coupling of the mixing vessel to the upper housing section.	Photographs of Accused Product (annotated). Moving the lever of the Accused Product to a first position moves the cam feature into the coupling position. When in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling the mixing vessel to the upper housing section.

Exhibit 7

Claim Chart Comparing the Generic (Wizaura) Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

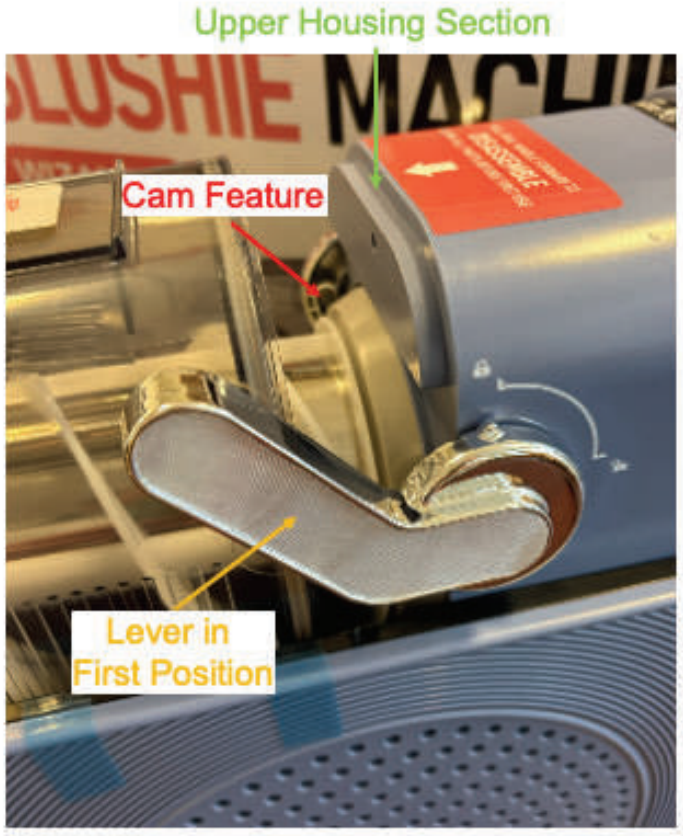
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 7

Claim Chart Comparing the Generic (Wizaura) Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

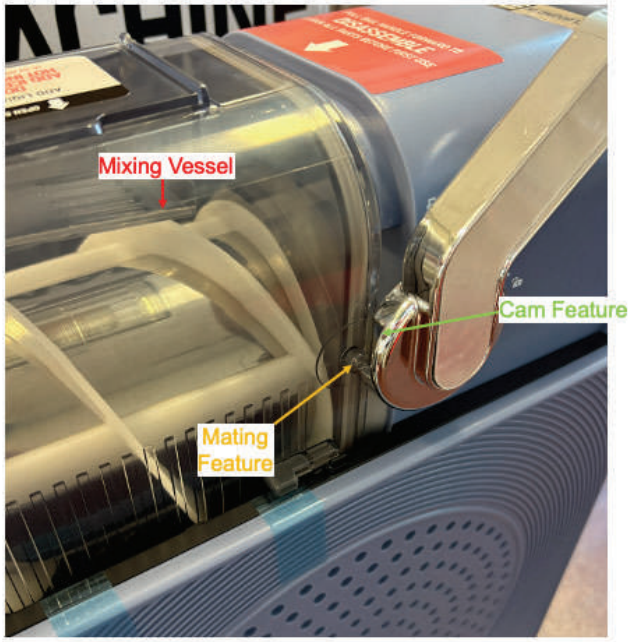
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

EXHIBIT 8

Exhibit 8
Claim Chart Comparing the Neoism Frozen Drink Maker to U.S. Patent No. 12,593,855

Below is a chart that applies asserted exemplary independent claim 24 and 30 of U.S. Patent No. 12,593,855 (the "'855 Patent") to the accused Neoism Frozen Drink Maker (the "Accused Product"). This Accused Product was purchased at the following listings:

- www.amazon.com/dp/B0G66MQVVM (ASIN B0G66MQVVM)
- www.amazon.com/dp/B0GCKY1MBZ (ASIN B0GCKY1MBZ)
- https://www.amazon.com/dp/B0GCLKYZLR (ASIN B0GCLKYZLR)

Inspection of the Accused Products purchased at each of the foregoing listings confirms that each is identical, varying only in color. The following contentions use photographs taken of one of the Accused Products, but each feature shown is identically present (with the exception of color) in all purchased Accused Products.

The arguments and evidence cited in the chart below are representative and Plaintiffs reserve the right to rely on additional arguments and evidence to show that the above-identified accused product infringes exemplary independent claim 24 and 30 of the '855 Patent.

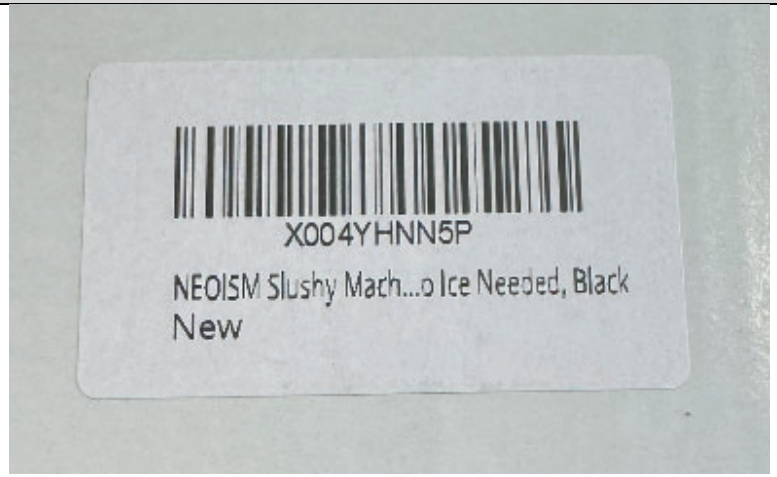
Claim Element	**Accused Product**
24[Pre.]: A frozen drink maker comprising:	 Accused Product Packaging.

Exhibit 8
Claim Chart Comparing the Neoism Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Accused Product Packaging.

Exhibit 8
Claim Chart Comparing the Neoism Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

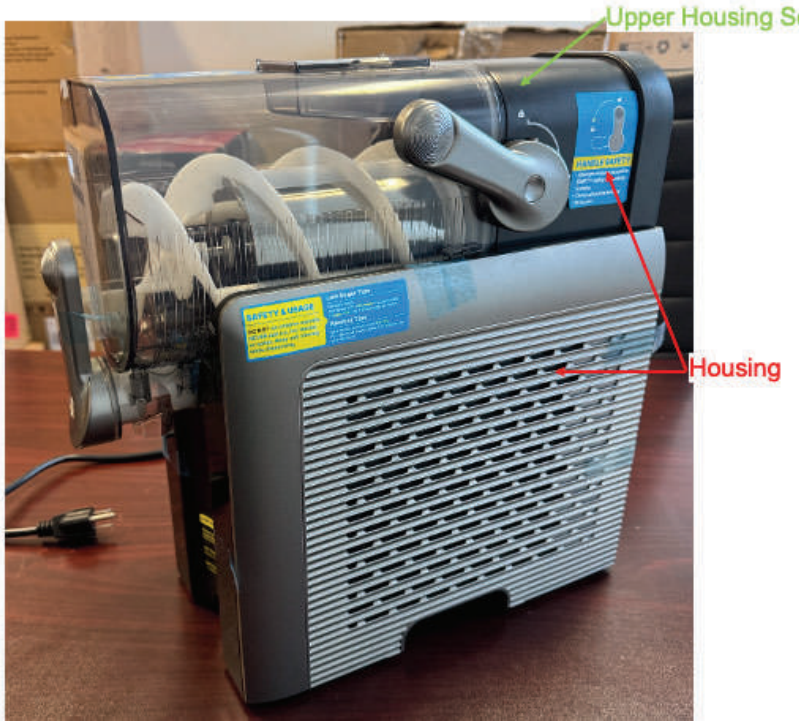
Claim Element	Accused Product
24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;	 Photograph of Accused Product (annotated). The cam feature of the Accused Product is moveable between a coupling position and uncoupling position.

Exhibit 8
Claim Chart Comparing the Neoism Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

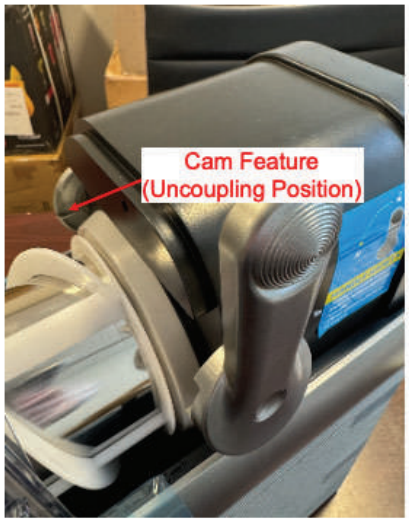
Claim Element	Accused Product
	 Photographs of Accused Product (annotated).

Exhibit 8
Claim Chart Comparing the Neoism Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

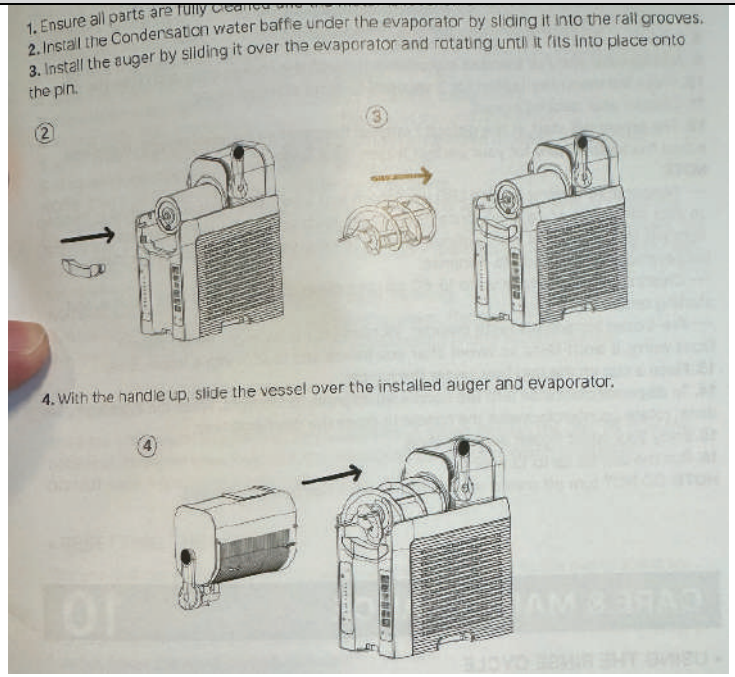
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 8
Claim Chart Comparing the Neoism Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

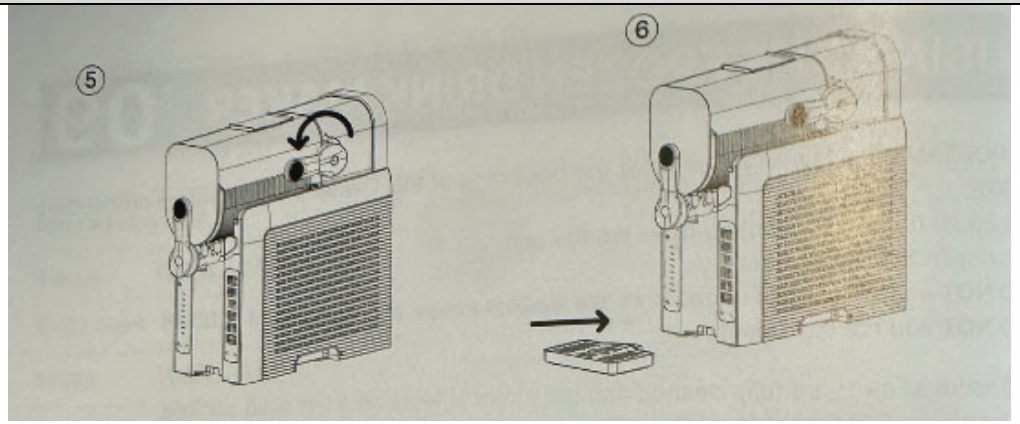
Claim Element	**Accused Product**
	 Accused Product Instruction Manual.
24[b]: a mixing vessel to receive a drink product, the mixing vessel having:	The mixing vessel is configured to receive a drink product.

Exhibit 8
Claim Chart Comparing the Neoism Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	Photograph of Accused Product (annotated).

Exhibit 8
Claim Chart Comparing the Neoism Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

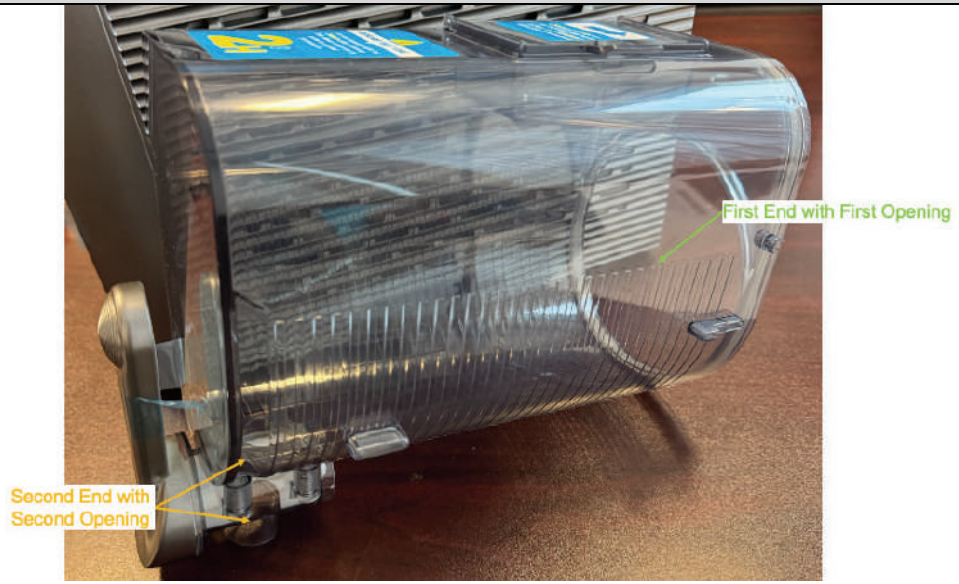
Claim Element	Accused Product
24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and	 Photograph of Accused Product (annotated). The second opening of the mixing vessel of the Accused Product is configured to dispense a drink product.

Exhibit 8

Claim Chart Comparing the Neoism Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

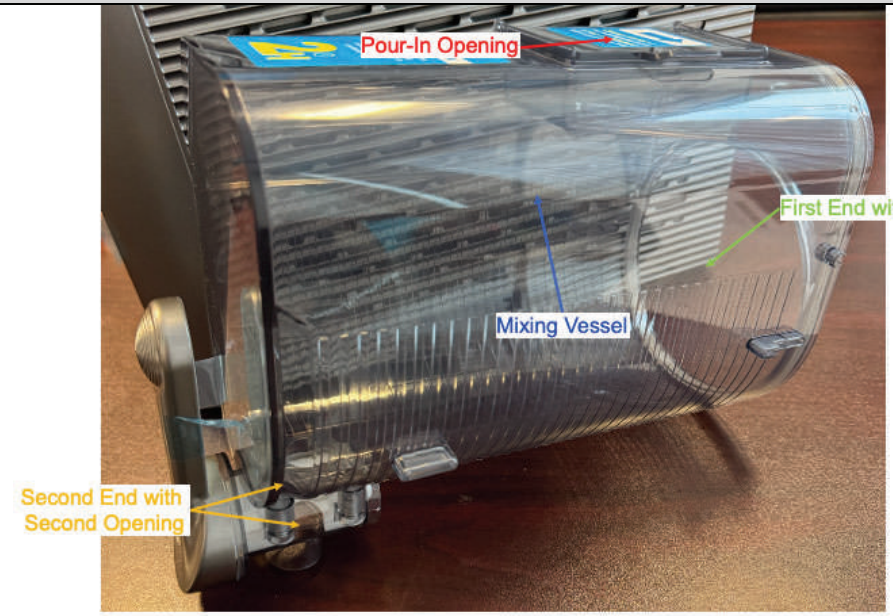
Claim Element	Accused Product
24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;	 Photograph of Accused Product (annotated).
24[c]: a dasher configured to rotate in the mixing vessel;	The dasher of the Accused Product is configured to rotate in the mixing vessel to stir the drink product.

Exhibit 8

Claim Chart Comparing the Neoism Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
24[d]: a motor to drive the dasher;	The Accused Product includes a motor that drives the dasher to rotate it to stir the drink product.

Exhibit 8

Claim Chart Comparing the Neoism Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

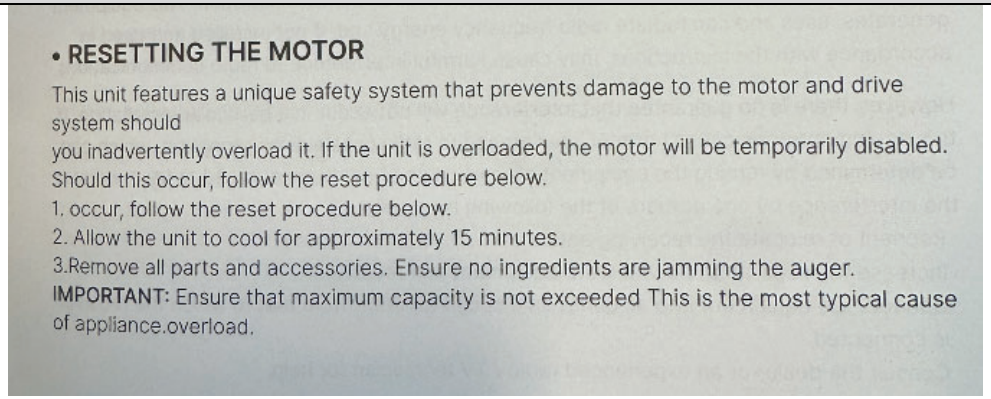
Claim Element	Accused Product
	 Accused Product Instruction Manual. As confirmed by product testing, during operation a motor of the frozen drink maker drives the dasher to rotate.

Exhibit 8

Claim Chart Comparing the Neoism Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

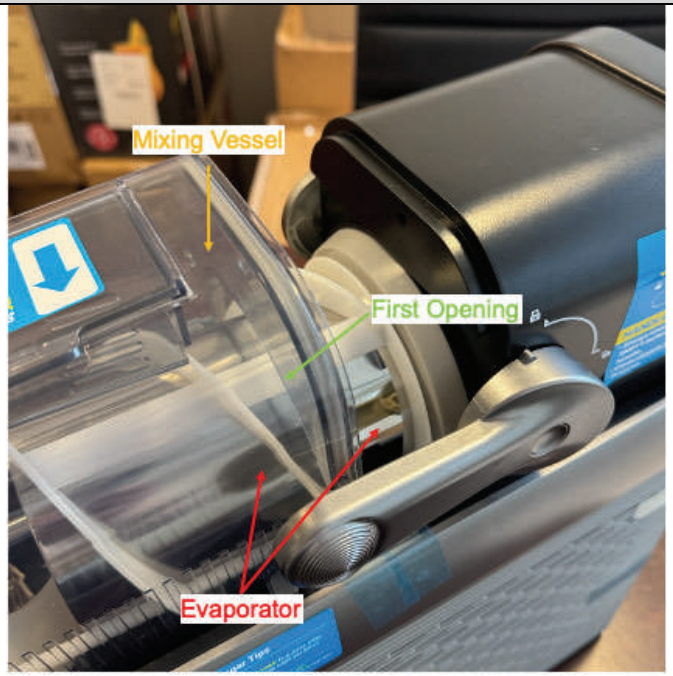
Claim Element	Accused Product
24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and	 Photograph of Accused Product (annotated). The evaporator is received through the first opening of the mixing vessel.

Exhibit 8

Claim Chart Comparing the Neoism Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

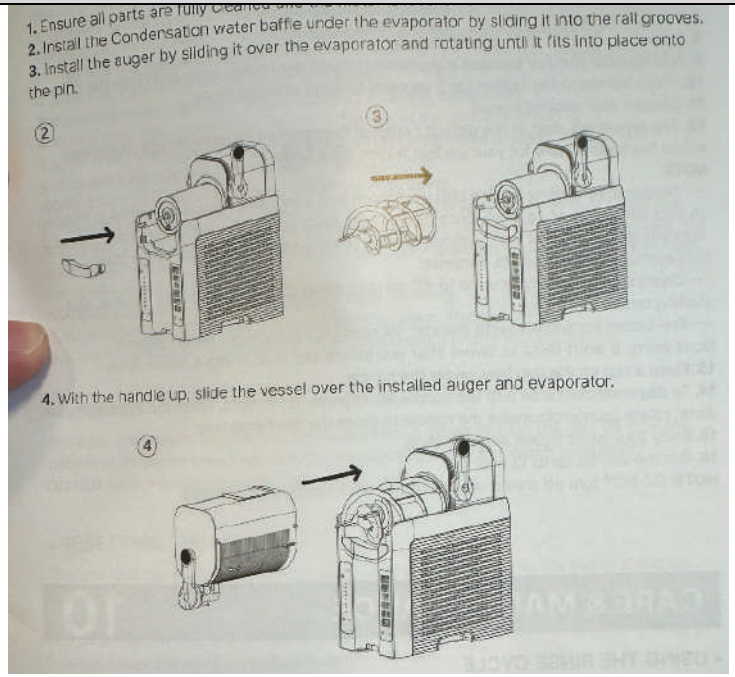
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 8

Claim Chart Comparing the Neoism Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

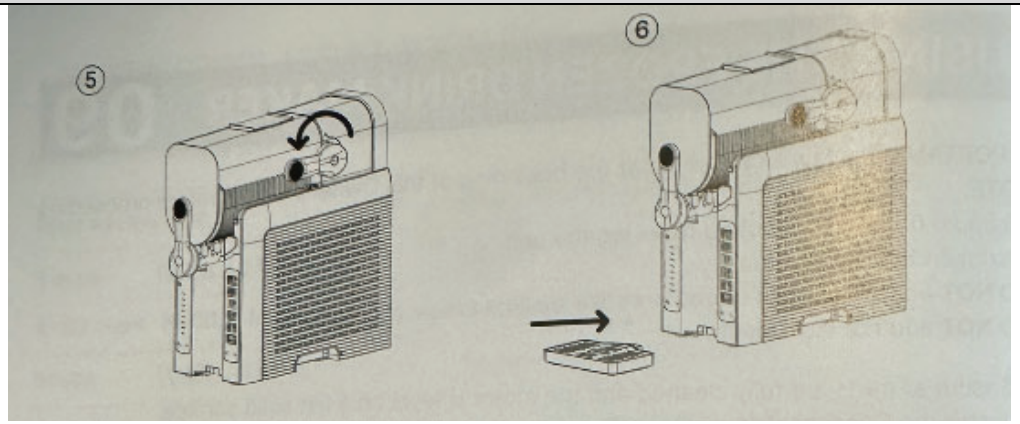
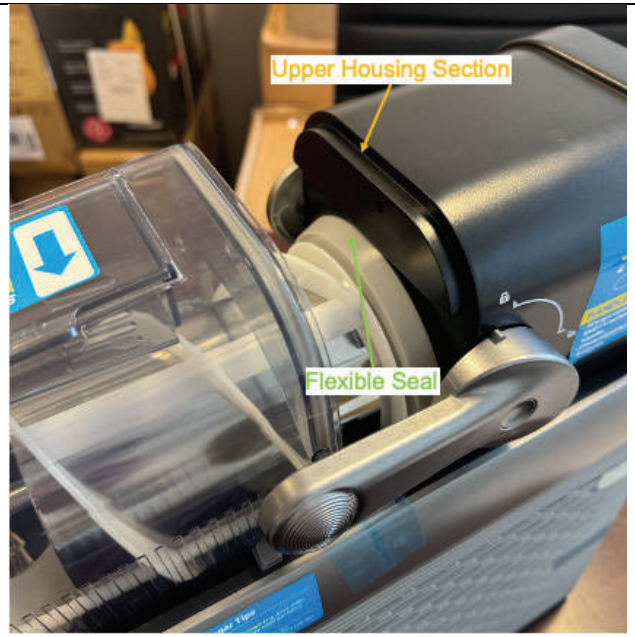
Claim Element	Accused Product
	 Accused Product Instruction Manual.
24[f]: a flexible seal arranged proximate to the upper housing section;	

Exhibit 8

Claim Chart Comparing the Neoism Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

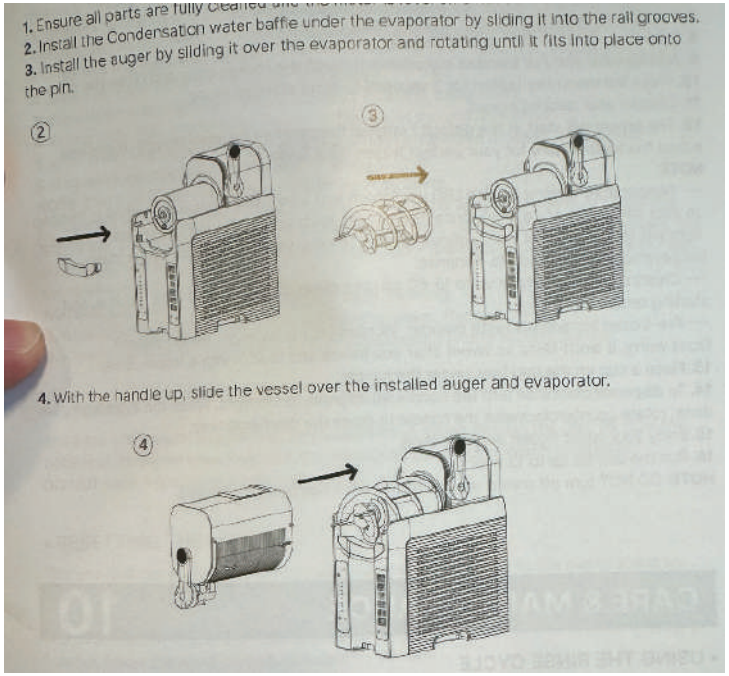
Claim Element	Accused Product
	Photograph of Accused Product (annotated). As confirmed by product testing, the flexible seal comprises a flexible material.
24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position, and	The cam feature of the Accused Product controls the coupling of the mixing vessel to the upper housing section when in the coupling position and uncouples the mixing vessel from the upper housing section when in the uncoupling position.  Accused Product Instruction Manual.

Exhibit 8

Claim Chart Comparing the Neoism Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

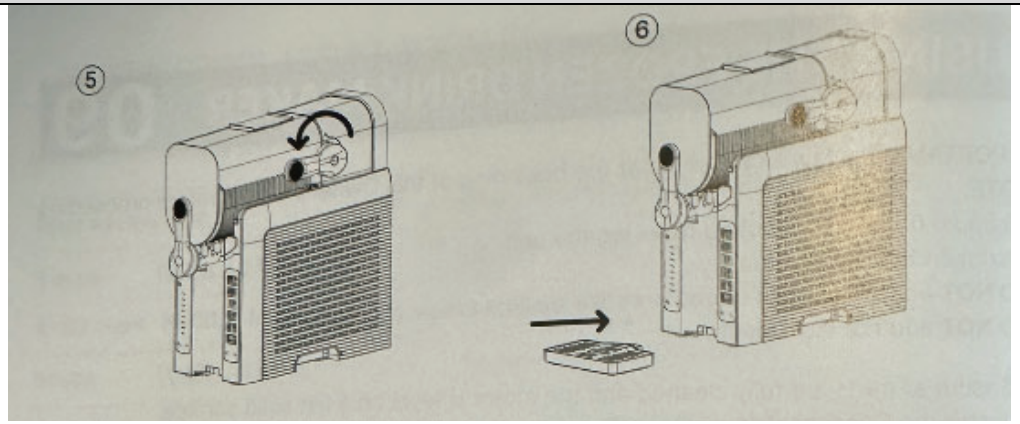
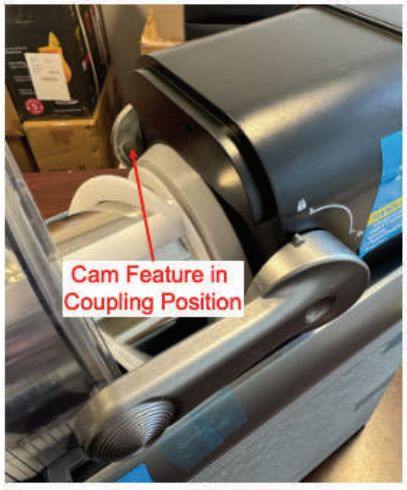
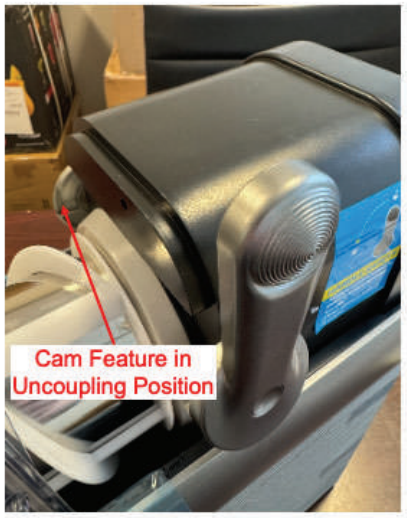
Claim Element	Accused Product
	 Accused Product Instruction Manual.   Photographs of Accused Product (annotated).

Exhibit 8

Claim Chart Comparing the Neoism Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

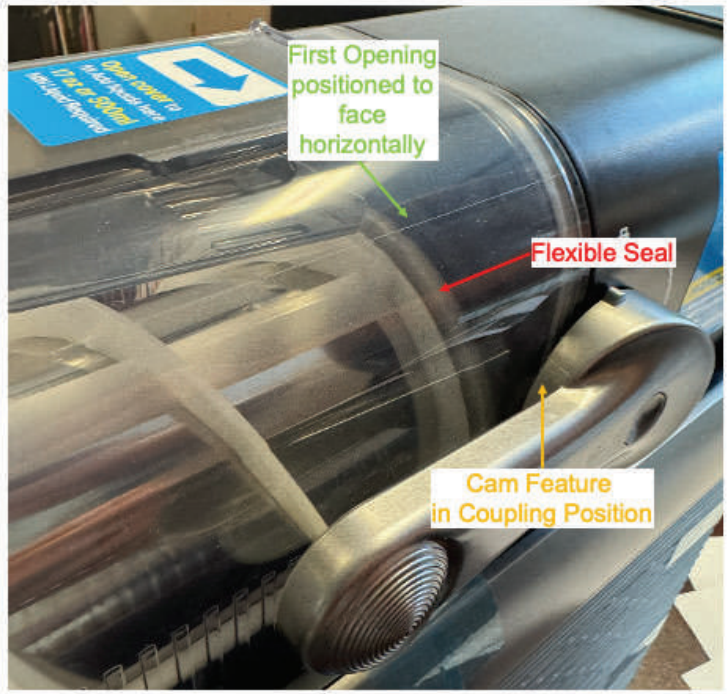
Claim Element	Accused Product
	Id., Cl. 24[a].
24[h]: wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.	When the cam feature of the Accused Product is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal about the first opening.  Photograph of Accused Product (annotated).
30. The frozen drink maker of claim 24, wherein the housing comprises a	The lever of the Accused Product is moveable relative to the upper housing section.

Exhibit 8

Claim Chart Comparing the Neoism Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

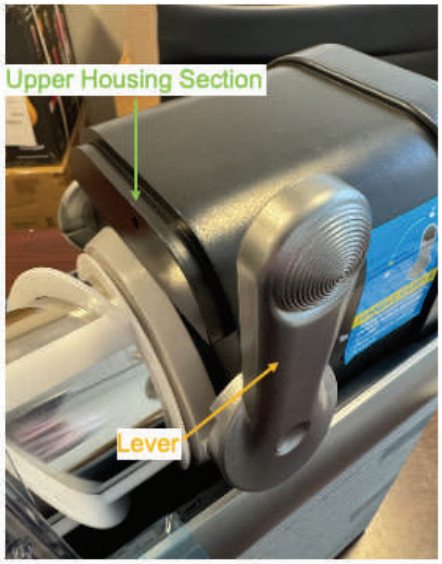
Claim Element	Accused Product
lever moveable relative to the upper housing section, wherein moving the lever to a first position moves the cam feature into the coupling position, and wherein, when in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling of the mixing vessel to the upper housing section.	 Photographs of Accused Product (annotated). Moving the lever of the Accused Product to a first position moves the cam feature into the coupling position. When in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling the mixing vessel to the upper housing section.

Exhibit 8

Claim Chart Comparing the Neoism Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

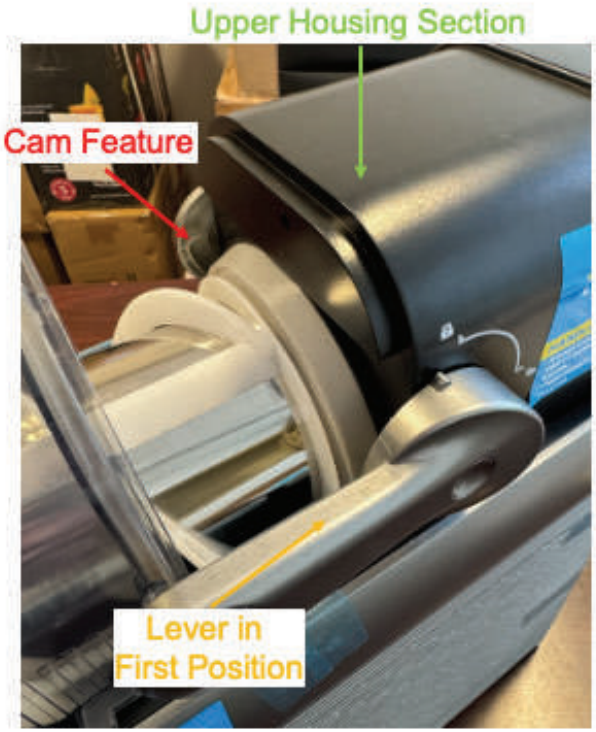
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 8

Claim Chart Comparing the Neoism Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

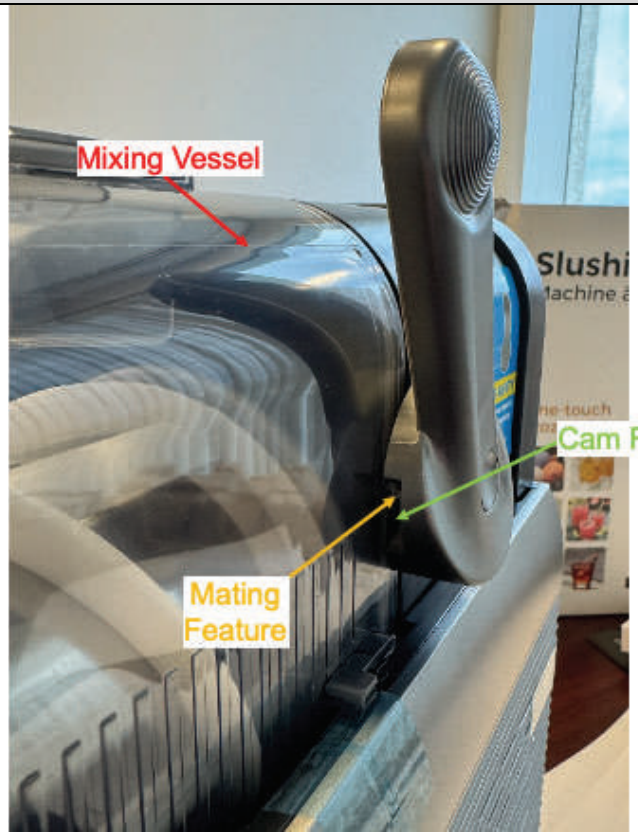
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

EXHIBIT 9

Exhibit 9
Claim Chart Comparing the Revotio Frozen Drink Maker to U.S. Patent No. 12,593,855

Below is a chart that applies asserted exemplary independent claim 24 and 30 of U.S. Patent No. 12,593,855 (the "'855 Patent") to the accused Revotio Frozen Drink Maker ("Accused Product"), purchased at the following listing: www.amazon.com/dp/B0FPF8YXCV (ASIN B0FPF8YXCV).

The arguments and evidence cited in the chart below are representative and Plaintiffs reserve the right to rely on additional arguments and evidence to show that the above-identified accused product infringes exemplary independent claim 24 and 30 of the '855 Patent.

Claim Element	**Accused Product**
24[Pre.]: A frozen drink maker comprising:	 Accused Product Packaging.

Exhibit 9
Claim Chart Comparing the Revotio Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

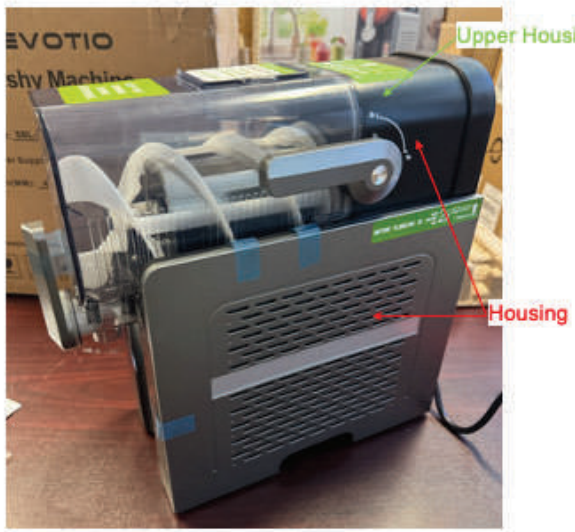
Claim Element	Accused Product
24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;	 Photograph of Accused Product (annotated). The cam feature of the Accused Product is moveable between a coupling position and uncoupling position.

Exhibit 9
Claim Chart Comparing the Revotio Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	Photographs of Accused Product (annotated).

Exhibit 9
Claim Chart Comparing the Revotio Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

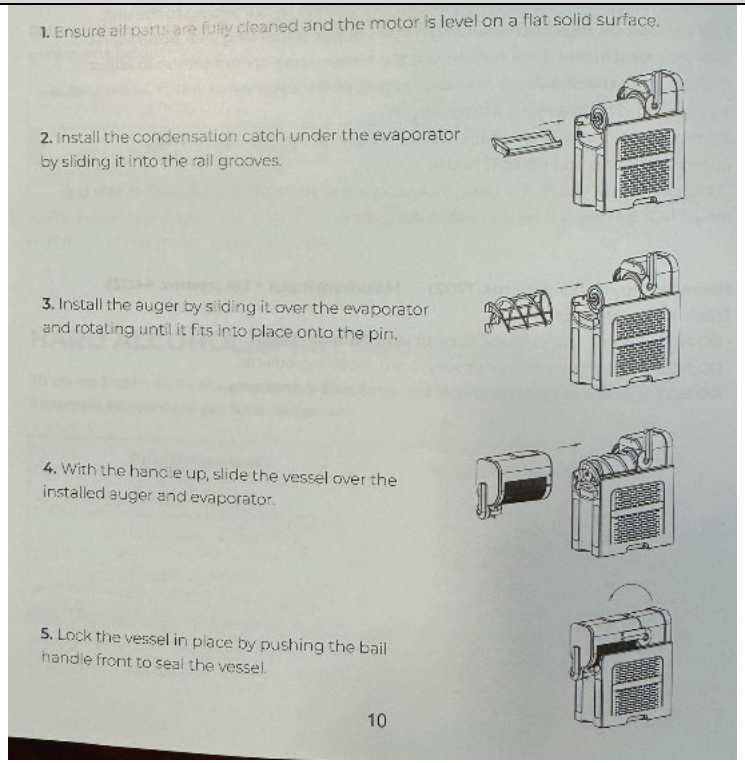
Claim Element	**Accused Product**
	 Accused Product Instruction Manual.
24[b]: a mixing vessel to receive a drink product, the mixing vessel having:	The mixing vessel is configured to receive a drink product.

Exhibit 9
Claim Chart Comparing the Revotio Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	Photograph of Accused Product (annotated).
24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and	

Exhibit 9
Claim Chart Comparing the Revotio Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	Photograph of Accused Product (annotated). Photograph of Accused Product (annotated). The second opening of the mixing vessel of the Accused Product is configured to dispense a drink product.
24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;	 Photograph of Accused Product (annotated).

Exhibit 9
Claim Chart Comparing the Revotio Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

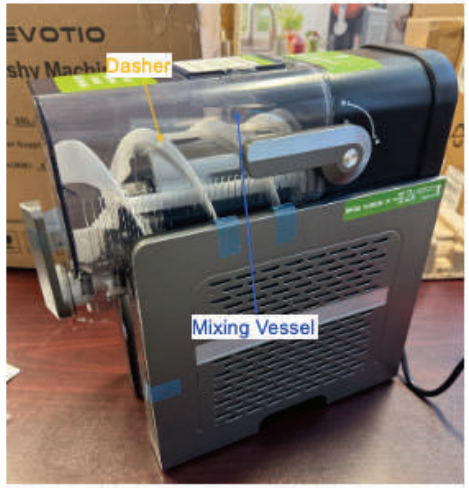
Claim Element	Accused Product
24[c]: a dasher configured to rotate in the mixing vessel;	The dasher of the Accused Product is configured to rotate in the mixing vessel to stir the drink product.  Photograph of Accused Product (annotated).
24[d]: a motor to drive the dasher;	The Accused Product includes a motor that drives the dasher to rotate it to stir the drink product.

Exhibit 9
Claim Chart Comparing the Revotio Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

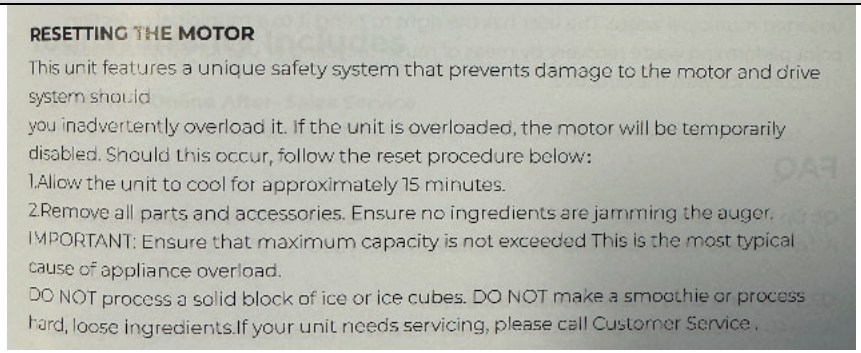
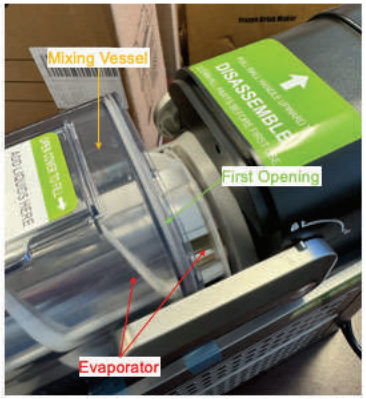
Claim Element	Accused Product
	 Accused Product Instruction Manual. As confirmed by product testing, during operation a motor of the frozen drink maker drives the dasher to rotate.
24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and	 Photograph of Accused Product (annotated). The evaporator is received through the first opening of the mixing vessel.

Exhibit 9

Claim Chart Comparing the Revotio Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

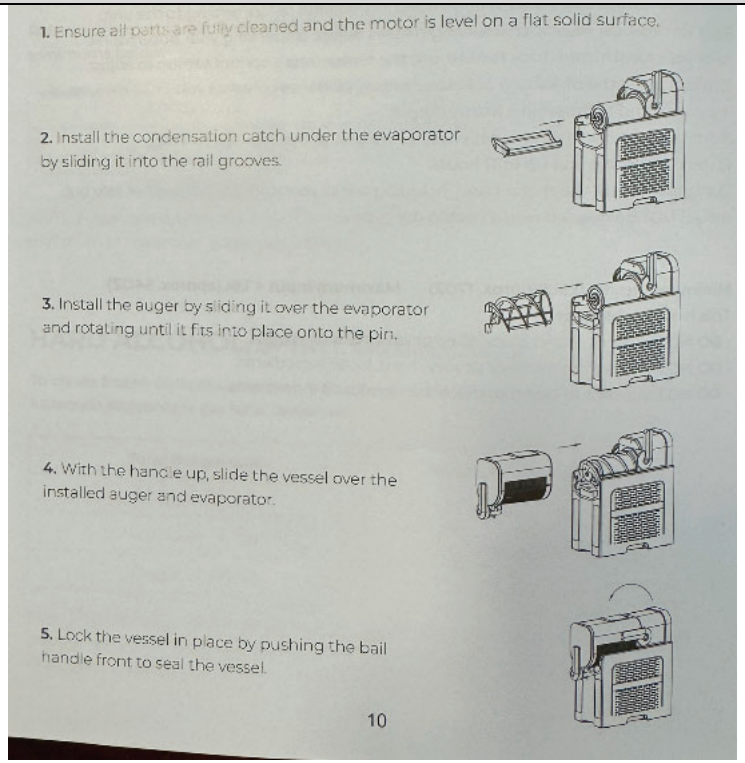
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 9

Claim Chart Comparing the Revotio Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
24[f]: a flexible seal arranged proximate to the upper housing section;	 Photograph of Accused Product (annotated). As confirmed by product testing, the flexible seal comprises a flexible material.
24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position, and	The cam feature of the Accused Product controls the coupling of the mixing vessel to the upper housing section when in the coupling position and uncouples the mixing vessel from the upper housing section when in the uncoupling position.

Exhibit 9

Claim Chart Comparing the Revotio Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

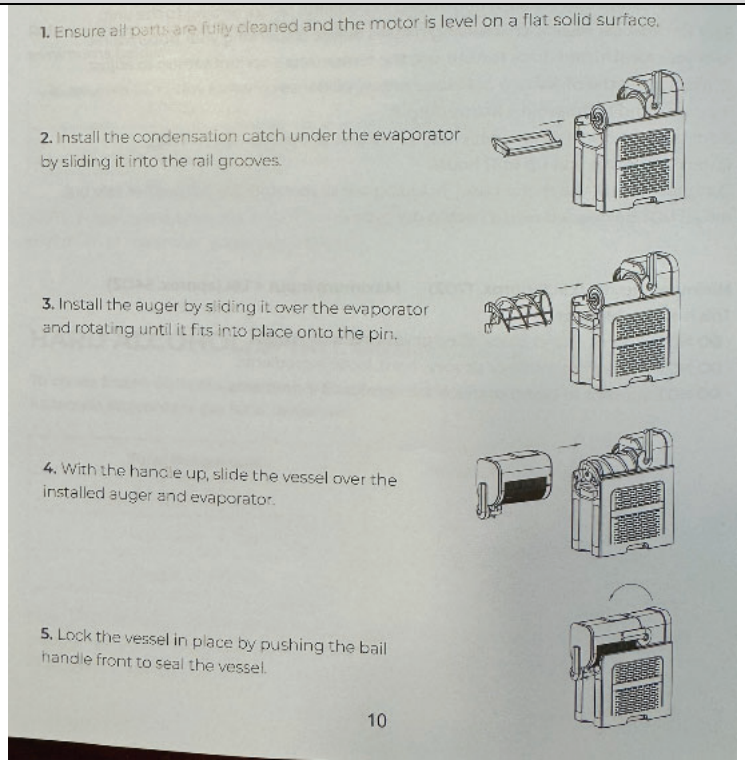
Claim Element	**Accused Product**
	 Accused Product Instruction Manual.

Exhibit 9

Claim Chart Comparing the Revotio Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	**Accused Product**
	 Photographs of Accused Product (annotated). *Id.*, Cl. 24[a].
24[h]: wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.	When the cam feature of the Accused Product is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal about the first opening.

Exhibit 9

Claim Chart Comparing the Revotio Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

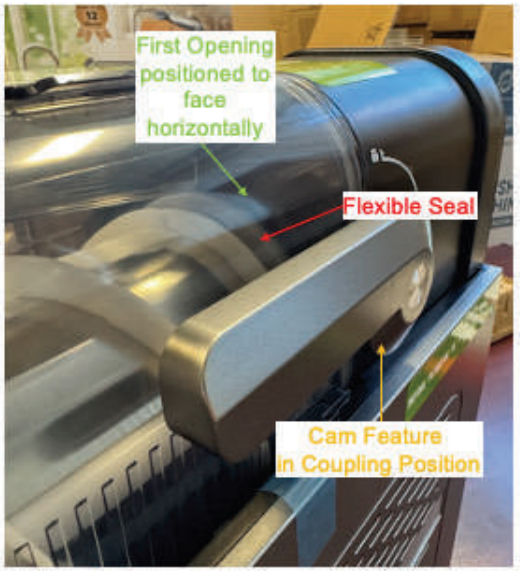
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
30. The frozen drink maker of claim 24, wherein the housing comprises a lever moveable relative to the upper housing section, wherein moving the lever to a first position moves the cam feature into the coupling position, and wherein, when in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control	The lever of the Accused Product is moveable relative to the upper housing section.

Exhibit 9

Claim Chart Comparing the Revotio Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
coupling of the mixing vessel to the upper housing section.	 Photographs of Accused Product (annotated). Moving the lever of the Accused Product to a first position moves the cam feature into the coupling position. When in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling the mixing vessel to the upper housing section.

Exhibit 9

Claim Chart Comparing the Revotio Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 9

Claim Chart Comparing the Revotio Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

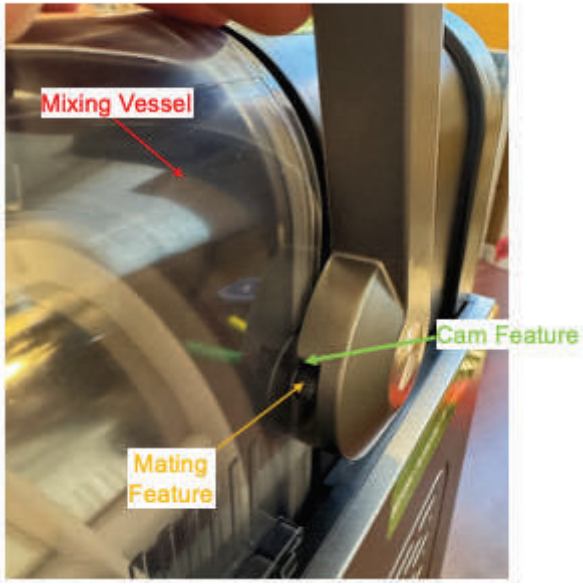
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

EXHIBIT 10

Exhibit 10
Claim Chart Comparing the SUPWIN Frozen Drink Maker to U.S. Patent No. 12,593,855

Below is a chart that applies asserted exemplary independent claim 24 and 30 of U.S. Patent No. 12,593,855 (the "'855 Patent") to the accused SUPWIN Frozen Drink Maker ("Accused Product"), purchased at the following listing: www.amazon.com/dp/B0FX2M6CV1 (ASIN B0FX2M6CV1).

The arguments and evidence cited in the chart below are representative and Plaintiffs reserve the right to rely on additional arguments and evidence to show that the above-identified accused product infringes exemplary independent claim 24 and 30 of the '855 Patent.

Claim Element	**Accused Product**
24[Pre.]: A frozen drink maker comprising:	 Accused Product Packaging.

Exhibit 10
Claim Chart Comparing the SUPWIN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

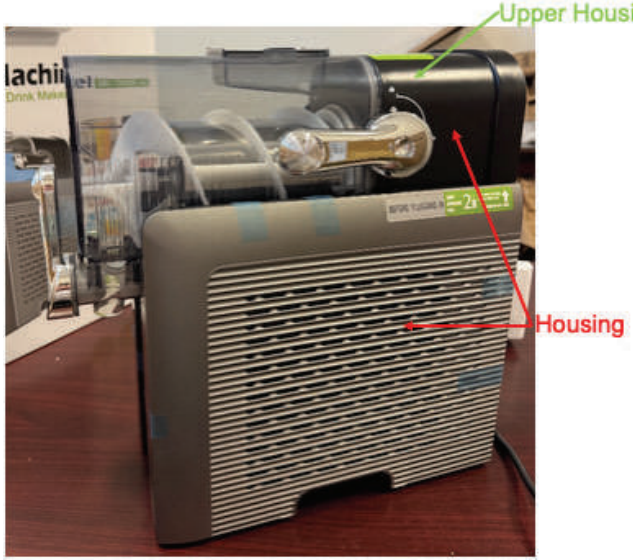
Claim Element	Accused Product
24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;	 Photograph of Accused Product (annotated). The cam feature of the Accused Product is moveable between a coupling position and uncoupling position.

Exhibit 10
Claim Chart Comparing the SUPWIN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

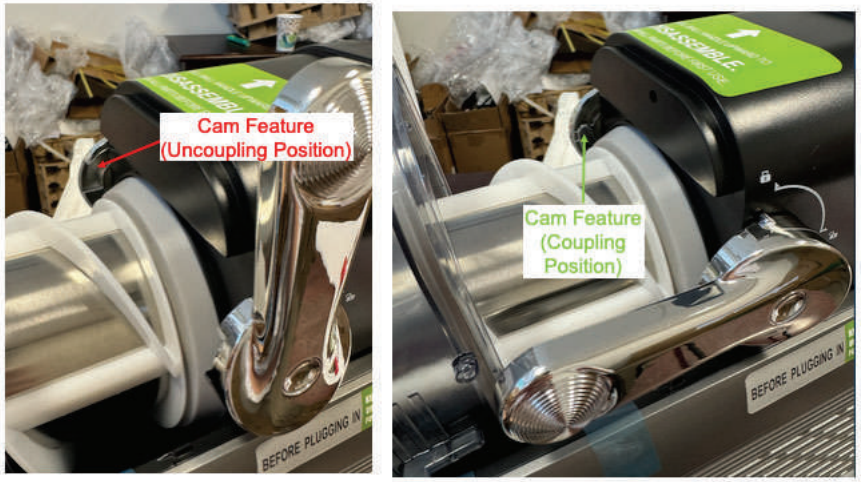
Claim Element	Accused Product
	 Photographs of Accused Product (annotated).

Exhibit 10
Claim Chart Comparing the SUPWIN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

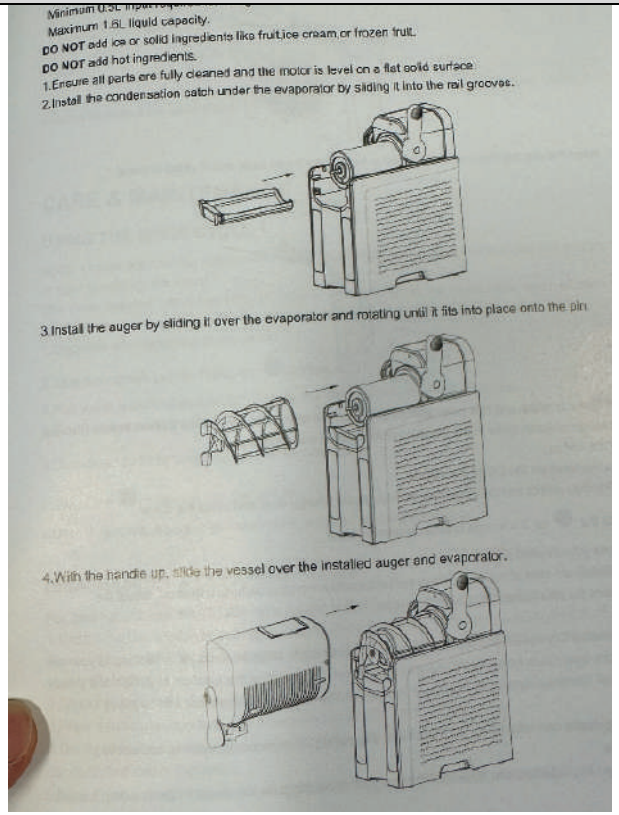
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 10
Claim Chart Comparing the SUPWIN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

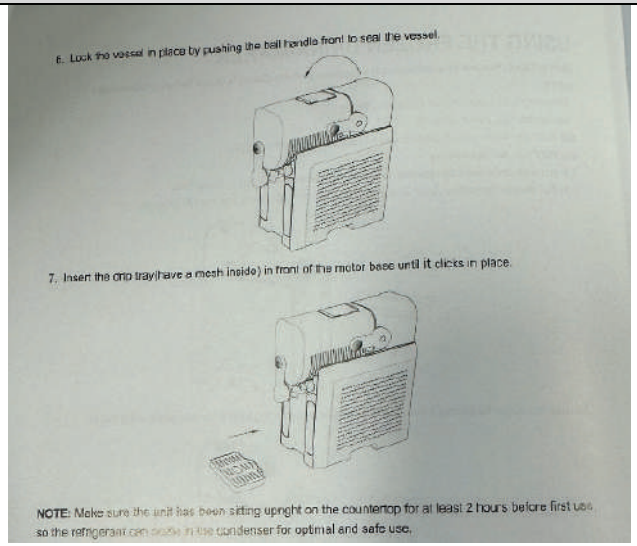
Claim Element	Accused Product
	 Accused Product Instruction Manual.
24[b]: a mixing vessel to receive a drink product, the mixing vessel having:	The mixing vessel is configured to receive a drink product.

Exhibit 10
Claim Chart Comparing the SUPWIN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

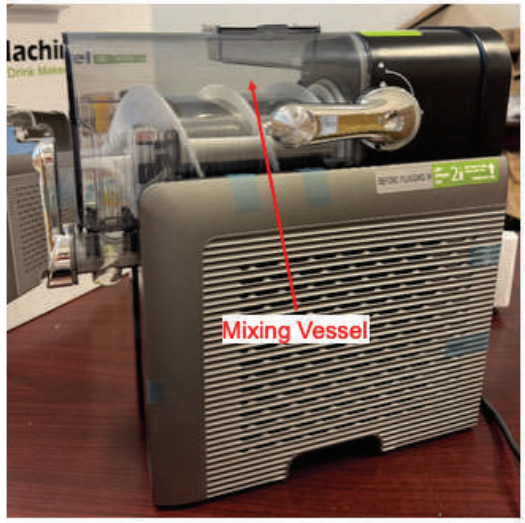
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and	Photograph of Accused Product (annotated).

Exhibit 10
Claim Chart Comparing the SUPWIN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

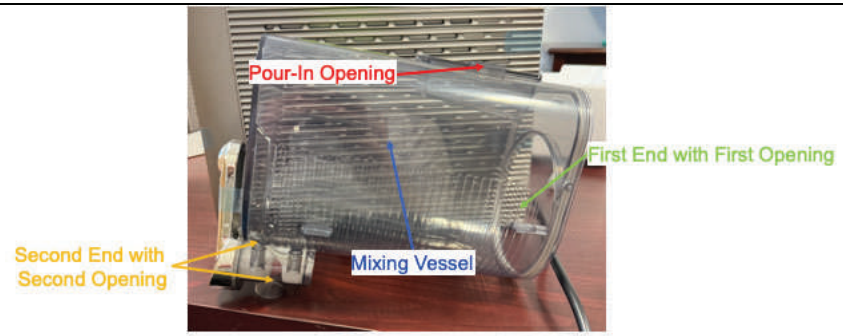
Claim Element	Accused Product
	The second opening of the mixing vessel of the Accused Product is configured to dispense a drink product.
24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;	 Photograph of Accused Product (annotated).
24[c]: a dasher configured to rotate in the mixing vessel;	The dasher of the Accused Product is configured to rotate in the mixing vessel to stir the drink product.

Exhibit 10
Claim Chart Comparing the SUPWIN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

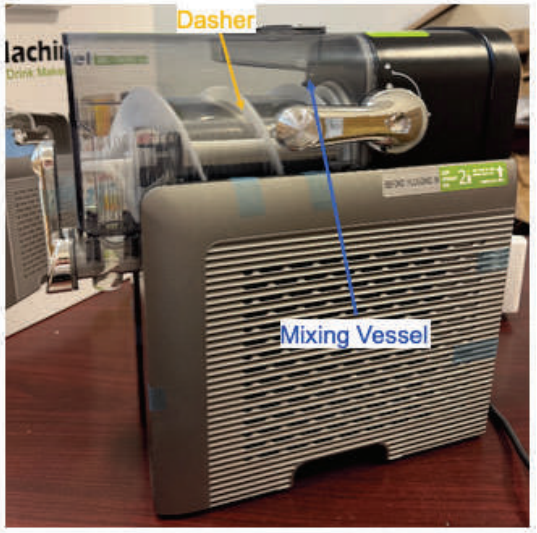
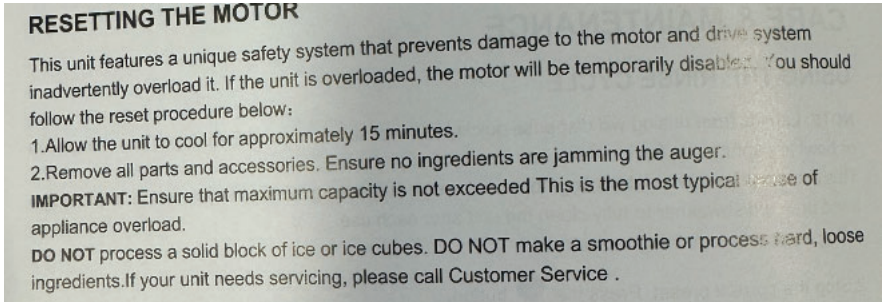
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
24[d]: a motor to drive the dasher;	The Accused Product includes a motor that drives the dasher to rotate it to stir the drink product.  **RESETTING THE MOTOR** This unit features a unique safety system that prevents damage to the motor and drive system inadvertently overload it. If the unit is overloaded, the motor will be temporarily disabled. You should follow the reset procedure below: 1.Allow the unit to cool for approximately 15 minutes. 2.Remove all parts and accessories. Ensure no ingredients are jamming the auger. **IMPORTANT:** Ensure that maximum capacity is not exceeded This is the most typical cause of appliance overload. **DO NOT** process a solid block of ice or ice cubes. DO NOT make a smoothie or process hard, loose ingredients.If your unit needs servicing, please call Customer Service . Accused Product Instruction Manual.

Exhibit 10

Claim Chart Comparing the SUPWIN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

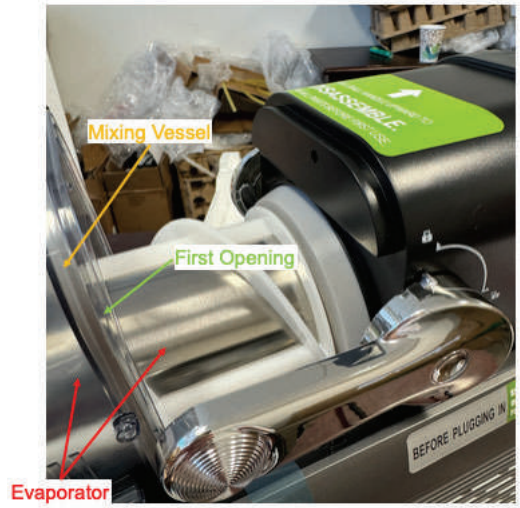
Claim Element	Accused Product
	As confirmed by product testing, during operation a motor of the frozen drink maker drives the dasher to rotate.
24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and	 Photograph of Accused Product (annotated). The evaporator is received through the first opening of the mixing vessel.

Exhibit 10

Claim Chart Comparing the SUPWIN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

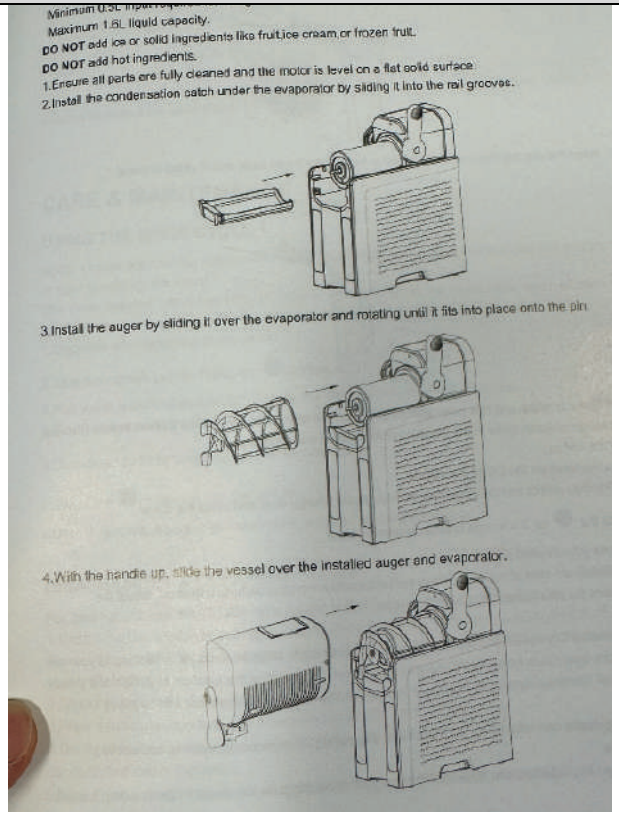
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 10

Claim Chart Comparing the SUPWIN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

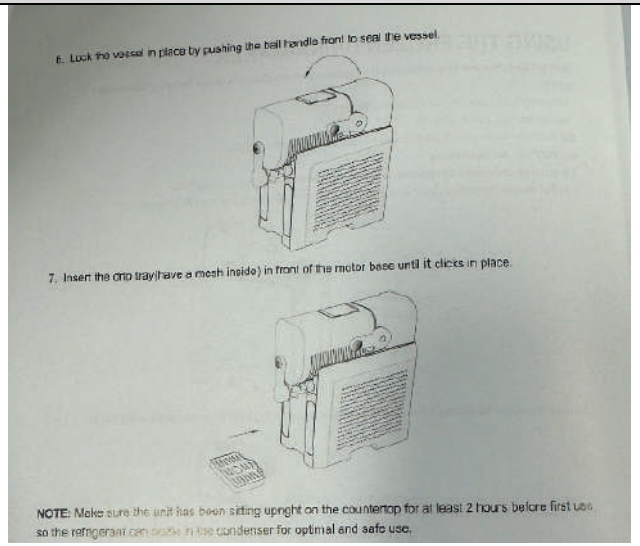
Claim Element	Accused Product
	 Accused Product Instruction Manual.
24[f]: a flexible seal arranged proximate to the upper housing section;	

Exhibit 10

Claim Chart Comparing the SUPWIN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

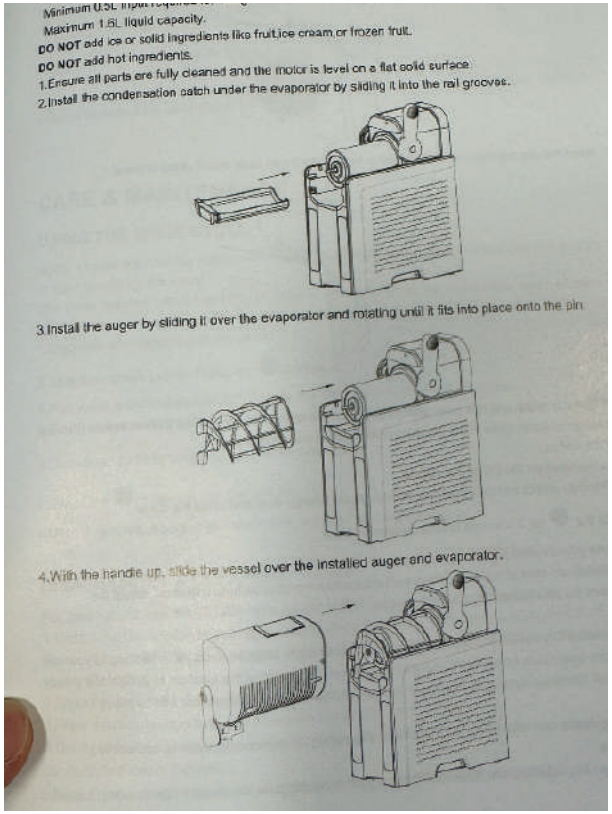
Claim Element	Accused Product
	Photograph of Accused Product (annotated). As confirmed by product testing, the flexible seal comprises a flexible material.
24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position, and	The cam feature of the Accused Product controls the coupling of the mixing vessel to the upper housing section when in the coupling position and uncouples the mixing vessel from the upper housing section when in the uncoupling position. 

Exhibit 10

Claim Chart Comparing the SUPWIN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

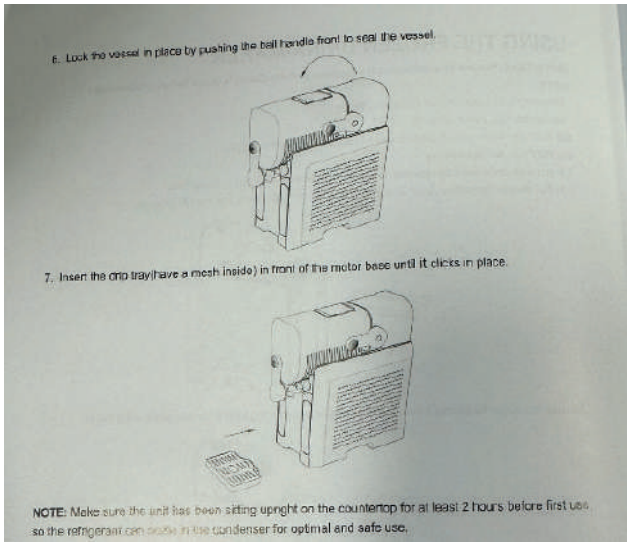
Claim Element	Accused Product
	Accused Product Instruction Manual.  Accused Product Instruction Manual.

Exhibit 10

Claim Chart Comparing the SUPWIN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

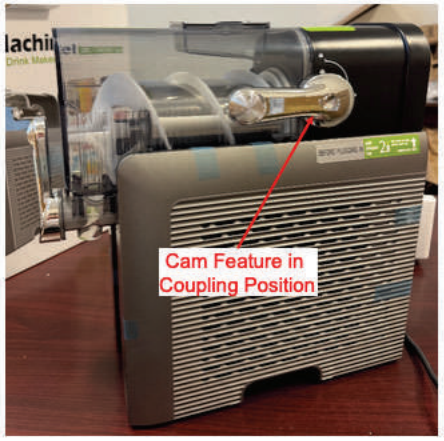
Claim Element	Accused Product
	 Photographs of Accused Product (annotated). *Id.*, Cl. 24[a].
24[h]: wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.	When the cam feature of the Accused Product is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal about the first opening.

Exhibit 10

Claim Chart Comparing the SUPWIN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

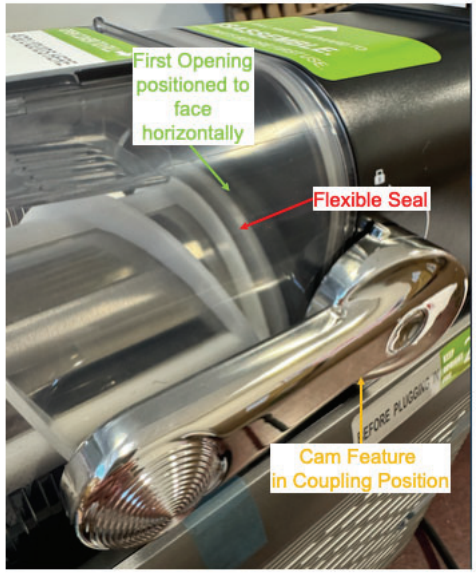
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
30. The frozen drink maker of claim 24, wherein the housing comprises a lever moveable relative to the upper housing section, wherein moving the lever to a first position moves the cam feature into the coupling position, and wherein, when in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control	The lever of the Accused Product is moveable relative to the upper housing section.

Exhibit 10

Claim Chart Comparing the SUPWIN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
coupling of the mixing vessel to the upper housing section.	 Photographs of Accused Product (annotated). Moving the lever of the Accused Product to a first position moves the cam feature into the coupling position. When in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling the mixing vessel to the upper housing section.

Exhibit 10

Claim Chart Comparing the SUPWIN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

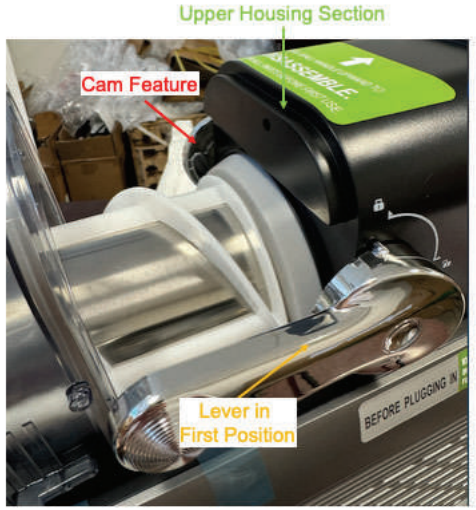
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 10

Claim Chart Comparing the SUPWIN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

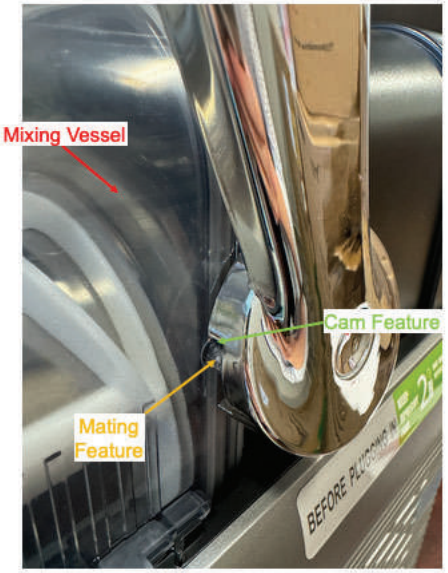
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

EXHIBIT 11

Exhibit 11
Claim Chart Comparing the Sweet Frozen Drink Maker to U.S. Patent No. 12,593,855

Below is a chart that applies asserted exemplary independent claim 24 and 30 of U.S. Patent No. 12,593,855 (the "'855 Patent") to the accused Sweet Frozen Drink Maker ("Accused Product"), purchased at the following listing: www.amazon.com/dp/B0F8BFBDBV (ASIN B0F8BFBDBV).

The arguments and evidence cited in the chart below are representative and Plaintiffs reserve the right to rely on additional arguments and evidence to show that the above-identified accused product infringes exemplary independent claim 24 and 30 of the '855 Patent.

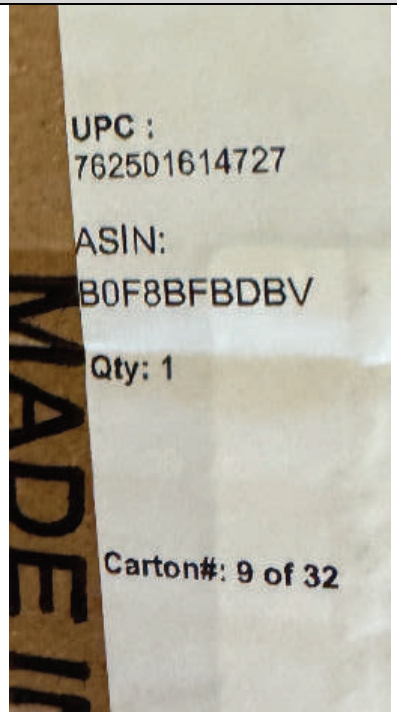
Claim Element	**Accused Product**
24[Pre.]: A frozen drink maker comprising:	 Accused Product Packaging.

Exhibit 11
Claim Chart Comparing the Sweet Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Accused Product Packaging.

Exhibit 11
Claim Chart Comparing the Sweet Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;	 Photograph of Accused Product (annotated). The cam feature of the Accused Product is moveable between a coupling position and uncoupling position.

Exhibit 11
Claim Chart Comparing the Sweet Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

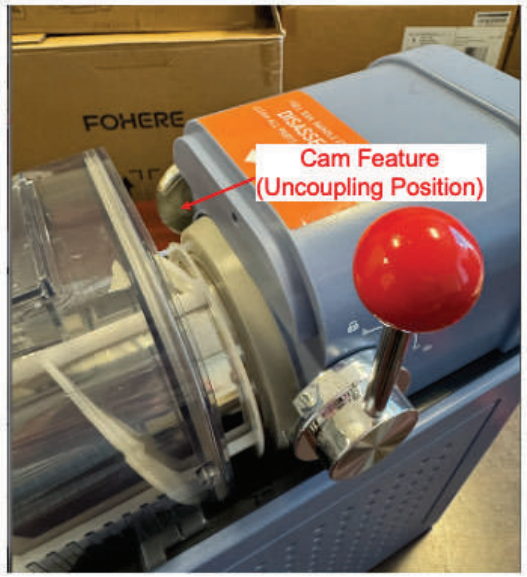
Claim Element	Accused Product
	 Photographs of Accused Product (annotated).

Exhibit 11
Claim Chart Comparing the Sweet Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

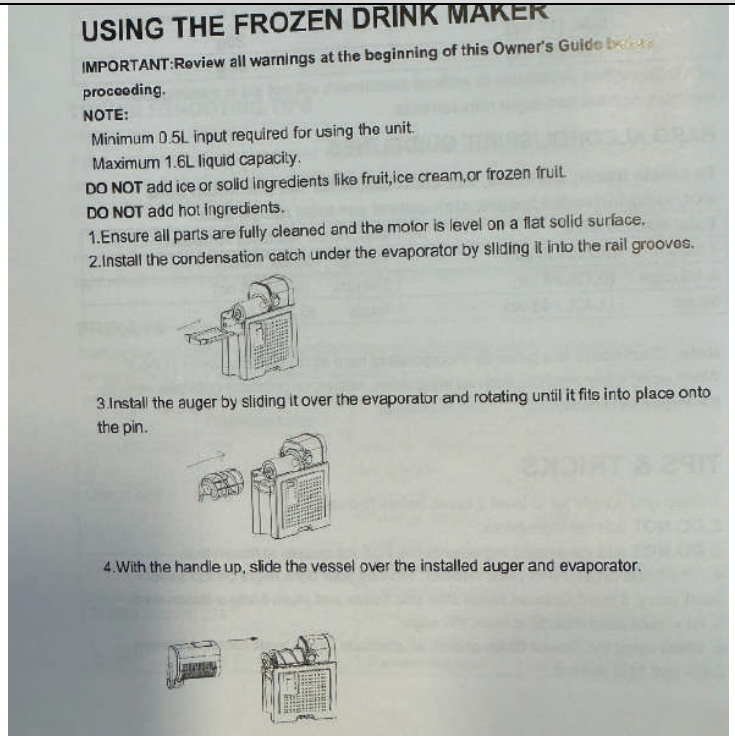
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 11
Claim Chart Comparing the Sweet Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

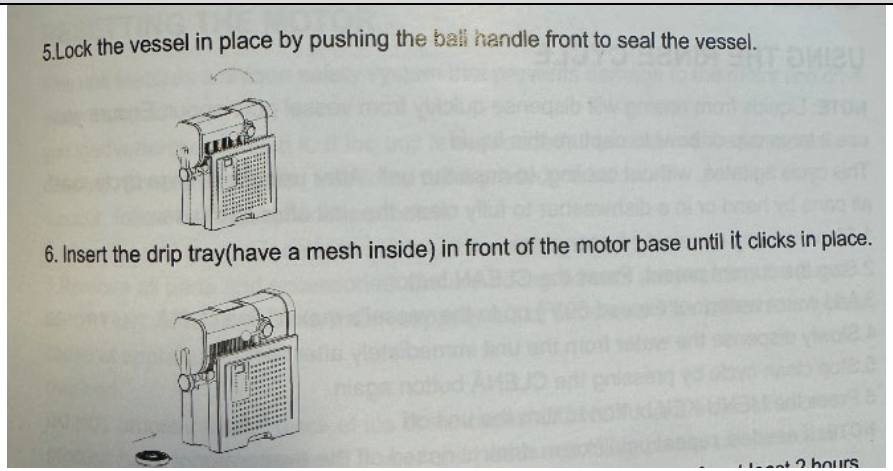
Claim Element	**Accused Product**
	 Accused Product Instruction Manual.
24[b]: a mixing vessel to receive a drink product, the mixing vessel having:	The mixing vessel is configured to receive a drink product.

Exhibit 11
Claim Chart Comparing the Sweet Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	Photograph of Accused Product (annotated).

Exhibit 11
Claim Chart Comparing the Sweet Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

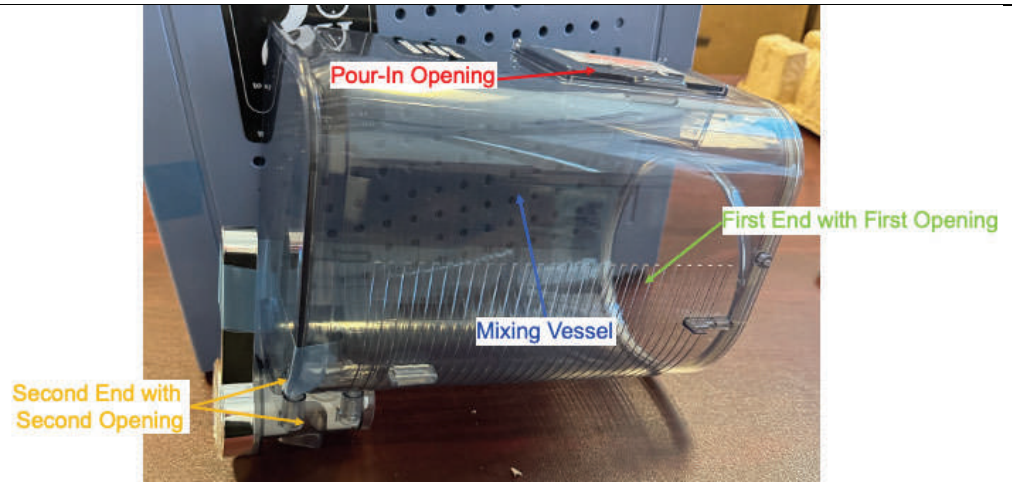
Claim Element	Accused Product
24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and	Photograph of Accused Product (annotated). The second opening of the mixing vessel of the Accused Product is configured to dispense a drink product.
24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;	

Exhibit 11

Claim Chart Comparing the Sweet Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	Photograph of Accused Product (annotated).
24[c]: a dasher configured to rotate in the mixing vessel;	The dasher of the Accused Product is configured to rotate in the mixing vessel to stir the drink product. Photograph of Accused Product (annotated).
24[d]: a motor to drive the dasher;	The Accused Product includes a motor that drives the dasher to rotate it to stir the drink product.

Exhibit 11

Claim Chart Comparing the Sweet Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

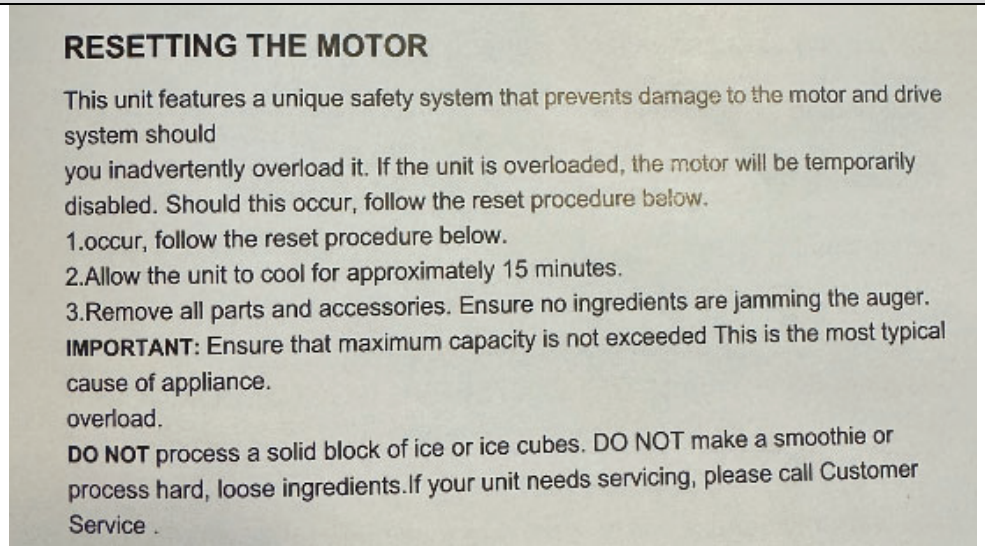
Claim Element	Accused Product
	 Accused Product Instruction Manual. As confirmed by product testing, during operation a motor of the frozen drink maker drives the dasher to rotate.

Exhibit 11

Claim Chart Comparing the Sweet Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

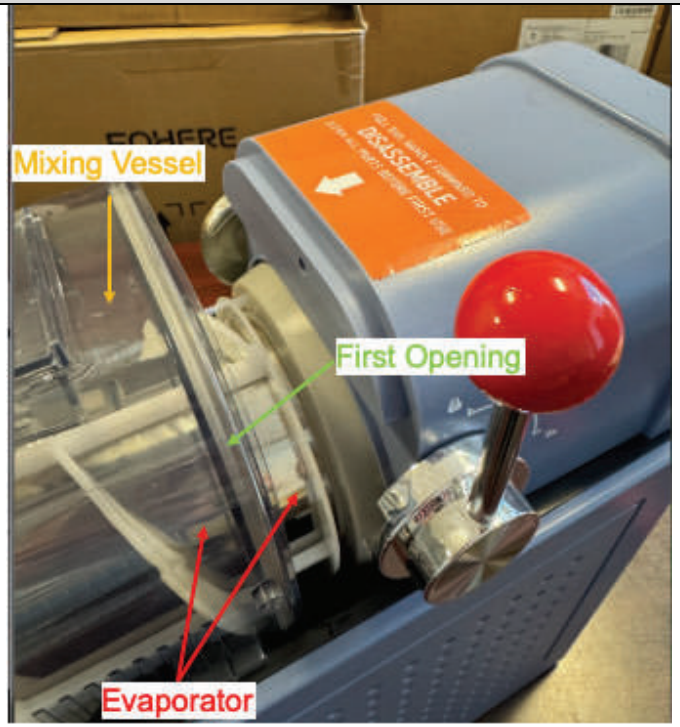
Claim Element	Accused Product
24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and	 Photograph of Accused Product (annotated). The evaporator is received through the first opening of the mixing vessel.

Exhibit 11

Claim Chart Comparing the Sweet Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

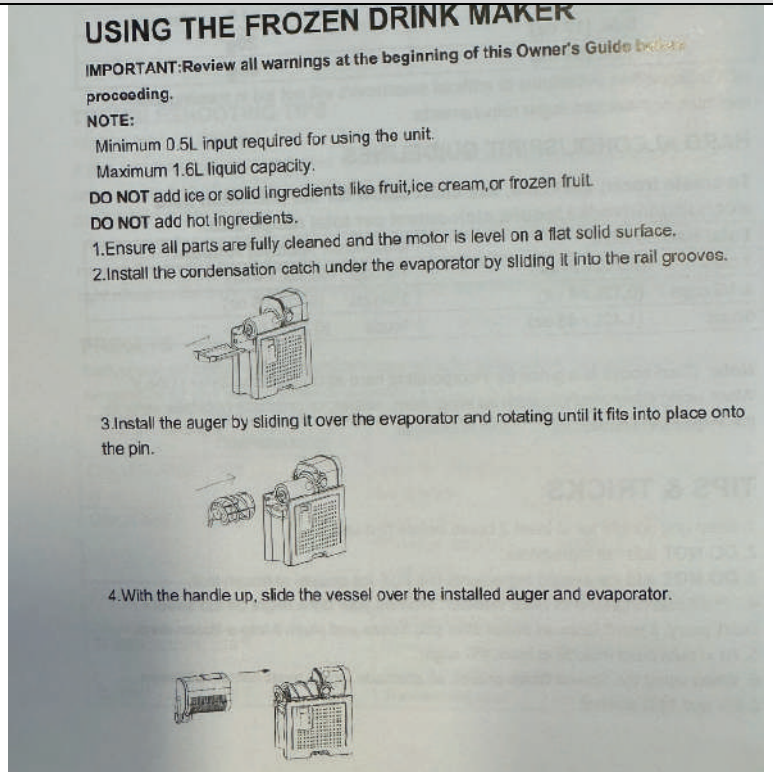
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 11

Claim Chart Comparing the Sweet Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

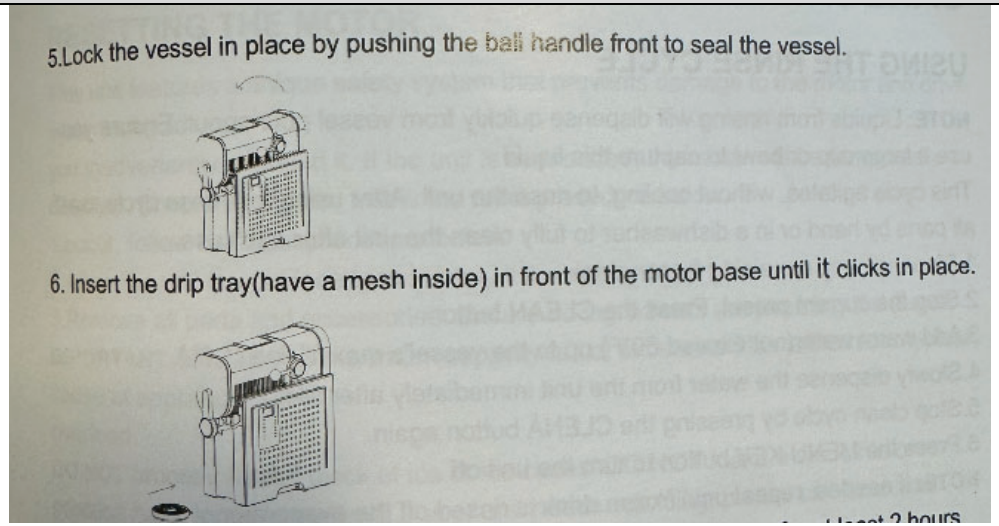
Claim Element	**Accused Product**
	 Accused Product Instruction Manual.

Exhibit 11

Claim Chart Comparing the Sweet Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
24[f]: a flexible seal arranged proximate to the upper housing section;	 Photograph of Accused Product (annotated). As confirmed by product testing, the flexible seal comprises a flexible material.
24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position, and	The cam feature of the Accused Product controls the coupling of the mixing vessel to the upper housing section when in the coupling position and uncouples the mixing vessel from the upper housing section when in the uncoupling position.

Exhibit 11

Claim Chart Comparing the Sweet Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

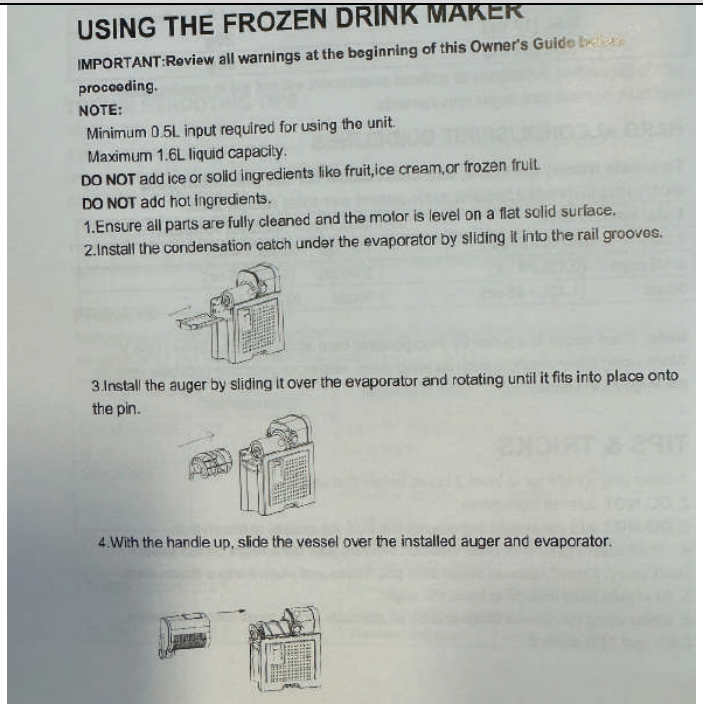
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 11

Claim Chart Comparing the Sweet Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

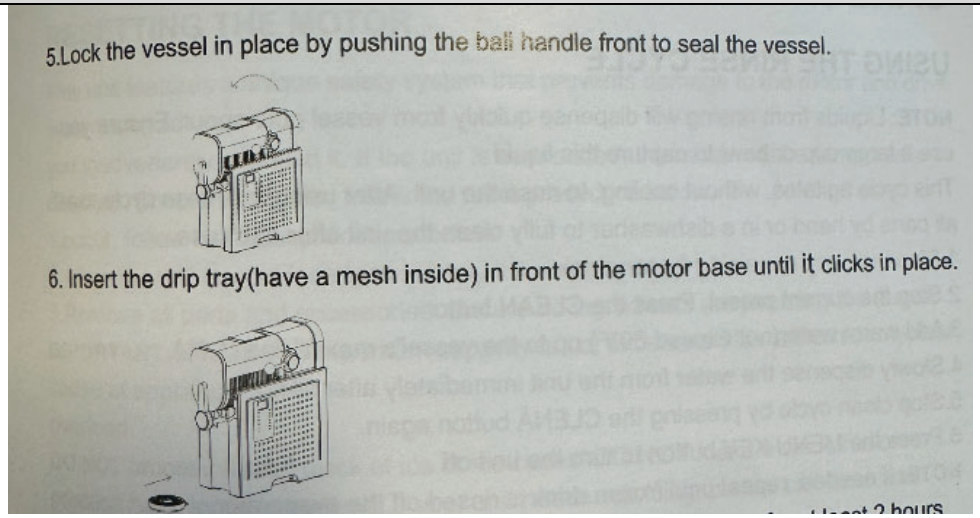
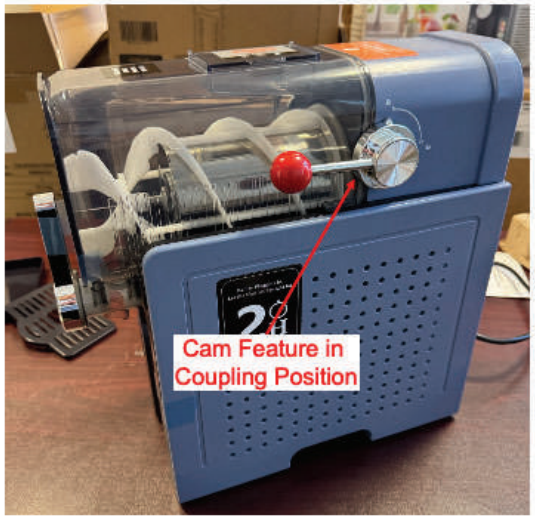
Claim Element	Accused Product
	 Accused Product Instruction Manual. 

Exhibit 11

Claim Chart Comparing the Sweet Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

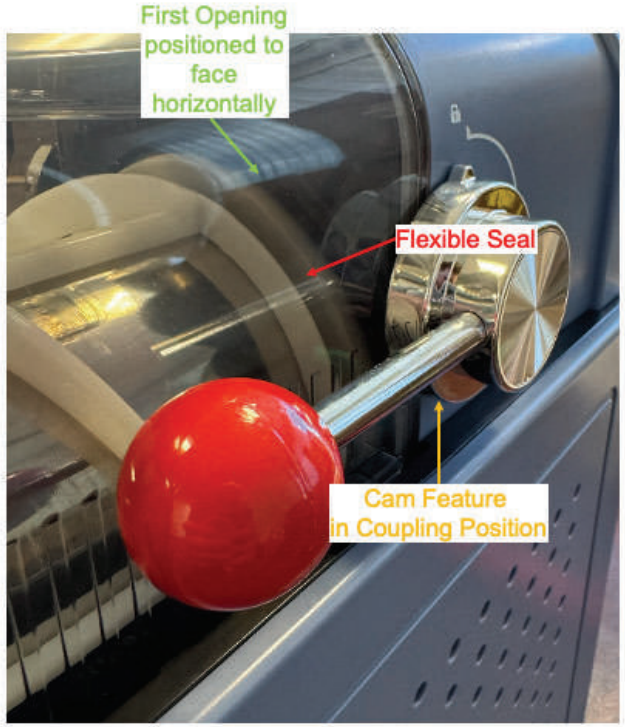
Claim Element	Accused Product
	Photographs of Accused Product (annotated). *Id.*, Cl. 24[a].
24[h]: wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.	When the cam feature of the Accused Product is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal about the first opening.  Photograph of Accused Product (annotated).

Exhibit 11

Claim Chart Comparing the Sweet Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
30. The frozen drink maker of claim 24, wherein the housing comprises a lever moveable relative to the upper housing section, wherein moving the lever to a first position moves the cam feature into the coupling position, and wherein, when in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling of the mixing vessel to the upper housing section.	The lever of the Accused Product is moveable relative to the upper housing section. Photographs of Accused Product (annotated). Moving the lever of the Accused Product to a first position moves the cam feature into the coupling position. When in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling the mixing vessel to the upper housing section.

Exhibit 11

Claim Chart Comparing the Sweet Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

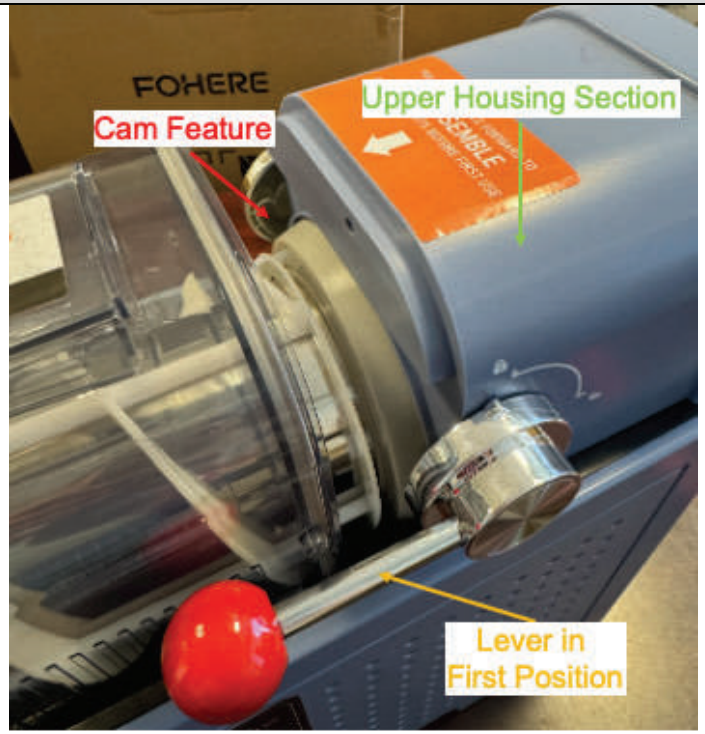
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 11

Claim Chart Comparing the Sweet Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

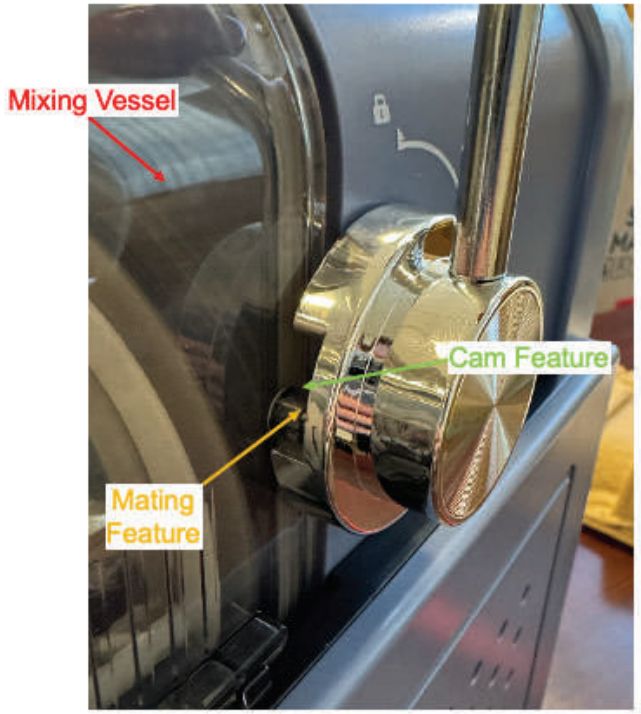
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

EXHIBIT 12

Exhibit 12
Claim Chart Comparing the Syintao Frozen Drink Maker to U.S. Patent No. 12,593,855

Below is a chart that applies asserted exemplary independent claim 24 and 30 of U.S. Patent No. 12,593,855 (the "'855 Patent") to the accused Syintao Frozen Drink Maker ("Accused Product"), purchased at the following listing: https://www.amazon.com/dp/B0GFRZBM55 (ASIN B0GFRZBM55).

The arguments and evidence cited in the chart below are representative and Plaintiffs reserve the right to rely on additional arguments and evidence to show that the above-identified accused product infringes exemplary independent claim 24 and 30 of the '855 Patent.

Claim Element	**Accused Product**
24[Pre.]: A frozen drink maker comprising:	 Accused Product Packaging.

Exhibit 12
Claim Chart Comparing the Syintao Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;	 Photograph of Accused Product (annotated). The cam feature of the Accused Product is moveable between a coupling position and uncoupling position.

Exhibit 12
Claim Chart Comparing the Syintao Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

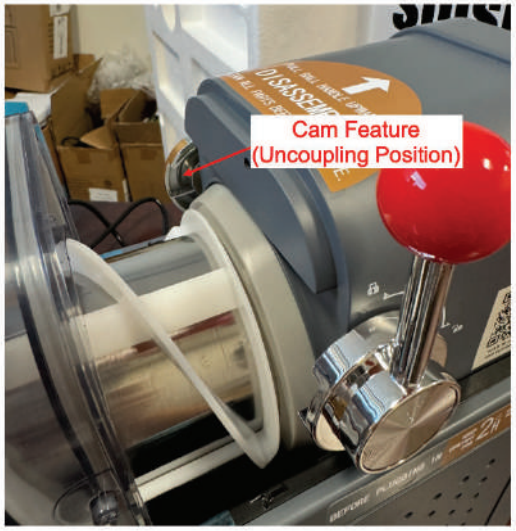
Claim Element	Accused Product
	 Photographs of Accused Product (annotated).

Exhibit 12
Claim Chart Comparing the Syintao Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

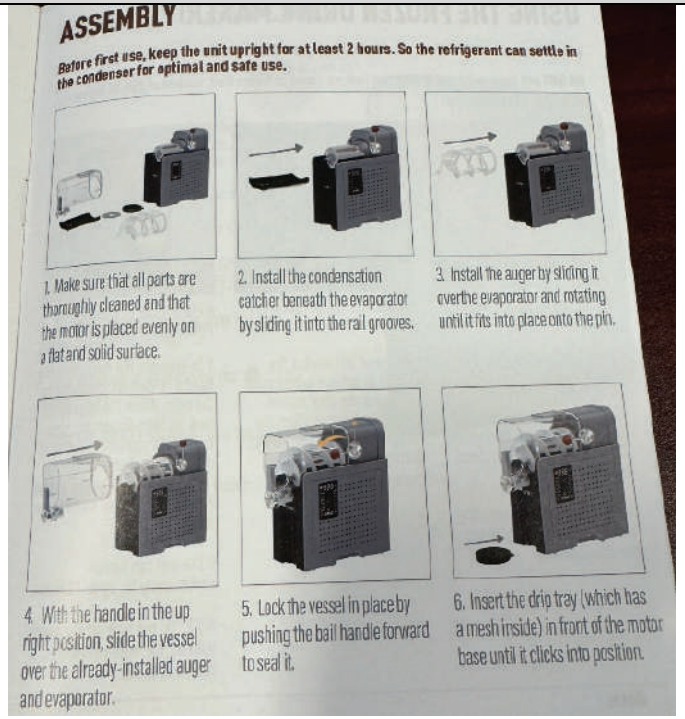
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 12
Claim Chart Comparing the Syintao Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Accused Product Instruction Manual.
24[b]: a mixing vessel to receive a drink product, the mixing vessel having:	The mixing vessel is configured to receive a drink product.

Exhibit 12
Claim Chart Comparing the Syintao Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	Photograph of Accused Product (annotated).

Exhibit 12
Claim Chart Comparing the Syintao Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and	 Photograph of Accused Product (annotated). The second opening of the mixing vessel of the Accused Product is configured to dispense a drink product.

Exhibit 12
Claim Chart Comparing the Syintao Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

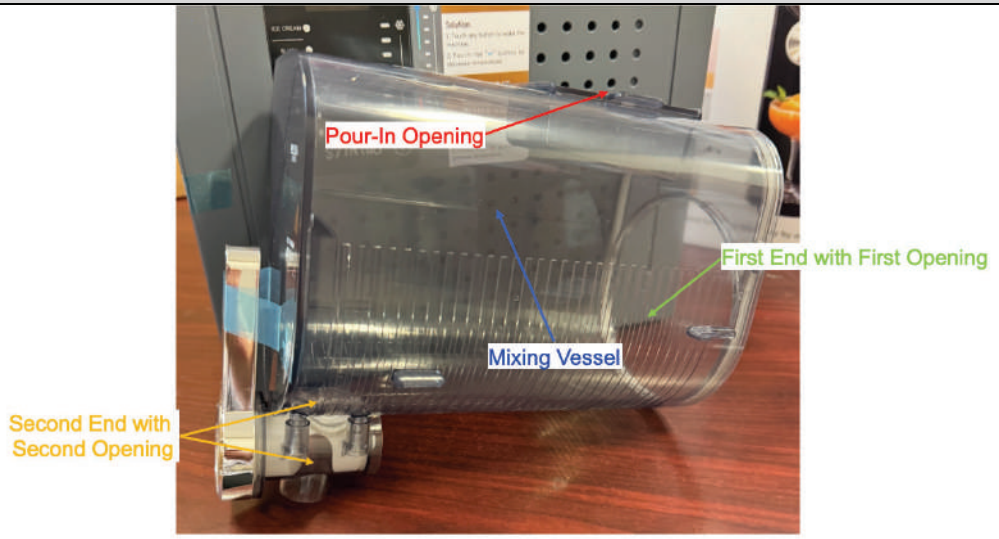
Claim Element	Accused Product
24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;	 Photograph of Accused Product (annotated).
24[c]: a dasher configured to rotate in the mixing vessel;	The dasher of the Accused Product is configured to rotate in the mixing vessel to stir the drink product.

Exhibit 12

Claim Chart Comparing the Syintao Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	**Accused Product**
	 Photograph of Accused Product (annotated).
24[d]: a motor to drive the dasher;	The Accused Product includes a motor that drives the dasher to rotate it to stir the drink product.

Exhibit 12

Claim Chart Comparing the Syintao Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

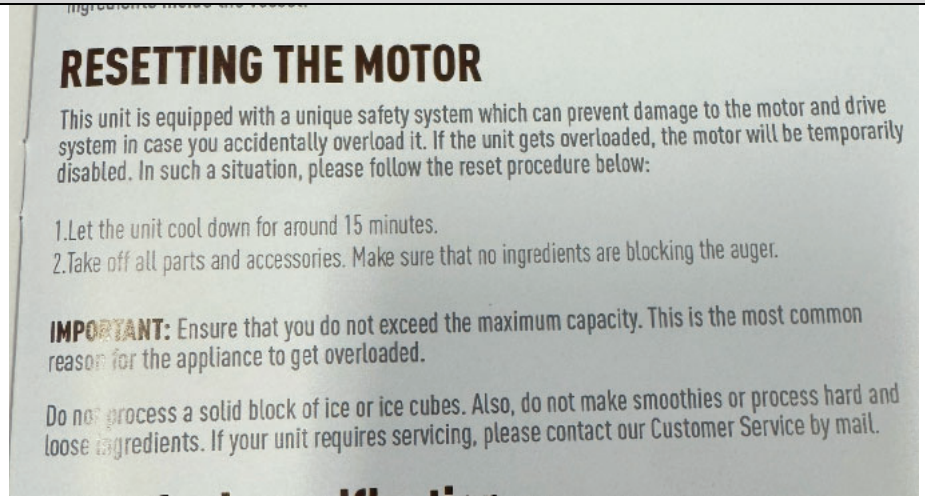
Claim Element	Accused Product
	 Accused Product Instruction Manual. As confirmed by product testing, during operation a motor of the frozen drink maker drives the dasher to rotate.

Exhibit 12

Claim Chart Comparing the Syintao Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

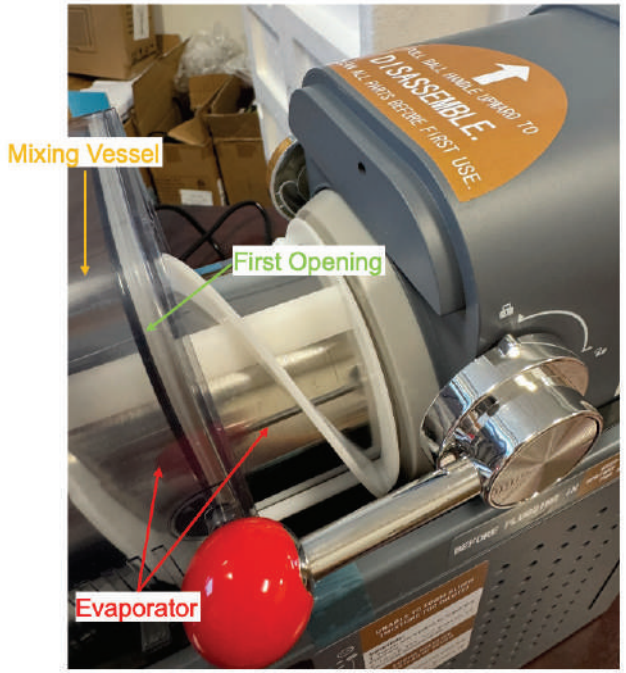
Claim Element	Accused Product
24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and	 Photograph of Accused Product (annotated). The evaporator is received through the first opening of the mixing vessel.

Exhibit 12

Claim Chart Comparing the Syintao Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

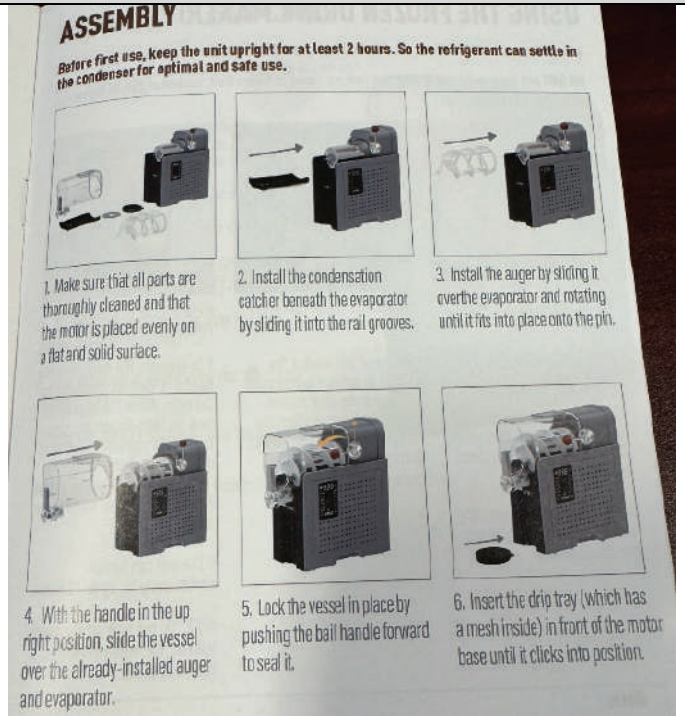
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 12

Claim Chart Comparing the Syintao Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 12

Claim Chart Comparing the Syintao Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

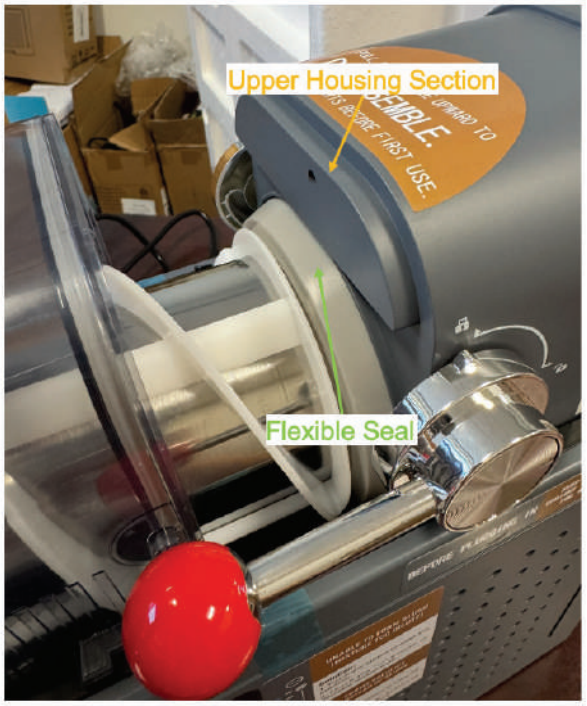
Claim Element	Accused Product
24[f]: a flexible seal arranged proximate to the upper housing section;	 Photograph of Accused Product (annotated). As confirmed by product testing, the flexible seal comprises a flexible material.
24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper	The cam feature of the Accused Product controls the coupling of the mixing vessel to the upper housing section when in the coupling position and uncouples the mixing vessel from the upper housing section when in the uncoupling position.

Exhibit 12

Claim Chart Comparing the Syintao Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

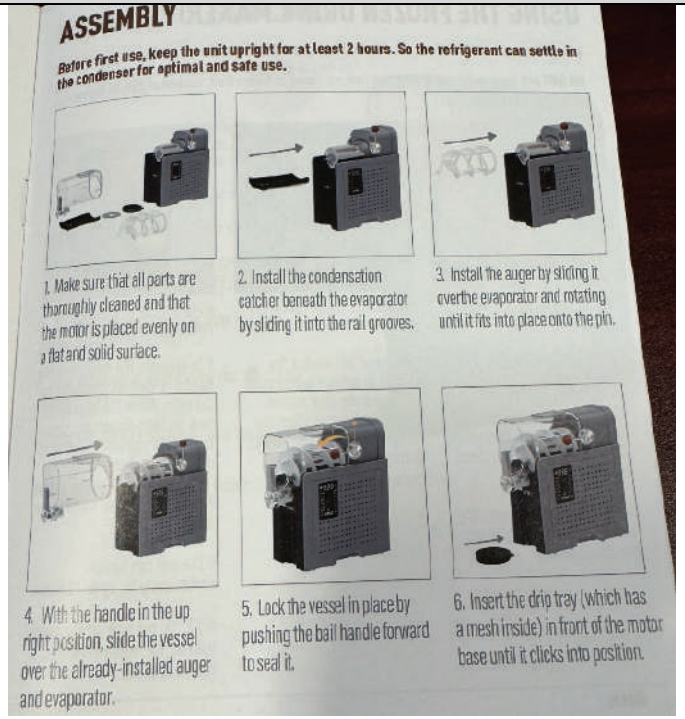
Claim Element	Accused Product
housing section when in the uncoupling position, and	 Accused Product Instruction Manual.

Exhibit 12

Claim Chart Comparing the Syintao Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 12

Claim Chart Comparing the Syintao Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

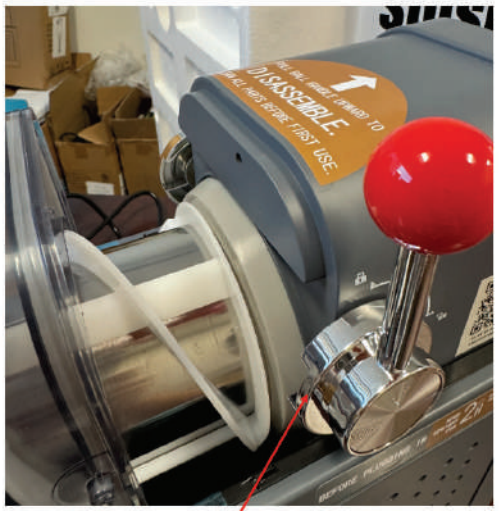
Claim Element	**Accused Product**
	 Photographs of Accused Product (annotated). *Id.*, Cl. 24[a].
24[h]: wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.	When the cam feature of the Accused Product is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal about the first opening.

Exhibit 12

Claim Chart Comparing the Syintao Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

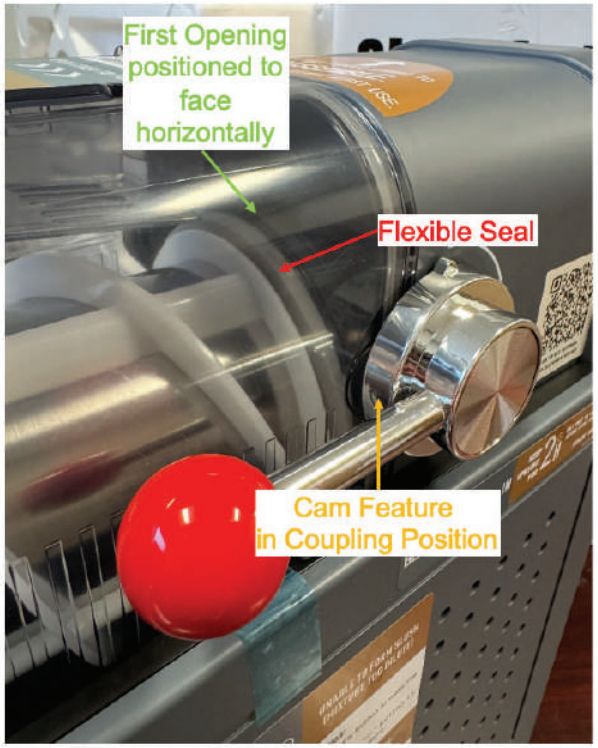
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
30. The frozen drink maker of claim 24, wherein the housing comprises a lever moveable relative to the upper housing section, wherein moving the lever to a first position moves the cam feature into the coupling position, and wherein, when in the	The lever of the Accused Product is moveable relative to the upper housing section.

Exhibit 12

Claim Chart Comparing the Syintao Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

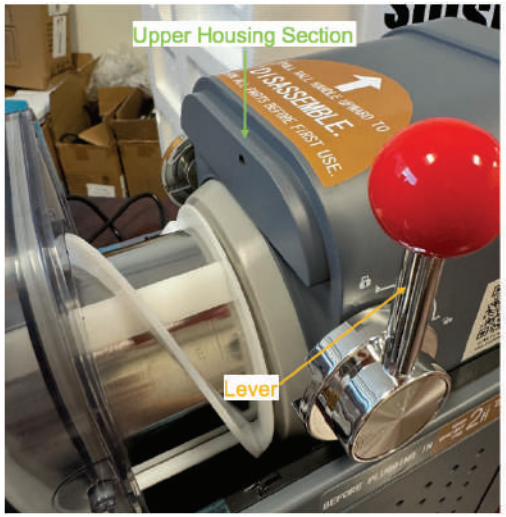
Claim Element	Accused Product
coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling of the mixing vessel to the upper housing section.	 Photographs of Accused Product (annotated). Moving the lever of the Accused Product to a first position moves the cam feature into the coupling position. When in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling the mixing vessel to the upper housing section.

Exhibit 12

Claim Chart Comparing the Syintao Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

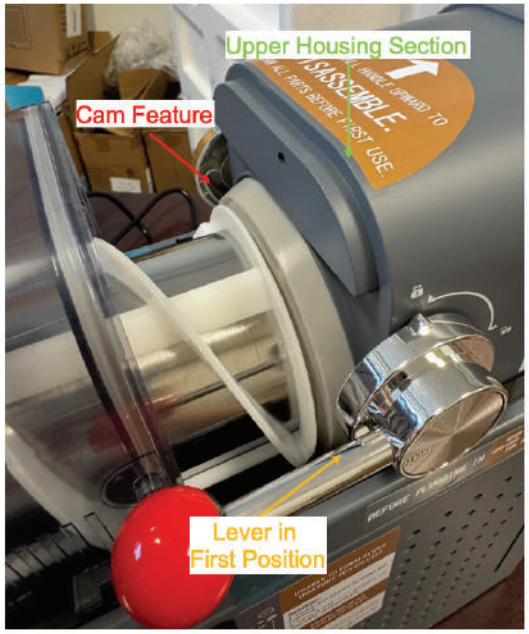
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 12

Claim Chart Comparing the Syintao Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

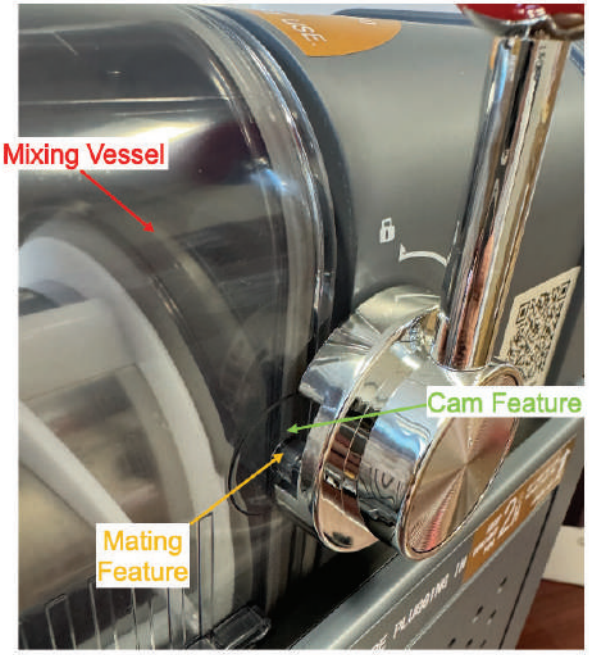
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

EXHIBIT 13

Exhibit 13
Claim Chart Comparing the Aaobosi Frozen Drink Maker to U.S. Patent No. 12,593,855

Below is a chart that applies asserted exemplary independent claim 24 of U.S. Patent No. 12,593,855 (the "'855 Patent") to the accused Aaobosi Frozen Drink Maker (the "Accused Product"). This Accused Product was purchased at the following listings:

- https://www.amazon.com/dp/B0FFH37RS6) (ASIN B0FFH37RS6)
- www.amazon.com/dp/B0FF4S42Q5 (ASIN B0FF4S42Q5)

Inspection of the Accused Products purchased at each of the foregoing listings confirms that each is identical. The following contentions use photographs taken of one of the Accused Products, but each feature shown is identically present in all purchased Accused Products.

The arguments and evidence cited in the chart below are representative and Plaintiffs reserve the right to rely on additional arguments and evidence to show that the above-identified accused products infringe exemplary independent claim 24 of the '855 Patent.

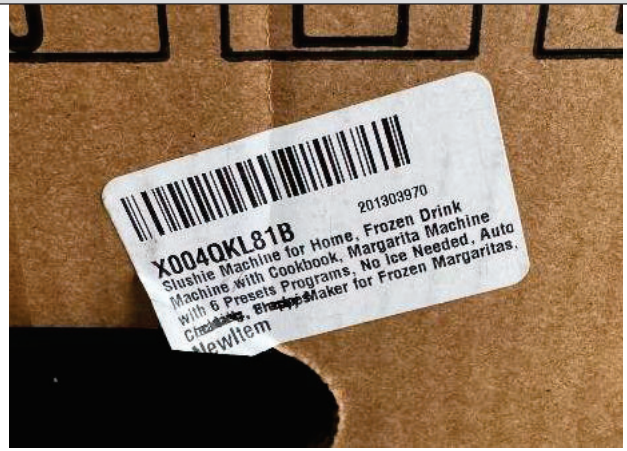
Claim Element	**Accused Product**
24[Pre.]: A frozen drink maker comprising:	 Photograph of Accused Product Packaging.

Exhibit 13
Claim Chart Comparing the Aaobosi Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Photograph of Accused Product.

Exhibit 13
Claim Chart Comparing the Aaobosi Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

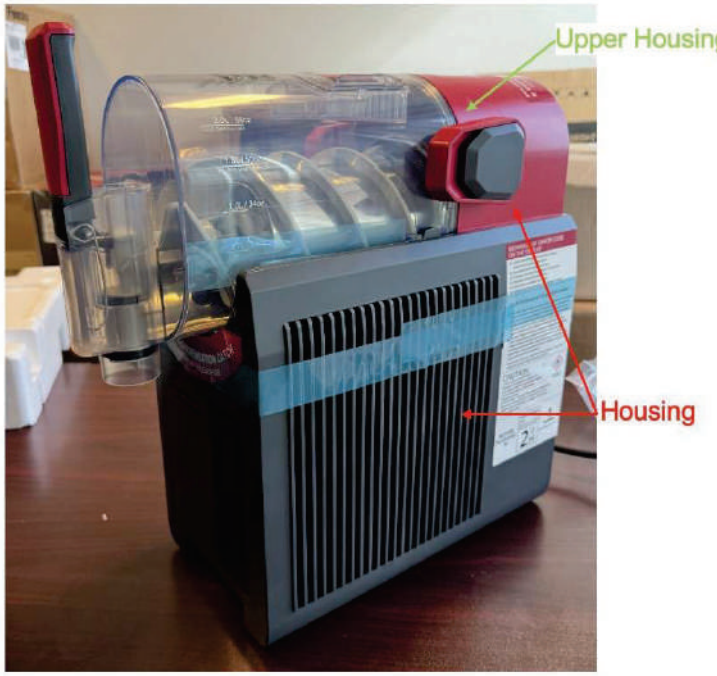
Claim Element	Accused Product
24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;	 Photograph of Accused Product (annotated). The cam feature of the Accused Product is moveable between a coupling position and uncoupling position.

Exhibit 13
Claim Chart Comparing the Aaobosi Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

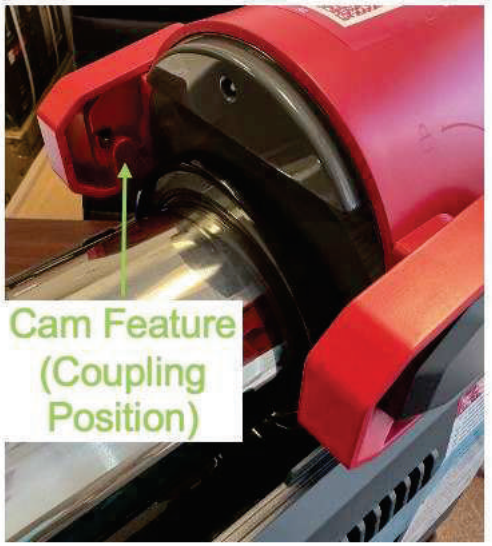
Claim Element	Accused Product
	 Photographs of Accused Products (annotated).

Exhibit 13
Claim Chart Comparing the Aaobosi Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

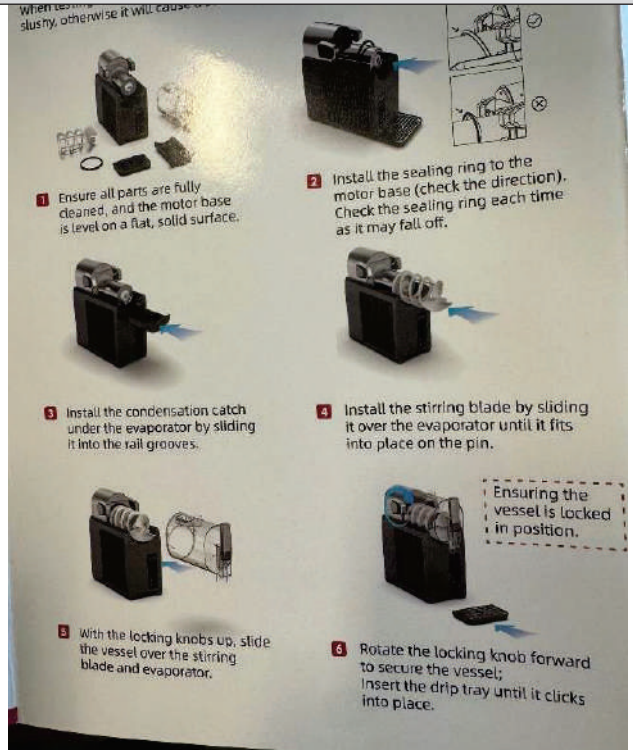
Claim Element	Accused Product
	 Accused Product Instruction Manual.
24[b]: a mixing vessel to receive a drink product, the mixing vessel having:	The mixing vessel is configured to receive a drink product.

Exhibit 13
Claim Chart Comparing the Aaobosi Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product

Exhibit 13
Claim Chart Comparing the Aaobosi Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

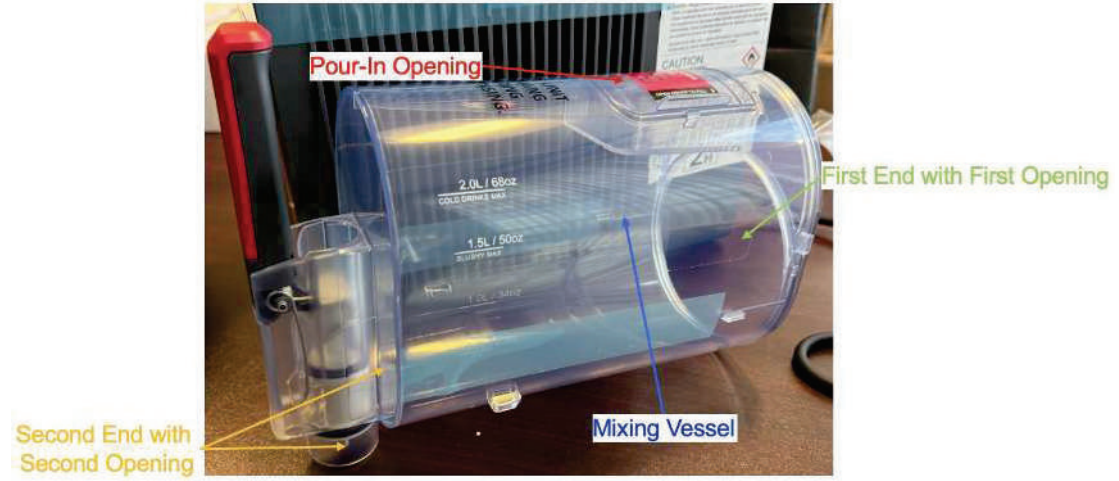
Claim Element	Accused Product
24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and	 Photograph of Accused Product (annotated). The second opening of the mixing vessel of the Accused Product is configured to dispense a drink product.
24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;	

Exhibit 13
Claim Chart Comparing the Aaobosi Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	Photograph of Accused Product (annotated).
24[c]: a dasher configured to rotate in the mixing vessel;	The dasher of the Accused Product is configured to rotate in the mixing vessel to stir the drink product. Photograph of Accused Product (annotated).
24[d]: a motor to drive the	The Accused Product includes a motor that drives the dasher to rotate it to stir the drink product.

Exhibit 13

Claim Chart Comparing the Aaobosi Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

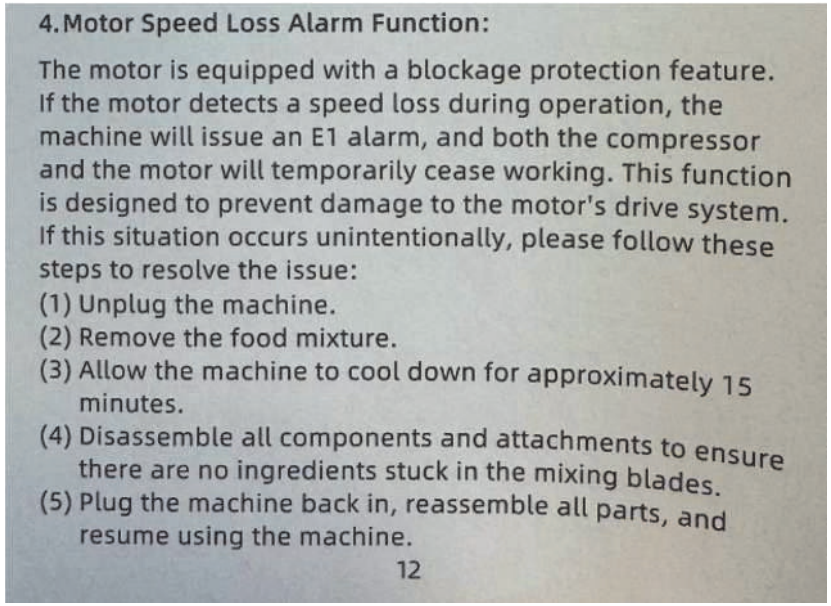
Claim Element	Accused Product
dasher;	 Accused Product Instruction Manual. As confirmed by product testing, during operation a motor of the frozen drink maker drives the dasher to rotate.

Exhibit 13

Claim Chart Comparing the Aaobosi Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

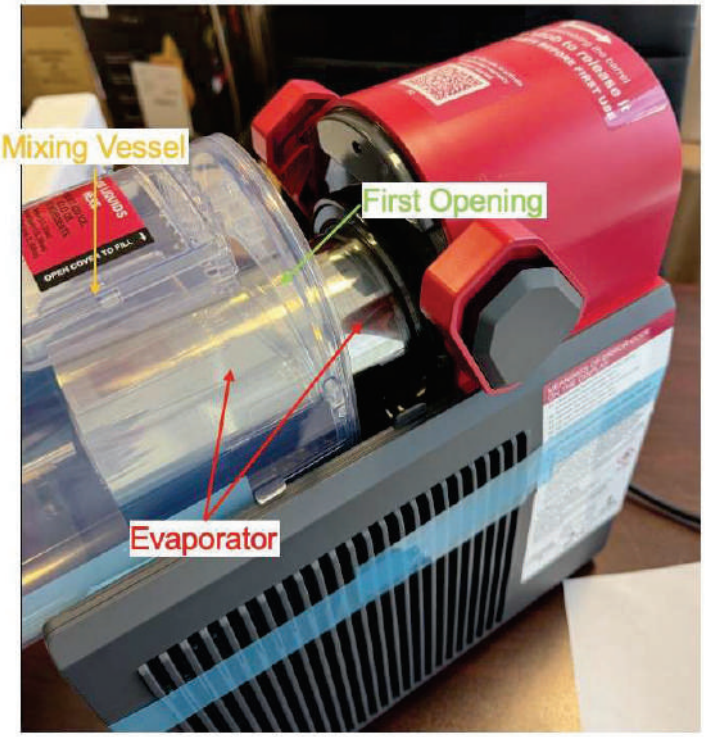
Claim Element	Accused Product
24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and	 Photograph of Accused Product (annotated). The evaporator is received through the first opening of the mixing vessel.

Exhibit 13

Claim Chart Comparing the Aaobosi Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

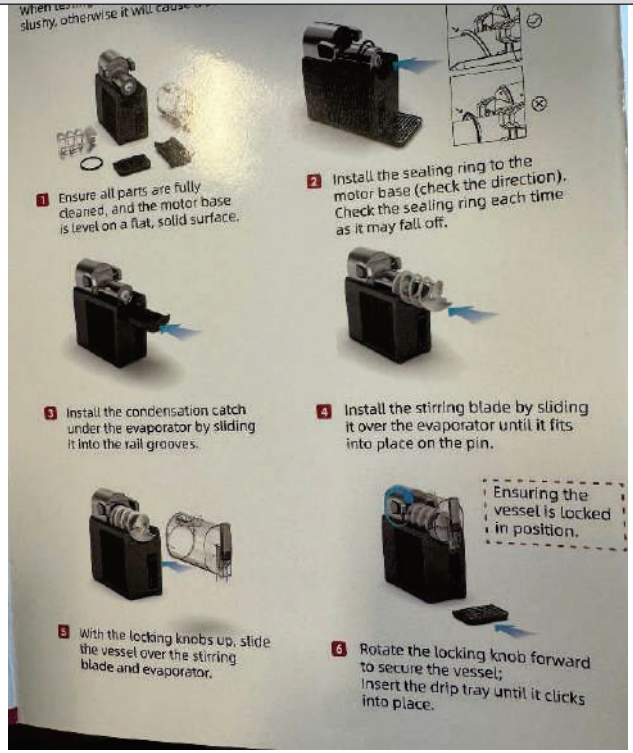
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 13

Claim Chart Comparing the Aaobosi Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
24[f]: a flexible seal arranged proximate to the upper housing section;	 Photograph of Accused Product (annotated). As confirmed by product testing, the flexible seal comprises a flexible material.
24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper	The cam feature of the Accused Product controls the coupling of the mixing vessel to the upper housing section when in the coupling position and uncouples the mixing vessel from the upper housing section when in the uncoupling position.

Exhibit 13

Claim Chart Comparing the Aaobosi Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

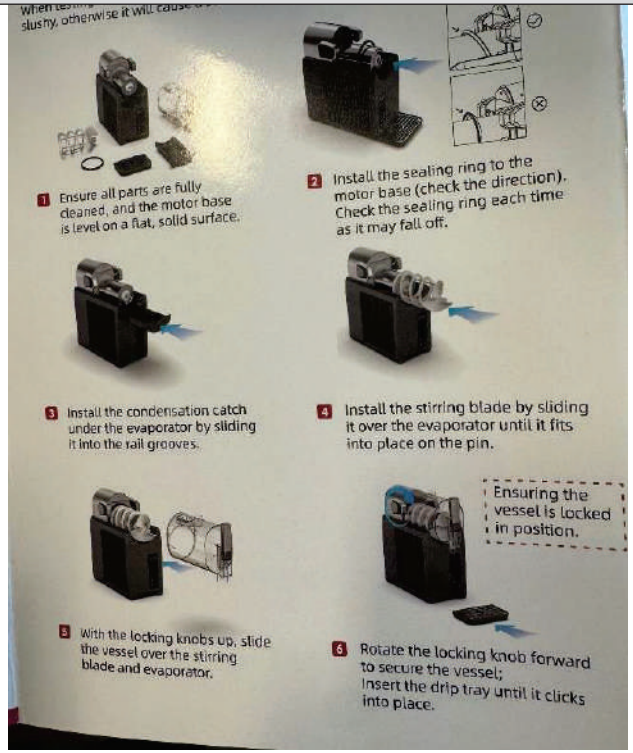
Claim Element	Accused Product
housing section when in the uncoupling position, and	 Accused Product Instruction Manual.

Exhibit 13

Claim Chart Comparing the Aaobosi Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	Photographs of Accused Product (annotated). *Id.*, Cl. 24[a].
24[h]: wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.	When the cam feature of the Accused Product is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal about the first opening.

Exhibit 13

Claim Chart Comparing the Aaobosi Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

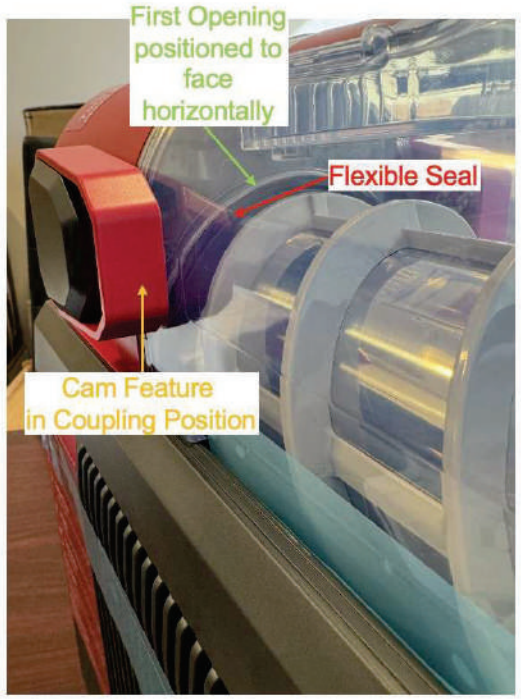
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

EXHIBIT 14

Exhibit 14
Claim Chart Comparing the AllTou Frozen Drink Maker to U.S. Patent No. 12,593,855

Below is a chart that applies asserted exemplary independent claim 24 of U.S. Patent No. 12,593,855 (the "'855 Patent") to the accused AllTou Frozen Drink Maker ("Accused Product"), purchased at the following listing: www.amazon.com/dp/B0GLFJVZRB (ASIN B0GLFJVZRB).

The arguments and evidence cited in the chart below are representative and Plaintiffs reserve the right to rely on additional arguments and evidence to show that the above-identified accused product infringes exemplary independent claim 24 of the '855 Patent.

Claim Element	Accused Product
24[Pre.]: A frozen drink maker comprising:	 Accused Product Instruction Manual.

Exhibit 14
Claim Chart Comparing the AllTou Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

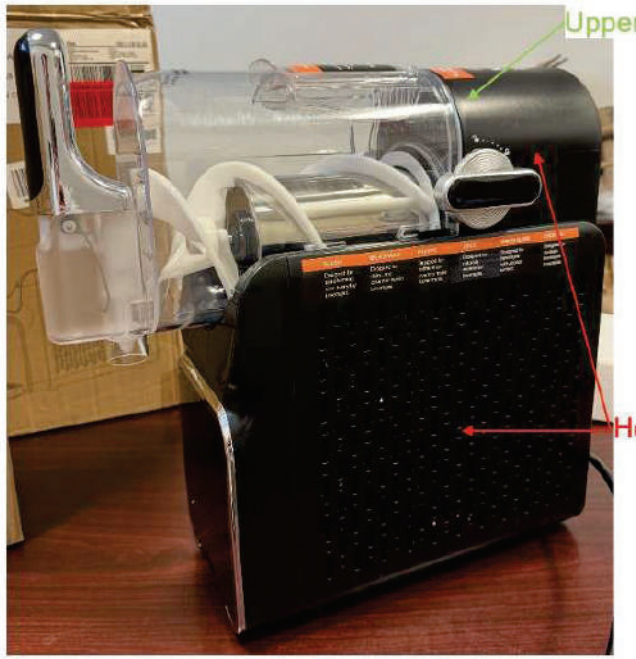
Claim Element	Accused Product
24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;	 Photograph of Accused Product (annotated). The cam feature of the Accused Product is moveable between a coupling position and uncoupling position.

Exhibit 14
Claim Chart Comparing the AllTou Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	Photographs of Accused Product (annotated).

Exhibit 14
Claim Chart Comparing the AllTou Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

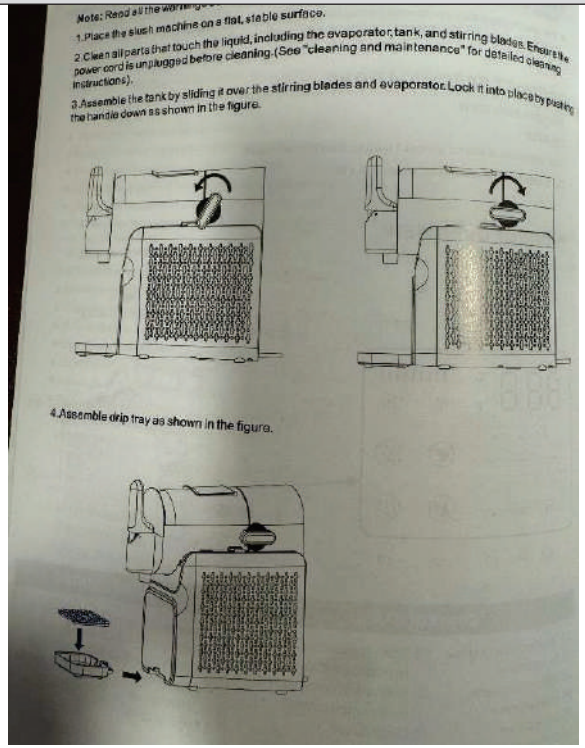
Claim Element	Accused Product
	 Accused Product Instruction Manual.
24[b]: a mixing vessel to receive a drink product, the mixing vessel having:	The mixing vessel is configured to receive a drink product.

Exhibit 14
Claim Chart Comparing the AllTou Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	Photograph of Accused Product (annotated).

Exhibit 14
Claim Chart Comparing the AllTou Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

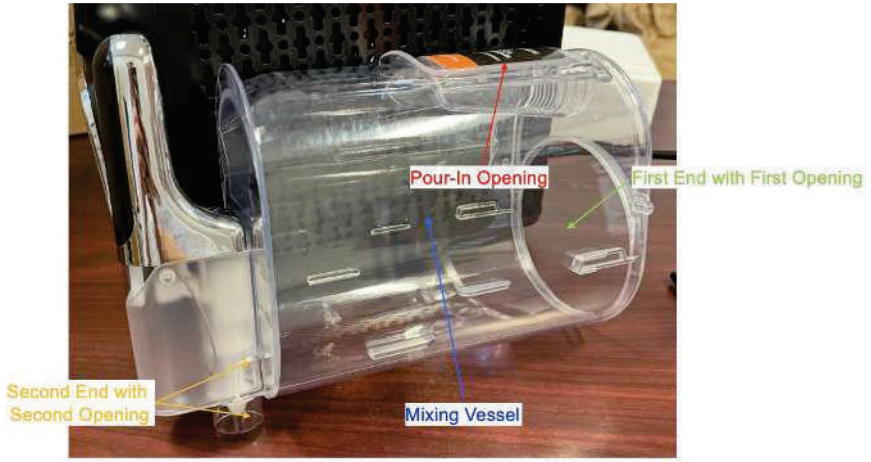
Claim Element	Accused Product
24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and	 Photograph of Accused Product (annotated). The second opening of the mixing vessel of the Accused Product is configured to dispense a drink product.  Photograph of Accused Product (annotated).

Exhibit 14
Claim Chart Comparing the AllTou Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

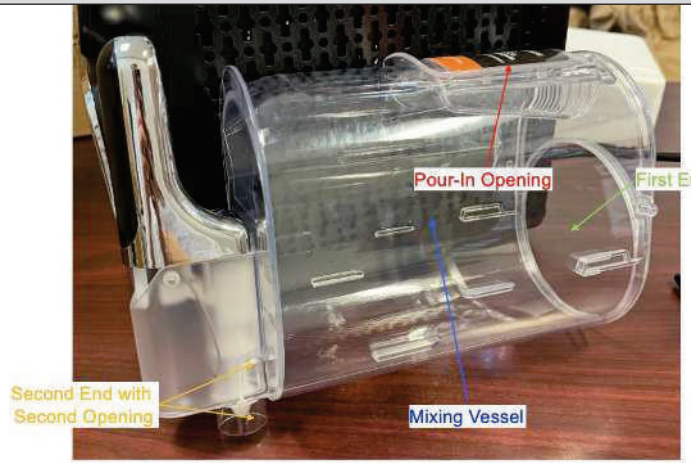
Claim Element	Accused Product
24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;	 Photograph of Accused Product (annotated).
24[c]: a dasher configured to rotate in the mixing vessel;	The dasher of the Accused Product is configured to rotate in the mixing vessel to stir the drink product.

Exhibit 14
Claim Chart Comparing the AllTou Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

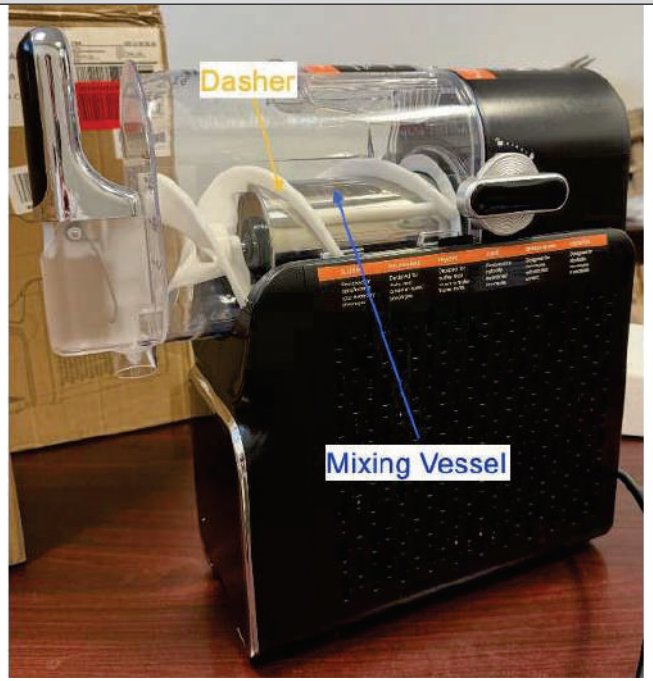
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
24[d]: a motor to drive the dasher;	The Accused Product includes a motor that drives the dasher to rotate it to stir the drink product. As confirmed by product testing, during operation a motor of the frozen drink maker drives the dasher to rotate.

Exhibit 14

Claim Chart Comparing the AllTou Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

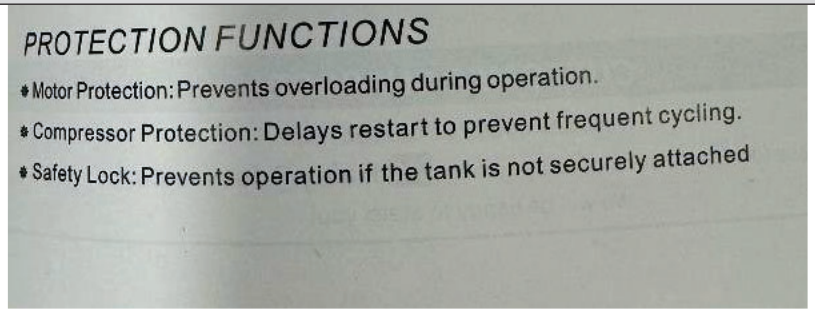
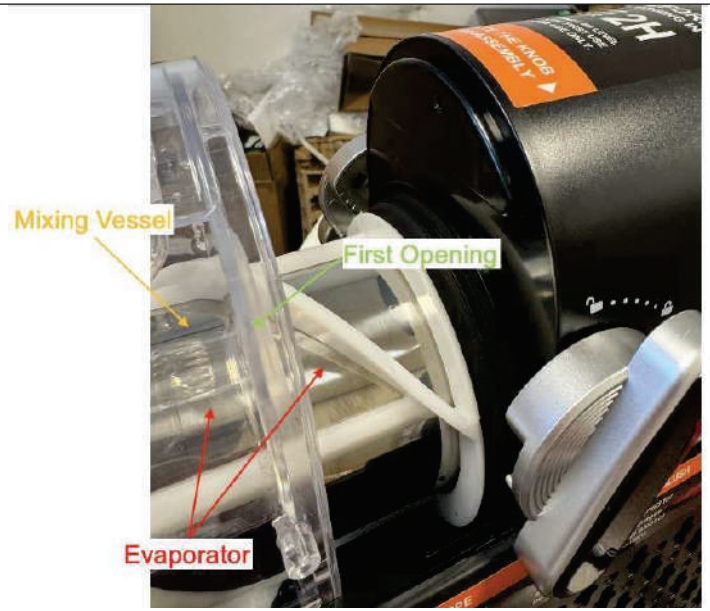
Claim Element	Accused Product
	 Accused Product Instruction Manual.
24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and	 Photograph of Accused Product (annotated). The evaporator is received through the first opening of the mixing vessel.

Exhibit 14

Claim Chart Comparing the AllTou Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

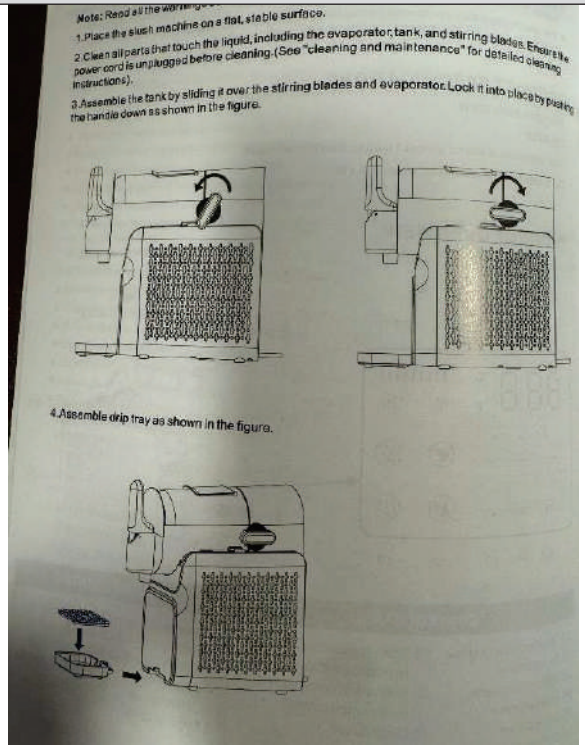
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 14

Claim Chart Comparing the AllTou Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
24[f]: a flexible seal arranged proximate to the upper housing section;	 Photograph of Accused Product (annotated). As confirmed by product testing, the flexible seal comprises a flexible material.
24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position, and	The cam feature of the Accused Product controls the coupling of the mixing vessel to the upper housing section when in the coupling position and uncouples the mixing vessel from the upper housing section when in the uncoupling position.

Exhibit 14

Claim Chart Comparing the AllTou Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

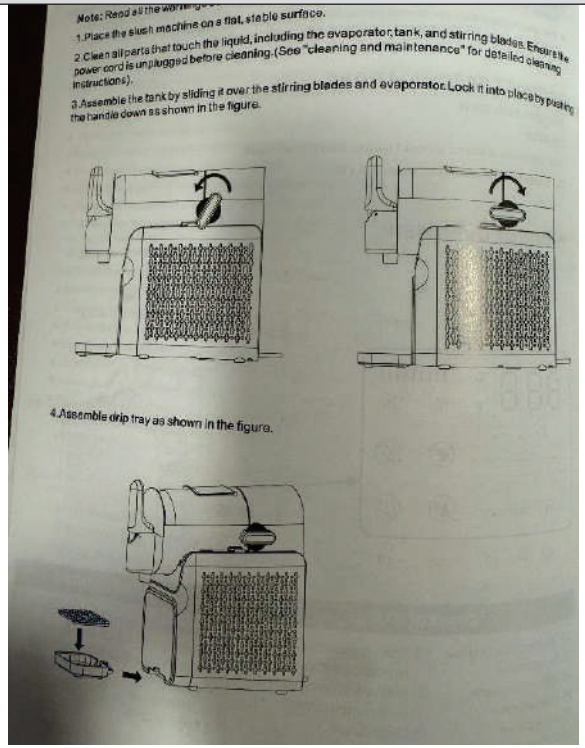
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 14

Claim Chart Comparing the AllTou Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

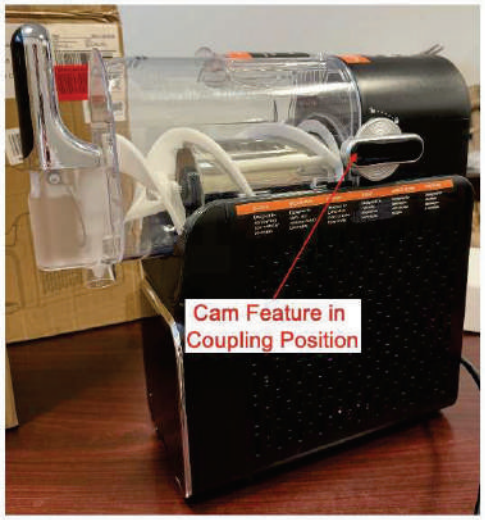
Claim Element	**Accused Product**
	 Photographs of Accused Product (annotated). *Id.*, Cl. 24[a].
24[h]: wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.	When the cam feature of the Accused Product is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal about the first opening.

Exhibit 14

Claim Chart Comparing the AllTou Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

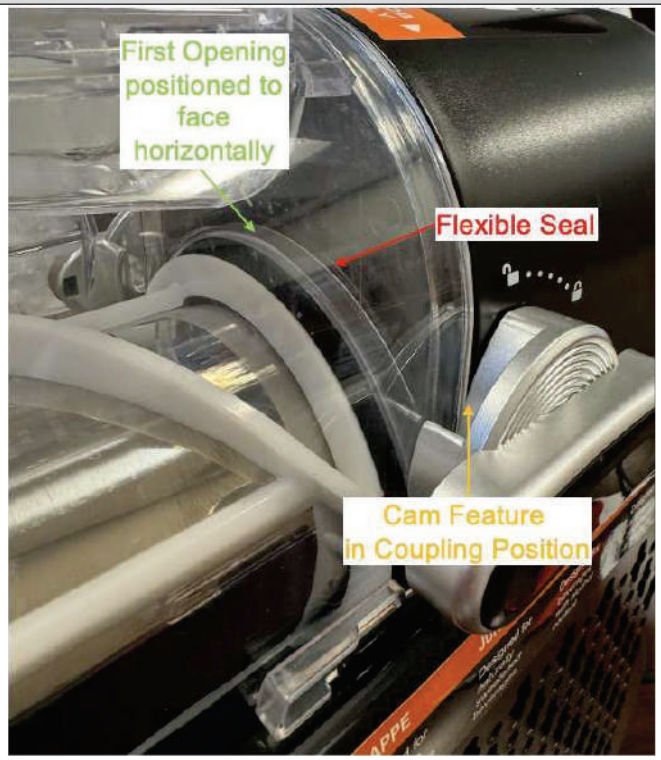
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

EXHIBIT 15

Exhibit 15
Claim Chart Comparing the Astralship Frozen Drink Maker to U.S. Patent No. 12,593,855

Below is a chart that applies asserted exemplary independent claim 24 and 30 of U.S. Patent No. 12,593,855 (the "'855 Patent") to the accused Astralship Frozen Drink Maker (the "Accused Product"). This Accused Product was purchased at the following listings:

- www.amazon.com/dp/B0F48675ZN (ASIN B0F48675ZN)
- www.amazon.com/dp/B0FVSSQP4J (ASIN B0FVSSQP4J)

Inspection of the Accused Products purchased at each of the foregoing listings confirms that each is identical. The following contentions use photographs taken of one of the Accused Products, but each feature shown is identically present in all purchased Accused Products.

The arguments and evidence cited in the chart below are representative and Plaintiffs reserve the right to rely on additional arguments and evidence to show that the above-identified accused product infringes exemplary independent claim 24 and 30 of the '855 Patent.

Claim Element	**Accused Product**
24[Pre.]: A frozen drink maker comprising:	 Accused Product Packaging.

Exhibit 15
Claim Chart Comparing the Astralship Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;	 Photograph of Accused Product (annotated). The cam feature of the Accused Product is moveable between a coupling position and uncoupling position.

Exhibit 15
Claim Chart Comparing the Astralship Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

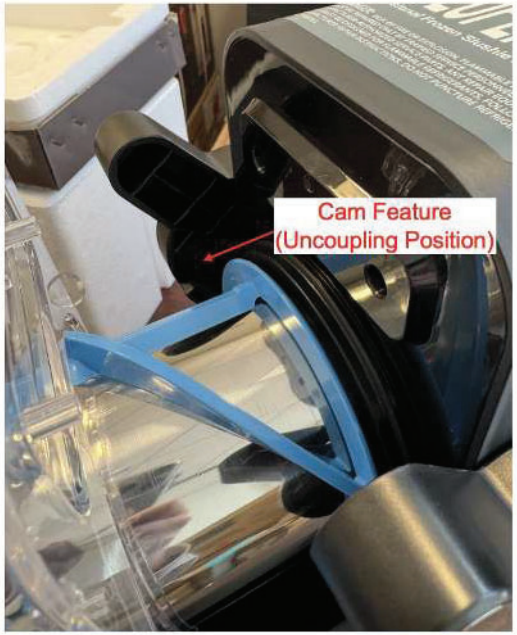
Claim Element	Accused Product
	 Photographs of Accused Product (annotated).

Exhibit 15
Claim Chart Comparing the Astralship Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

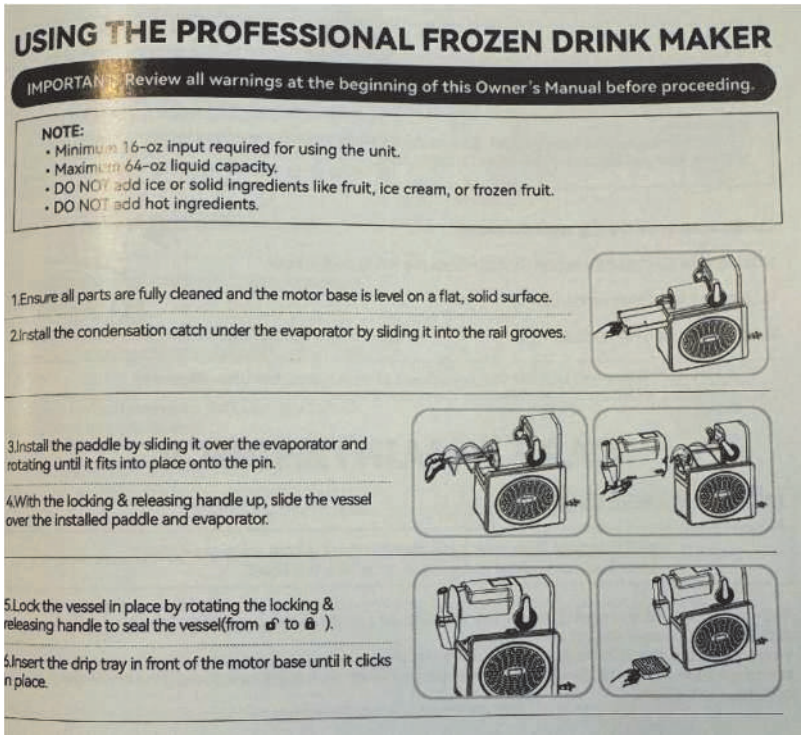
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 15
Claim Chart Comparing the Astralship Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

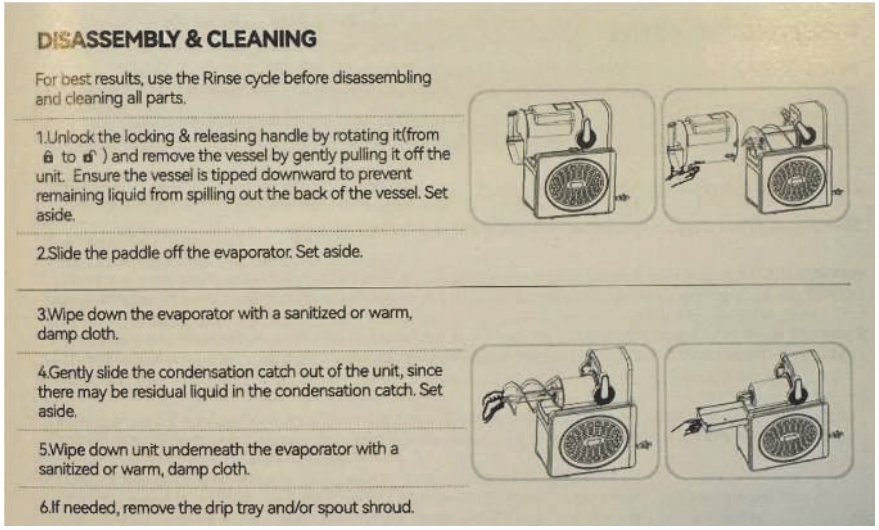
Claim Element	Accused Product
	 Accused Product Instruction Manual.
24[b]: a mixing vessel to receive a drink product, the mixing vessel having:	The mixing vessel is configured to receive a drink product.

Exhibit 15
Claim Chart Comparing the Astralship Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	Photograph of Accused Product (annotated).

Exhibit 15
Claim Chart Comparing the Astralship Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and	 Photograph of Accused Product (annotated). The second opening of the mixing vessel of the Accused Product is configured to dispense a drink product.

Exhibit 15
Claim Chart Comparing the Astralship Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

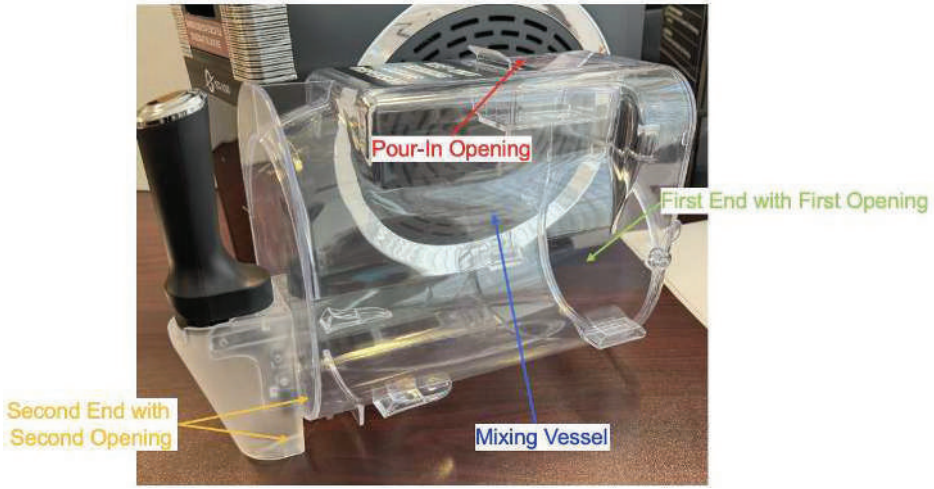
Claim Element	Accused Product
24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;	 Photograph of Accused Product (annotated).
24[c]: a dasher configured to rotate in the mixing vessel;	The dasher of the Accused Product is configured to rotate in the mixing vessel to stir the drink product.

Exhibit 15

Claim Chart Comparing the Astralship Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

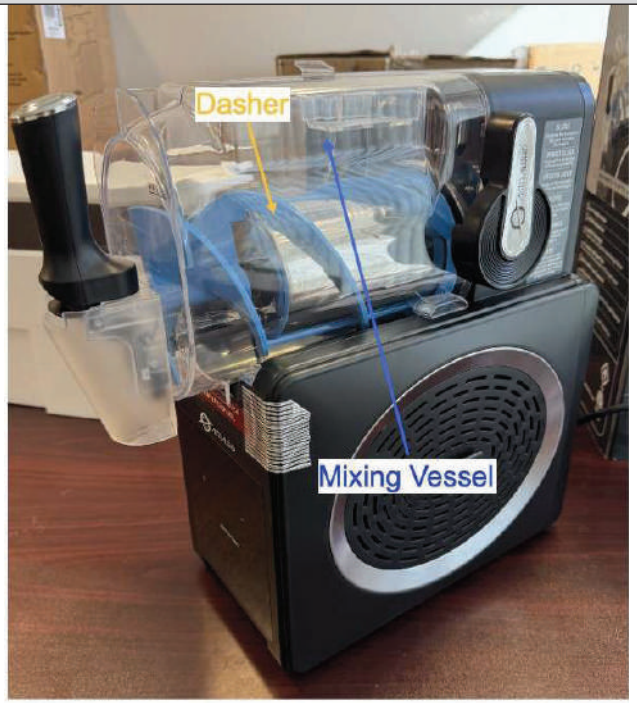
Claim Element	**Accused Product**
	 Photograph of Accused Product (annotated).
24[d]: a motor to drive the dasher;	The Accused Product includes a motor that drives the dasher to rotate it to stir the drink product.

Exhibit 15

Claim Chart Comparing the Astralship Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

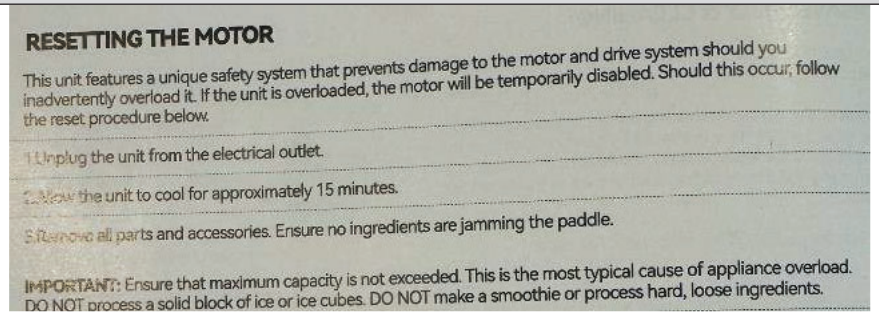
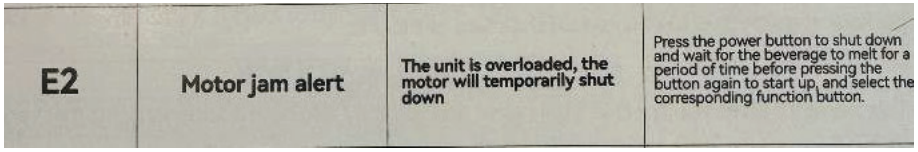
Claim Element	Accused Product
	 Accused Product Instruction Manual.  Accused Product Instruction Manual. As confirmed by product testing, during operation a motor of the frozen drink maker drives the dasher to rotate.

Exhibit 15

Claim Chart Comparing the Astralship Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

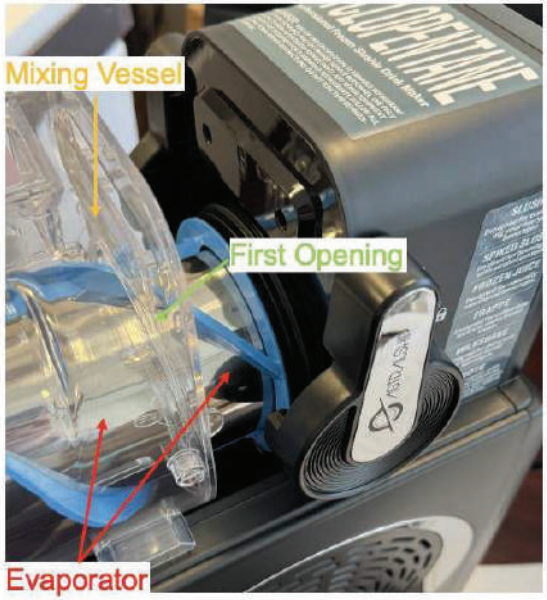
Claim Element	Accused Product
24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and	 Photograph of Accused Product (annotated). The evaporator is received through the first opening of the mixing vessel.

Exhibit 15

Claim Chart Comparing the Astralship Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

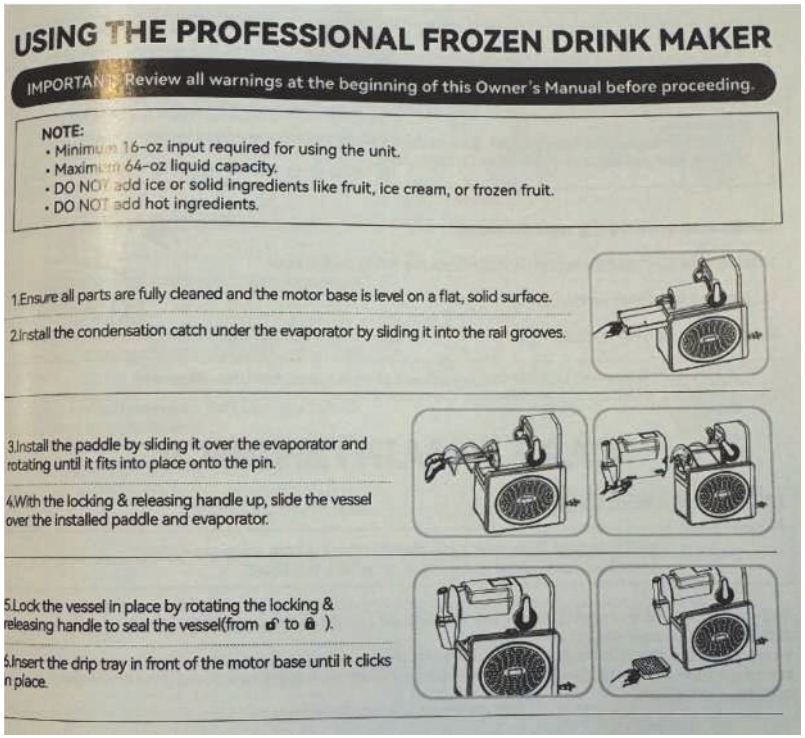
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 15

Claim Chart Comparing the Astralship Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

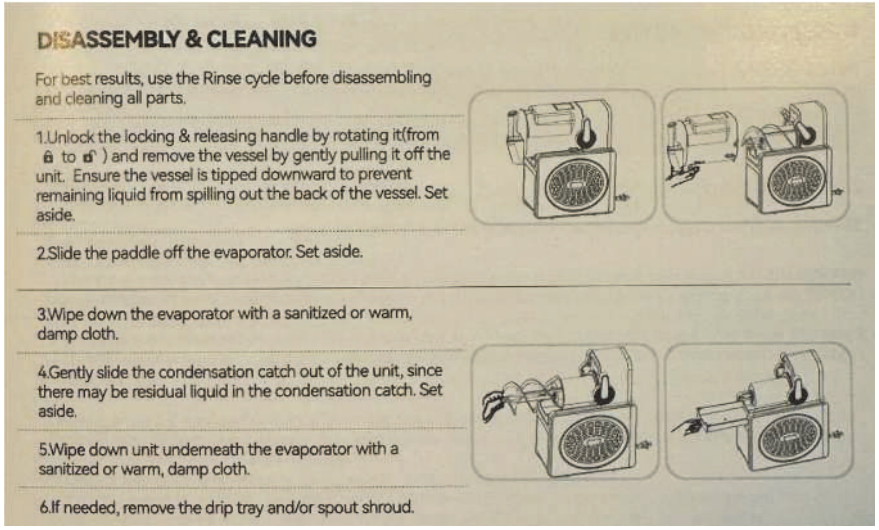
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 15

Claim Chart Comparing the Astralship Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

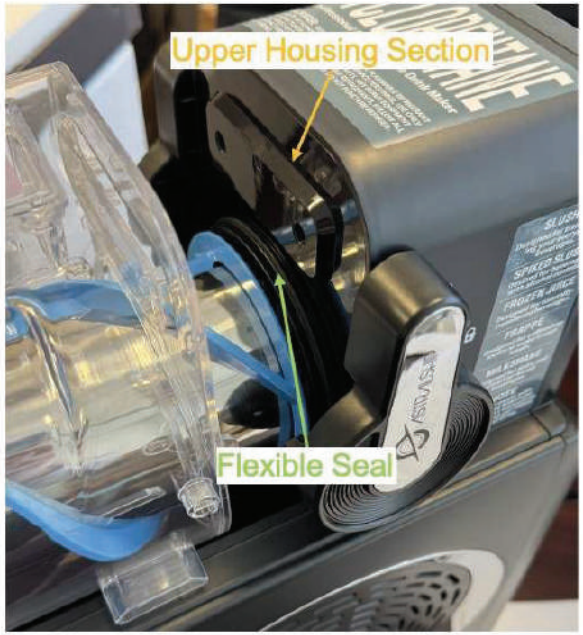
Claim Element	Accused Product
24[f]: a flexible seal arranged proximate to the upper housing section;	 Photograph of Accused Product (annotated). As confirmed by product testing, the flexible seal comprises a flexible material.
24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position, and	The cam feature of the Accused Product controls the coupling of the mixing vessel to the upper housing section when in the coupling position and uncouples the mixing vessel from the upper housing section when in the uncoupling position.

Exhibit 15

Claim Chart Comparing the Astralship Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

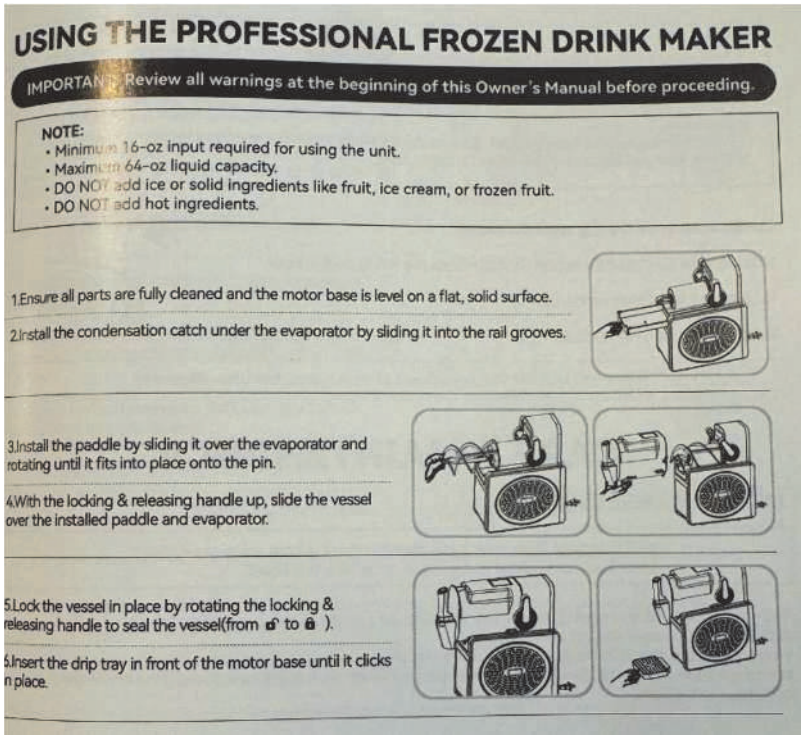
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 15

Claim Chart Comparing the Astralship Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

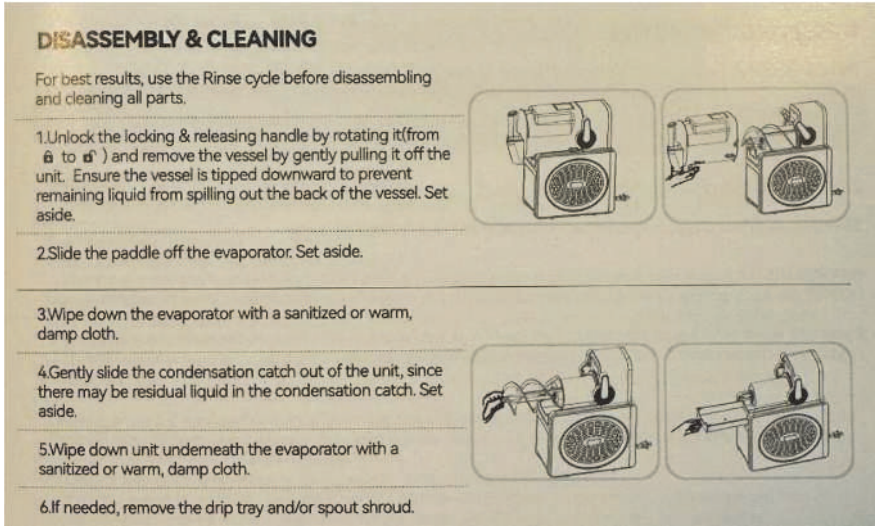
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 15

Claim Chart Comparing the Astralship Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

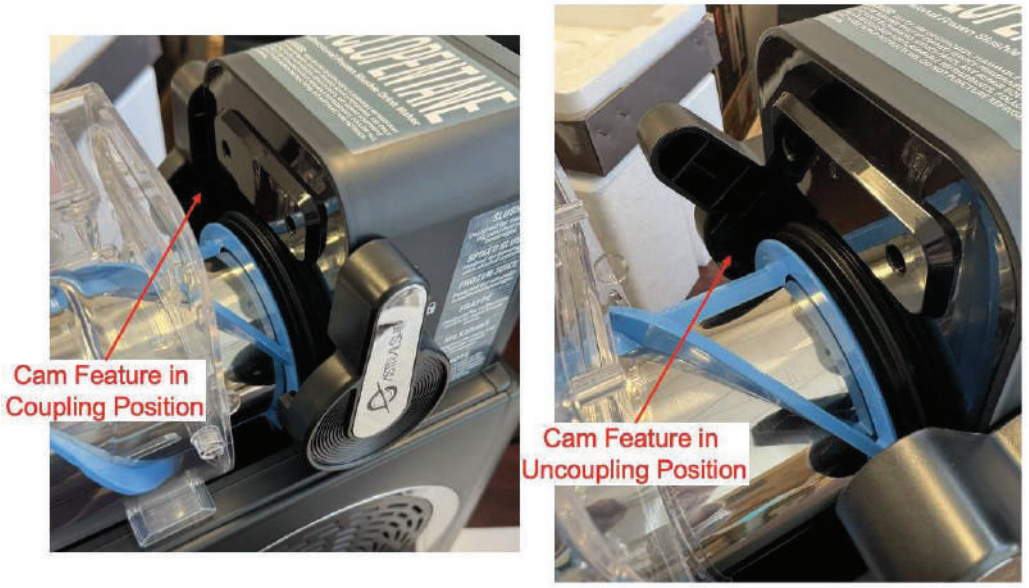
Claim Element	**Accused Product**
	 Photographs of Accused Product (annotated). *Id.*, Cl. 24[a].
24[h]: wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.	When the cam feature of the Accused Product is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal about the first opening.

Exhibit 15

Claim Chart Comparing the Astralship Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

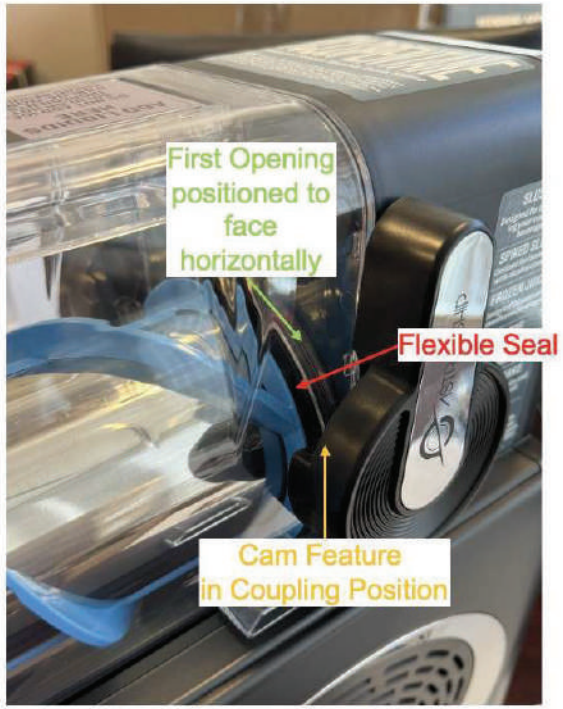
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
30. The frozen drink maker of claim 24, wherein the housing comprises a lever moveable relative to the upper housing section, wherein moving the lever to a first position moves the cam feature into the coupling position, and wherein, when in the coupling position, the cam feature	The lever of the Accused Product is moveable relative to the upper housing section.

Exhibit 15

Claim Chart Comparing the Astralship Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
engages at least one mating feature on the mixing vessel to control coupling of the mixing vessel to the upper housing section.	Photographs of Accused Product (annotated). Moving the lever of the Accused Product to a first position moves the cam feature into the coupling position. When in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling the mixing vessel to the upper housing section.

Exhibit 15

Claim Chart Comparing the Astralship Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

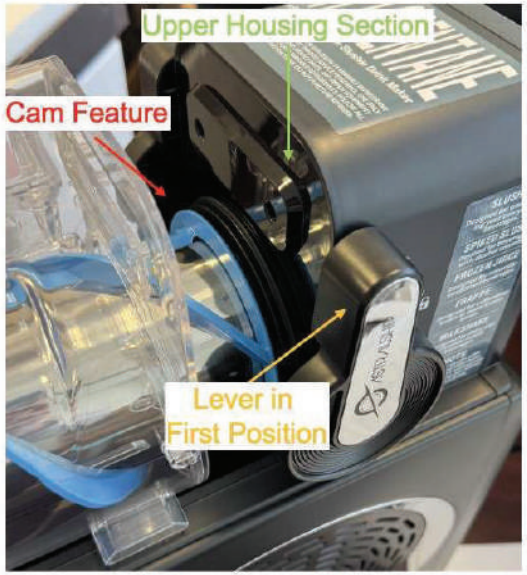
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 15

Claim Chart Comparing the Astralship Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

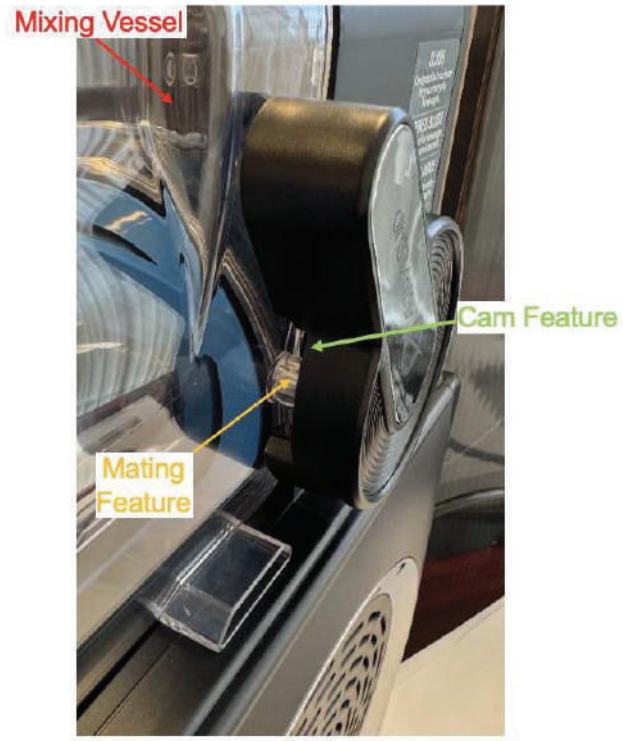
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

EXHIBIT 16

Exhibit 16
Claim Chart Comparing the Besococina Frozen Drink Maker to U.S. Patent No. 12,593,855

Below is a chart that applies asserted exemplary independent claim 24 of U.S. Patent No. 12,593,855 (the "'855 Patent") to the accused Besococina Frozen Drink Maker (the "Accused Product"), purchased at the following listing: www.amazon.com/dp/B0FNK5KDSP) (ASIN B0FNK5KDSP).

The arguments and evidence cited in the chart below are representative and Plaintiffs reserve the right to rely on additional arguments and evidence to show that the above-identified accused product infringes exemplary independent claim 24 of the '855 Patent.

Claim Element	**Accused Product**
24[Pre.]: A frozen drink maker comprising:	 Accused Product Packaging.

Exhibit 16
Claim Chart Comparing the Besococina Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

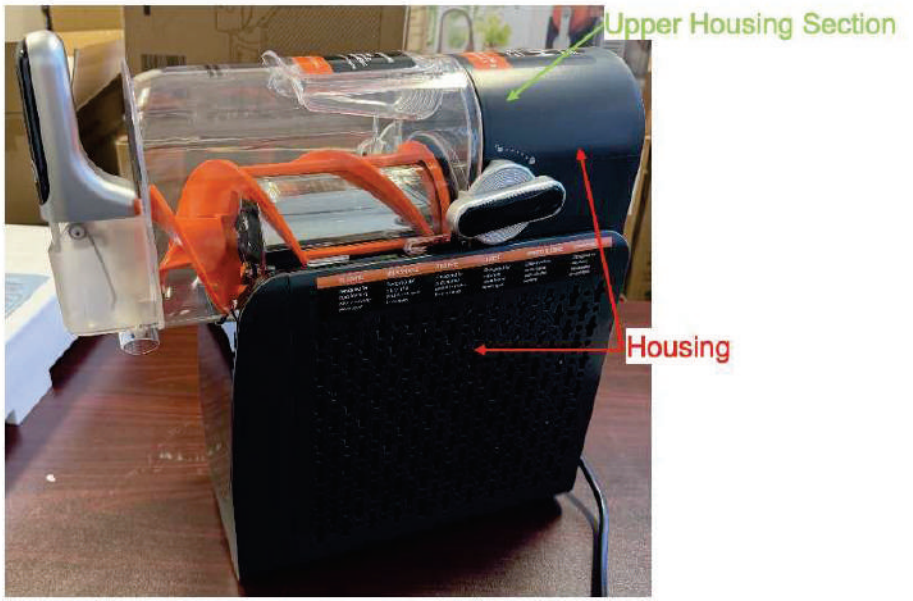
Claim Element	Accused Product
24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;	 Photograph of Accused Product (annotated). The cam feature of the Accused Product is moveable between a coupling position and uncoupling position.

Exhibit 16
Claim Chart Comparing the Besococina Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Photographs of Accused Product (annotated).

Exhibit 16
Claim Chart Comparing the Besococina Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

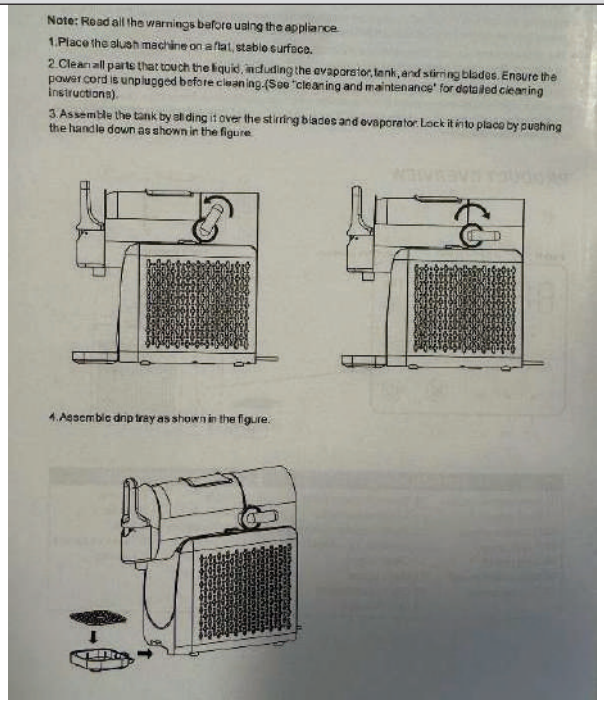
Claim Element	Accused Product
	 Accused Product Instruction Manual.
24[b]: a mixing vessel to receive a drink product, the mixing vessel having:	The mixing vessel is configured to receive a drink product.

Exhibit 16
Claim Chart Comparing the Besococina Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

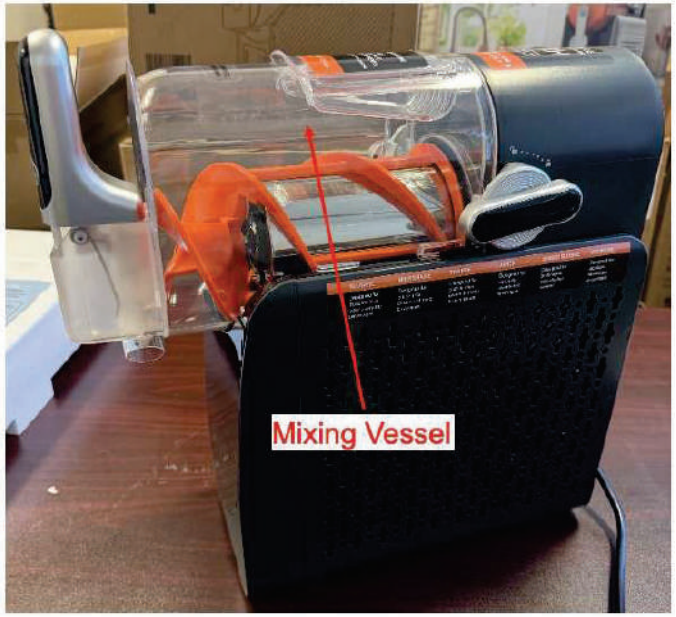
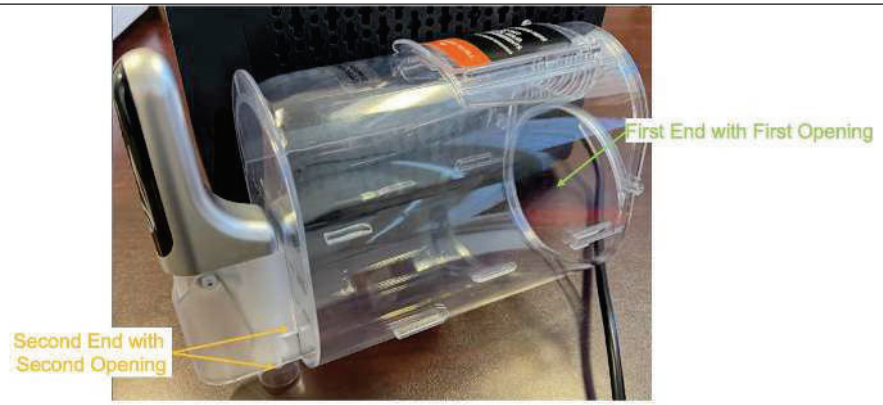
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and	 Photograph of Accused Product (annotated).

Exhibit 16
Claim Chart Comparing the Besococina Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

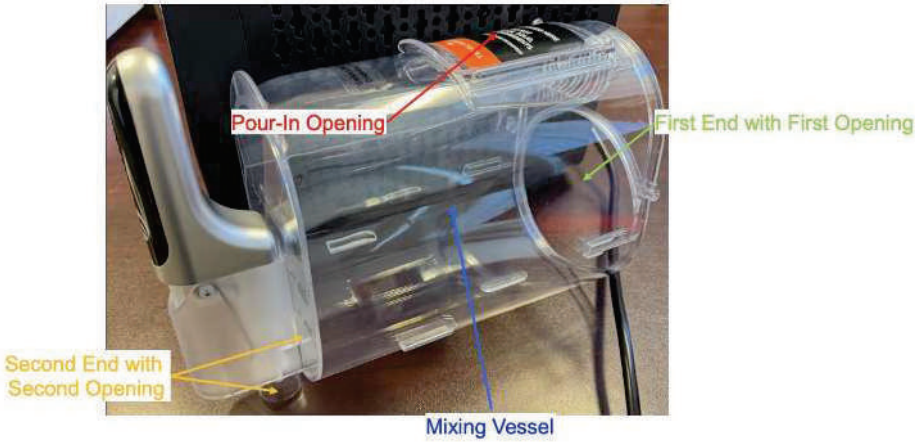
Claim Element	Accused Product
	The second opening of the mixing vessel of the Accused Product is configured to dispense a drink product.
24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;	 Photograph of Accused Product (annotated).
24[c]: a dasher configured to rotate in the mixing vessel;	The dasher of the Accused Product is configured to rotate in the mixing vessel to stir the drink product.

Exhibit 16
Claim Chart Comparing the Besococina Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

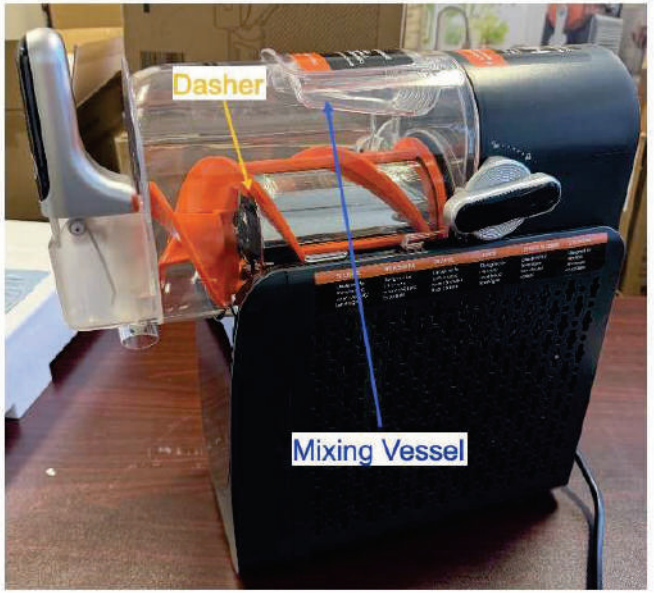
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
24[d]: a motor to drive the dasher;	The Accused Product includes a motor that drives the dasher to rotate it to stir the drink product. PROTECTION FUNCTIONS * Motor Protection: Prevents overloading during operation. * Compressor Protection: Delays restart to prevent frequent cycling. * Safety Lock: Prevents operation if the tank is not securely attached Accused Product Instruction Manual. As confirmed by product testing, during operation a motor of the frozen drink maker drives the dasher to rotate.

Exhibit 16
Claim Chart Comparing the Besococina Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

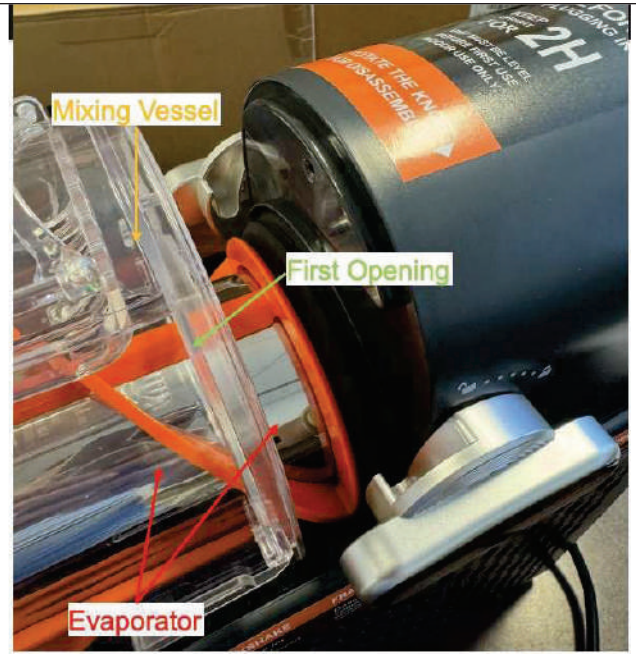
Claim Element	Accused Product
24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and	 Photograph of Accused Product (annotated). The evaporator is received through the first opening of the mixing vessel.

Exhibit 16

Claim Chart Comparing the Besococina Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

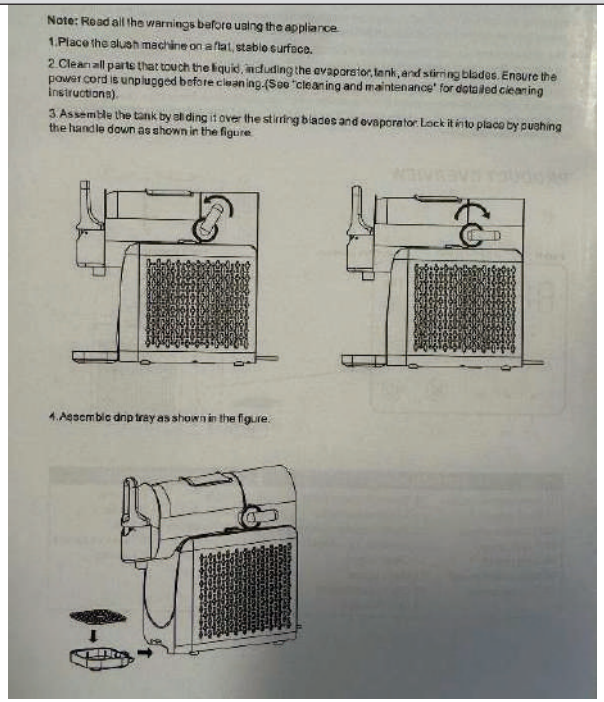
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 16

Claim Chart Comparing the Besococina Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

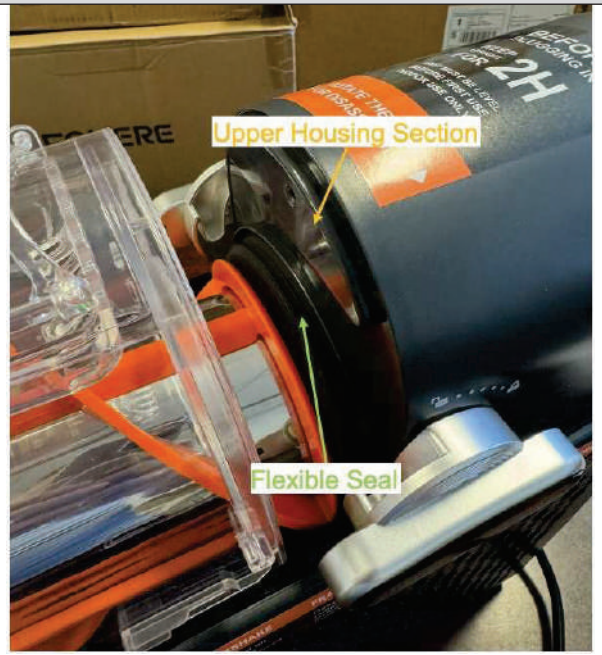
Claim Element	Accused Product
24[f]: a flexible seal arranged proximate to the upper housing section;	 Photograph of Accused Product (annotated). As confirmed by product testing, the flexible seal comprises a flexible material.
24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position, and	The cam feature of the Accused Product controls the coupling of the mixing vessel to the upper housing section when in the coupling position and uncouples the mixing vessel from the upper housing section when in the uncoupling position.

Exhibit 16

Claim Chart Comparing the Besococina Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

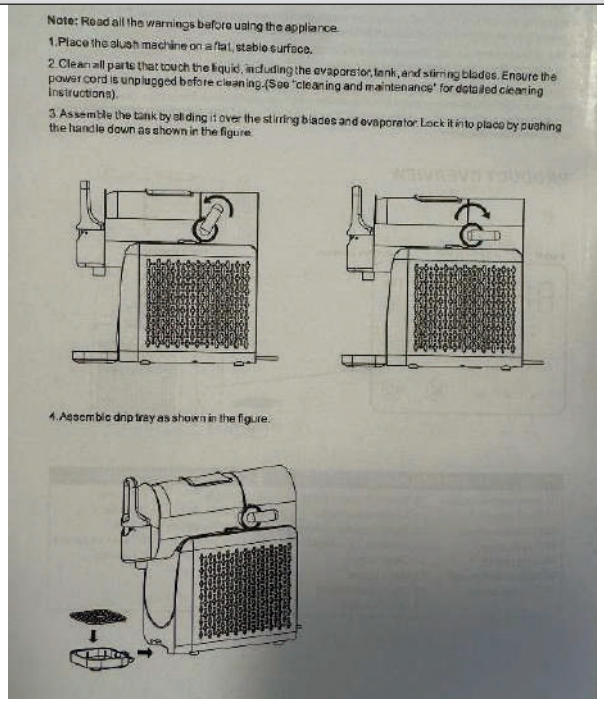
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 16

Claim Chart Comparing the Besococina Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

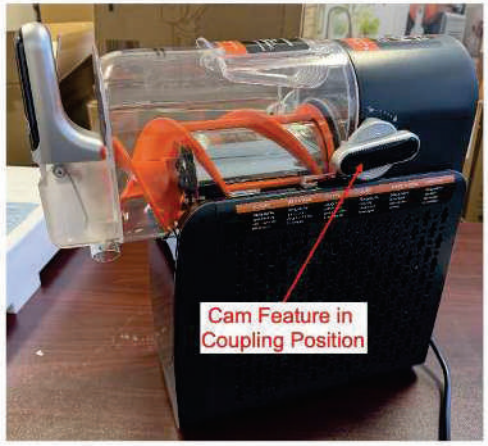
Claim Element	**Accused Product**
	 Photographs of Accused Product (annotated). *Id.*, Cl. 24[a].
24[h]: wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.	When the cam feature of the Accused Product is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal about the first opening.

Exhibit 16

Claim Chart Comparing the Besococina Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

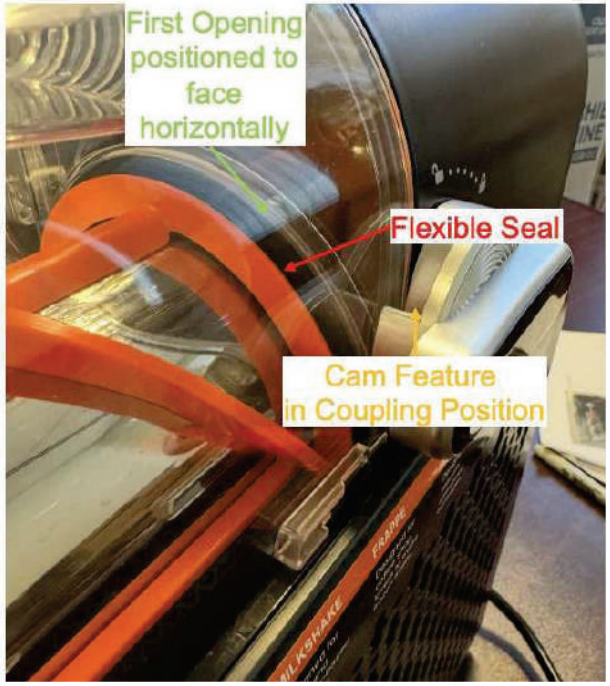
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

EXHIBIT 17

Exhibit 17
Claim Chart Comparing the Blizzee Frozen Drink Maker to U.S. Patent No. 12,593,855

Below is a chart that applies asserted exemplary independent claim 24 of U.S. Patent No. 12,593,855 (the "'855 Patent") to the accused Blizzee Frozen Drink Maker (the "Accused Product"). This Accused Product was purchased at the following listings:

- www.amazon.com/dp/B0FN1WLJK1 (ASIN B0FN1WLJK1)
- www.amazon.com/dp/B0FN13CYSZ (ASIN B0FN13CYSZ)

Inspection of the Accused Products purchased at each of the foregoing listings confirms that each is identical, varying only in color. The following contentions use photographs taken of one of the Accused Products, but each feature shown is identically present (with the exception of color) in all purchased Accused Products.

The arguments and evidence cited in the chart below are representative and Plaintiffs reserve the right to rely on additional arguments and evidence to show that the above-identified accused product infringes exemplary independent claim 24 of the '855 Patent.

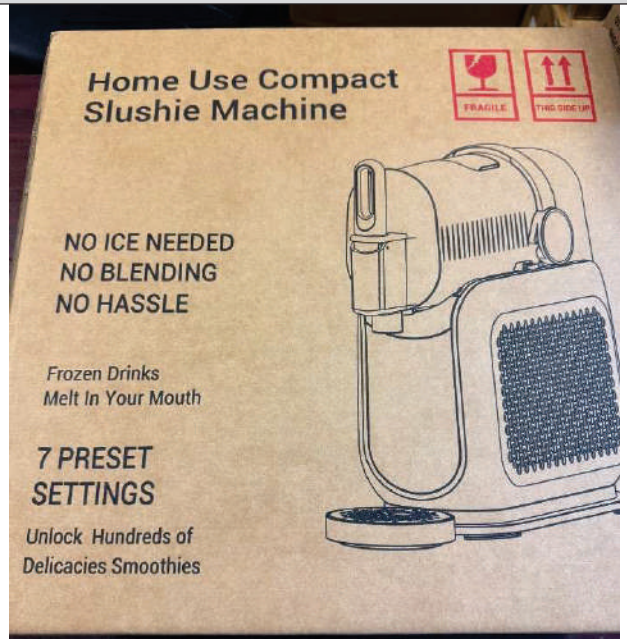
Claim Element	**Accused Product**
24[Pre.]: A frozen drink maker comprising:	 Accused Product Packaging.

Exhibit 17
Claim Chart Comparing the Blizzee Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Photograph of Accused Product.
24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;	

Exhibit 17
Claim Chart Comparing the Blizzee Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

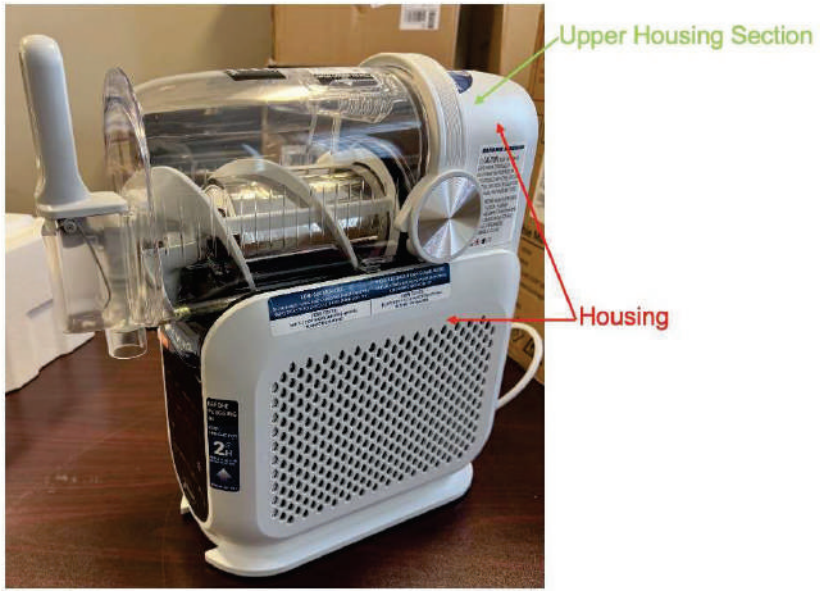
Claim Element	Accused Product
	 Photograph of Accused Product (annotated). The cam feature of the Accused Product is moveable between a coupling position and uncoupling position.

Exhibit 17
Claim Chart Comparing the Blizzee Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

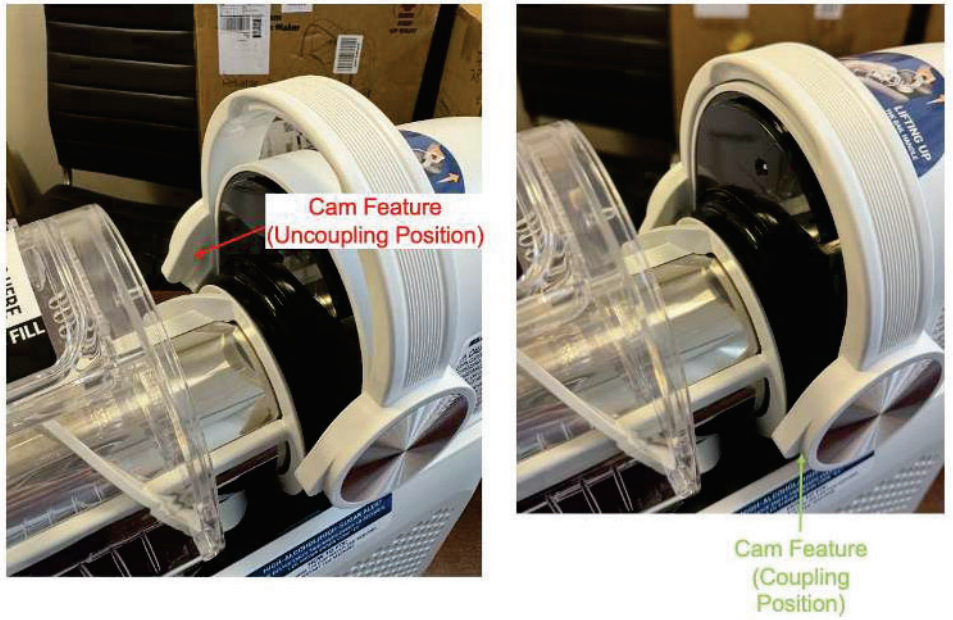
Claim Element	Accused Product
	 Photographs of Accused Product (annotated).

Exhibit 17
Claim Chart Comparing the Blizzee Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

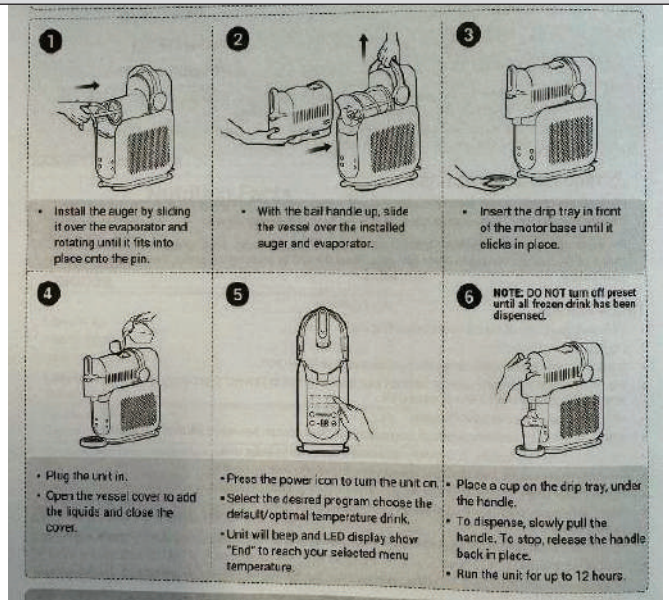
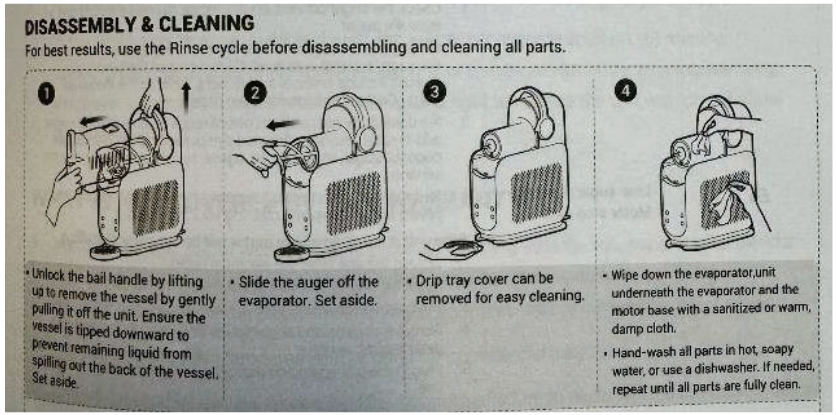
Claim Element	Accused Product
	 Accused Product Instruction Manual.  Accused Product Instruction Manual.

Exhibit 17
Claim Chart Comparing the Blizzee Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

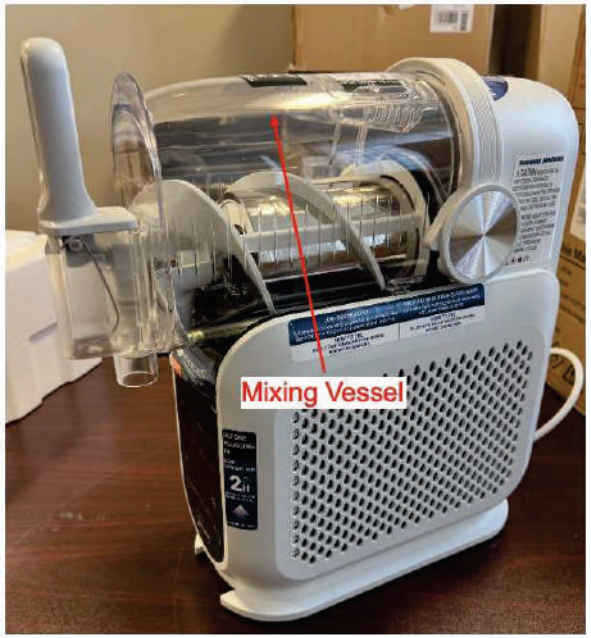
Claim Element	**Accused Product**
24[b]: a mixing vessel to receive a drink product, the mixing vessel having:	The mixing vessel is configured to receive a drink product.  Photograph of Accused Product (annotated).

Exhibit 17
Claim Chart Comparing the Blizzee Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

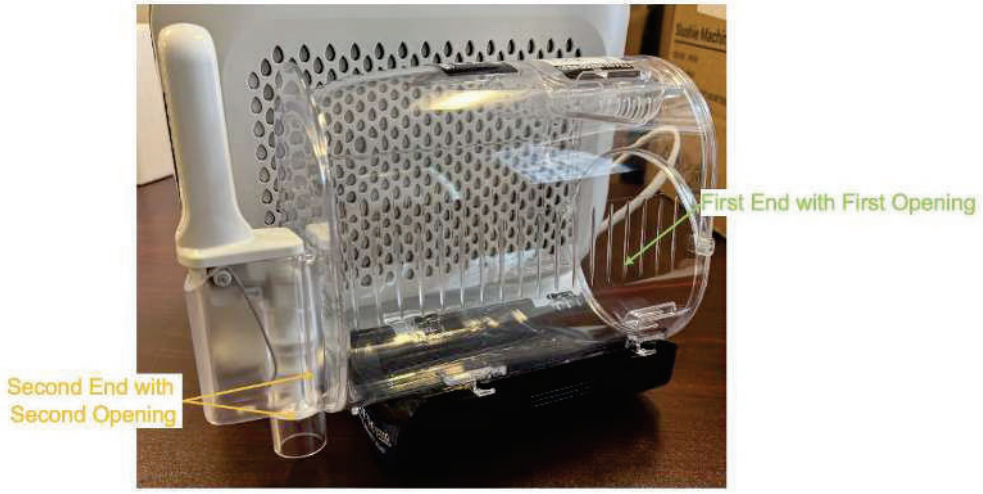
Claim Element	Accused Product
24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and	 Photograph of Accused Product (annotated). The second opening of the mixing vessel of the Accused Product is configured to dispense a drink product.

Exhibit 17
Claim Chart Comparing the Blizzee Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

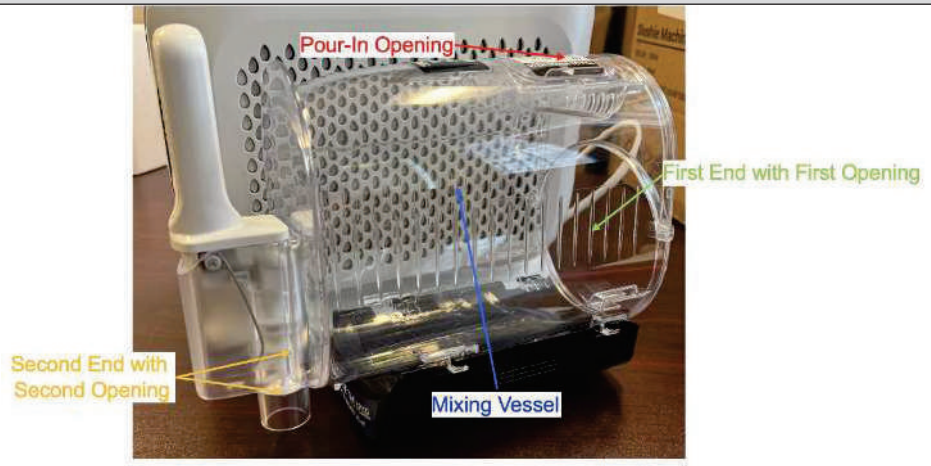
Claim Element	Accused Product
24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;	 Photograph of Accused Product (annotated).
24[c]: a dasher configured to rotate in the mixing vessel;	The dasher of the Accused Product is configured to rotate in the mixing vessel to stir the drink product.

Exhibit 17

Claim Chart Comparing the Blizzee Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

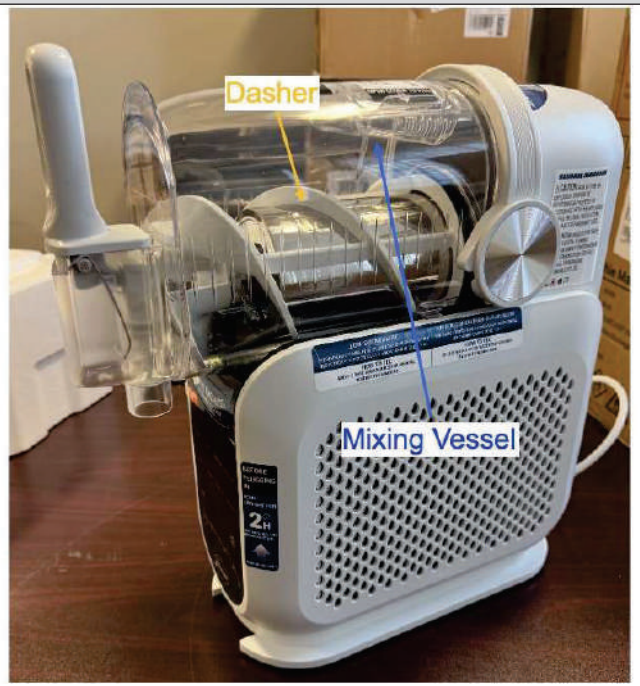
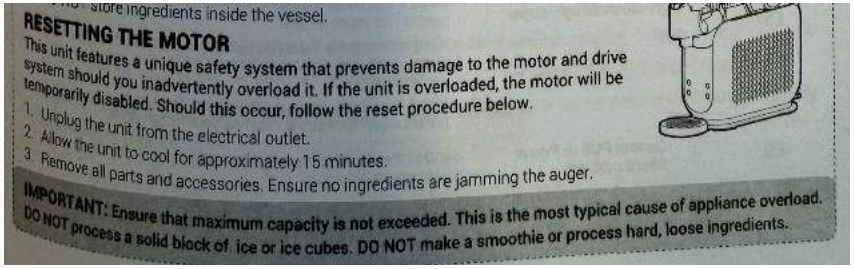
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
24[d]: a motor to drive the dasher;	The Accused Product includes a motor that drives the dasher to rotate it to stir the drink product.  store ingredients inside the vessel. **RESETTING THE MOTOR** This unit features a unique safety system that prevents damage to the motor and drive system should you inadvertently overload it. If the unit is overloaded, the motor will be temporarily disabled. Should this occur, follow the reset procedure below. 1. Unplug the unit from the electrical outlet. 2. Allow the unit to cool for approximately 15 minutes. 3. Remove all parts and accessories. Ensure no ingredients are jamming the auger. **IMPORTANT:** Ensure that maximum capacity is not exceeded. This is the most typical cause of appliance overload. DO NOT process a solid block of ice or ice cubes. DO NOT make a smoothie or process hard, loose ingredients.

Exhibit 17

Claim Chart Comparing the Blizzee Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

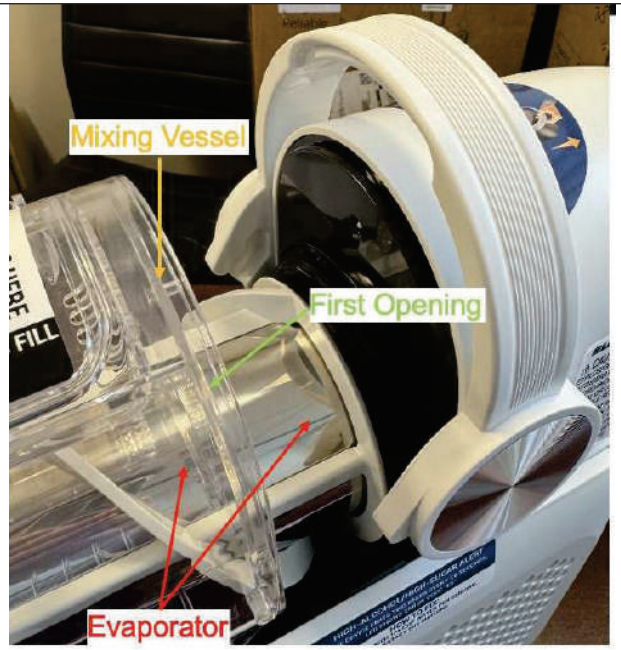
Claim Element	Accused Product
	Accused Product Instruction Manual. As confirmed by product testing, during operation a motor of the frozen drink maker drives the dasher to rotate.
24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and	 Photograph of Accused Product (annotated). The evaporator is received through the first opening of the mixing vessel.

Exhibit 17

Claim Chart Comparing the Blizzee Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

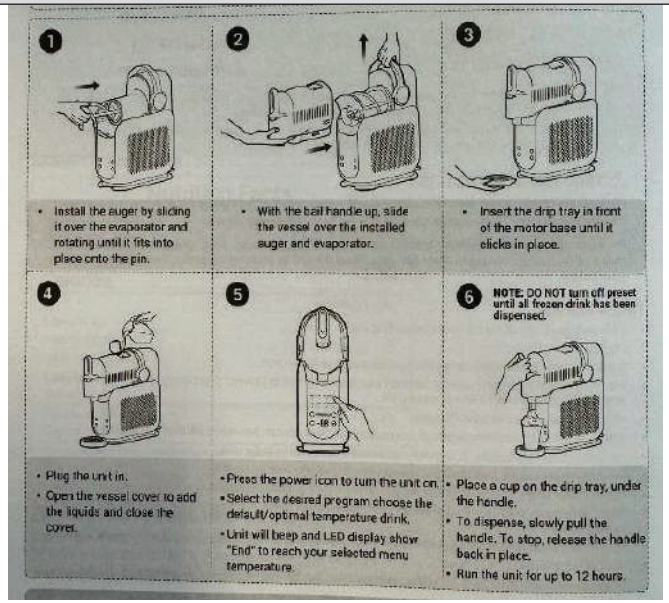
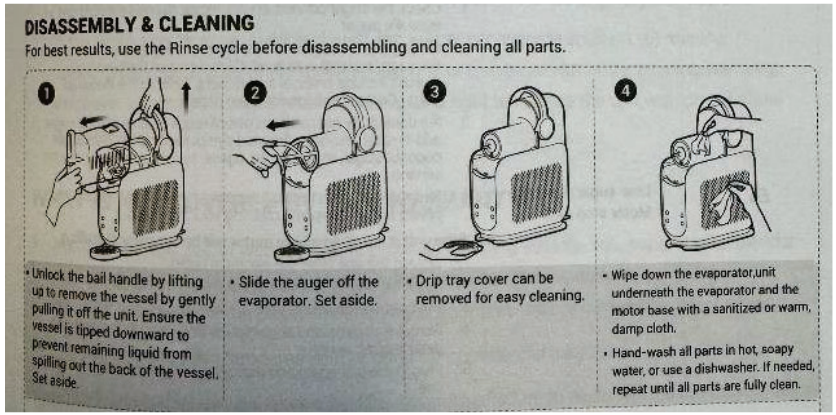
Claim Element	Accused Product
	 Accused Product Instruction Manual.  Accused Product Instruction Manual.

Exhibit 17

Claim Chart Comparing the Blizzee Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

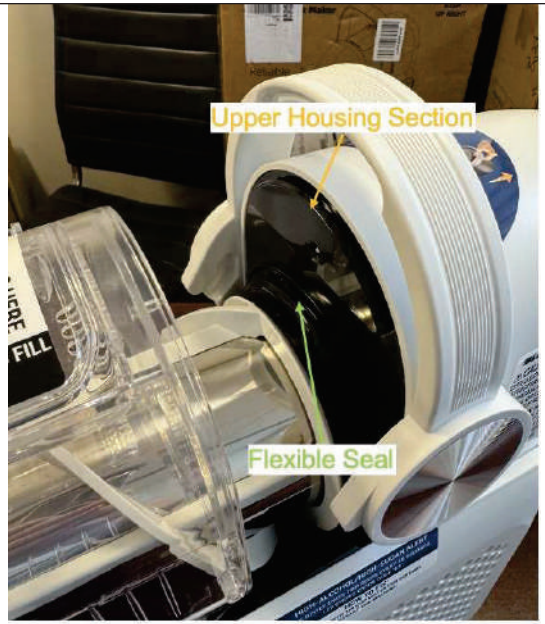
Claim Element	Accused Product
24[f]: a flexible seal arranged proximate to the upper housing section;	 Photograph of Accused Product (annotated). As confirmed by product testing, the flexible seal comprises a flexible material.
24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position, and	The cam feature of the Accused Product controls the coupling of the mixing vessel to the upper housing section when in the coupling position and uncouples the mixing vessel from the upper housing section when in the uncoupling position.

Exhibit 17

Claim Chart Comparing the Blizzee Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

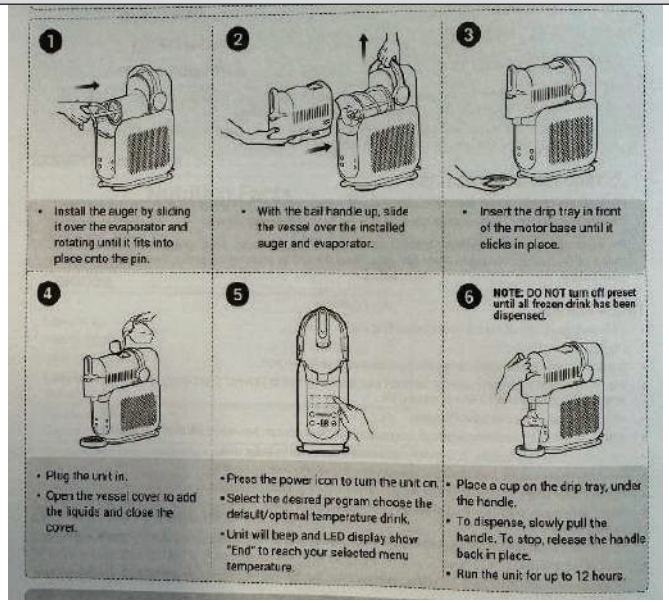
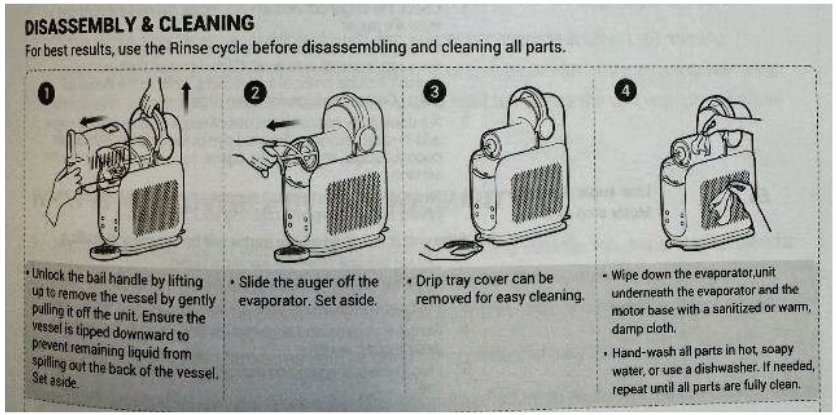
Claim Element	Accused Product
	 Accused Product Instruction Manual.  Accused Product Instruction Manual.

Exhibit 17

Claim Chart Comparing the Blizzee Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

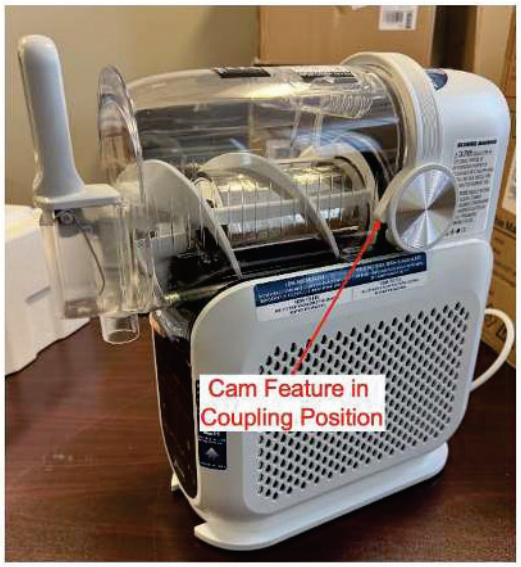
Claim Element	Accused Product
	 Photographs of Accused Product (annotated). *Id.*, Cl. 24[a].
24[h]: wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.	When the cam feature of the Accused Product is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal about the first opening.

Exhibit 17

Claim Chart Comparing the Blizzee Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

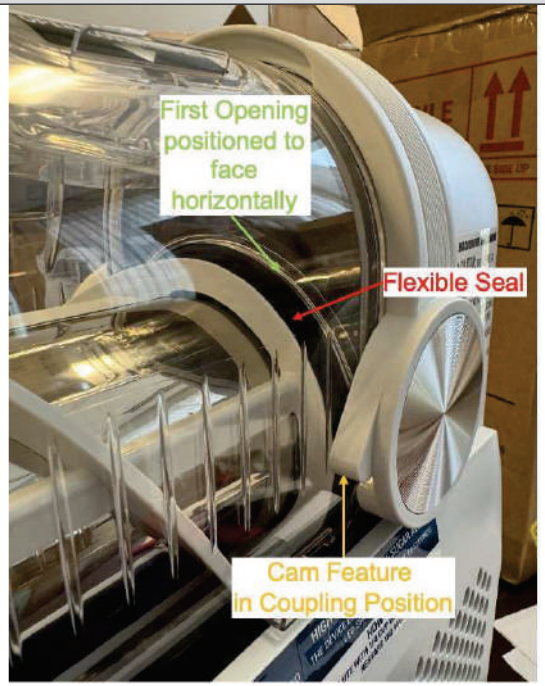
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

EXHIBIT 18

Exhibit 18
Claim Chart Comparing the Casidea Frozen Drink Maker to U.S. Patent No. 12,593,855

Below is a chart that applies asserted exemplary independent claim 24 and 30 of U.S. Patent No. 12,593,855 (the "'855 Patent") to the accused Casidea Frozen Drink Maker ("Accused Product"), purchased at the following listing: https://www.amazon.com/dp/B0FH7FJ186 (ASIN B0FH7FJ186).

The arguments and evidence cited in the chart below are representative and Plaintiffs reserve the right to rely on additional arguments and evidence to show that the above-identified accused product infringes exemplary independent claim 24 and 30 of the '855 Patent.

Claim Element	Accused Product
24[Pre.]: A frozen drink maker comprising:	 Accused Product Packaging.

Exhibit 18
Claim Chart Comparing the Casidea Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

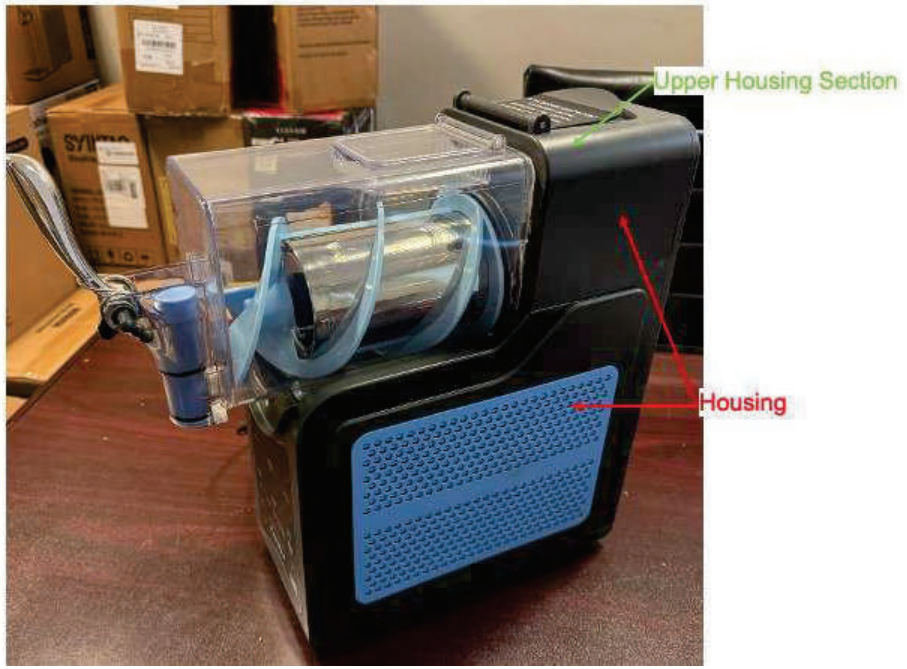
Claim Element	Accused Product
24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;	 Photograph of Accused Product (annotated). The cam feature of the Accused Product is moveable between a coupling position and uncoupling position.

Exhibit 18
Claim Chart Comparing the Casidea Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Photographs of Accused Product (annotated).

Exhibit 18
Claim Chart Comparing the Casidea Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

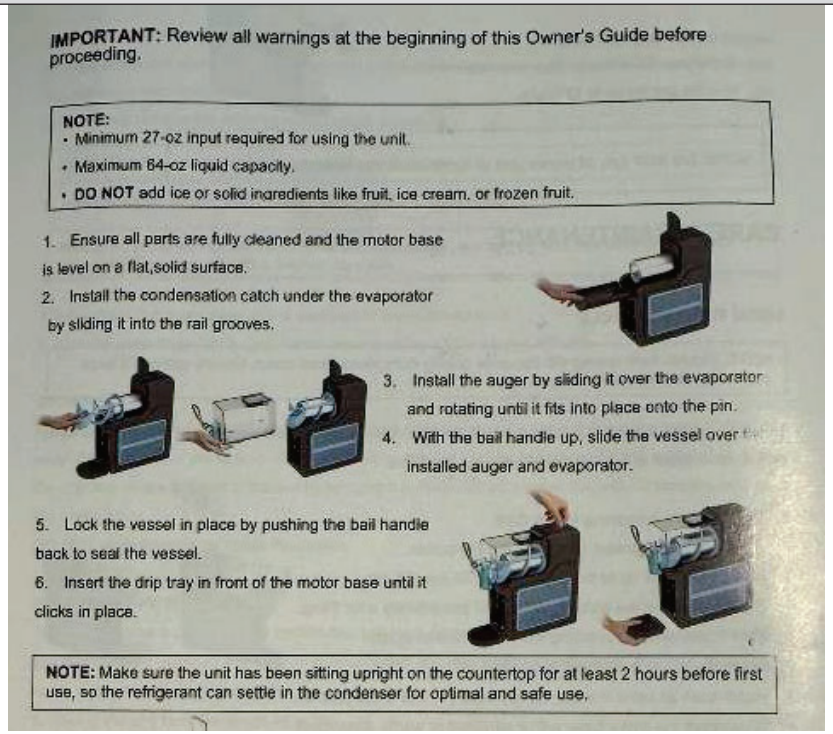
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 18
Claim Chart Comparing the Casidea Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

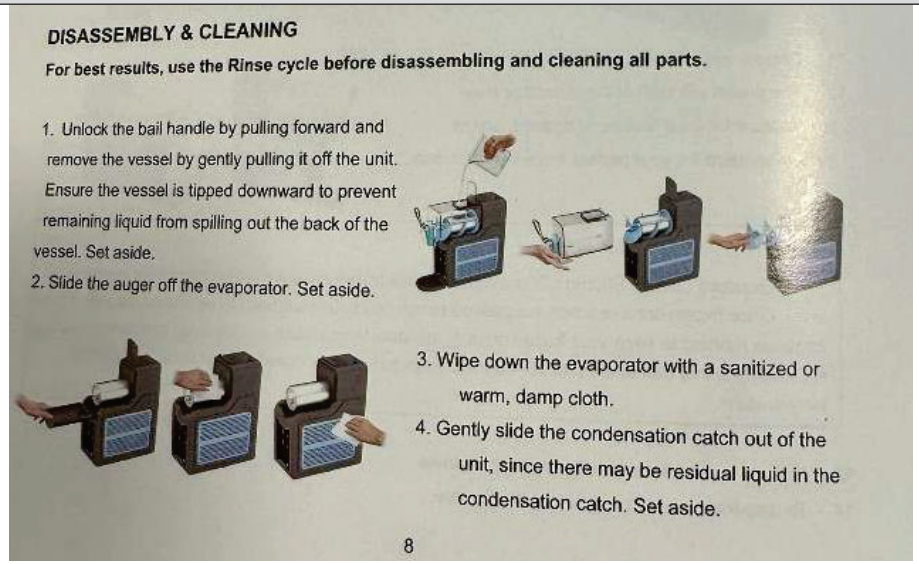
Claim Element	Accused Product
	 Accused Product Instruction Manual.
24[b]: a mixing vessel to receive a drink product, the mixing vessel having:	The mixing vessel is configured to receive a drink product.

Exhibit 18
Claim Chart Comparing the Casidea Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	Photograph of Accused Product (annotated).

Exhibit 18
Claim Chart Comparing the Casidea Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

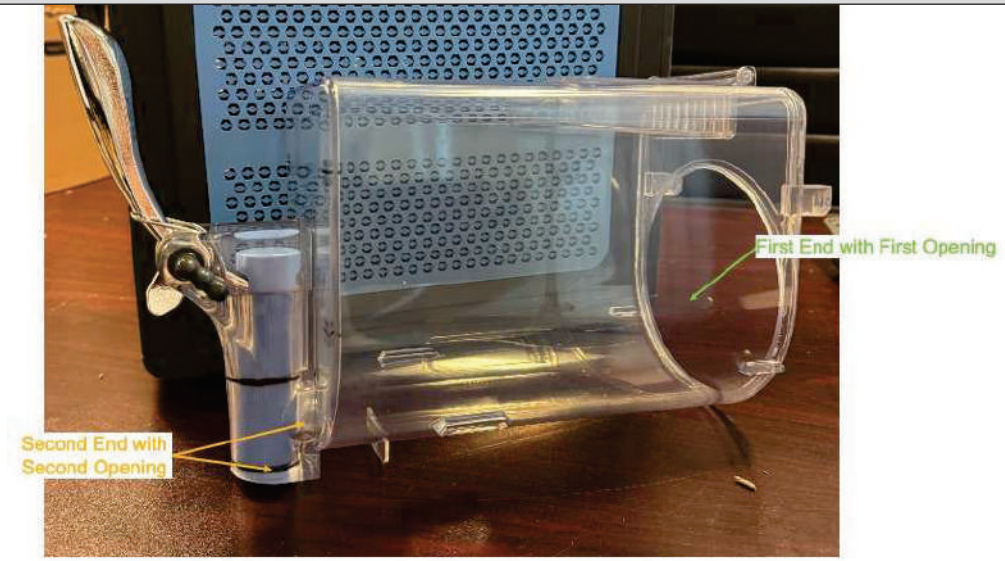
Claim Element	Accused Product
24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and	 Photograph of Accused Product (annotated). The second opening of the mixing vessel of the Accused Product is configured to dispense a drink product.

Exhibit 18
Claim Chart Comparing the Casidea Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

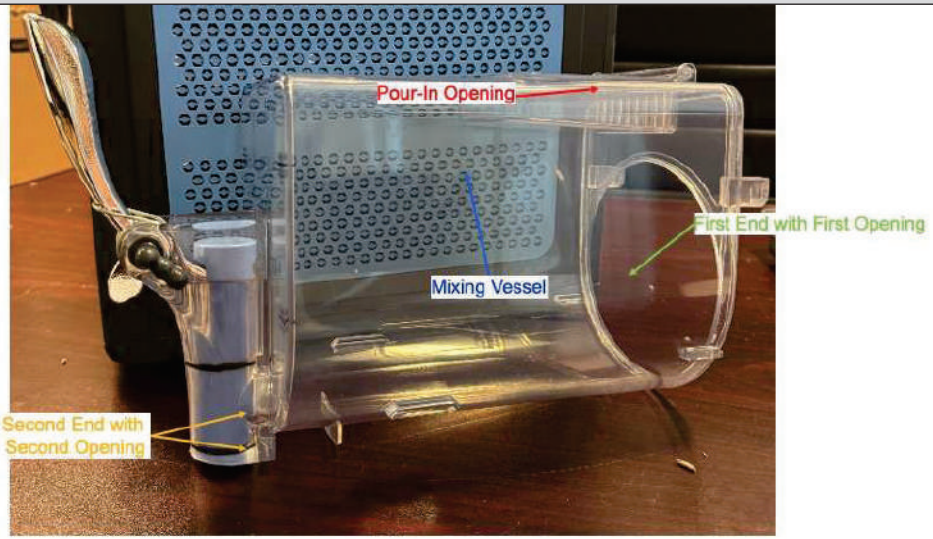
Claim Element	Accused Product
24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;	 Photograph of Accused Product (annotated).
24[c]: a dasher configured to rotate in the mixing vessel;	The dasher of the Accused Product is configured to rotate in the mixing vessel to stir the drink product.

Exhibit 18

Claim Chart Comparing the Casidea Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
24[d]: a motor to drive the dasher;	The Accused Product includes a motor that drives the dasher to rotate it to stir the drink product.

Exhibit 18

Claim Chart Comparing the Casidea Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

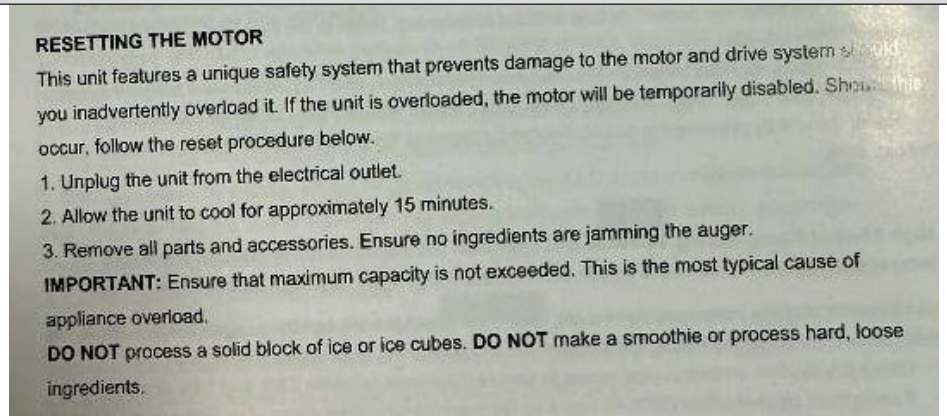
Claim Element	Accused Product
	 Accused Product Instruction Manual. As confirmed by product testing, during operation a motor of the frozen drink maker drives the dasher to rotate.

Exhibit 18

Claim Chart Comparing the Casidea Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

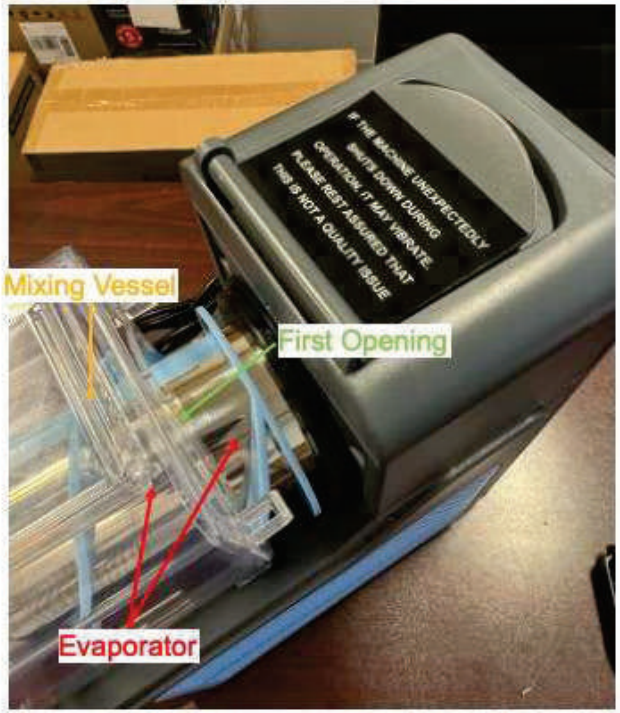
Claim Element	Accused Product
24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and	 Photograph of Accused Product (annotated). The evaporator is received through the first opening of the mixing vessel.

Exhibit 18

Claim Chart Comparing the Casidea Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

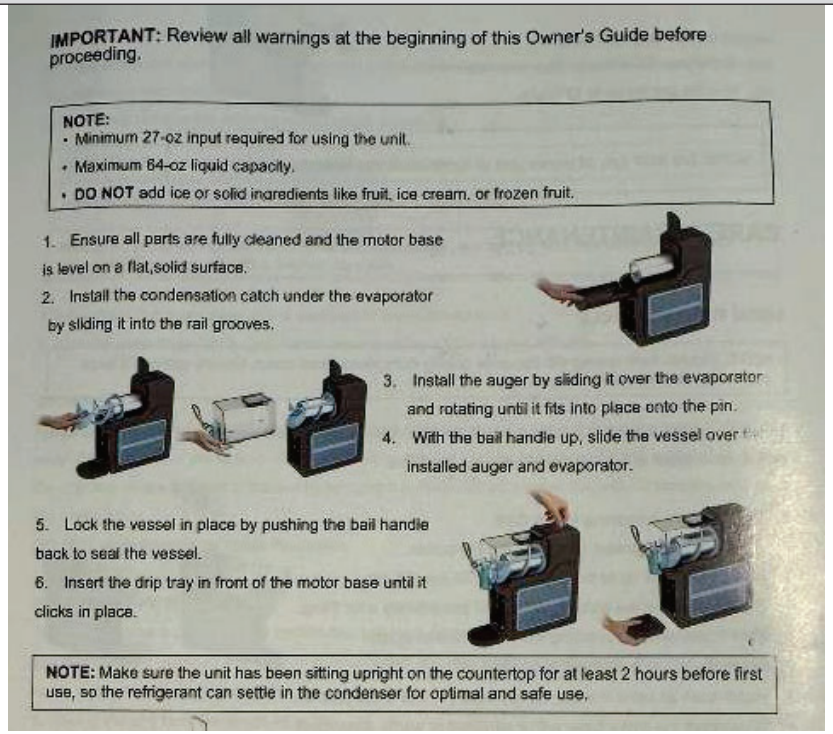
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 18

Claim Chart Comparing the Casidea Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

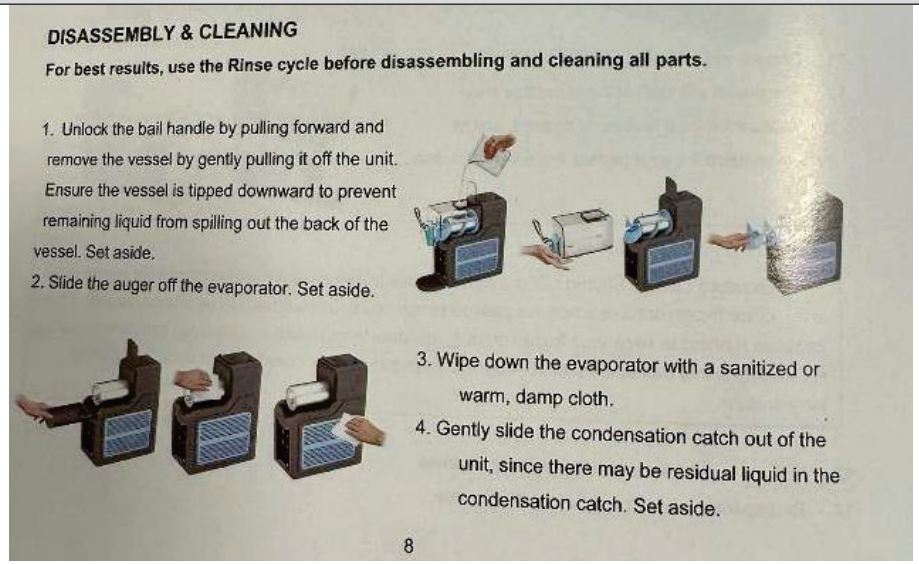
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 18

Claim Chart Comparing the Casidea Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
24[f]: a flexible seal arranged proximate to the upper housing section;	 Photograph of Accused Product (annotated). As confirmed by product testing, the flexible seal comprises a flexible material.
24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling	The cam feature of the Accused Product controls the coupling of the mixing vessel to the upper housing section when in the coupling position and uncouples the mixing vessel from the upper housing section when in the uncoupling position.

Exhibit 18

Claim Chart Comparing the Casidea Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

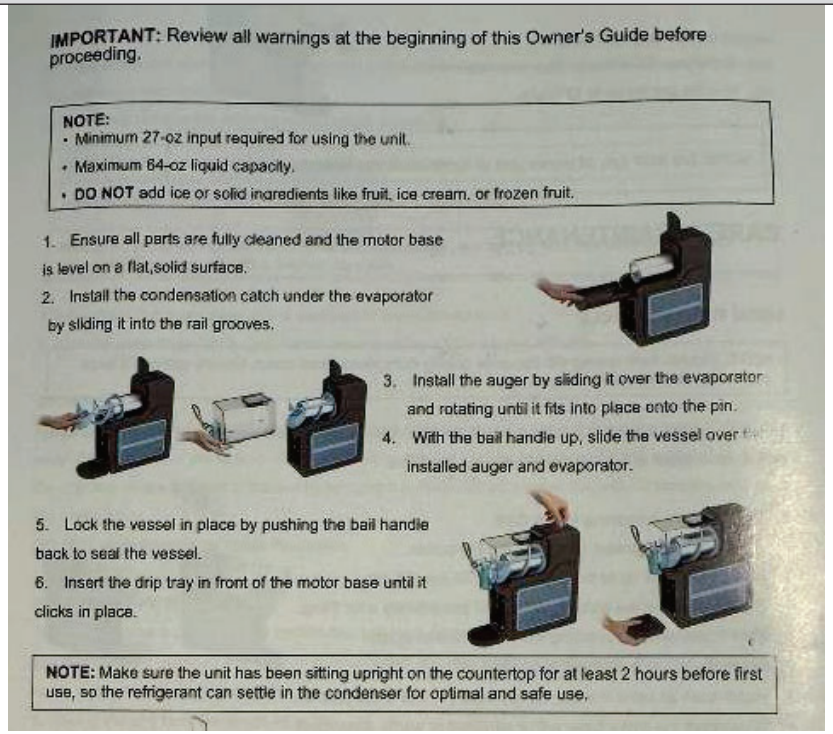
Claim Element	Accused Product
the mixing vessel from the upper housing section when in the uncoupling position, and	 Accused Product Instruction Manual.

Exhibit 18

Claim Chart Comparing the Casidea Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

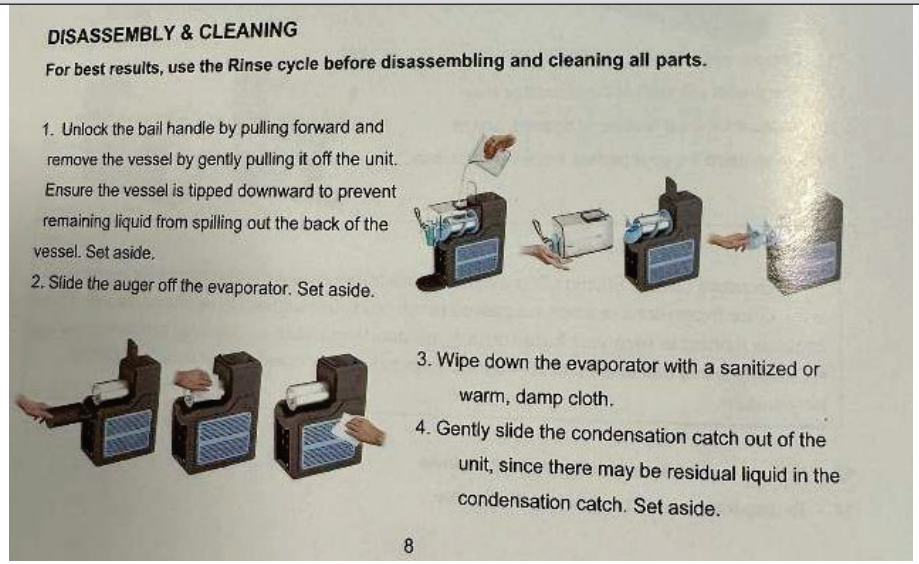
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 18

Claim Chart Comparing the Casidea Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	**Accused Product**
	Photographs of Accused Product (annotated). *Id.*, Cl. 24[a].
24[h]: wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.	When the cam feature of the Accused Product is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal about the first opening.

Exhibit 18

Claim Chart Comparing the Casidea Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

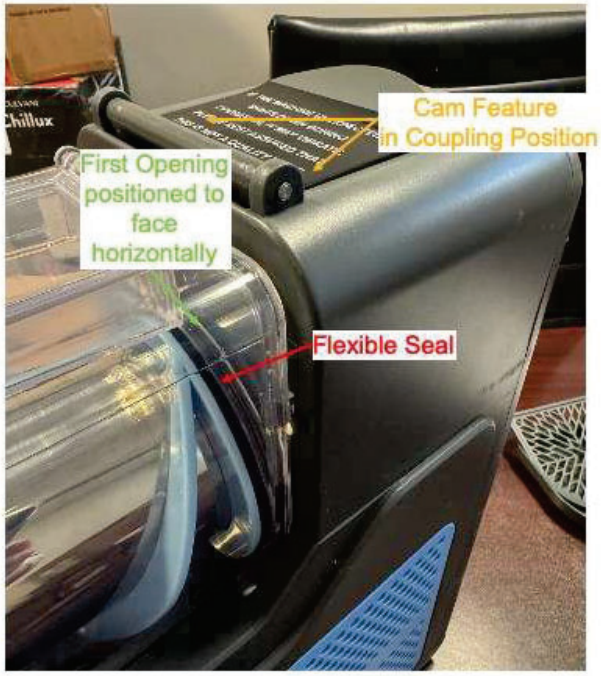
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

EXHIBIT 19

Exhibit 19
Claim Chart Comparing the Cowsar Frozen Drink Maker to U.S. Patent No. 12,593,855

Below is a chart that applies asserted exemplary independent claim 24 and 30 of U.S. Patent No. 12,593,855 (the "'855 Patent") to the accused Cowsar Frozen Drink Maker ("Accused Product"), purchased at the following listing: www.amazon.com/dp/B0GTK7WL43 (ASIN B0GTK7WL43).

The arguments and evidence cited in the chart below are representative and Plaintiffs reserve the right to rely on additional arguments and evidence to show that the above-identified accused product infringes exemplary independent claim 24 and 30 of the '855 Patent.

Claim Element	Accused Product
24[Pre.]: A frozen drink maker comprising:	 Accused Product Packaging.

Exhibit 19
Claim Chart Comparing the Cowsar Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

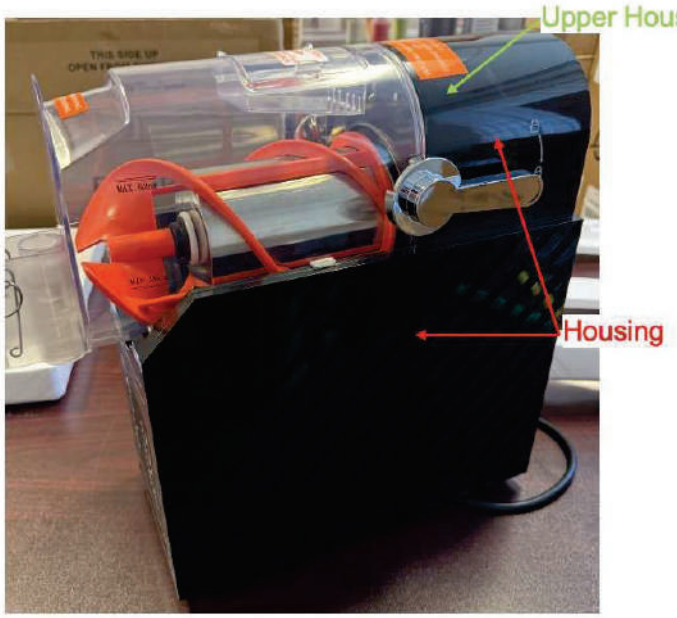
Claim Element	Accused Product
24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;	 Photograph of Accused Product (annotated). The cam feature of the Accused Product is moveable between a coupling position and uncoupling position.

Exhibit 19
Claim Chart Comparing the Cowsar Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	Photographs of Accused Product (annotated).

Exhibit 19
Claim Chart Comparing the Cowsar Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

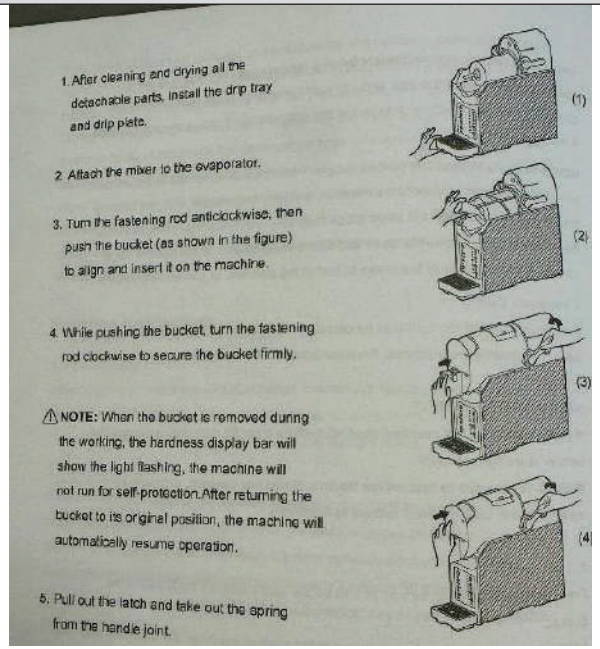
Claim Element	Accused Product
	 Accused Product Instruction Manual.
24[b]: a mixing vessel to receive a drink product, the mixing vessel having:	The mixing vessel is configured to receive a drink product.

Exhibit 19
Claim Chart Comparing the Cowsar Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

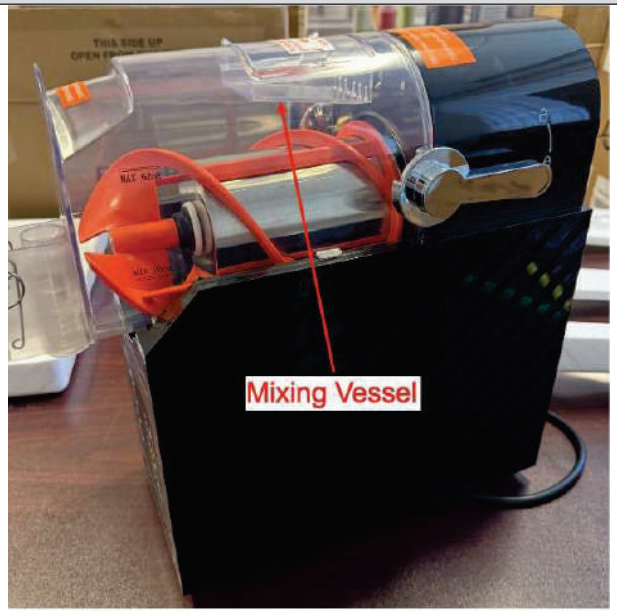
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and	Photograph of Accused Product (annotated).

Exhibit 19
Claim Chart Comparing the Cowsar Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

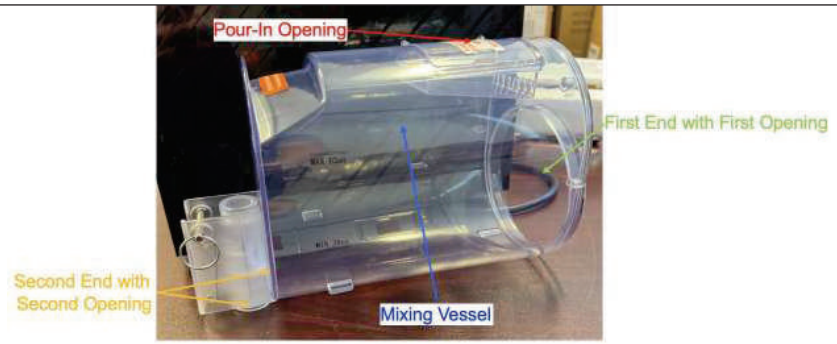
Claim Element	Accused Product
	The second opening of the mixing vessel of the Accused Product is configured to dispense a drink product.
24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;	 Photograph of Accused Product (annotated).
24[c]: a dasher configured to rotate in the mixing vessel;	The dasher of the Accused Product is configured to rotate in the mixing vessel to stir the drink product.

Exhibit 19
Claim Chart Comparing the Cowsar Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

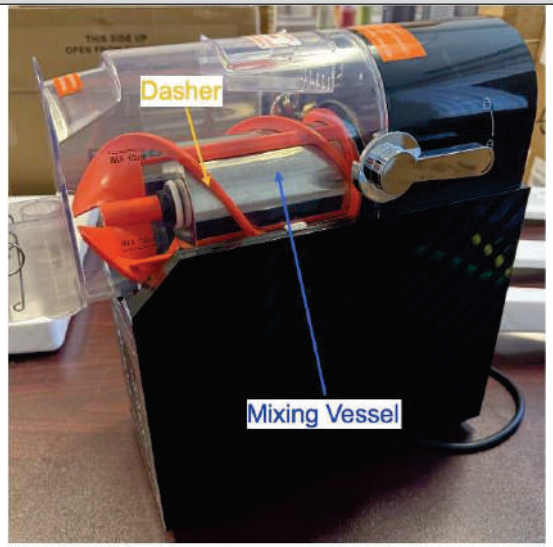
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
24[d]: a motor to drive the dasher;	The Accused Product includes a motor that drives the dasher to rotate it to stir the drink product.

Exhibit 19
Claim Chart Comparing the Cowsar Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

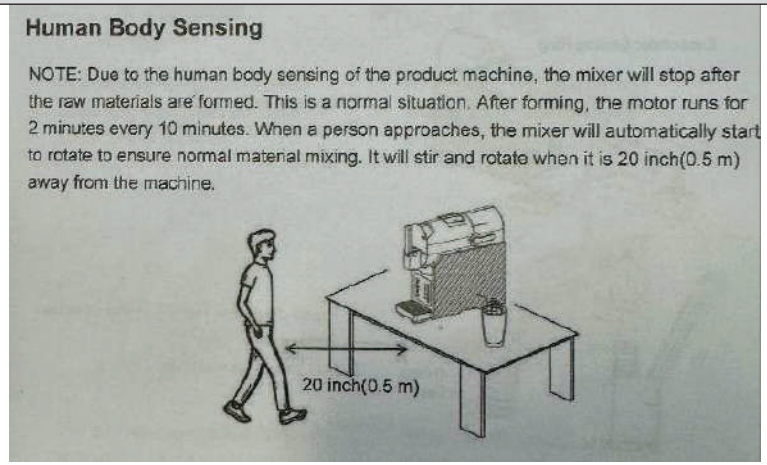
Claim Element	Accused Product
	 Accused Product Instruction Manual. As confirmed by product testing, during operation a motor of the frozen drink maker drives the dasher to rotate.

Exhibit 19

Claim Chart Comparing the Cowsar Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

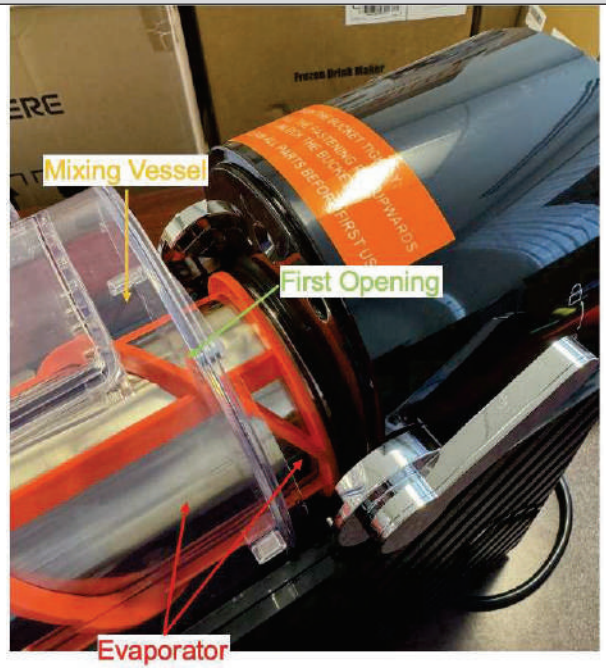
Claim Element	Accused Product
24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and	 Photograph of Accused Product (annotated). The evaporator is received through the first opening of the mixing vessel.

Exhibit 19

Claim Chart Comparing the Cowsar Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

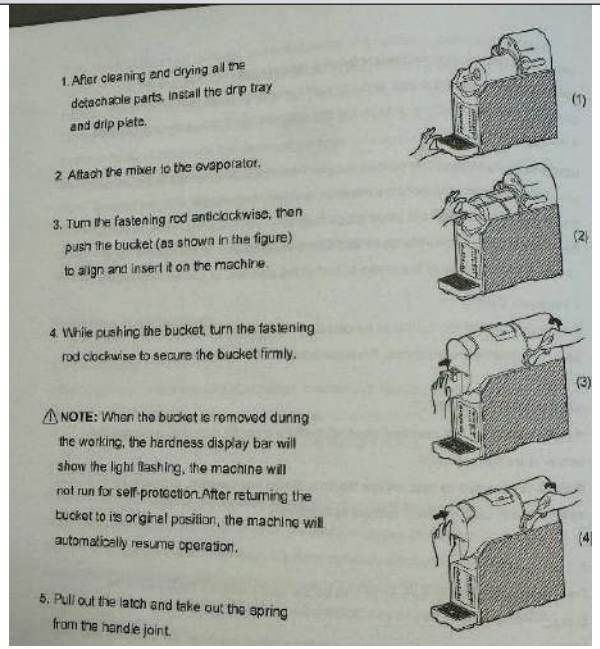
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 19

Claim Chart Comparing the Cowsar Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

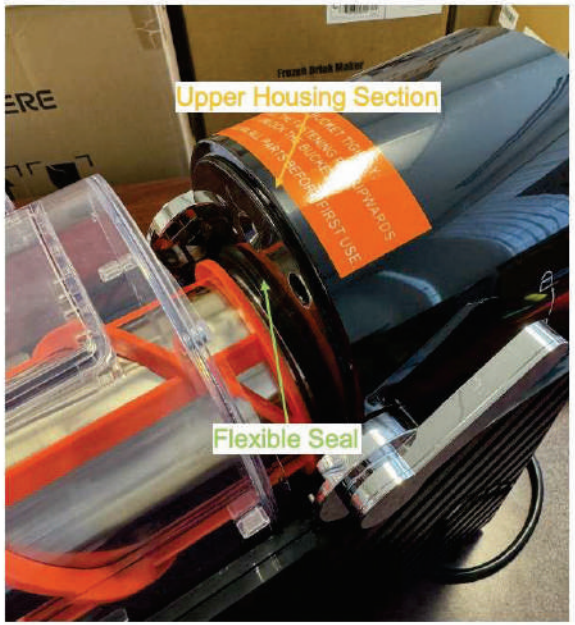
Claim Element	Accused Product
24[f]: a flexible seal arranged proximate to the upper housing section;	 Photograph of Accused Product (annotated). As confirmed by product testing, the flexible seal comprises a flexible material.
24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position, and	The cam feature of the Accused Product controls the coupling of the mixing vessel to the upper housing section when in the coupling position and uncouples the mixing vessel from the upper housing section when in the uncoupling position.

Exhibit 19

Claim Chart Comparing the Cowsar Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

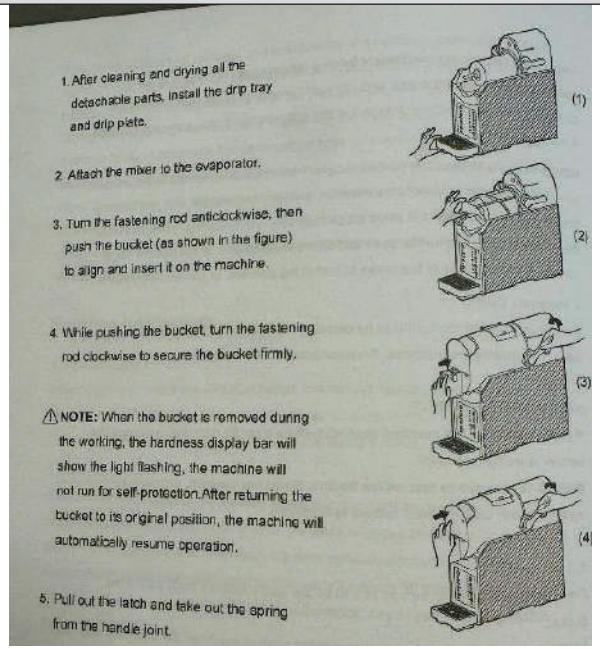
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 19

Claim Chart Comparing the Cowsar Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

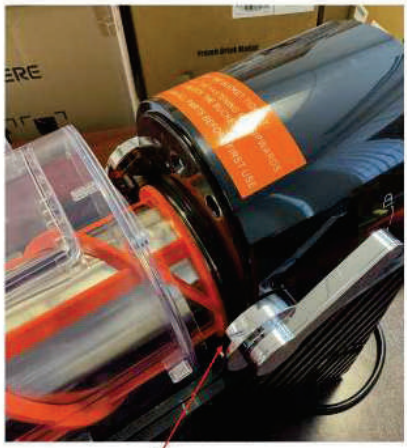
Claim Element	**Accused Product**
	 Photographs of Accused Product (annotated). *Id.*, Cl. 24[a].
24[h]: wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.	When the cam feature of the Accused Product is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal about the first opening.

Exhibit 19

Claim Chart Comparing the Cowsar Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

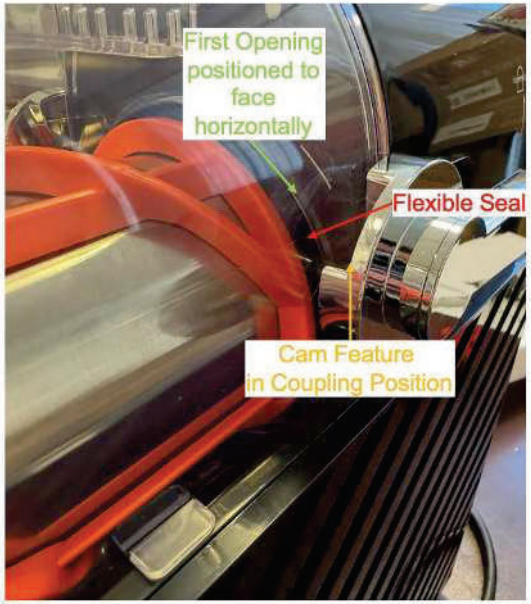
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
30. The frozen drink maker of claim 24, wherein the housing comprises a lever moveable relative to the upper housing section, wherein moving the lever to a first position moves the cam feature into the coupling position, and wherein, when in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling of the mixing vessel to the upper housing section.	The lever of the Accused Product is moveable relative to the upper housing section.

Exhibit 19

Claim Chart Comparing the Cowsar Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

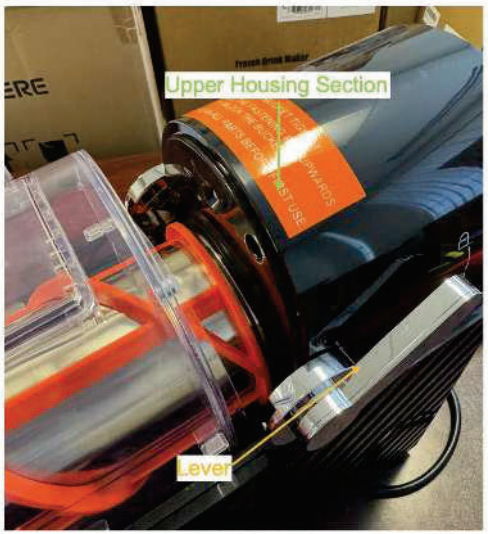
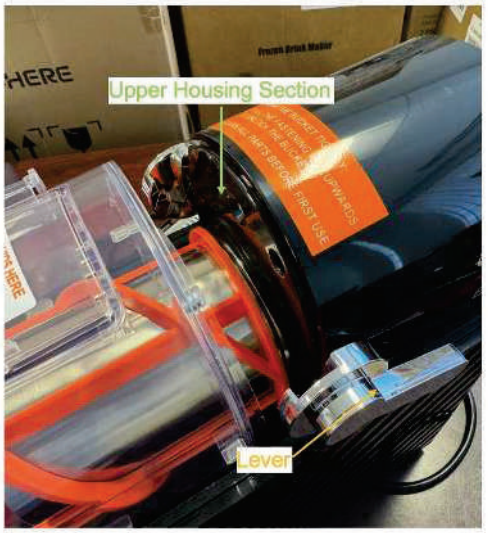
Claim Element	Accused Product
	  Photographs of Accused Product (annotated). Moving the lever of the Accused Product to a first position moves the cam feature into the coupling position. When in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling the mixing vessel to the upper housing section.

Exhibit 19

Claim Chart Comparing the Cowsar Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

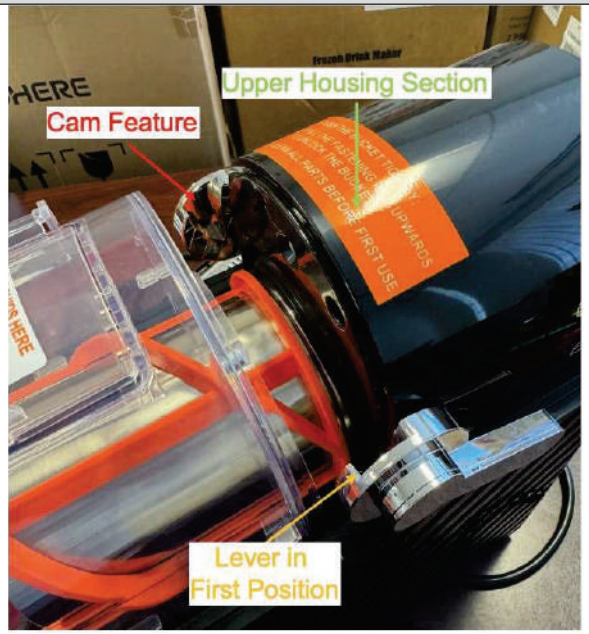
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 19

Claim Chart Comparing the Cowsar Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

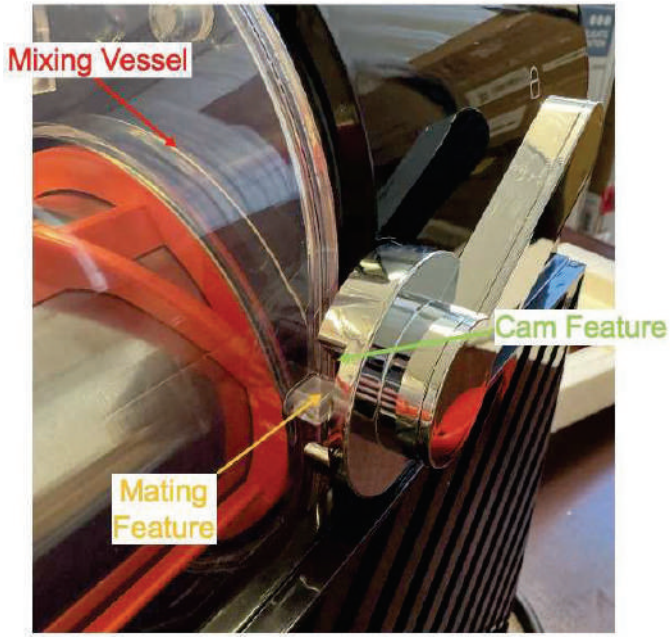
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

EXHIBIT 20

Exhibit 20
Claim Chart Comparing the CROWNFUL Frozen Drink Maker to U.S. Patent No. 12,593,855

Below is a chart that applies asserted exemplary independent claim 24 and 30 of U.S. Patent No. 12,593,855 (the "'855 Patent") to the accused CROWNFUL Frozen Drink Maker ("Accused Product"), purchased at the following listing: www.amazon.com/dp/B0FXMCG8B3 (ASIN B0FXMCG8B3).

The arguments and evidence cited in the chart below are representative and Plaintiffs reserve the right to rely on additional arguments and evidence to show that the above-identified accused product infringes exemplary independent claim 24 and 30 of the '855 Patent.

Claim Element	Accused Product
24[Pre.]: A frozen drink maker comprising:	 Accused Product Packaging.

Exhibit 20
Claim Chart Comparing the CROWNFUL Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

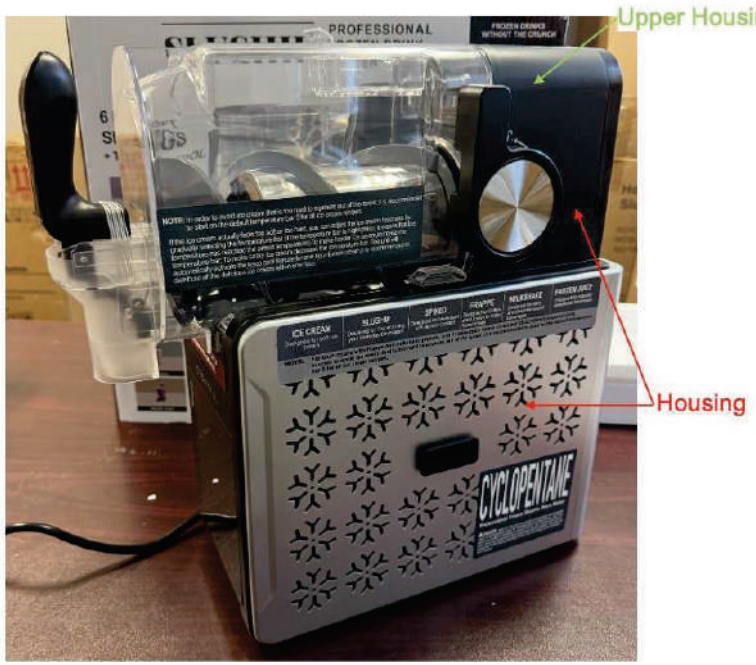
Claim Element	Accused Product
24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;	 Photograph of Accused Product (annotated). The cam feature of the Accused Product is moveable between a coupling position and uncoupling position.

Exhibit 20
Claim Chart Comparing the CROWNFUL Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

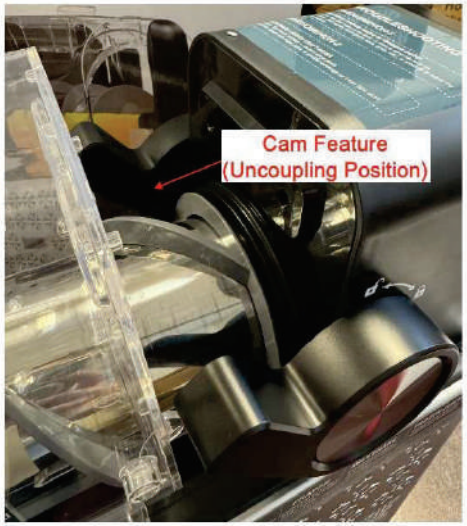
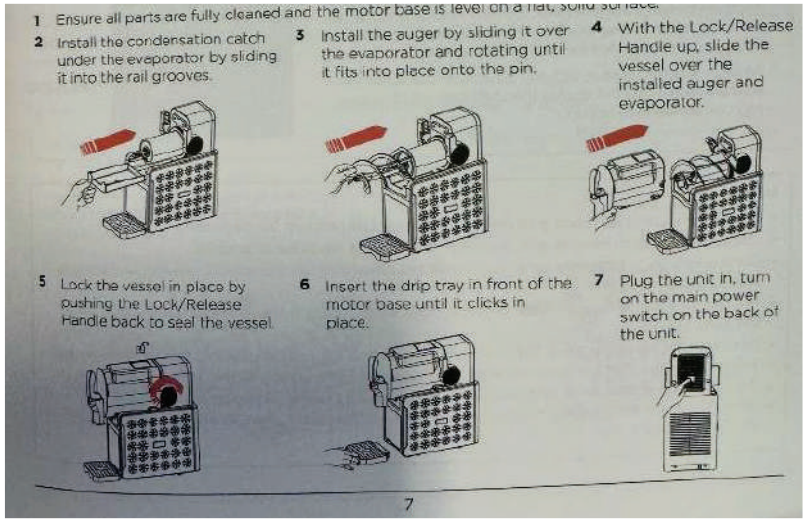
Claim Element	Accused Product
	 Photographs of Accused Product (annotated).
	 Accused Product Instruction Manual.

Exhibit 20
Claim Chart Comparing the CROWNFUL Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

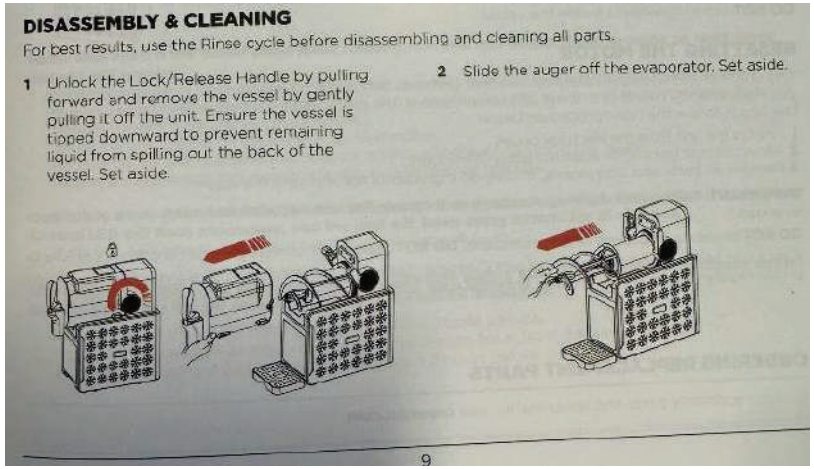
Claim Element	Accused Product
	 Accused Product Instruction Manual.
24[b]: a mixing vessel to receive a drink product, the mixing vessel having:	The mixing vessel is configured to receive a drink product.

Exhibit 20
Claim Chart Comparing the CROWNFUL Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and	 Photograph of Accused Product (annotated).

Exhibit 20
Claim Chart Comparing the CROWNFUL Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

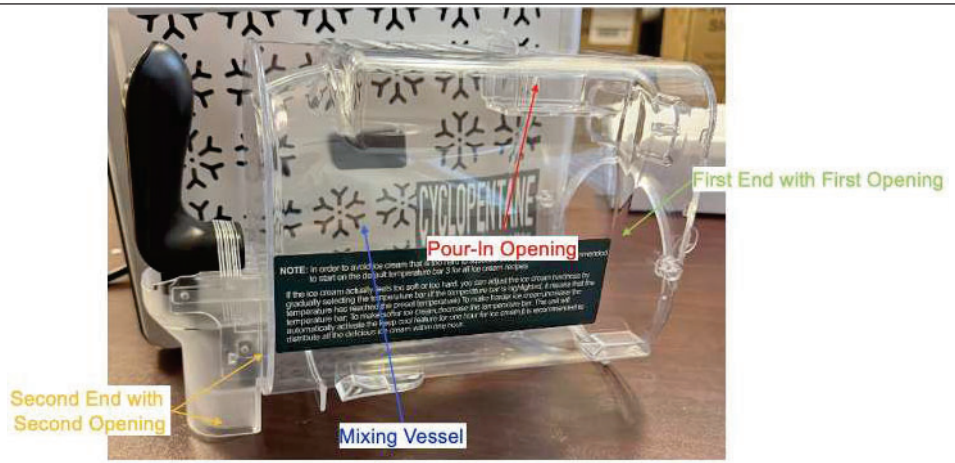
Claim Element	Accused Product
	The second opening of the mixing vessel of the Accused Product is configured to dispense a drink product.
24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;	 Photograph of Accused Product (annotated).
24[c]: a dasher configured to rotate in the mixing vessel;	The dasher of the Accused Product is configured to rotate in the mixing vessel to stir the drink product.

Exhibit 20
Claim Chart Comparing the CROWNFUL Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
24[d]: a motor to drive the dasher;	The Accused Product includes a motor that drives the dasher to rotate it to stir the drink product. As confirmed by product testing, during operation a motor of the frozen drink maker drives the dasher to rotate.

Exhibit 20
Claim Chart Comparing the CROWNFUL Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

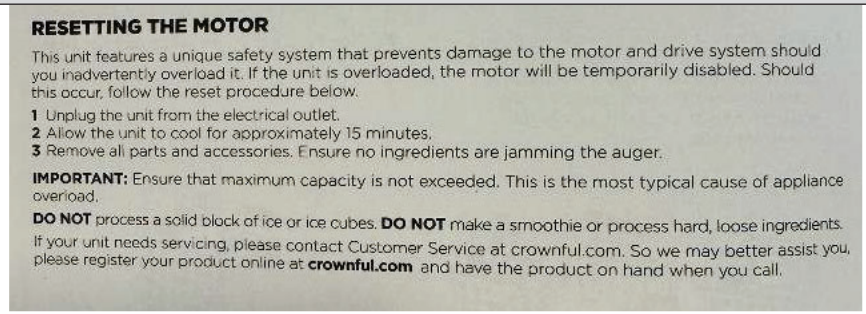
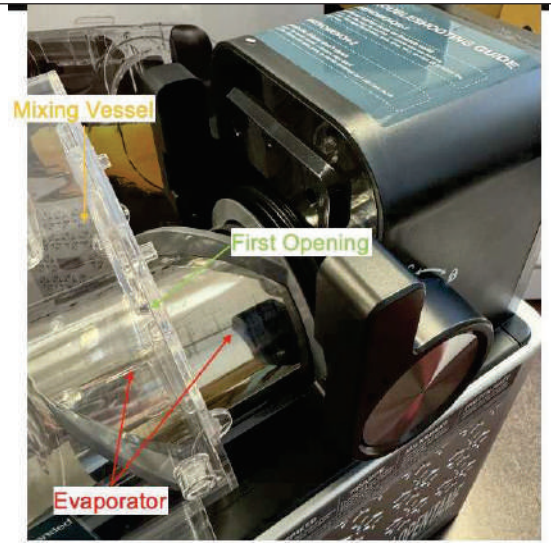
Claim Element	Accused Product
	 Accused Product Instruction Manual.
24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and	 Photograph of Accused Product (annotated). The evaporator is received through the first opening of the mixing vessel.

Exhibit 20

Claim Chart Comparing the CROWNFUL Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

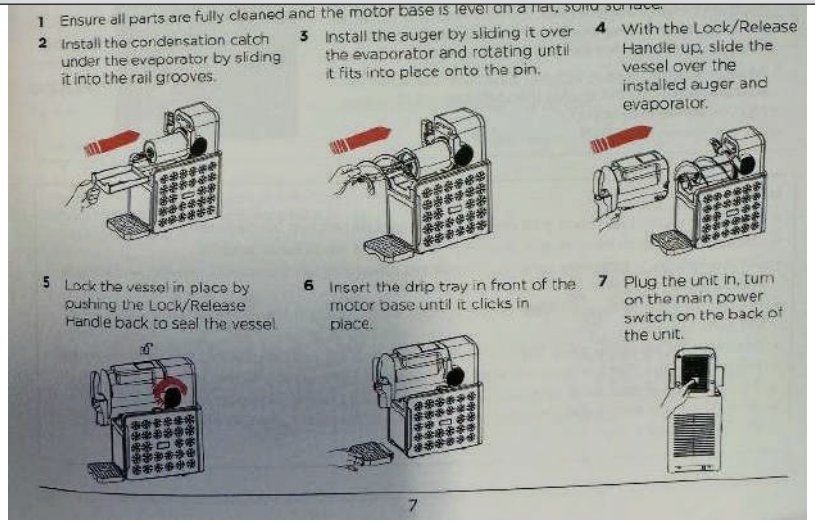
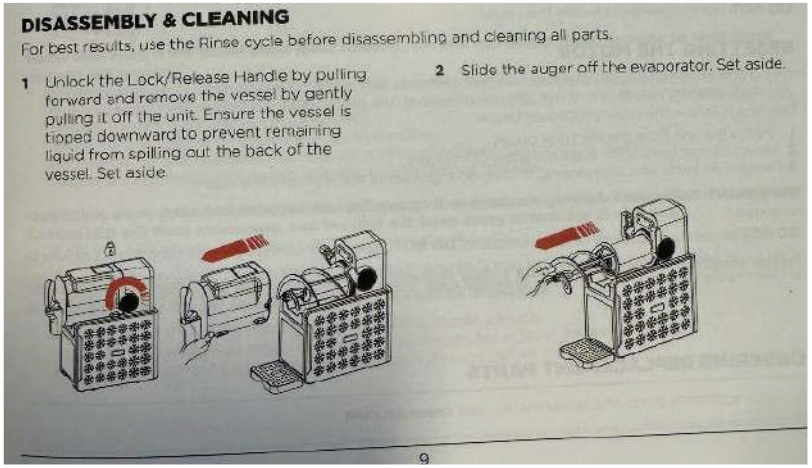
Claim Element	Accused Product
	 Accused Product Instruction Manual.  Accused Product Instruction Manual.

Exhibit 20

Claim Chart Comparing the CROWNFUL Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

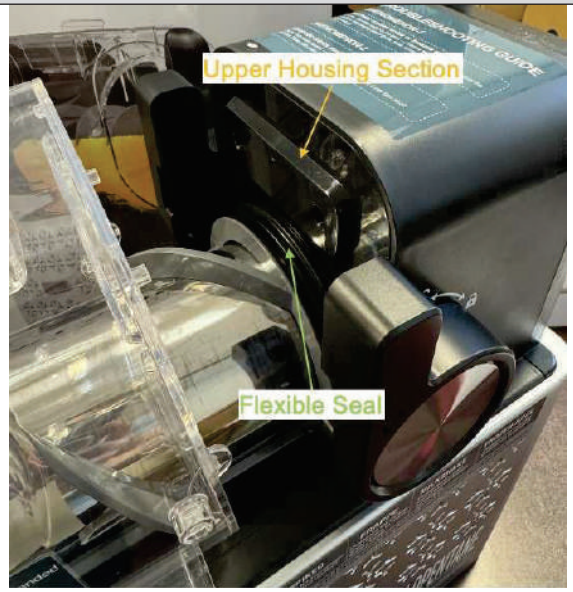
Claim Element	Accused Product
24[f]: a flexible seal arranged proximate to the upper housing section;	 Photograph of Accused Product (annotated). As confirmed by product testing, the flexible seal comprises a flexible material.
24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position, and	The cam feature of the Accused Product controls the coupling of the mixing vessel to the upper housing section when in the coupling position and uncouples the mixing vessel from the upper housing section when in the uncoupling position.

Exhibit 20

Claim Chart Comparing the CROWNFUL Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

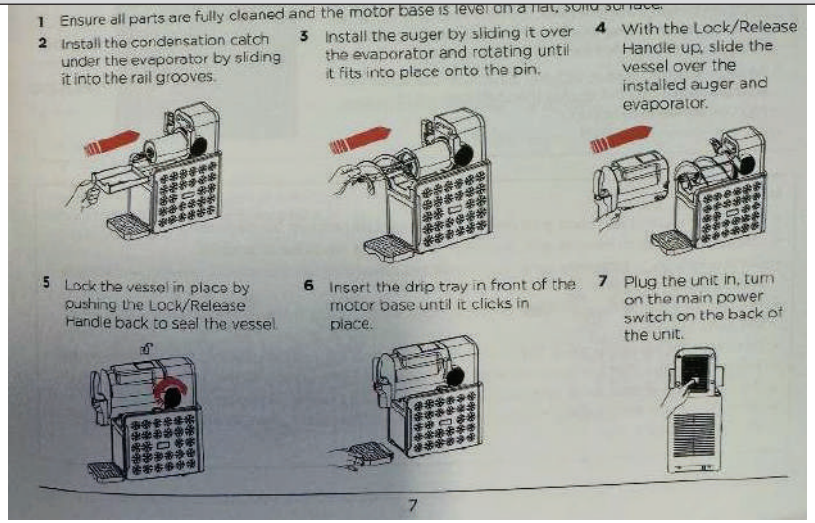
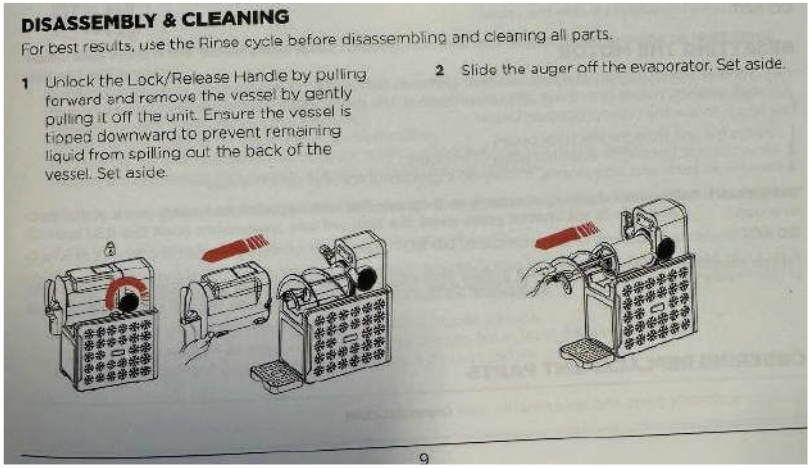
Claim Element	Accused Product
	 Accused Product Instruction Manual.  Accused Product Instruction Manual.

Exhibit 20

Claim Chart Comparing the CROWNFUL Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

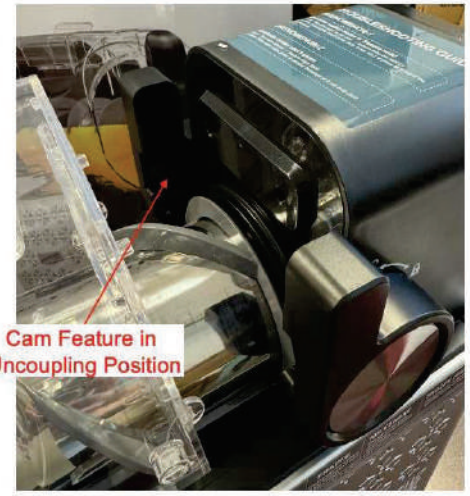
Claim Element	Accused Product
	 Photographs of Accused Product (annotated). *Id.*, Cl. 24[a].
24[h]: wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.	When the cam feature of the Accused Product is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal about the first opening.

Exhibit 20

Claim Chart Comparing the CROWNFUL Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

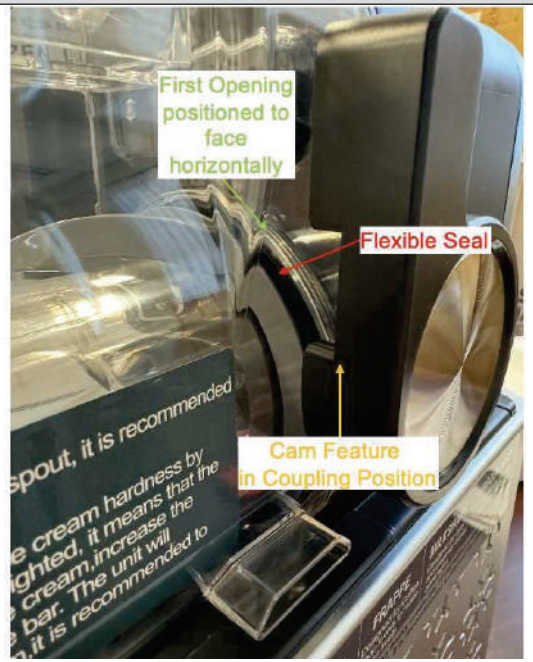
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
30. The frozen drink maker of claim 24, wherein the housing comprises a lever moveable relative to the upper housing section, wherein moving the lever to a first position moves the cam feature into the coupling position, and wherein, when in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling of the mixing vessel to the upper housing section.	The lever of the Accused Product is moveable relative to the upper housing section.

Exhibit 20

Claim Chart Comparing the CROWNFUL Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Photographs of Accused Product (annotated). Moving the lever of the Accused Product to a first position moves the cam feature into the coupling position. When in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling the mixing vessel to the upper housing section.

Exhibit 20

Claim Chart Comparing the CROWNFUL Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

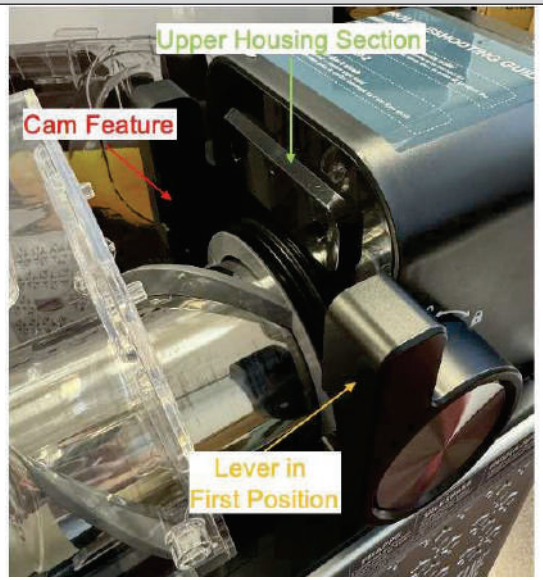
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 20

Claim Chart Comparing the CROWNFUL Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

EXHIBIT 21

Exhibit 21
Claim Chart Comparing the Culvani Frozen Drink Maker to U.S. Patent No. 12,593,855

Below is a chart that applies asserted exemplary independent claim 24 of U.S. Patent No. 12,593,855 (the "'855 Patent") to the accused Culvani Frozen Drink Maker ("Accused Product"), purchased at the following listing: www.amazon.com/dp/B0FLSDY79Z (ASIN B0FLSDY79Z).

The arguments and evidence cited in the chart below are representative and Plaintiffs reserve the right to rely on additional arguments and evidence to show that the above-identified accused product infringes exemplary independent claim 24 of the '855 Patent.

Claim Element	**Accused Product**
24[Pre.]: A frozen drink maker comprising:	 Accused Product Packaging.

Exhibit 21
Claim Chart Comparing the Culvani Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

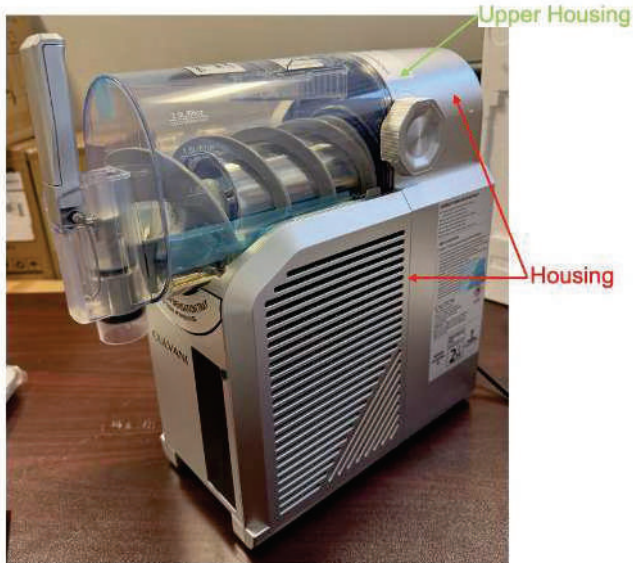
Claim Element	Accused Product
24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;	 Photograph of Accused Product (annotated). The cam feature of the Accused Product is moveable between a coupling position and uncoupling position.

Exhibit 21
Claim Chart Comparing the Culvani Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

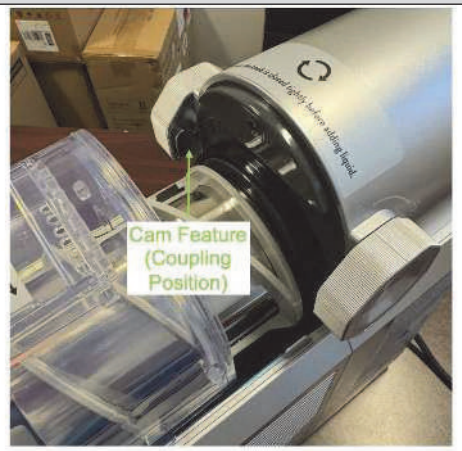
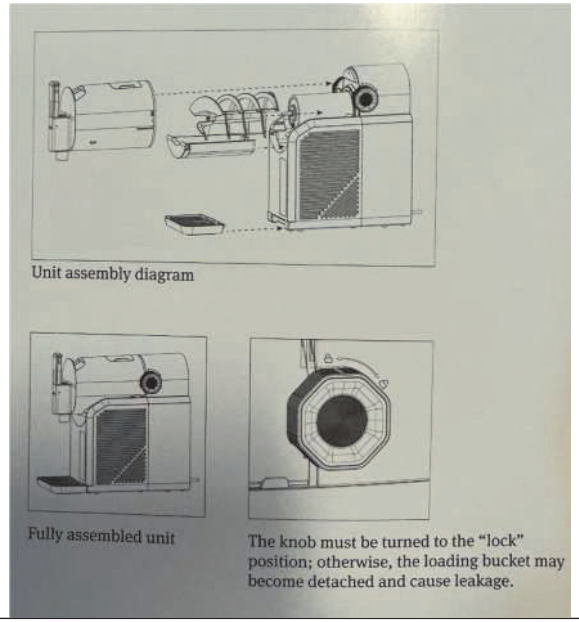
Claim Element	Accused Product
	 Photographs of Accused Product (annotated). 

Exhibit 21
Claim Chart Comparing the Culvani Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

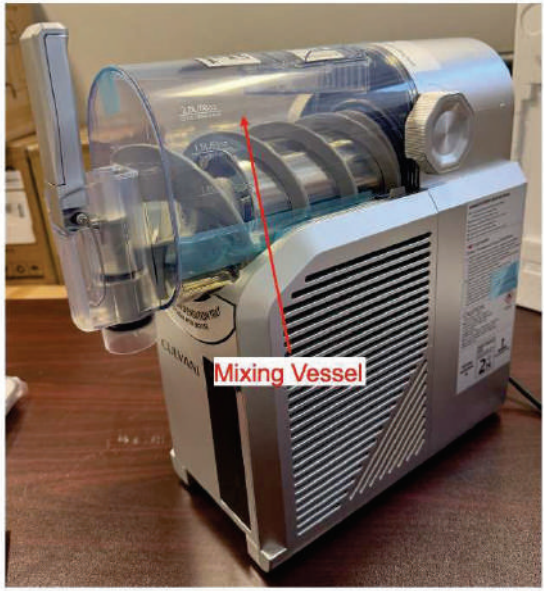
Claim Element	Accused Product
	Accused Product Instruction Manual.
24[b]: a mixing vessel to receive a drink product, the mixing vessel having:	The mixing vessel is configured to receive a drink product.  Photograph of Accused Product (annotated).

Exhibit 21
Claim Chart Comparing the Culvani Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

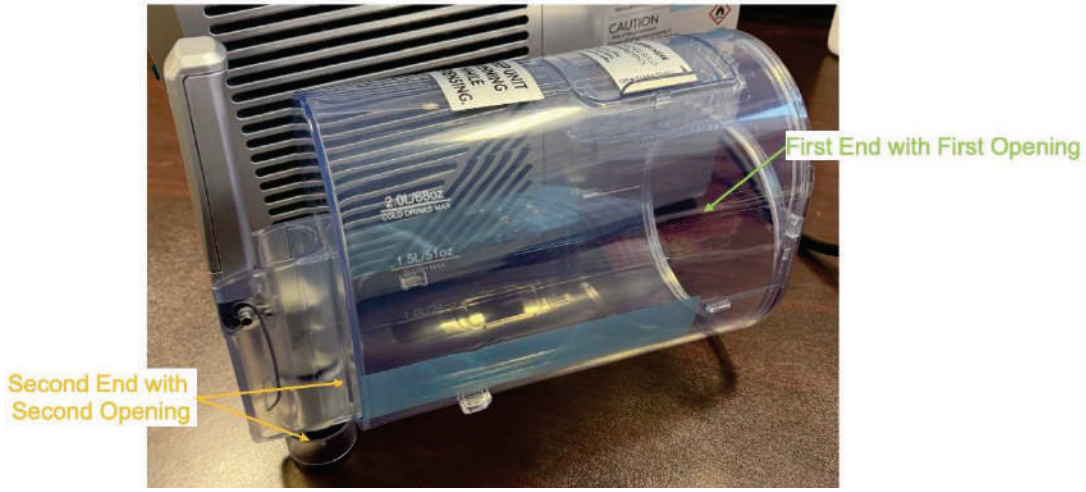
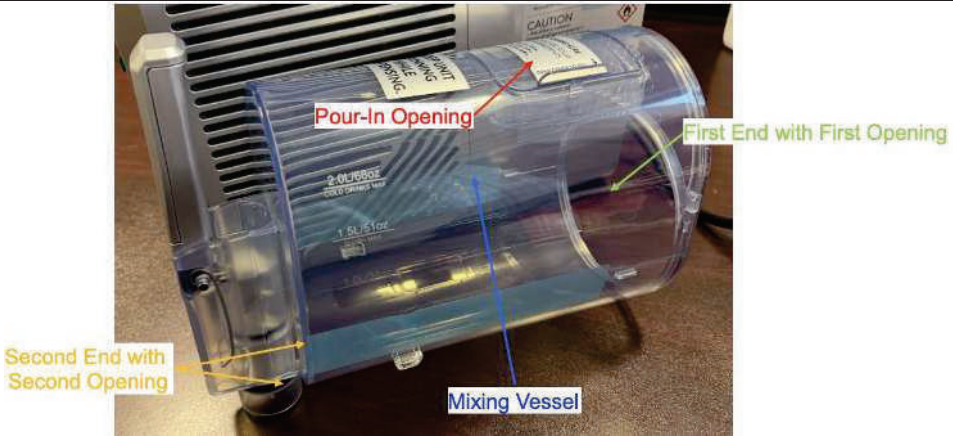
Claim Element	Accused Product
24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and	 Photograph of Accused Product (annotated). The second opening of the mixing vessel of the Accused Product is configured to dispense a drink product.
24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;	 Photograph of Accused Product (annotated).

Exhibit 21
Claim Chart Comparing the Culvani Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

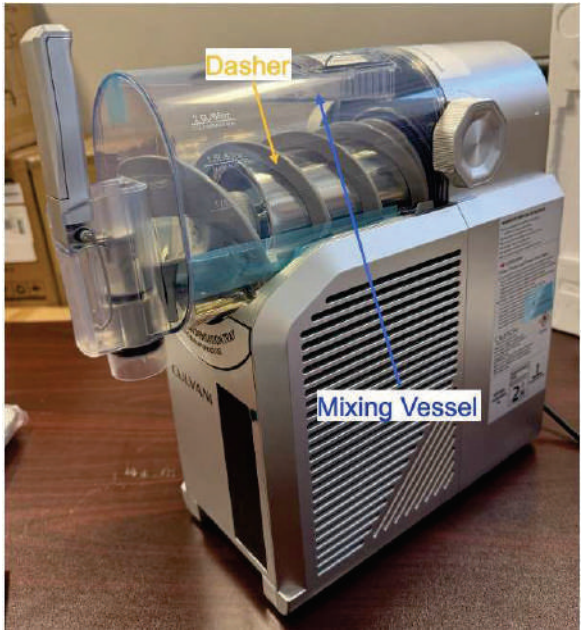
Claim Element	Accused Product
24[c]: a dasher configured to rotate in the mixing vessel;	The dasher of the Accused Product is configured to rotate in the mixing vessel to stir the drink product.  Photograph of Accused Product (annotated).
24[d]: a motor to drive the dasher;	The Accused Product includes a motor that drives the dasher to rotate it to stir the drink product.

Exhibit 21
Claim Chart Comparing the Culvani Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

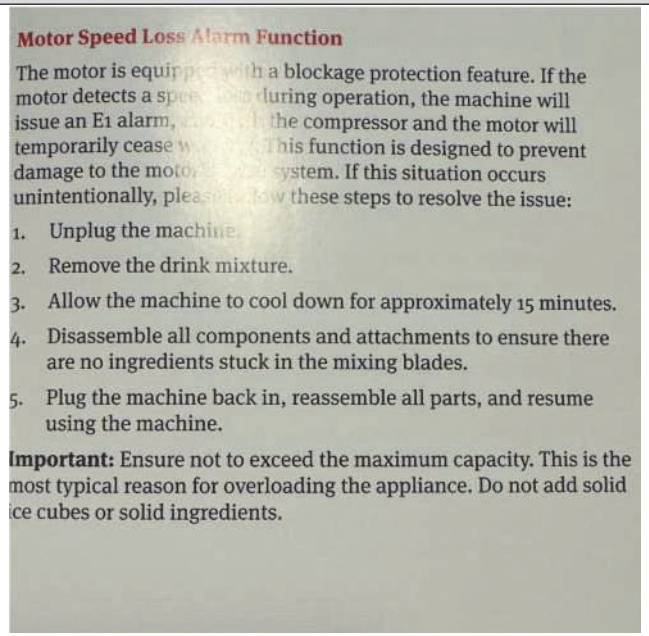
Claim Element	Accused Product
	 Accused Product Instruction Manual. As confirmed by product testing, during operation a motor of the frozen drink maker drives the dasher to rotate.

Exhibit 21
Claim Chart Comparing the Culvani Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

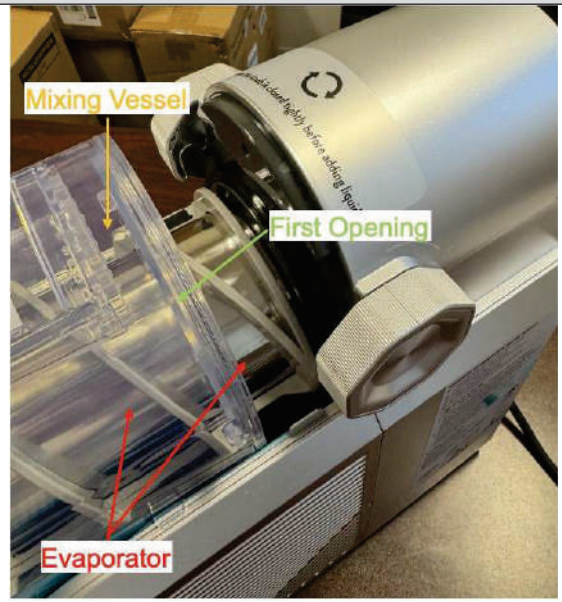
Claim Element	Accused Product
24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and	 Photograph of Accused Product (annotated). The evaporator is received through the first opening of the mixing vessel.

Exhibit 21

Claim Chart Comparing the Culvani Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

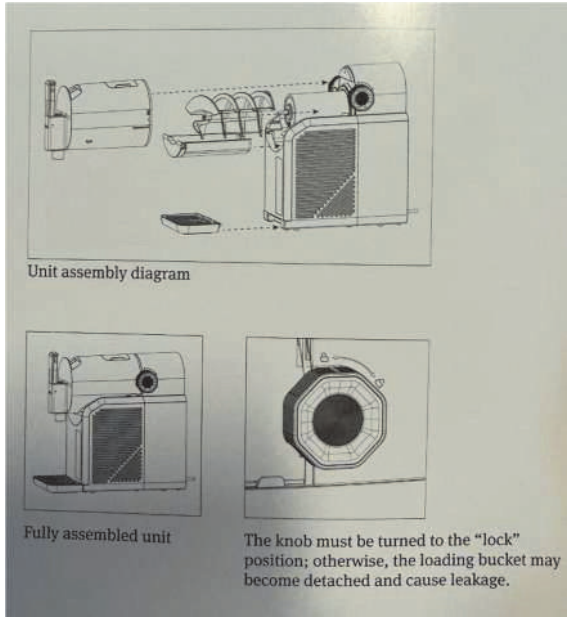
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 21

Claim Chart Comparing the Culvani Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

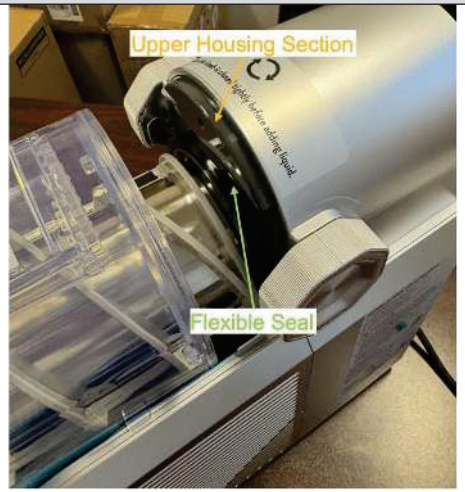
Claim Element	Accused Product
24[f]: a flexible seal arranged proximate to the upper housing section;	 Photograph of Accused Product (annotated). As confirmed by product testing, the flexible seal comprises a flexible material.
24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position, and	The cam feature of the Accused Product controls the coupling of the mixing vessel to the upper housing section when in the coupling position and uncouples the mixing vessel from the upper housing section when in the uncoupling position.

Exhibit 21

Claim Chart Comparing the Culvani Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

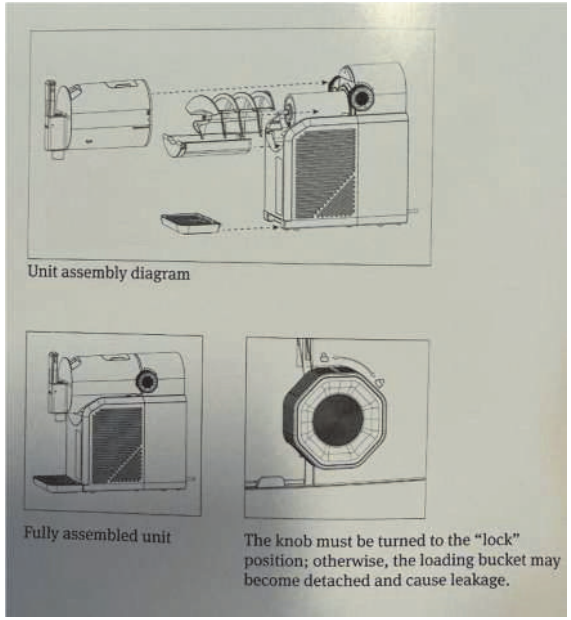
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 21

Claim Chart Comparing the Culvani Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	**Accused Product**
	Photographs of Accused Product (annotated). *Id.*, Cl. 24[a].
24[h]: wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.	When the cam feature of the Accused Product is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal about the first opening.

Exhibit 21

Claim Chart Comparing the Culvani Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

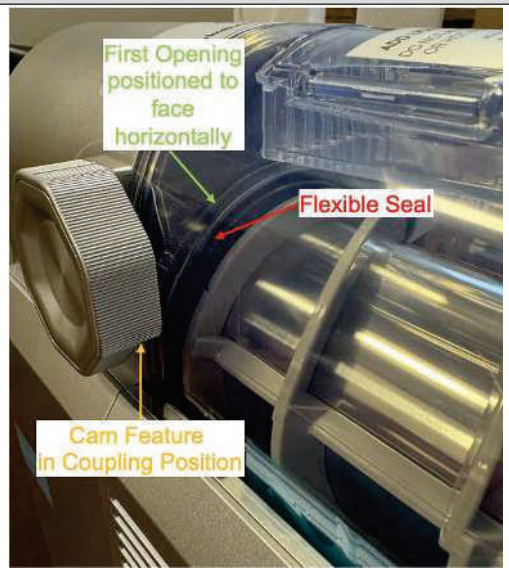
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

EXHIBIT 22

Exhibit 22
Claim Chart Comparing the Dutepa Frozen Drink Maker to U.S. Patent No. 12,593,855

Below is a chart that applies asserted exemplary independent claim 24 of U.S. Patent No. 12,593,855 (the "'855 Patent") to the accused Dutepa Frozen Drink Maker ("Accused Product"), purchased at the following listing: https://www.amazon.com/dp/B0F9FXR3ZT (ASIN B0F9FXR3ZT).

The arguments and evidence cited in the chart below are representative and Plaintiffs reserve the right to rely on additional arguments and evidence to show that the above-identified accused product infringes exemplary independent claim 24 of the '855 Patent.

Claim Element	Accused Product
24[Pre.]: A frozen drink maker comprising:	Accused Product Packaging.

Exhibit 22
Claim Chart Comparing the Dutepa Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Photograph of Accused Product.

Exhibit 22
Claim Chart Comparing the Dutepa Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

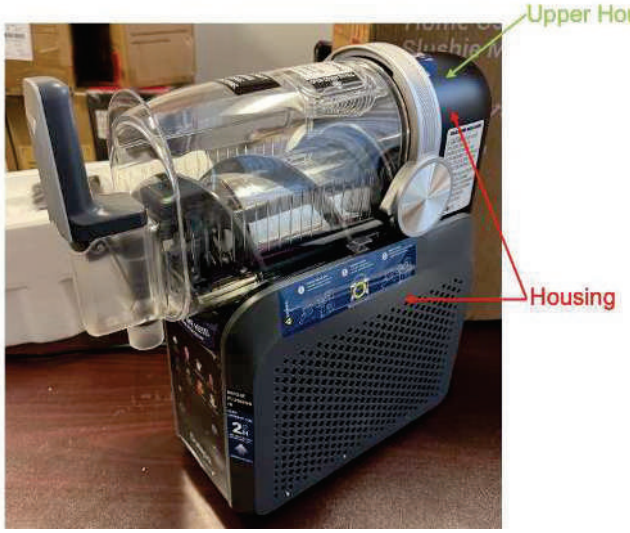
Claim Element	Accused Product
24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;	 Photograph of Accused Product (annotated). The cam feature of the Accused Product is moveable between a coupling position and uncoupling position.

Exhibit 22
Claim Chart Comparing the Dutepa Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

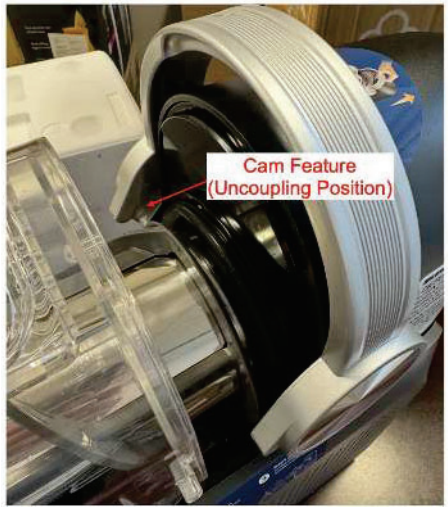
Claim Element	Accused Product
	 Photographs of Accused Product (annotated).

Exhibit 22
Claim Chart Comparing the Dutepa Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

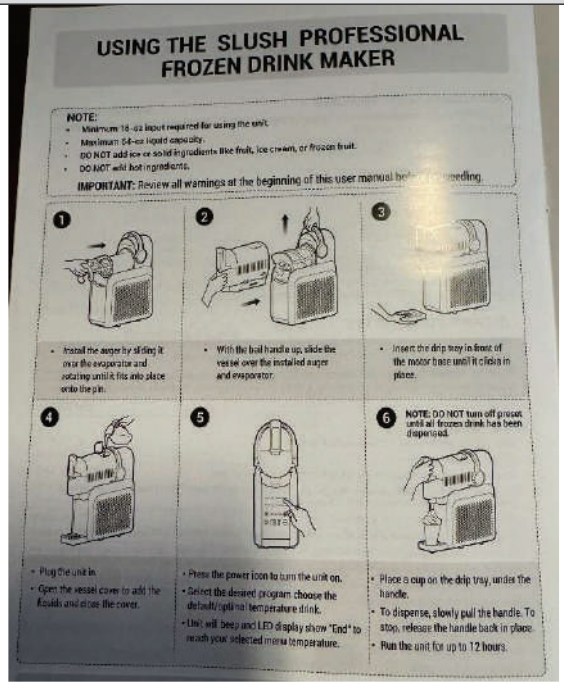
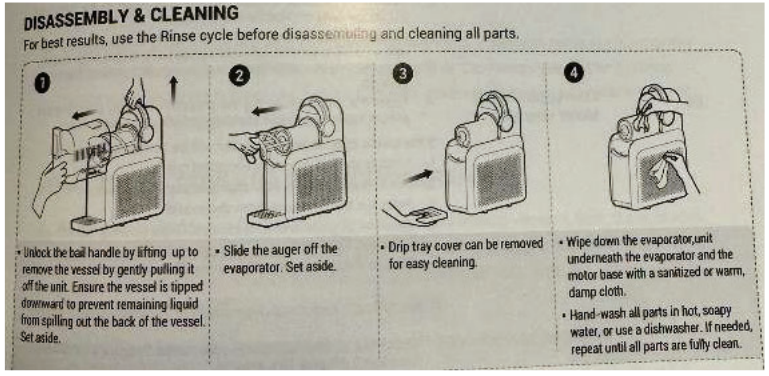
Claim Element	Accused Product
	 Accused Product Instruction Manual.  Accused Product Instruction Manual.

Exhibit 22
Claim Chart Comparing the Dutepa Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

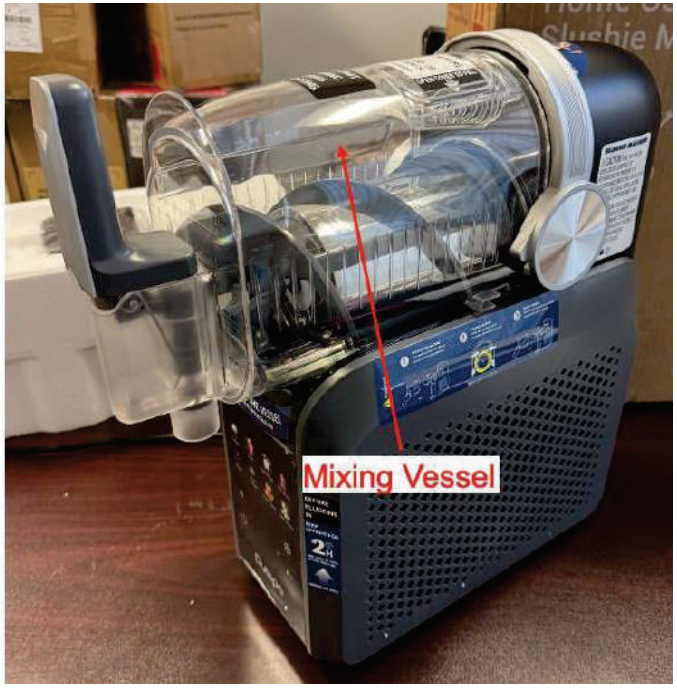
Claim Element	Accused Product
24[b]: a mixing vessel to receive a drink product, the mixing vessel having:	The mixing vessel is configured to receive a drink product.  Photograph of Accused Product (annotated).

Exhibit 22
Claim Chart Comparing the Dutepa Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and	Photograph of Accused Product (annotated). The second opening of the mixing vessel of the Accused Product is configured to dispense a drink product.

Exhibit 22
Claim Chart Comparing the Dutepa Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

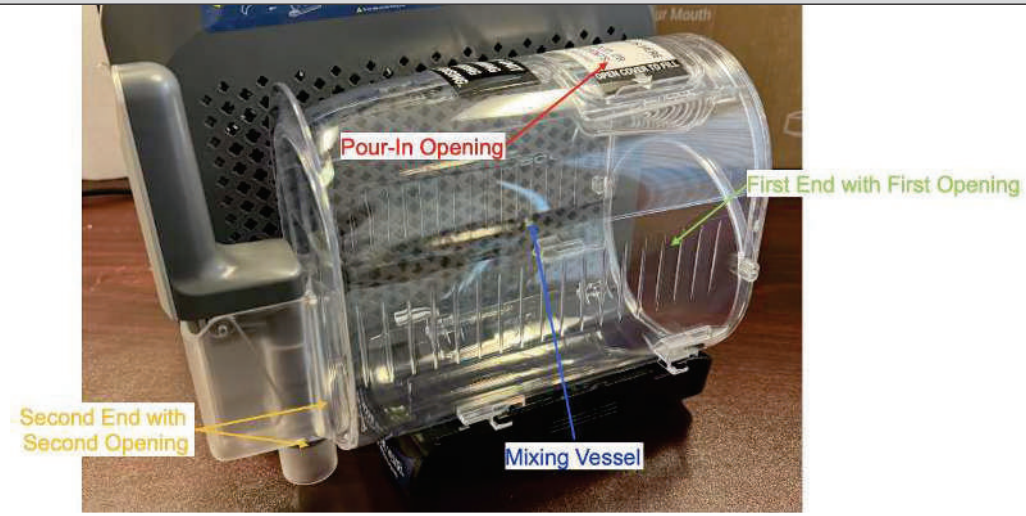
Claim Element	Accused Product
24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;	 Photograph of Accused Product (annotated).
24[c]: a dasher configured to rotate in the mixing vessel;	The dasher of the Accused Product is configured to rotate in the mixing vessel to stir the drink product.

Exhibit 22

Claim Chart Comparing the Dutepa Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

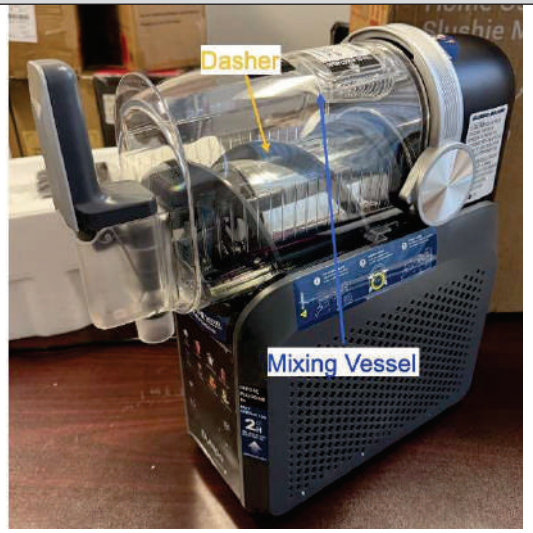
Claim Element	**Accused Product**
	 Photograph of Accused Product (annotated).
24[d]: a motor to drive the dasher;	The Accused Product includes a motor that drives the dasher to rotate it to stir the drink product. As confirmed by product testing, during operation a motor of the frozen drink maker drives the dasher to rotate.

Exhibit 22

Claim Chart Comparing the Dutepa Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

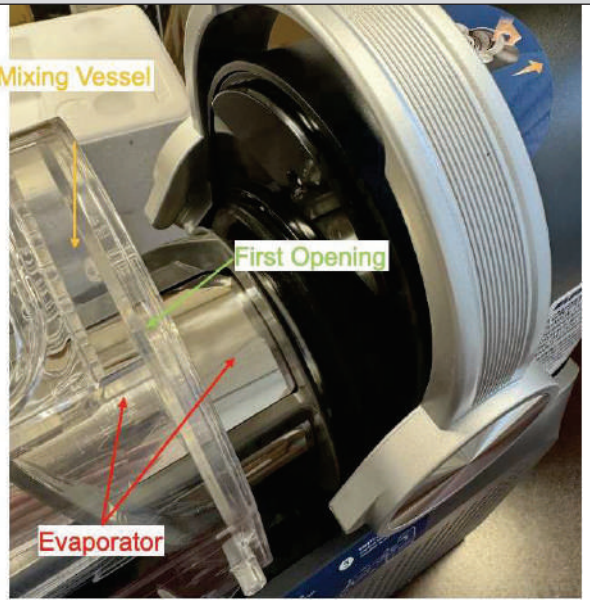
Claim Element	**Accused Product**
24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and	 Photograph of Accused Product (annotated). The evaporator is received through the first opening of the mixing vessel.

Exhibit 22

Claim Chart Comparing the Dutepa Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

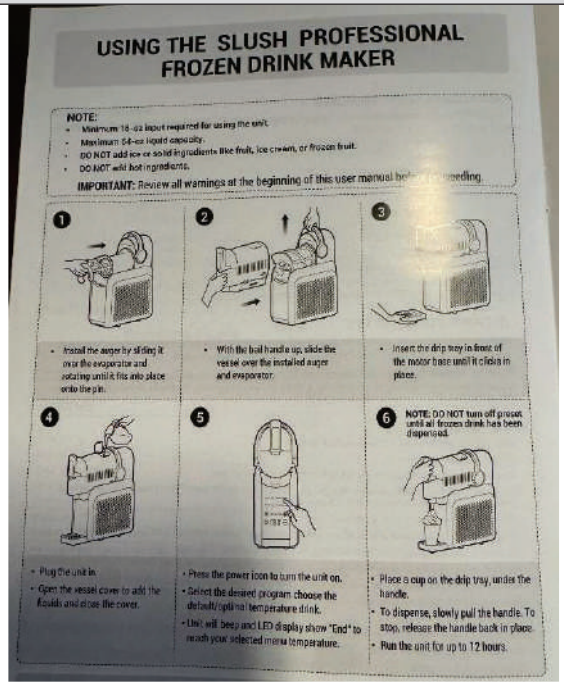
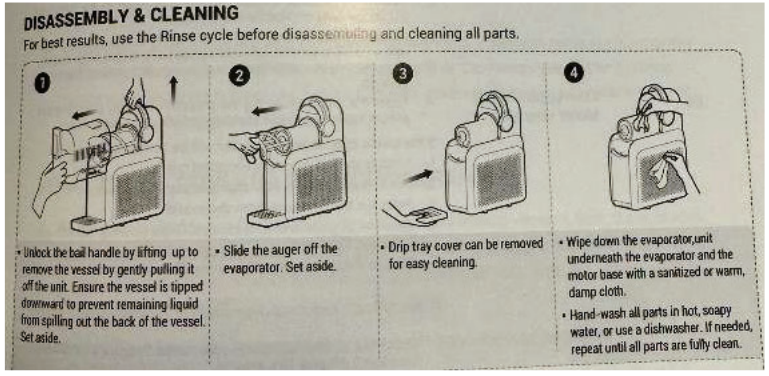
Claim Element	Accused Product
	 Accused Product Instruction Manual.  Accused Product Instruction Manual.

Exhibit 22

Claim Chart Comparing the Dutepa Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

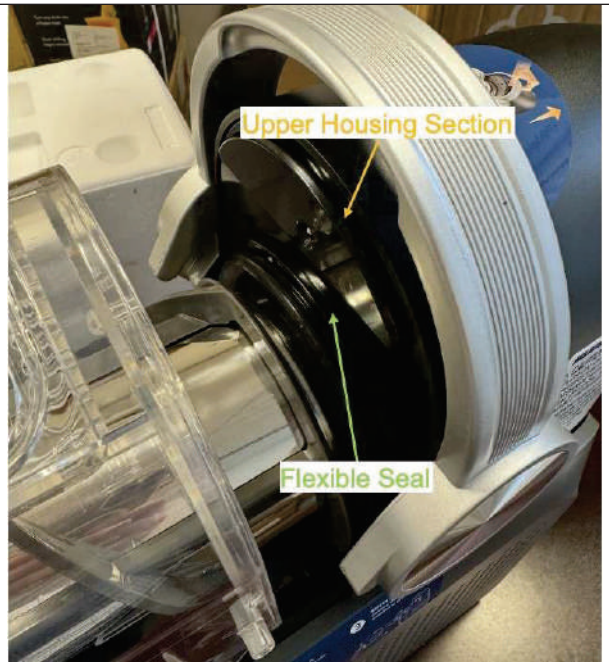
Claim Element	Accused Product
24[f]: a flexible seal arranged proximate to the upper housing section;	 Photograph of Accused Product (annotated). As confirmed by product testing, the flexible seal comprises a flexible material.
24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position, and	The cam feature of the Accused Product controls the coupling of the mixing vessel to the upper housing section when in the coupling position and uncouples the mixing vessel from the upper housing section when in the uncoupling position.

Exhibit 22

Claim Chart Comparing the Dutepa Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

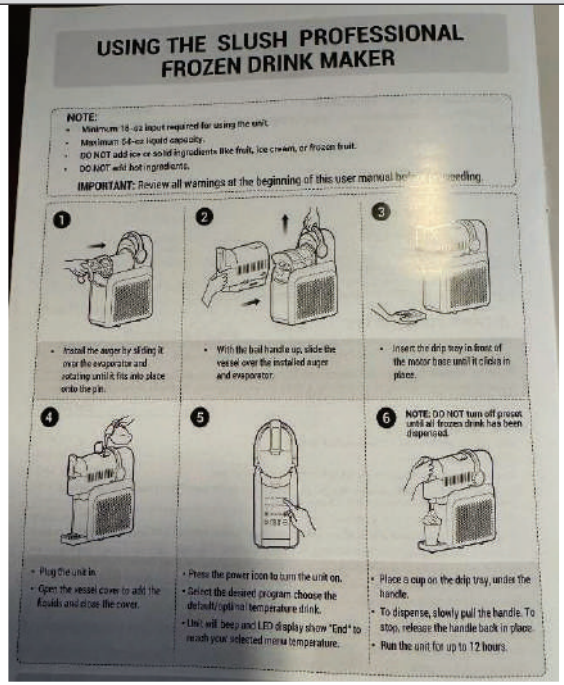
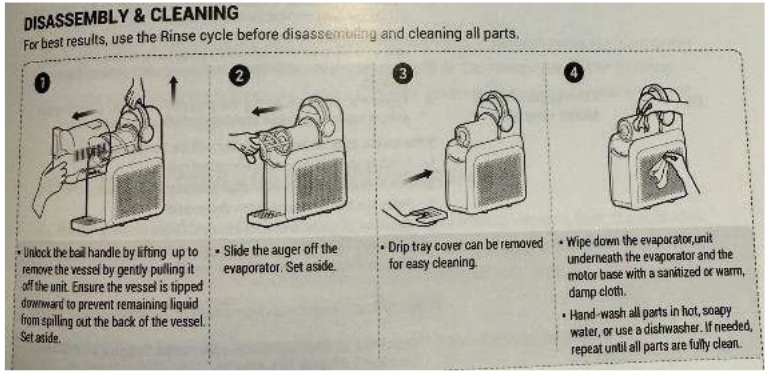
Claim Element	Accused Product
	 Accused Product Instruction Manual.  Accused Product Instruction Manual.

Exhibit 22

Claim Chart Comparing the Dutepa Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

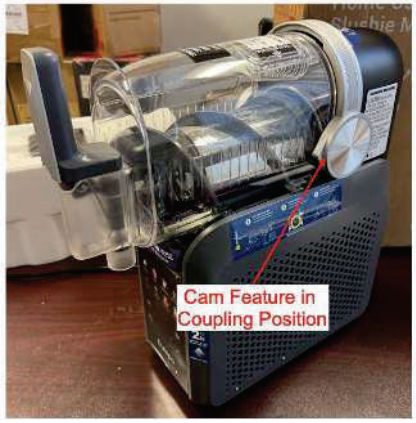
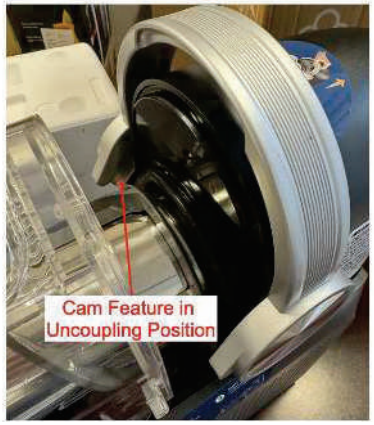
Claim Element	**Accused Product**
	  Photographs of Accused Product (annotated). *Id.*, Cl. 24[a].
24[h]: wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.	When the cam feature of the Accused Product is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal about the first opening.

Exhibit 22

Claim Chart Comparing the Dutepa Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

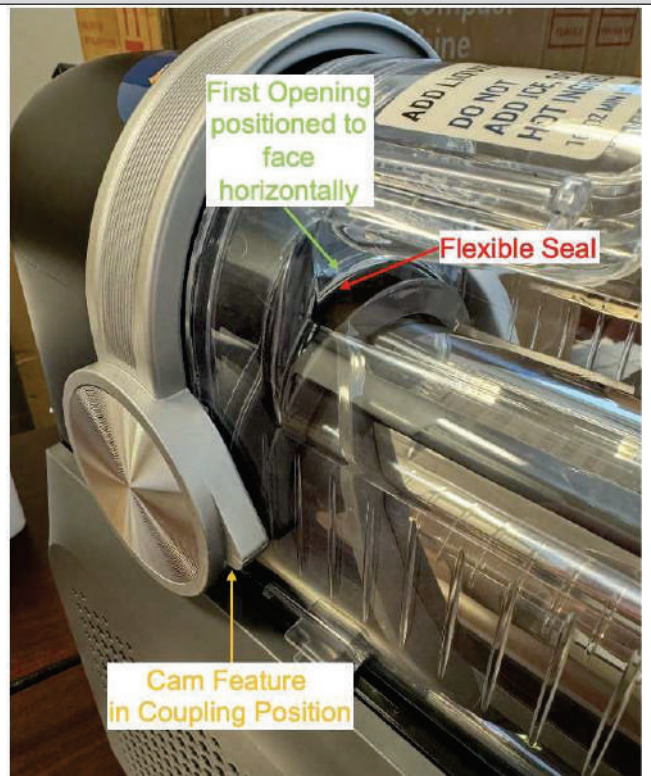
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

EXHIBIT 23

Exhibit 23
Claim Chart Comparing the Fesoiu Frozen Drink Maker to U.S. Patent No. 12,593,855

Below is a chart that applies asserted exemplary independent claim 24 and 30 of U.S. Patent No. 12,593,855 (the "'855 Patent") to the accused Fesoiu Frozen Drink Maker ("Accused Product"), purchased at the following listing: www.amazon.com/dp/B0GTSZLPZW (ASIN B0GTSZLPZW).

The arguments and evidence cited in the chart below are representative and Plaintiffs reserve the right to rely on additional arguments and evidence to show that the above-identified accused product infringes exemplary independent claim 24 and 30 of the '855 Patent.

Claim Element	**Accused Product**
24[Pre.]: A frozen drink maker comprising:	 Accused Product Packaging.

Exhibit 23
Claim Chart Comparing the Fesoiu Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	Photograph of Accused Product.

Exhibit 23
Claim Chart Comparing the Fesoiu Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

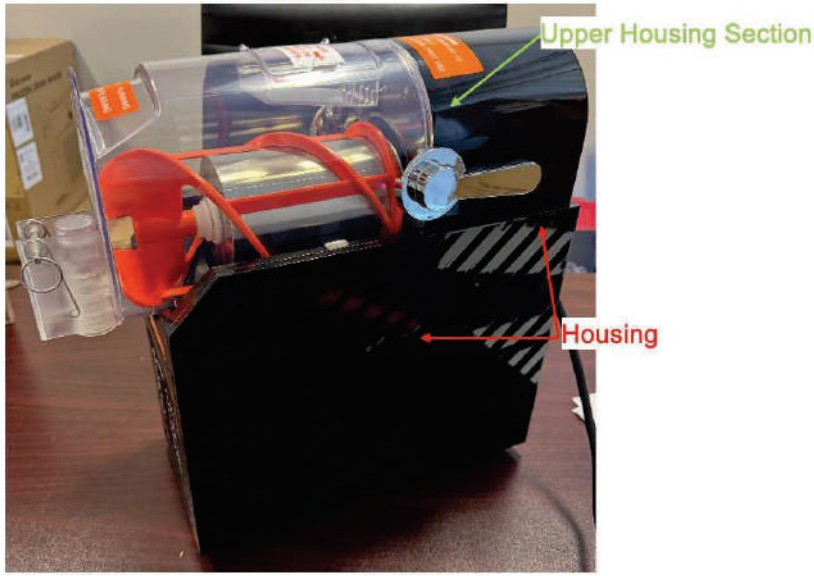
Claim Element	Accused Product
24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;	 Photograph of Accused Product (annotated). The cam feature of the Accused Product is moveable between a coupling position and uncoupling position.

Exhibit 23
Claim Chart Comparing the Fesoiu Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

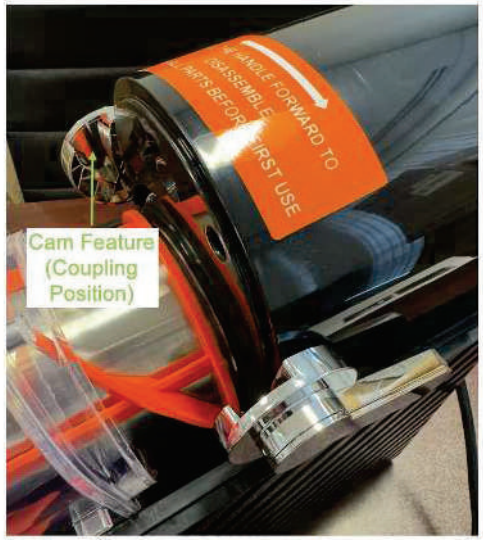
Claim Element	Accused Product
	 Photographs of Accused Product (annotated).

Exhibit 23
Claim Chart Comparing the Fesoiu Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

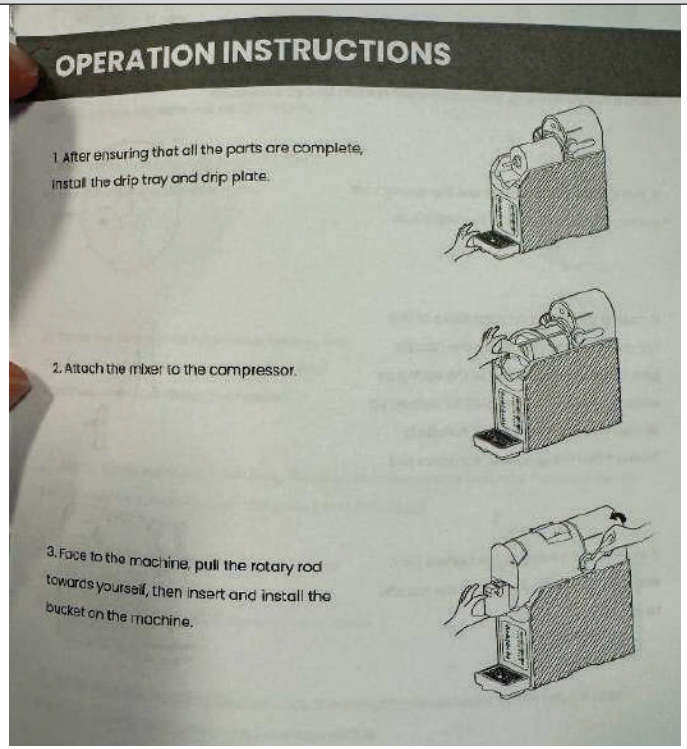
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 23
Claim Chart Comparing the Fesoiu Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

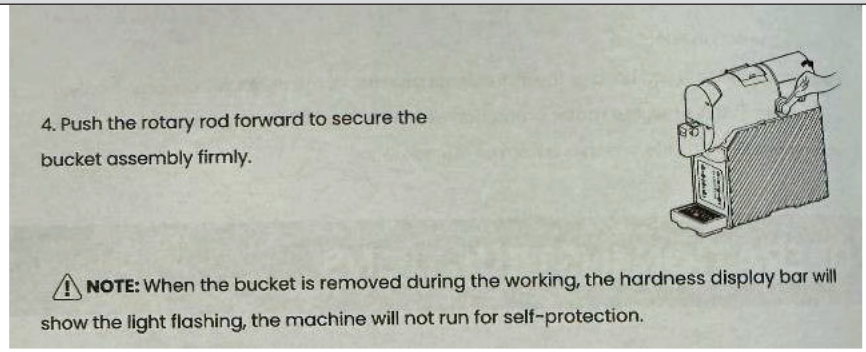
Claim Element	Accused Product
	 Accused Product Instruction Manual.
24[b]: a mixing vessel to receive a drink product, the mixing vessel having:	The mixing vessel is configured to receive a drink product.

Exhibit 23
Claim Chart Comparing the Fesoiu Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

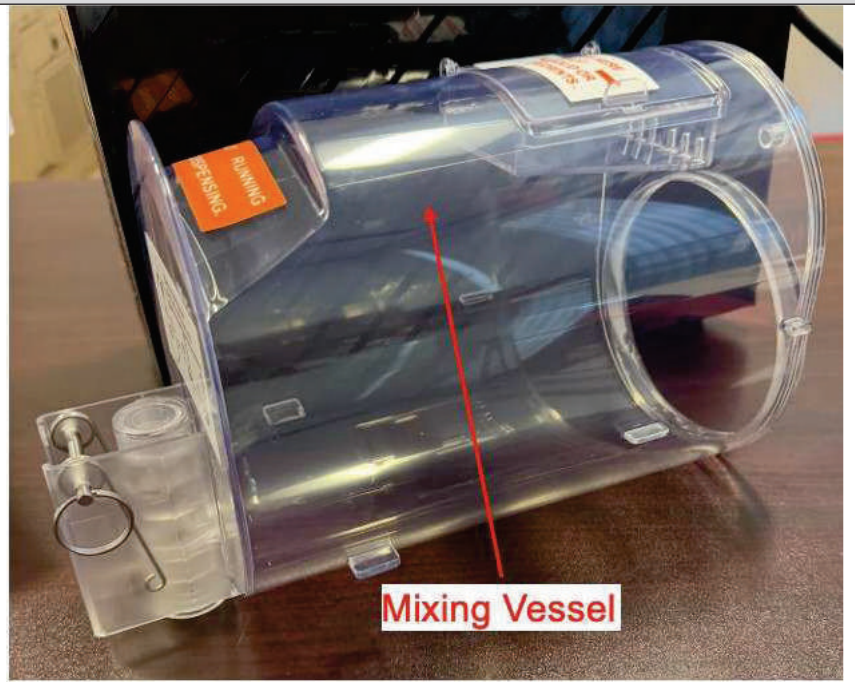
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 23
Claim Chart Comparing the Fesoiu Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

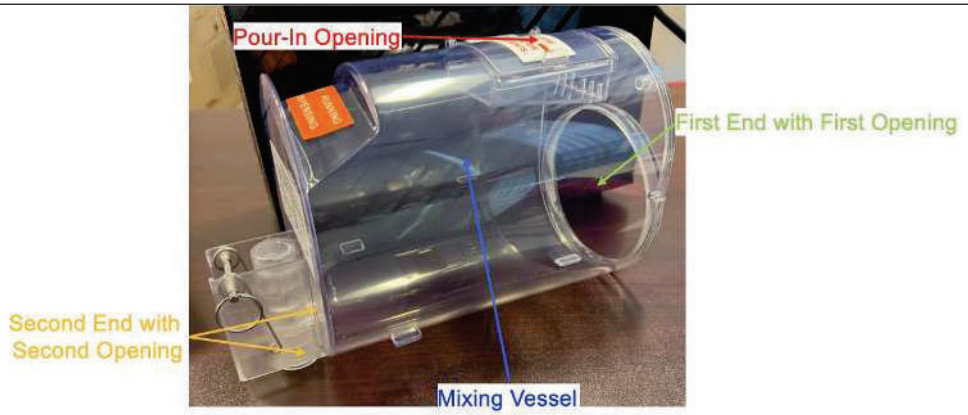
Claim Element	Accused Product
24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and	 Photograph of Accused Product (annotated). The second opening of the mixing vessel of the Accused Product is configured to dispense a drink product.
24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;	 Photograph of Accused Product (annotated).

Exhibit 23

Claim Chart Comparing the Fesoiu Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

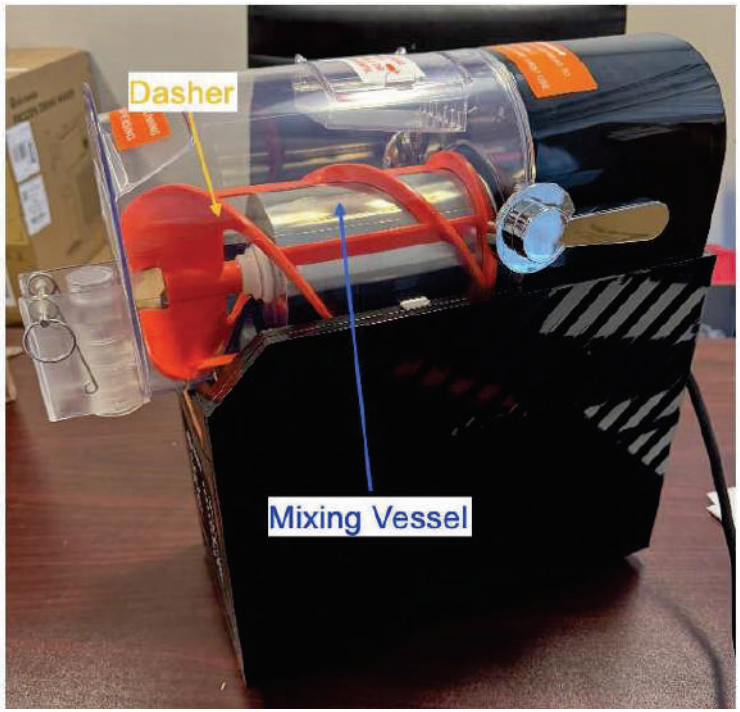
Claim Element	Accused Product
24[c]: a dasher configured to rotate in the mixing vessel;	The dasher of the Accused Product is configured to rotate in the mixing vessel to stir the drink product.  Photograph of Accused Product (annotated).
24[d]: a motor to drive the dasher;	The Accused Product includes a motor that drives the dasher to rotate it to stir the drink product. As confirmed by product testing, during operation a motor of the frozen drink maker drives

Exhibit 23

Claim Chart Comparing the Fesoiu Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

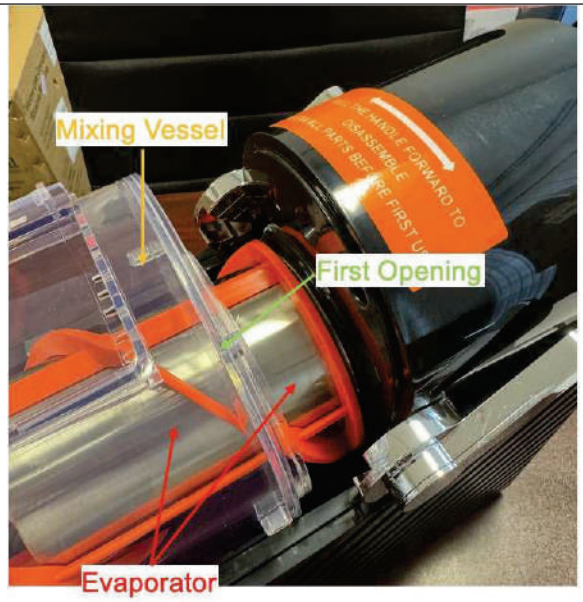
Claim Element	Accused Product
	the dasher to rotate.
24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and	 Photograph of Accused Product (annotated). The evaporator is received through the first opening of the mixing vessel.

Exhibit 23

Claim Chart Comparing the Fesoiu Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

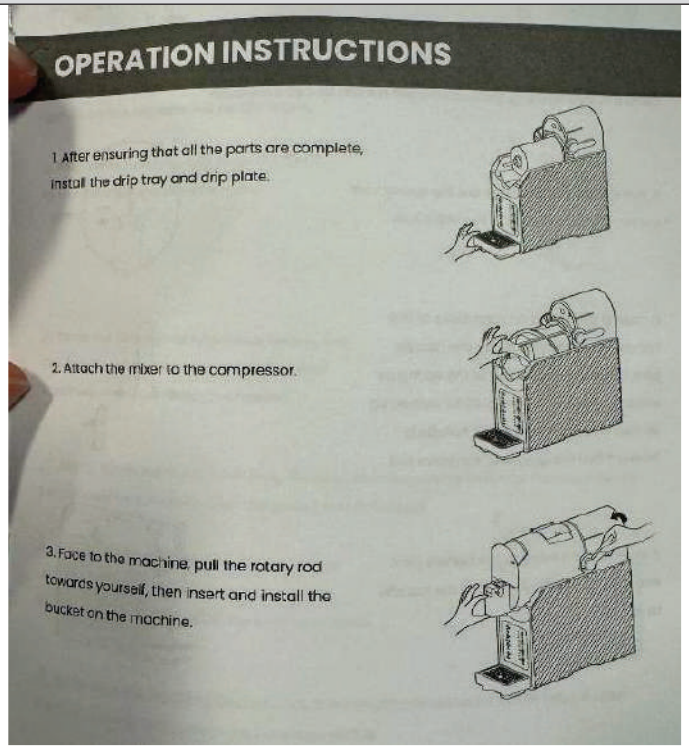
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 23

Claim Chart Comparing the Fesoiu Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

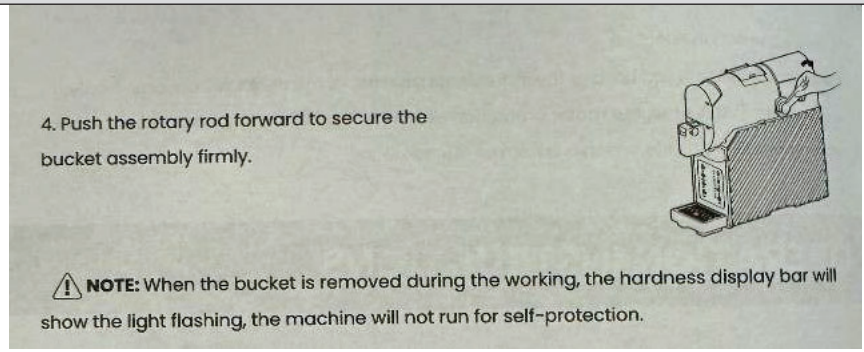
Claim Element	Accused Product
	 Accused Product Instruction Manual.
24[f]: a flexible seal arranged proximate to the upper housing section;	 Photograph of Accused Product (annotated).

Exhibit 23

Claim Chart Comparing the Fesoiu Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

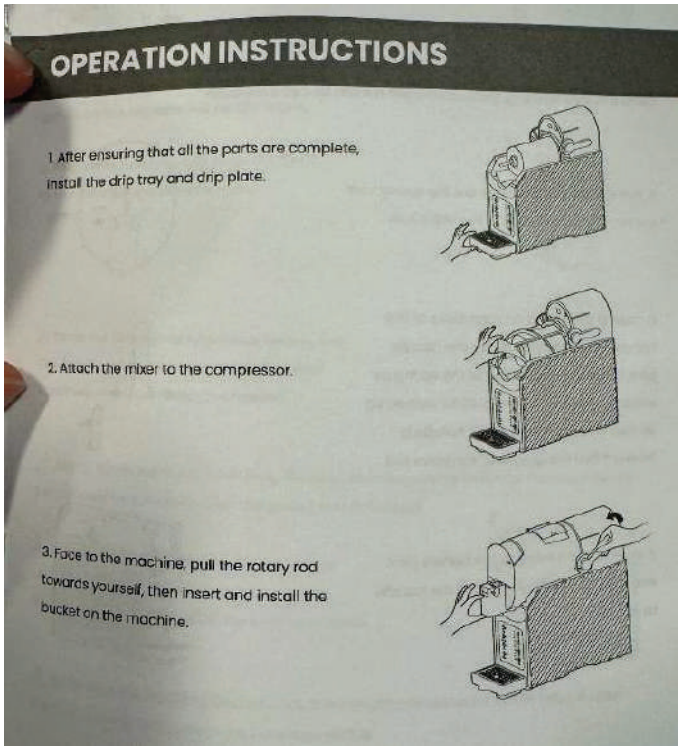
Claim Element	Accused Product
	As confirmed by product testing, the flexible seal comprises a flexible material.
24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position, and	The cam feature of the Accused Product controls the coupling of the mixing vessel to the upper housing section when in the coupling position and uncouples the mixing vessel from the upper housing section when in the uncoupling position.  Accused Product Instruction Manual.

Exhibit 23

Claim Chart Comparing the Fesoiu Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

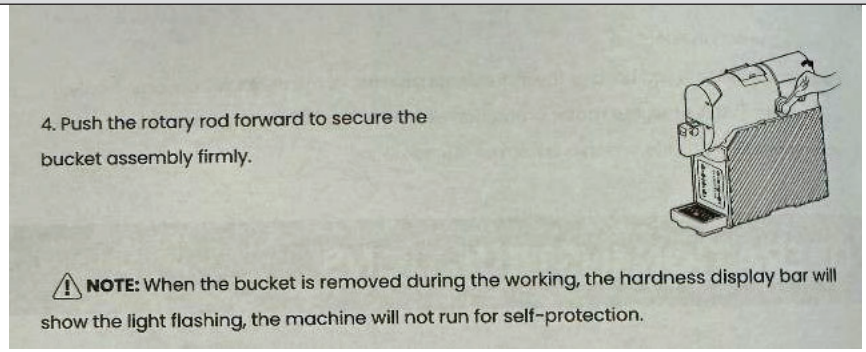
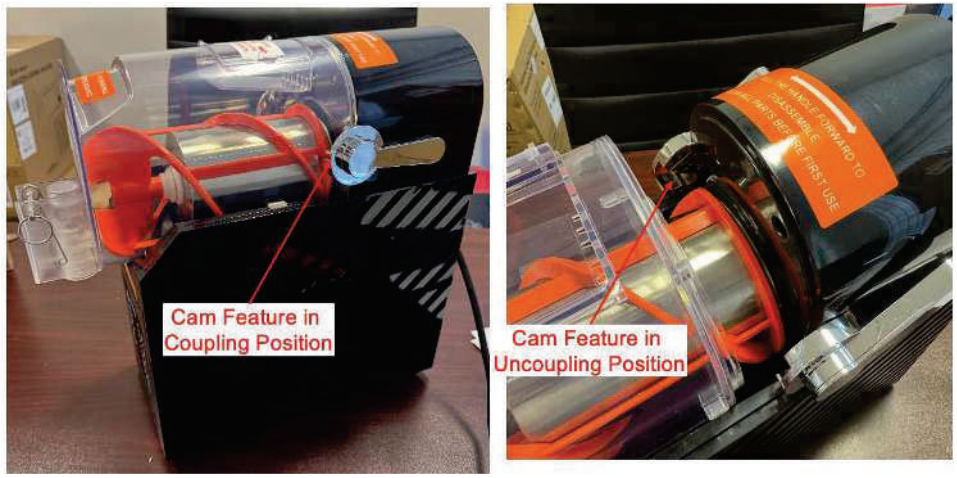
Claim Element	Accused Product
	 Accused Product Instruction Manual.  Photographs of Accused Product (annotated). *Id.*, Cl. 24[a].
24[h]: wherein, when the cam feature is in the coupling position, the first	When the cam feature of the Accused Product is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal

Exhibit 23

Claim Chart Comparing the Fesoiu Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

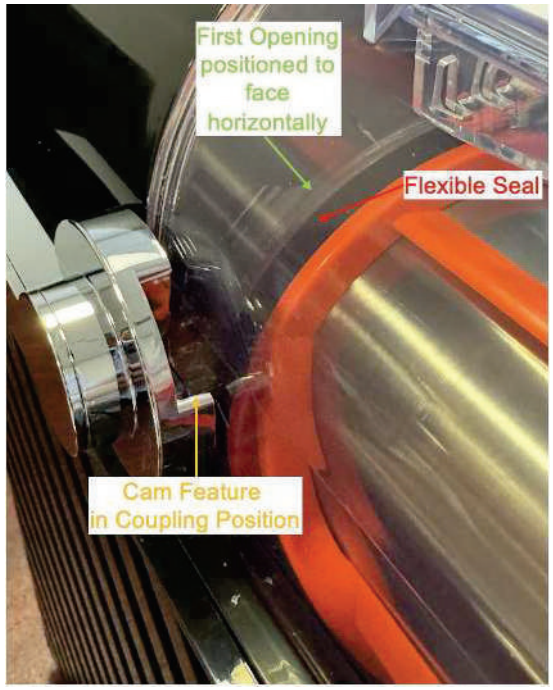
Claim Element	Accused Product
opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.	about the first opening.  Photograph of Accused Product (annotated).
30. The frozen drink maker of claim 24, wherein the housing comprises a lever moveable relative to the upper housing section, wherein moving the lever to a first position moves the cam feature into the coupling position, and wherein, when in the	The lever of the Accused Product is moveable relative to the upper housing section.

Exhibit 23

Claim Chart Comparing the Fesoiu Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	**Accused Product**
coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling of the mixing vessel to the upper housing section.	Photographs of Accused Product (annotated). Moving the lever of the Accused Product to a first position moves the cam feature into the coupling position. When in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling the mixing vessel to the upper housing section.

Exhibit 23

Claim Chart Comparing the Fesoiu Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

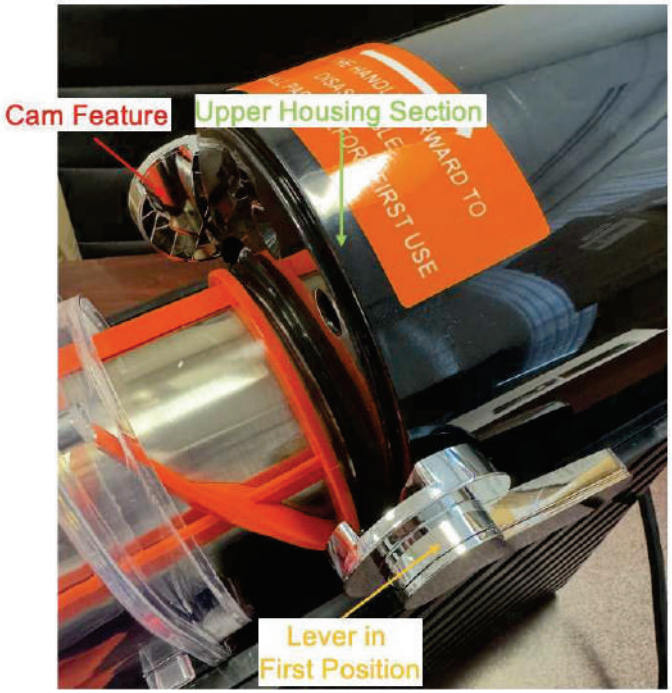
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 23

Claim Chart Comparing the Fesoiu Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

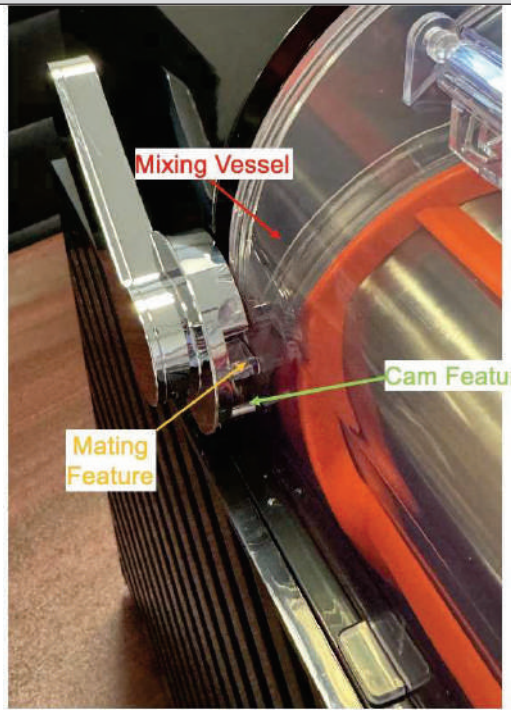
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

EXHIBIT 24

Exhibit 24
Claim Chart Comparing the Fohere Frozen Drink Maker to U.S. Patent No. 12,593,855

Below is a chart that applies asserted exemplary independent claim 24 of U.S. Patent No. 12,593,855 (the "'855 Patent") to the accused Fohere Frozen Drink Maker (the "Accused Product"). This Accused Product was purchased at the following listings:

- www.amazon.com/dp/B0FSQHLWG4 (ASIN B0FSQHLWG4)
- www.amazon.com/dp/B0FR9C7RPY (ASIN B0FR9C7RPY)

Inspection of the Accused Products purchased at each of the foregoing listings confirms that each is identical, varying only in color. The following contentions use photographs taken of one of the Accused Products, but each feature shown is identically present (with the exception of color) in all purchased Accused Products.

The arguments and evidence cited in the chart below are representative and Plaintiffs reserve the right to rely on additional arguments and evidence to show that the above-identified accused product infringes exemplary independent claim 24 of the '855 Patent.

Claim Element	**Accused Product**
24[Pre.]: A frozen drink maker comprising:	 Accused Product Packaging.

Exhibit 24
Claim Chart Comparing the Fohere Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Photograph of Accused Product.

Exhibit 24
Claim Chart Comparing the Fohere Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

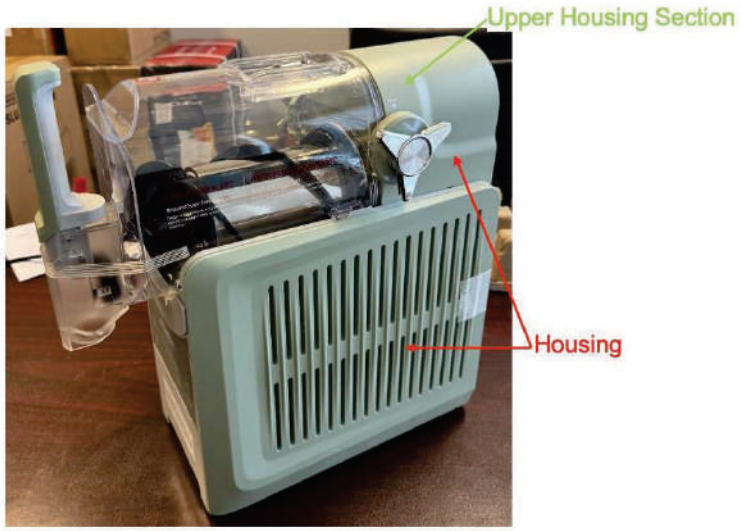
Claim Element	Accused Product
24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;	 Photograph of Accused Product (annotated). The cam feature of the Accused Product is moveable between a coupling position and uncoupling position.

Exhibit 24
Claim Chart Comparing the Fohere Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

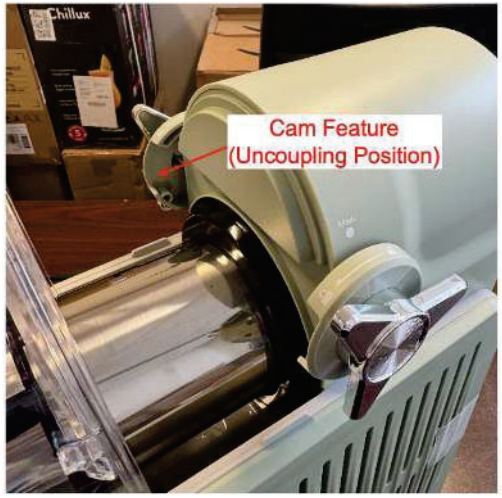
Claim Element	Accused Product
	 Photographs of Accused Product (annotated).

Exhibit 24
Claim Chart Comparing the Fohere Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

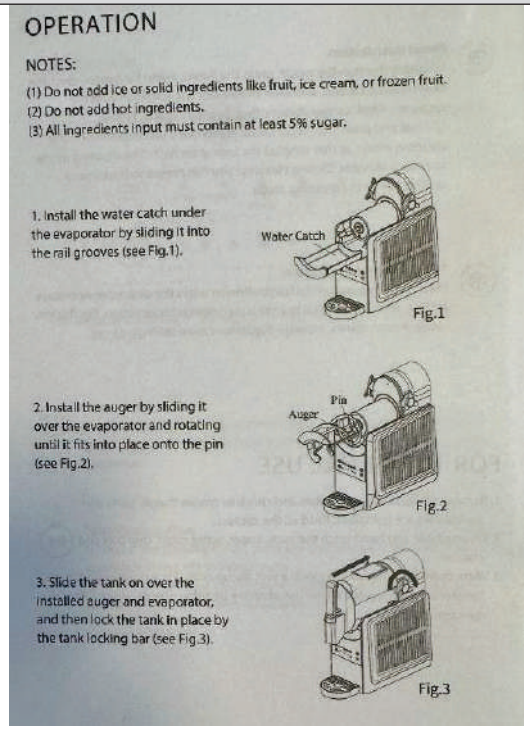
Claim Element	Accused Product
	 Accused Product Instruction Manual.
24[b]: a mixing vessel to receive a drink product, the mixing vessel having:	The mixing vessel is configured to receive a drink product.

Exhibit 24
Claim Chart Comparing the Fohere Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

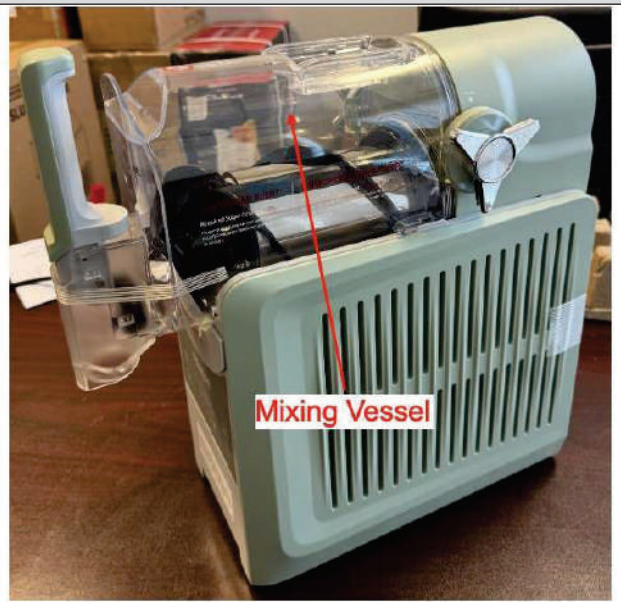
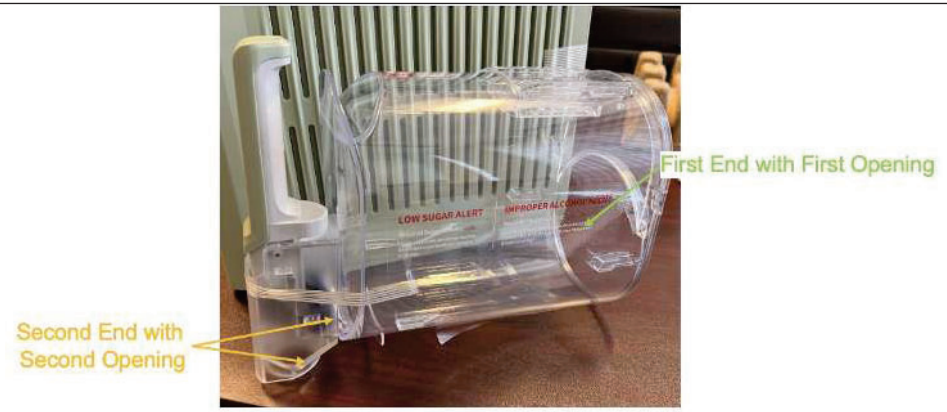
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and	 Photograph of Accused Product (annotated).

Exhibit 24
Claim Chart Comparing the Fohere Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

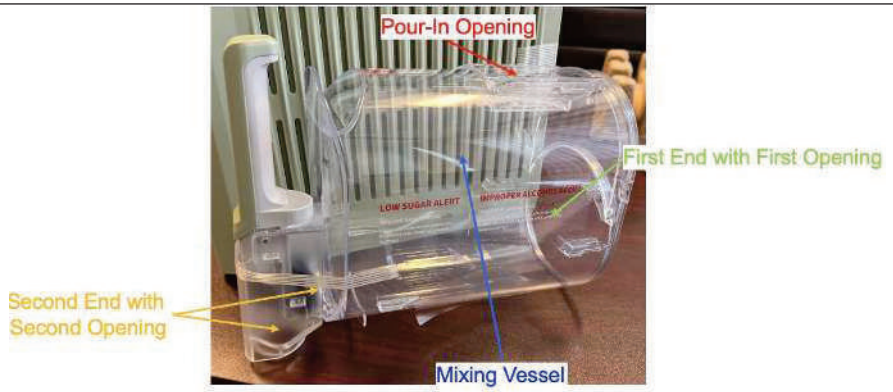
Claim Element	Accused Product
	The second opening of the mixing vessel of the Accused Product is configured to dispense a drink product.
24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;	 Photograph of Accused Product (annotated).
24[c]: a dasher configured to rotate in the mixing vessel;	The dasher of the Accused Product is configured to rotate in the mixing vessel to stir the drink product.

Exhibit 24
Claim Chart Comparing the Fohere Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

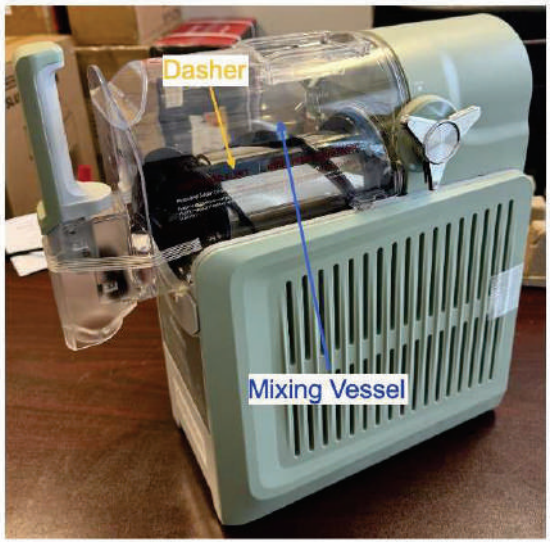
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
24[d]: a motor to drive the dasher;	The Accused Product includes a motor that drives the dasher to rotate it to stir the drink product. As confirmed by product testing, during operation a motor of the frozen drink maker drives the dasher to rotate.

Exhibit 24

Claim Chart Comparing the Fohere Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

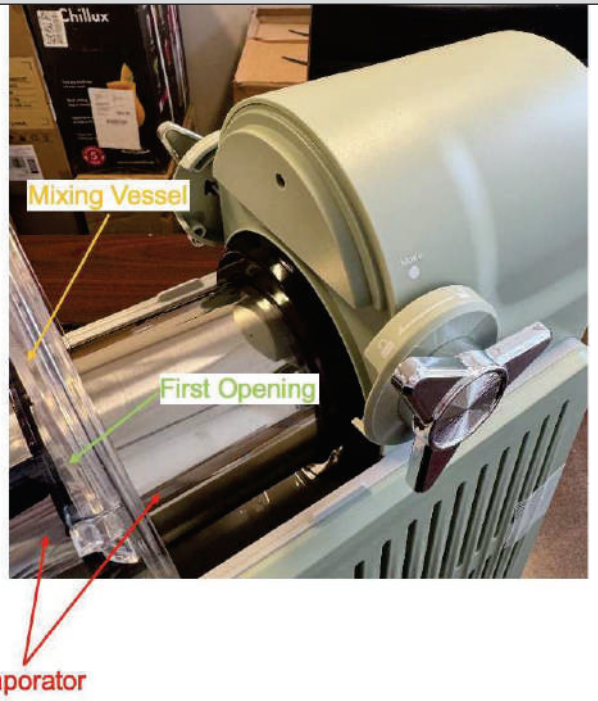
Claim Element	Accused Product
24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and	 Photograph of Accused Product (annotated). The evaporator is received through the first opening of the mixing vessel.

Exhibit 24

Claim Chart Comparing the Fohere Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

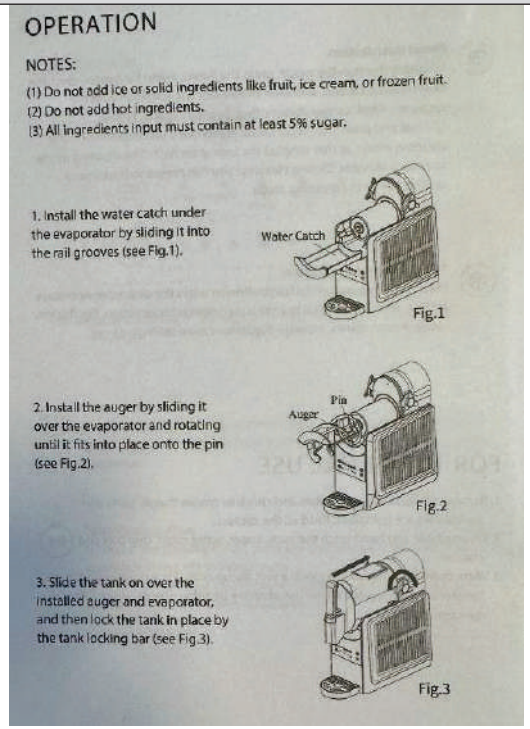
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 24

Claim Chart Comparing the Fohere Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

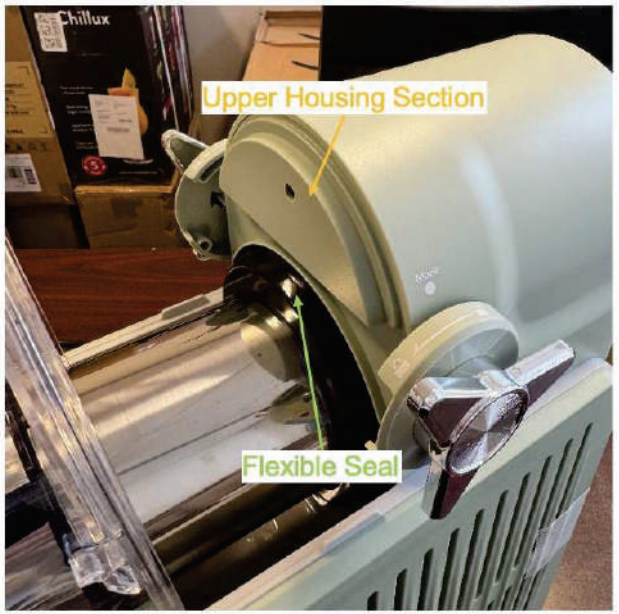
Claim Element	**Accused Product**
24[f]: a flexible seal arranged proximate to the upper housing section;	 Photograph of Accused Product (annotated). As confirmed by product testing, the flexible seal comprises a flexible material.
24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position, and	The cam feature of the Accused Product controls the coupling of the mixing vessel to the upper housing section when in the coupling position and uncouples the mixing vessel from the upper housing section when in the uncoupling position.

Exhibit 24

Claim Chart Comparing the Fohere Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

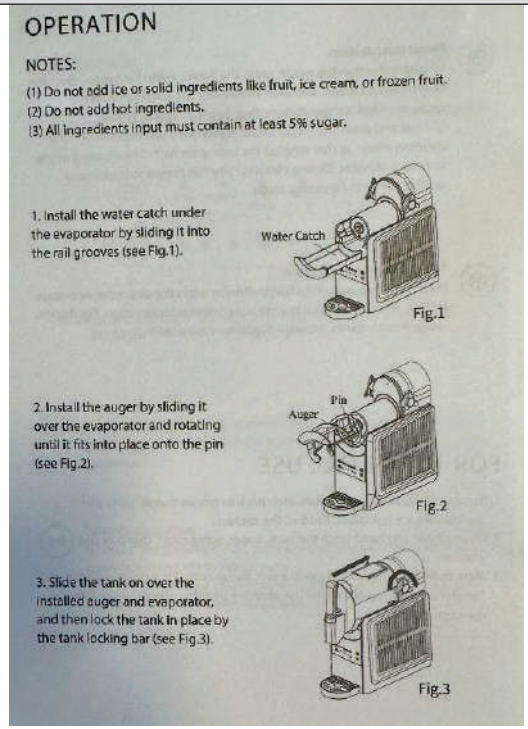
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 24

Claim Chart Comparing the Fohere Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

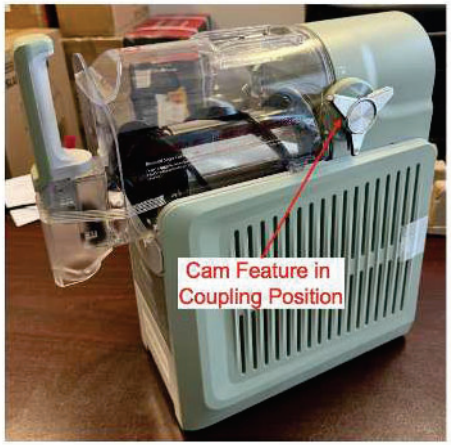
Claim Element	**Accused Product**
	 Photographs of Accused Product (annotated). *Id.*, Cl. 24[a].
24[h]: wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.	When the cam feature of the Accused Product is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal about the first opening.

Exhibit 24

Claim Chart Comparing the Fohere Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

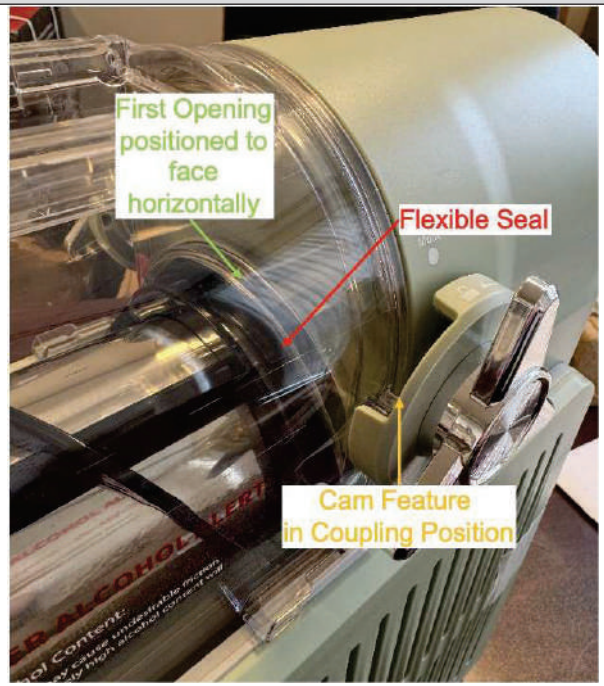
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

EXHIBIT 25

Exhibit 25
Claim Chart Comparing the Foyoconven Frozen Drink Maker to U.S. Patent No. 12,593,855

Below is a chart that applies asserted exemplary independent claim 24 of U.S. Patent No. 12,593,855 (the "'855 Patent") to the accused Foyoconven Frozen Drink Maker ("Accused Product"), purchased at the following listing: https://www.amazon.com/dp/B0FVFKBHF8 (ASIN B0FVFKBHF8).

The arguments and evidence cited in the chart below are representative and Plaintiffs reserve the right to rely on additional arguments and evidence to show that the above-identified accused product infringes exemplary independent claim 24 of the '855 Patent.

Claim Element	Accused Product
24[Pre.]: A frozen drink maker comprising:	 Accused Product Packaging.

Exhibit 25
Claim Chart Comparing the Foyoconven Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

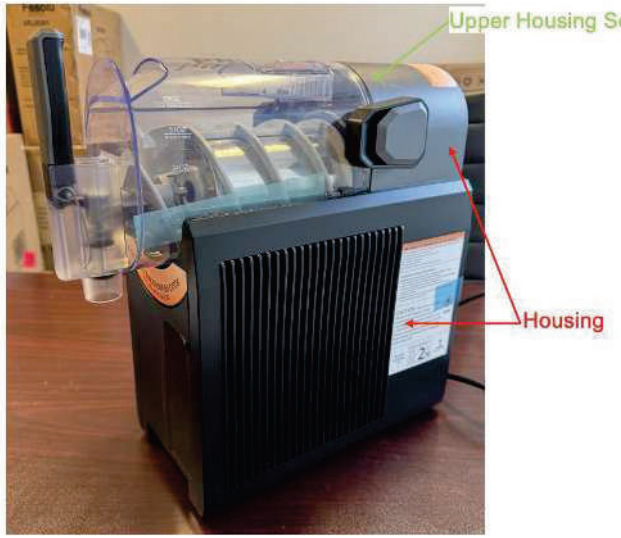
Claim Element	Accused Product
24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;	 Photograph of Accused Product (annotated). The cam feature of the Accused Product is moveable between a coupling position and uncoupling position.

Exhibit 25
Claim Chart Comparing the Foyoconven Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Photographs of Accused Product (annotated).

Exhibit 25
Claim Chart Comparing the Foyoconven Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Accused Product Instruction Manual.
24[b]: a mixing vessel to receive a drink product, the mixing vessel having:	The mixing vessel is configured to receive a drink product.

Exhibit 25
Claim Chart Comparing the Foyoconven Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

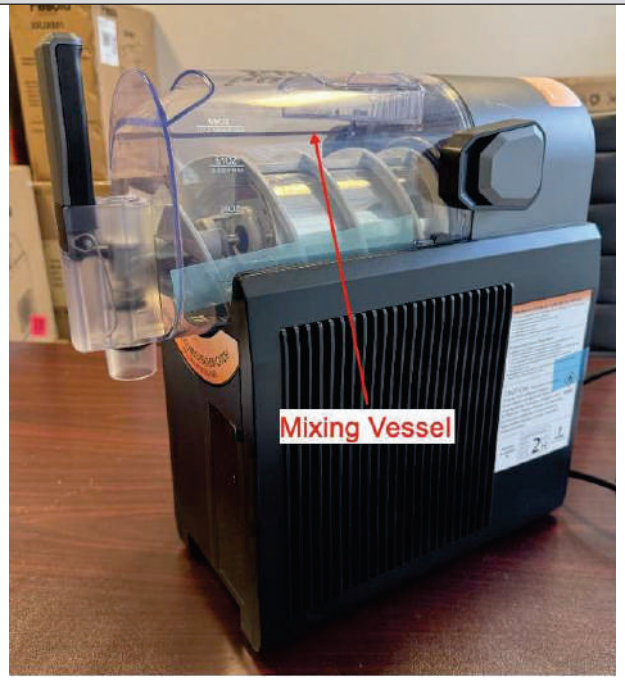
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 25
Claim Chart Comparing the Foyoconven Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

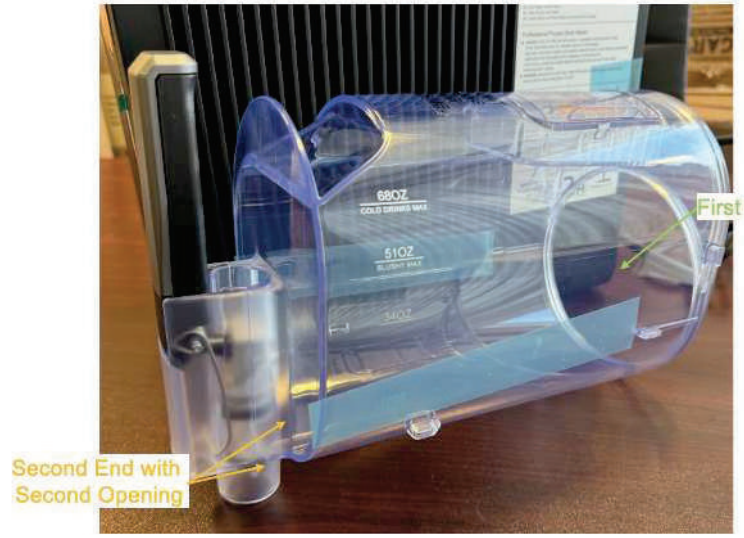
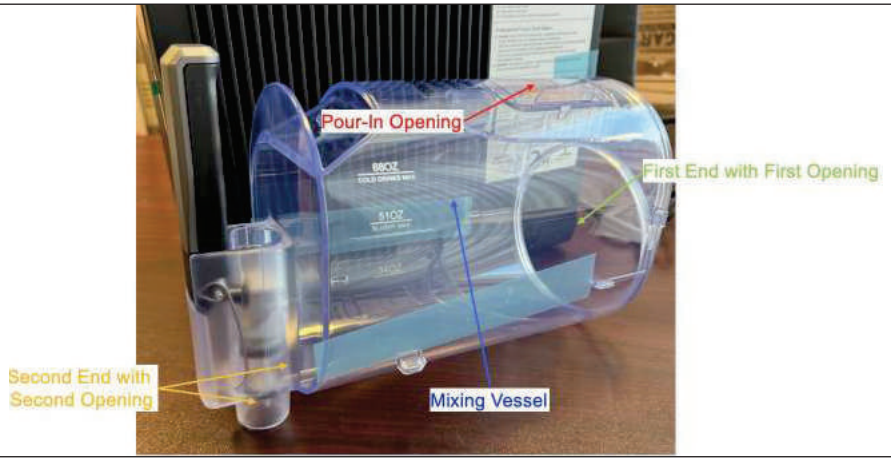
Claim Element	Accused Product
24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and	 Photograph of Accused Product (annotated). The second opening of the mixing vessel of the Accused Product is configured to dispense a drink product.
24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;	

Exhibit 25
Claim Chart Comparing the Foyoconven Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	Photograph of Accused Product (annotated).
24[c]: a dasher configured to rotate in the mixing vessel;	The dasher of the Accused Product is configured to rotate in the mixing vessel to stir the drink product. Photograph of Accused Product (annotated).
24[d]: a motor to drive the dasher;	The Accused Product includes a motor that drives the dasher to rotate it to stir the drink product.

Exhibit 25
Claim Chart Comparing the Foyoconven Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

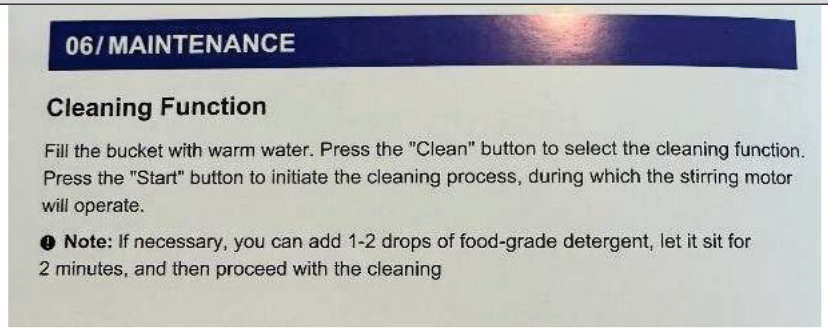
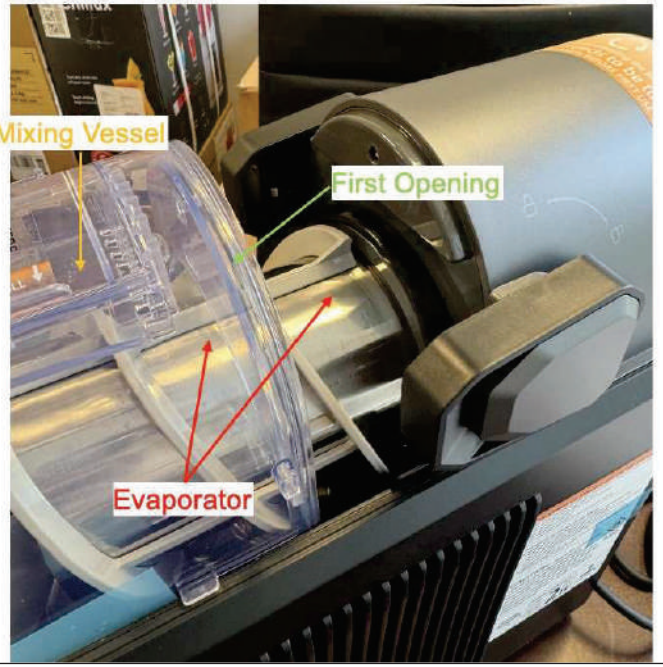
Claim Element	Accused Product
	 Accused Product Instruction Manual. As confirmed by product testing, during operation a motor of the frozen drink maker drives the dasher to rotate.
24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and	

Exhibit 25

Claim Chart Comparing the Foyoconven Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

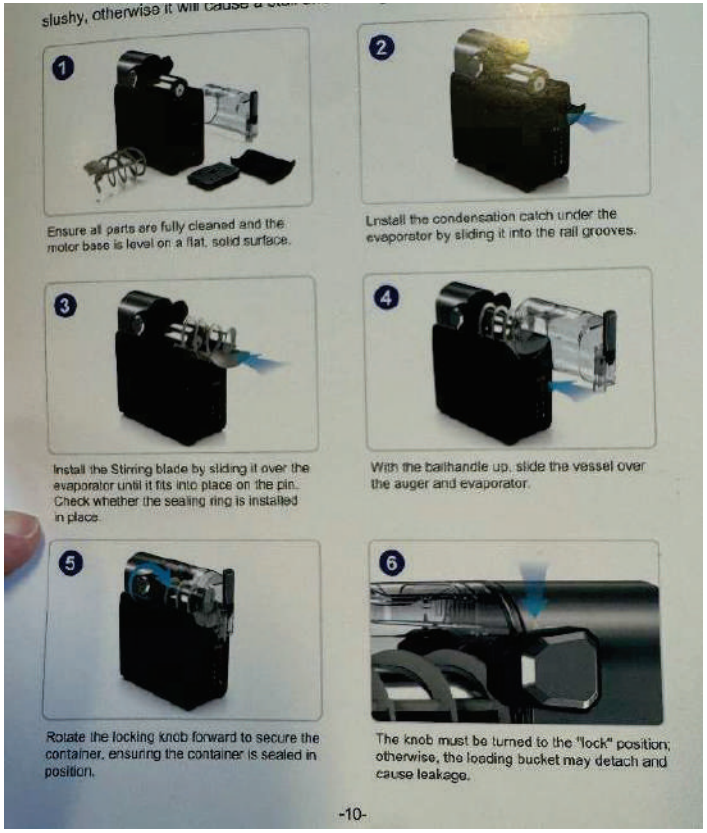
Claim Element	Accused Product
	Photograph of Accused Product (annotated). The evaporator is received through the first opening of the mixing vessel.  Accused Product Instruction Manual.

Exhibit 25

Claim Chart Comparing the Foyoconven Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
24[f]: a flexible seal arranged proximate to the upper housing section;	 Photograph of Accused Product (annotated). As confirmed by product testing, the flexible seal comprises a flexible material.
24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position, and	The cam feature of the Accused Product controls the coupling of the mixing vessel to the upper housing section when in the coupling position and uncouples the mixing vessel from the upper housing section when in the uncoupling position.

Exhibit 25

Claim Chart Comparing the Foyoconven Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 25

Claim Chart Comparing the Foyoconven Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

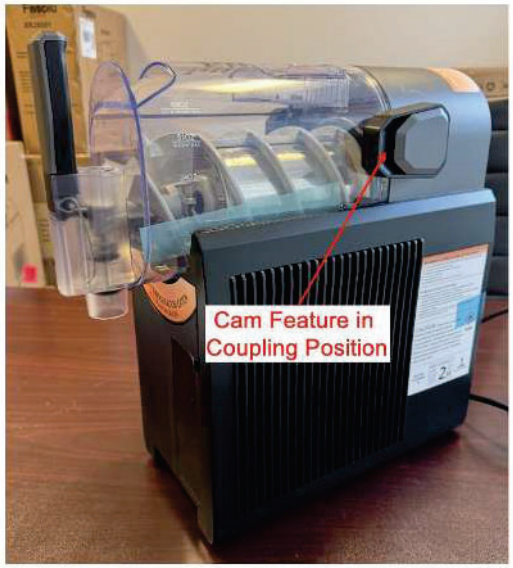
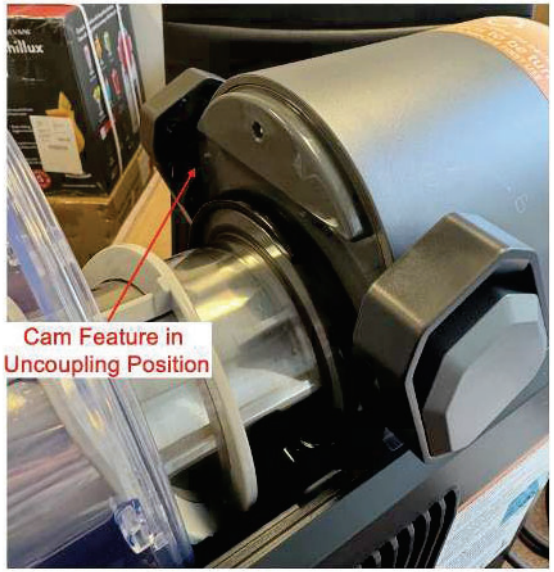
Claim Element	**Accused Product**
	  Photographs of Accused Product (annotated). *Id.*, Cl. 24[a].
24[h]: wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.	When the cam feature of the Accused Product is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal about the first opening.

Exhibit 25

Claim Chart Comparing the Foyoconven Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

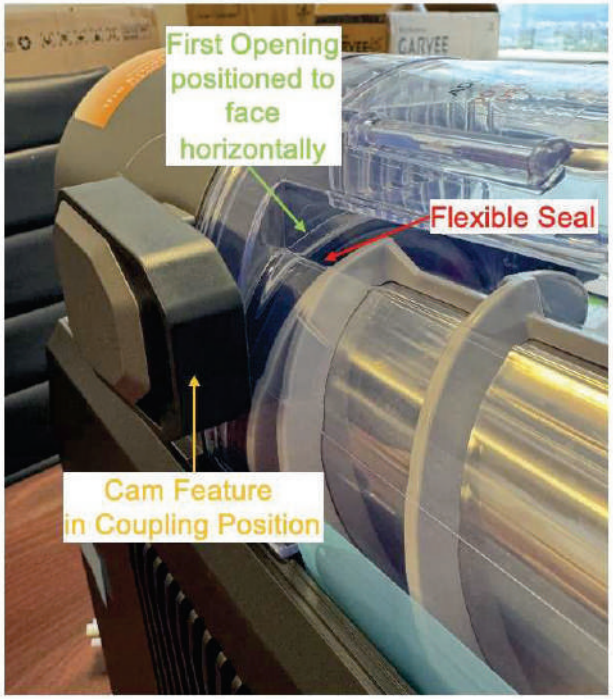
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

EXHIBIT 26

Exhibit 26
Claim Chart Comparing the GSEICE Frozen Drink Maker to U.S. Patent No. 12,593,855

Below is a chart that applies asserted exemplary independent claim 24 and 30 of U.S. Patent No. 12,593,855 (the "'855 Patent") to the accused GSEICE Frozen Drink Maker (the "Accused Product"). This Accused Product was purchased at the following listings:

- www.amazon.com/dp/B0FF9SN2GV (ASIN B0FF9SN2GV)
- www.amazon.com/dp/B0FSKR56YN (ASIN B0FSKR56YN)

Inspection of the Accused Products purchased at each of the foregoing listings confirms that each is identical, varying only in color. The following contentions use photographs taken of one of the Accused Products, but each feature shown is identically present (with the exception of color) in all purchased Accused Products.

The arguments and evidence cited in the chart below are representative and Plaintiffs reserve the right to rely on additional arguments and evidence to show that the above-identified accused product infringes exemplary independent claim 24 and 30 of the '855 Patent.

Claim Element	**Accused Product**
24[Pre.]: A frozen drink maker comprising:	 Accused Product Packaging.

Exhibit 26
Claim Chart Comparing the GSEICE Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

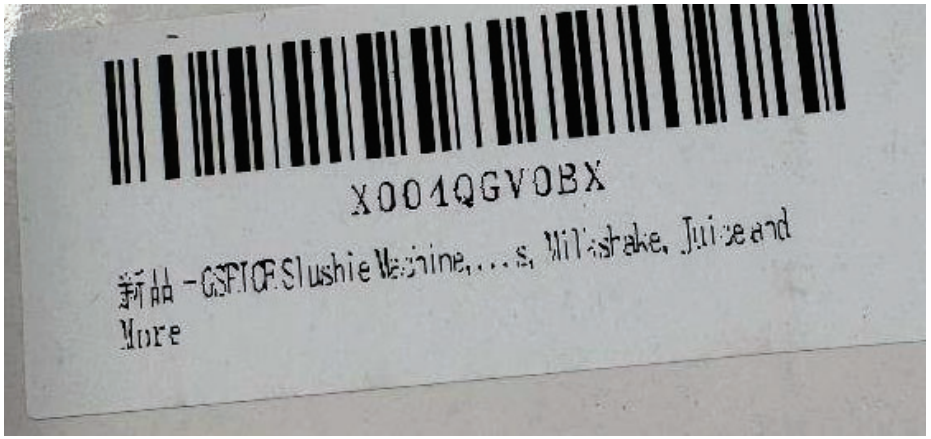
Claim Element	Accused Product
	 Accused Product Packaging.

Exhibit 26
Claim Chart Comparing the GSEICE Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;	 Photograph of Accused Product (annotated). The cam feature of the Accused Product is moveable between a coupling position and uncoupling position.

Exhibit 26
Claim Chart Comparing the GSEICE Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	Photographs of Accused Product (annotated).

Exhibit 26
Claim Chart Comparing the GSEICE Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

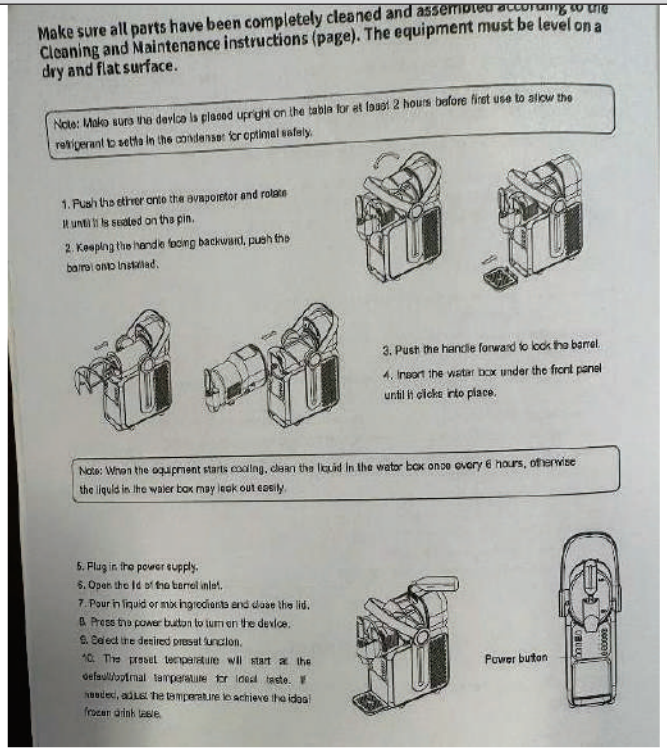
Claim Element	Accused Product
	 Accused Product Instruction Manual.
24[b]: a mixing vessel to receive a drink product, the mixing vessel having:	The mixing vessel is configured to receive a drink product.

Exhibit 26
Claim Chart Comparing the GSEICE Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 26
Claim Chart Comparing the GSEICE Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

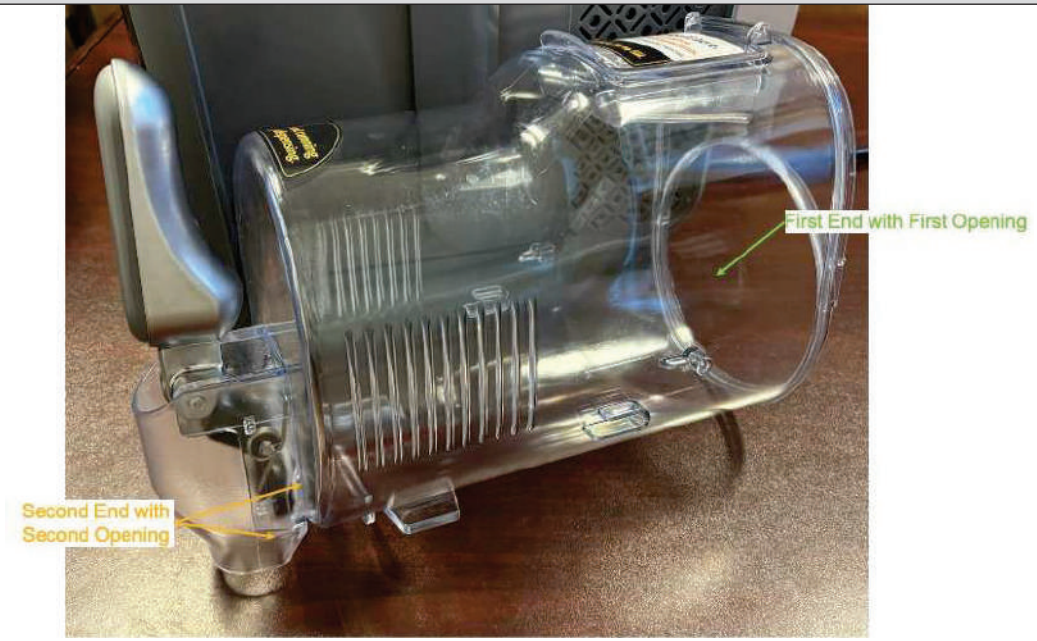
Claim Element	Accused Product
24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and	 Photograph of Accused Product (annotated). The second opening of the mixing vessel of the Accused Product is configured to dispense a drink product.

Exhibit 26
Claim Chart Comparing the GSEICE Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

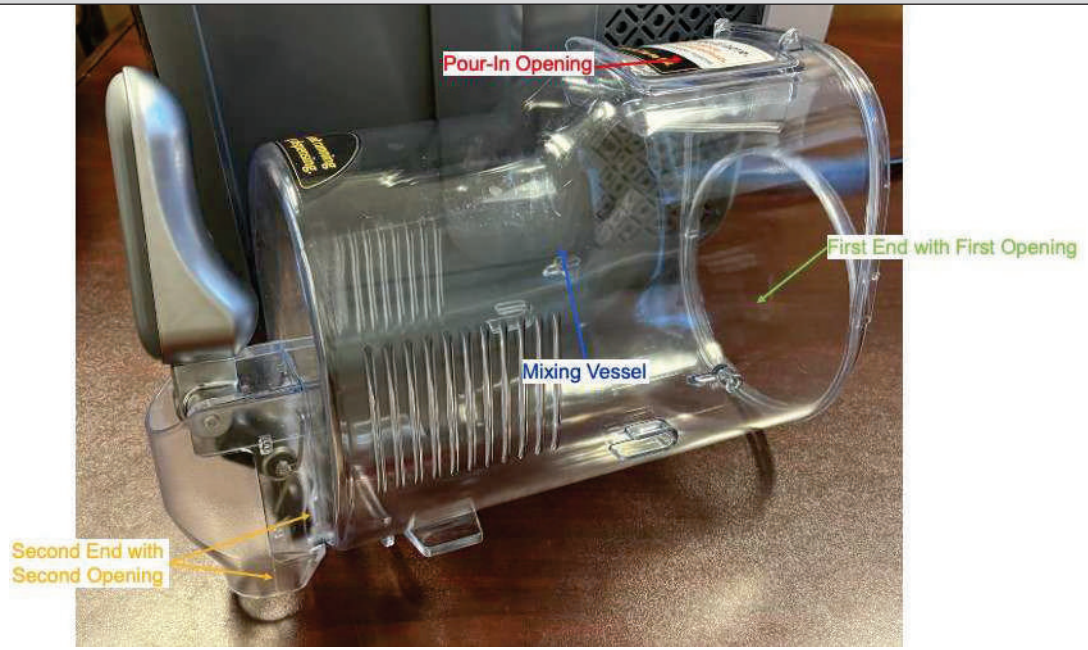
Claim Element	Accused Product
24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;	 Photograph of Accused Product (annotated).
24[c]: a dasher configured to rotate in the mixing vessel;	The dasher of the Accused Product is configured to rotate in the mixing vessel to stir the drink product.

Exhibit 26

Claim Chart Comparing the GSEICE Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
24[d]: a motor to drive the dasher;	The Accused Product includes a motor that drives the dasher to rotate it to stir the drink product.

Exhibit 26

Claim Chart Comparing the GSEICE Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

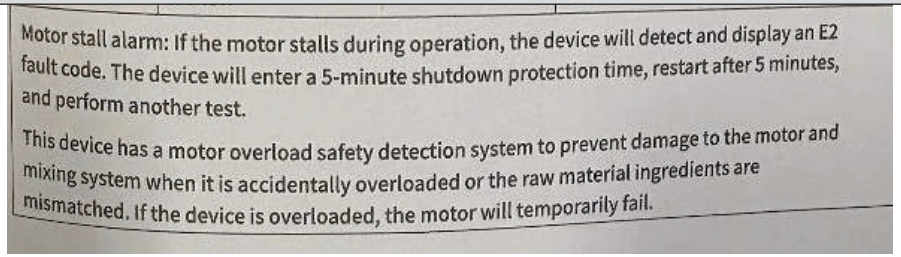
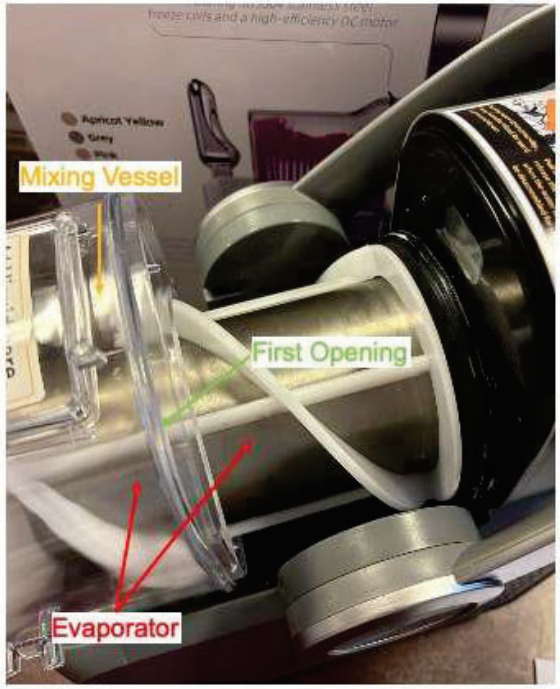
Claim Element	Accused Product
	 Accused Product Instruction Manual. As confirmed by product testing, during operation a motor of the frozen drink maker drives the dasher to rotate.
24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and	

Exhibit 26

Claim Chart Comparing the GSEICE Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

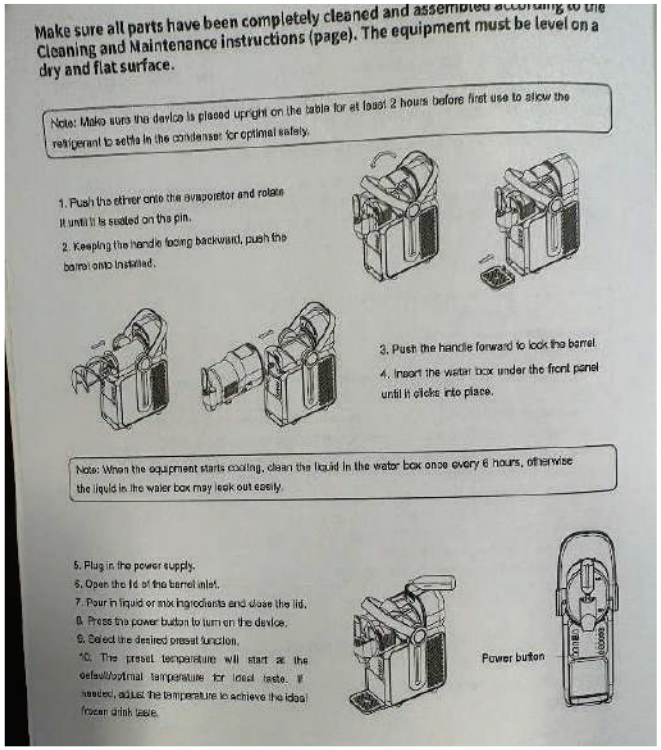
Claim Element	Accused Product
	Photograph of Accused Product (annotated). The evaporator is received through the first opening of the mixing vessel.  Accused Product Instruction Manual.

Exhibit 26

Claim Chart Comparing the GSEICE Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

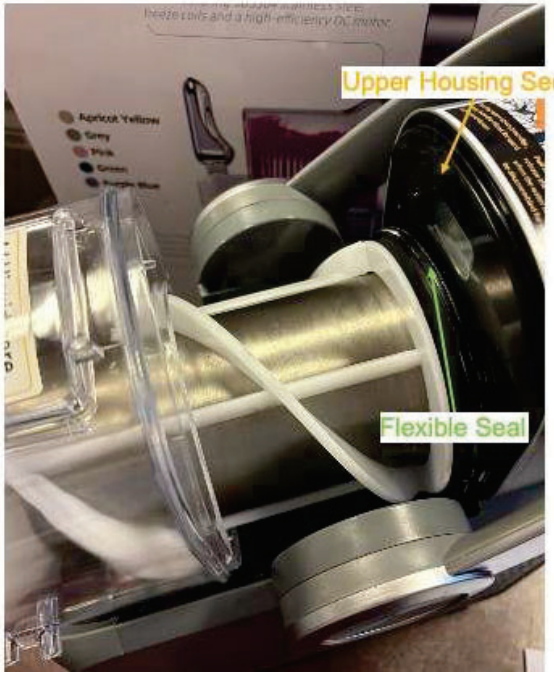
Claim Element	Accused Product
24[f]: a flexible seal arranged proximate to the upper housing section;	 Photograph of Accused Product (annotated). As confirmed by product testing, the flexible seal comprises a flexible material.
24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position, and	The cam feature of the Accused Product controls the coupling of the mixing vessel to the upper housing section when in the coupling position and uncouples the mixing vessel from the upper housing section when in the uncoupling position.

Exhibit 26

Claim Chart Comparing the GSEICE Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

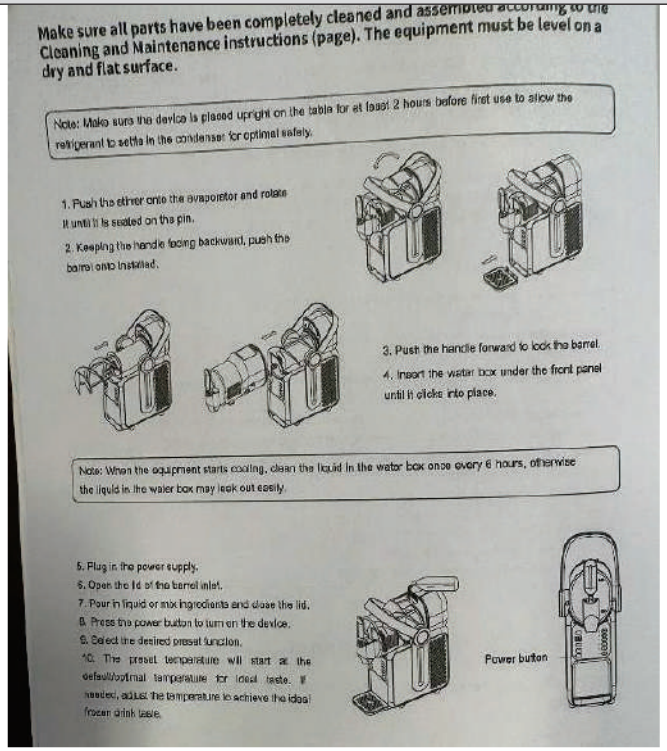
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 26

Claim Chart Comparing the GSEICE Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

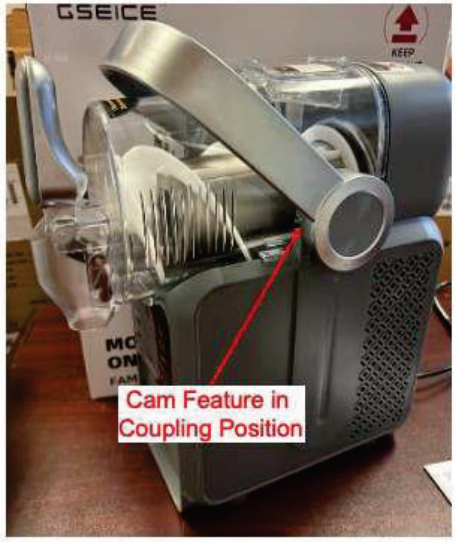
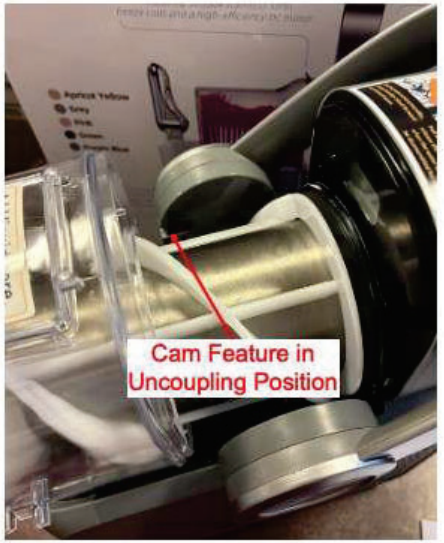
Claim Element	**Accused Product**
	  Photographs of Accused Product (annotated). *Id.*, Cl. 24[a].
24[h]: wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.	When the cam feature of the Accused Product is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal about the first opening.

Exhibit 26

Claim Chart Comparing the GSEICE Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

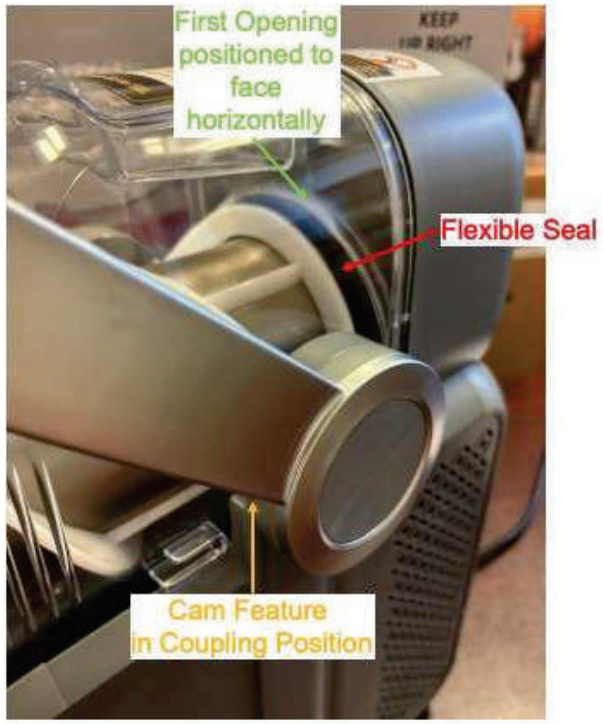
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
30. The frozen drink maker of claim 24, wherein the housing comprises a lever moveable relative to the upper housing section, wherein moving the lever to a first position moves the cam feature into the coupling position, and wherein, when in the	The lever of the Accused Product is moveable relative to the upper housing section.

Exhibit 26

Claim Chart Comparing the GSEICE Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

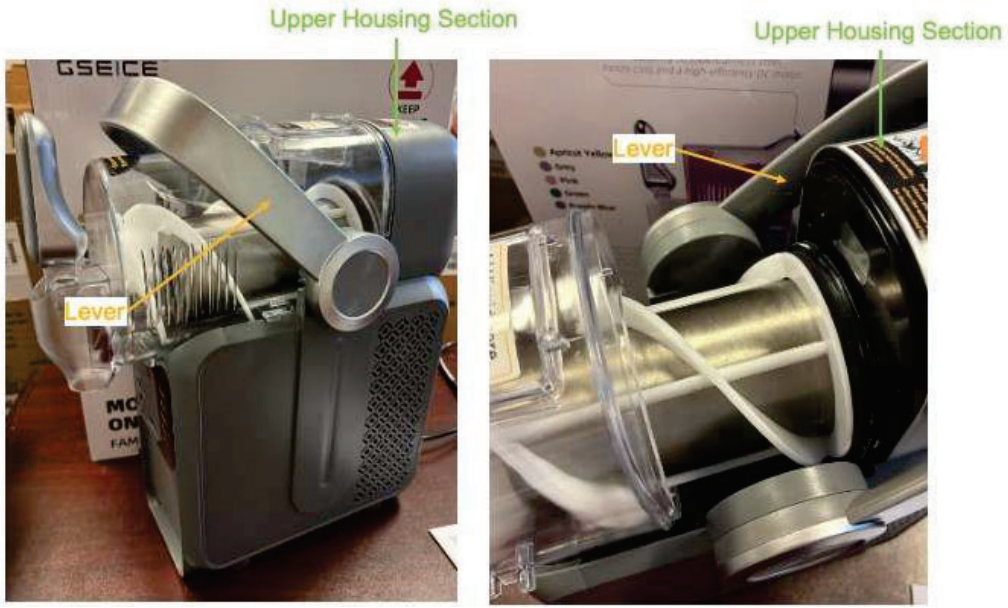
Claim Element	Accused Product
coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling of the mixing vessel to the upper housing section.	 Photographs of Accused Product (annotated). Moving the lever of the Accused Product to a first position moves the cam feature into the coupling position. When in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling the mixing vessel to the upper housing section.

Exhibit 26

Claim Chart Comparing the GSEICE Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

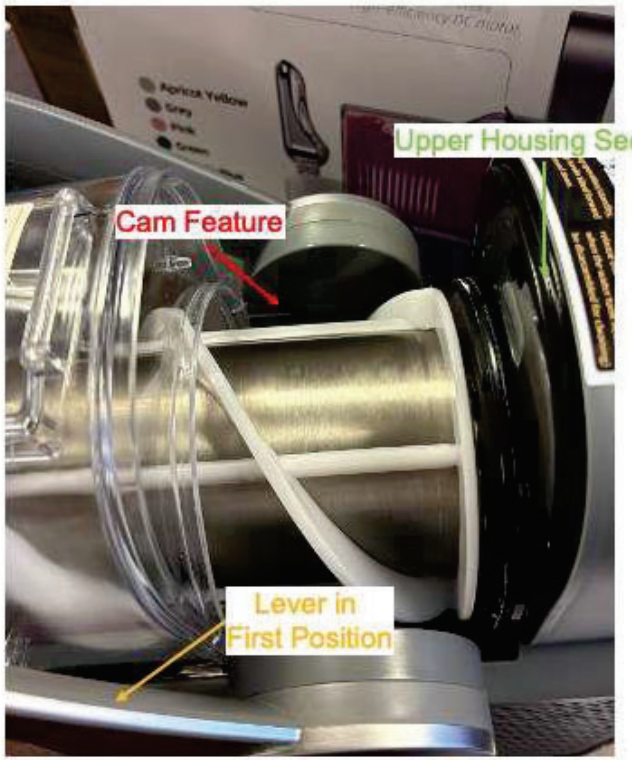
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 26

Claim Chart Comparing the GSEICE Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

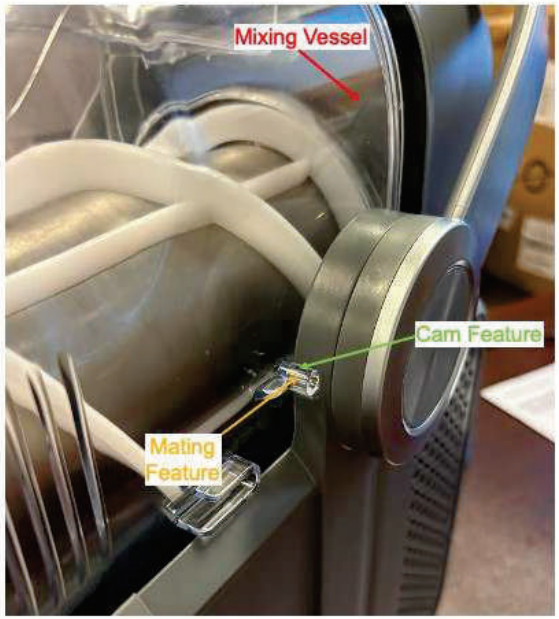
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

EXHIBIT 27

Exhibit 27
Claim Chart Comparing the GSEICE Frozen Drink Maker to U.S. Patent No. 12,593,855

Below is a chart that applies asserted exemplary independent claim 24 and 30 of U.S. Patent No. 12,593,855 (the "'855 Patent") to the accused GSEICE Frozen Drink Maker ("Accused Product"), purchased at the following listing: www.amazon.com/dp/B0FQ4NJSJL (ASIN B0FQ4NJSJL).

The arguments and evidence cited in the chart below are representative and Plaintiffs reserve the right to rely on additional arguments and evidence to show that the above-identified accused product infringes exemplary independent claim 24 and 30 of the '855 Patent.

Claim Element	Accused Product
24[Pre.]: A frozen drink maker comprising:	 Accused Product Packaging.

Exhibit 27
Claim Chart Comparing the GSEICE Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;	 Photograph of Accused Product (annotated). The cam feature of the Accused Product is moveable between a coupling position and uncoupling position.

Exhibit 27
Claim Chart Comparing the GSEICE Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	Photographs of Accused Product (annotated).

Exhibit 27
Claim Chart Comparing the GSEICE Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

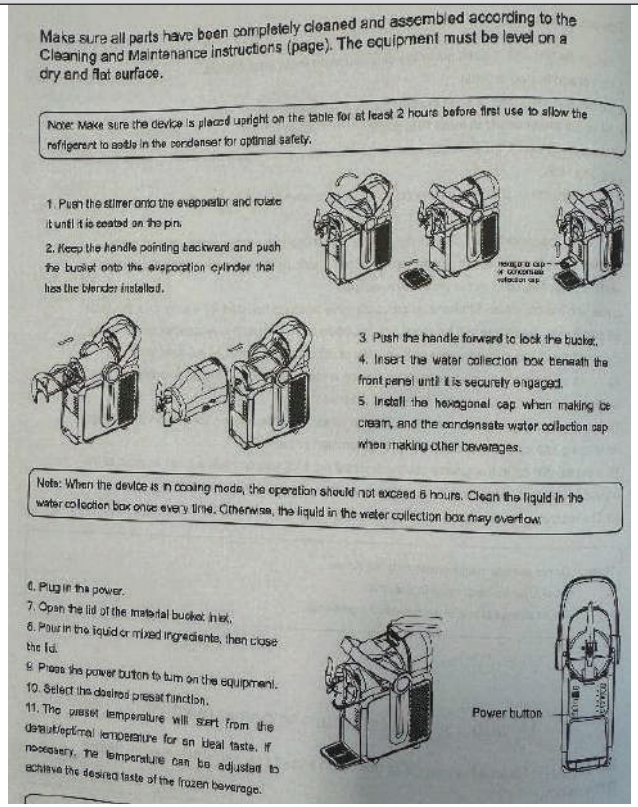
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 27
Claim Chart Comparing the GSEICE Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

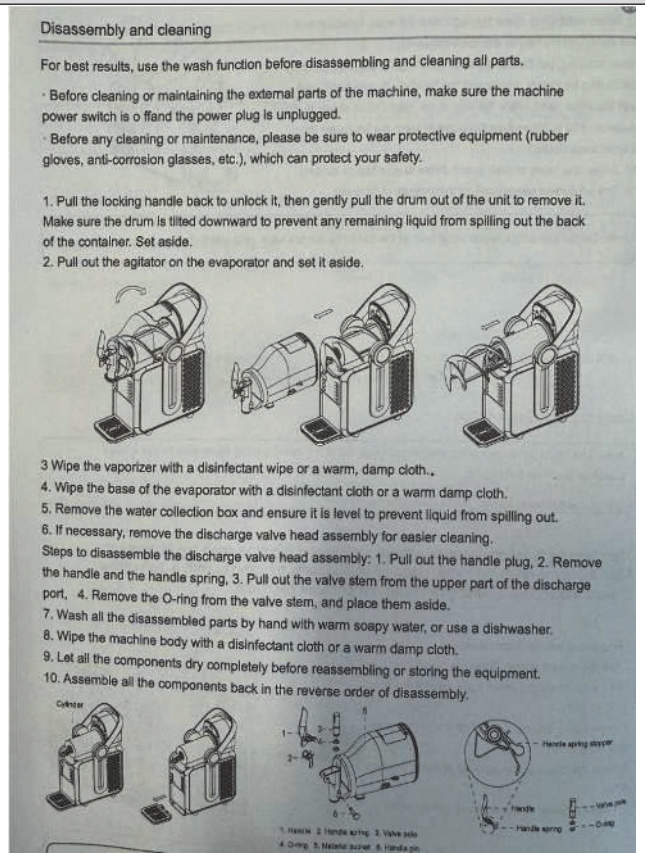
Claim Element	Accused Product
	 Accused Product Instruction Manual.
24[b]: a mixing vessel to receive a drink product, the mixing vessel having:	The mixing vessel is configured to receive a drink product.

Exhibit 27
Claim Chart Comparing the GSEICE Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 27
Claim Chart Comparing the GSEICE Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and	Photograph of Accused Product (annotated). The second opening of the mixing vessel of the Accused Product is configured to dispense a drink product.

Exhibit 27
Claim Chart Comparing the GSEICE Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

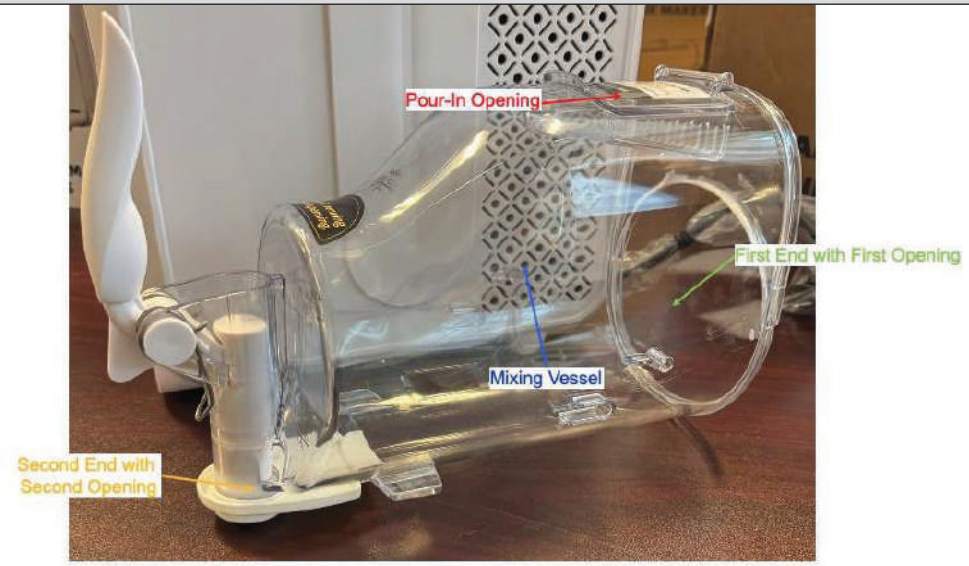
Claim Element	Accused Product
24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;	 Photograph of Accused Product (annotated).
24[c]: a dasher configured to rotate in the mixing vessel;	The dasher of the Accused Product is configured to rotate in the mixing vessel to stir the drink product.

Exhibit 27

Claim Chart Comparing the GSEICE Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

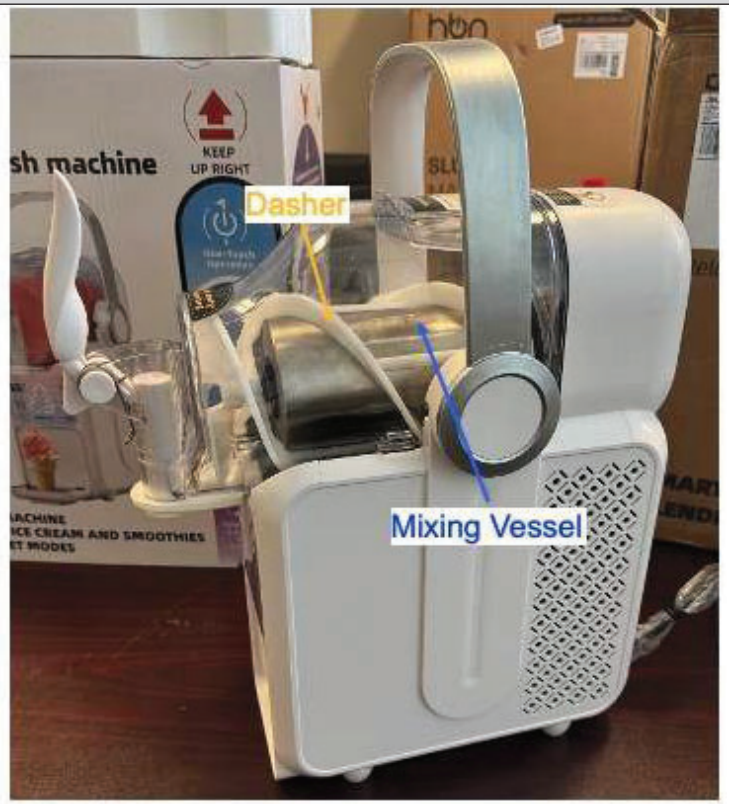
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
24[d]: a motor to drive the dasher;	The Accused Product includes a motor that drives the dasher to rotate it to stir the drink product. As confirmed by product testing, during operation a motor of the frozen drink maker drives the dasher to rotate.

Exhibit 27

Claim Chart Comparing the GSEICE Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

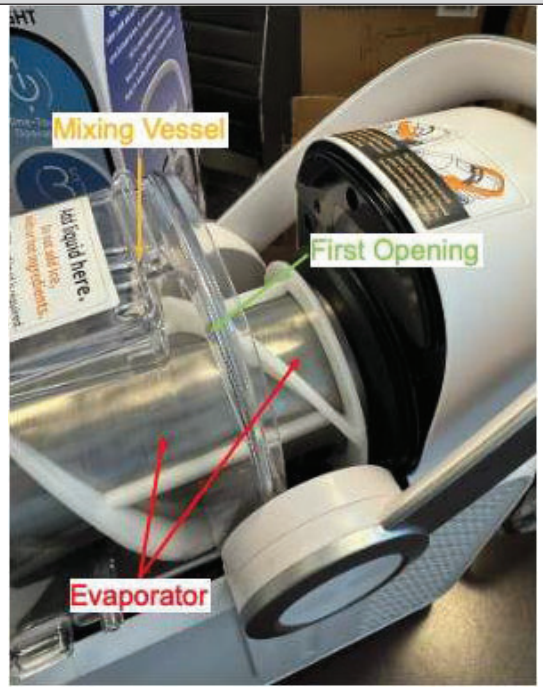
Claim Element	Accused Product
24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and	 Photograph of Accused Product (annotated). The evaporator is received through the first opening of the mixing vessel.

Exhibit 27

Claim Chart Comparing the GSEICE Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

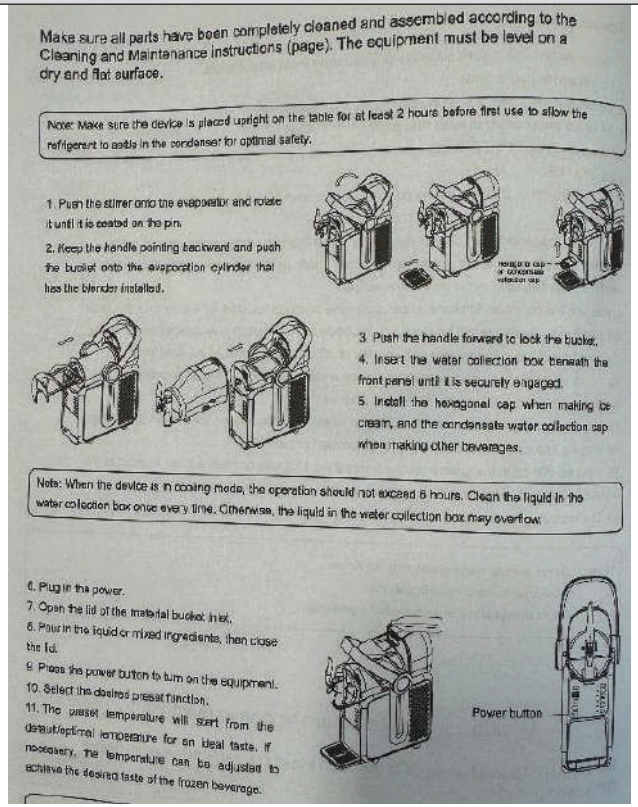
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 27

Claim Chart Comparing the GSEICE Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

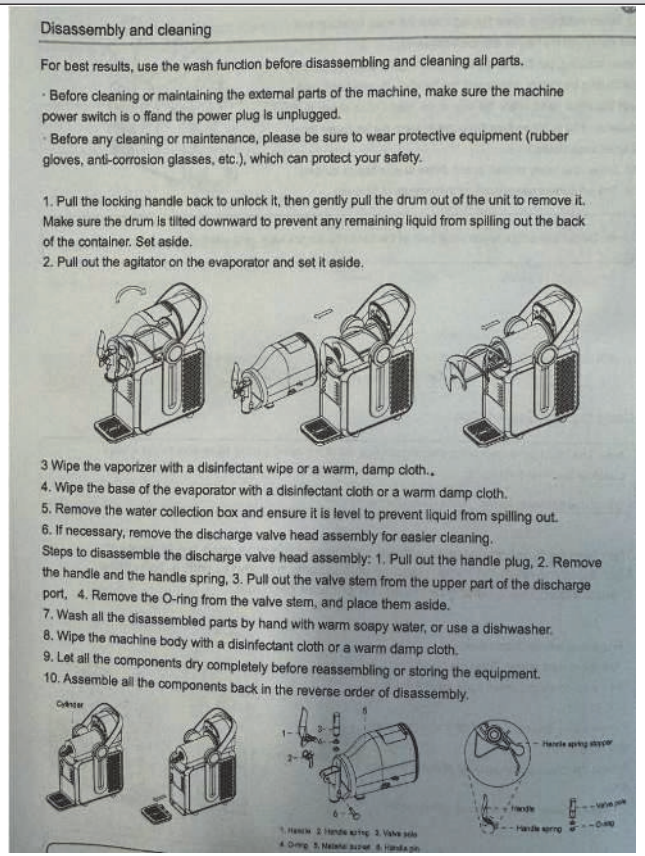
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 27

Claim Chart Comparing the GSEICE Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
24[f]: a flexible seal arranged proximate to the upper housing section;	 Photograph of Accused Product (annotated). As confirmed by product testing, the flexible seal comprises a flexible material.
24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position, and	The cam feature of the Accused Product controls the coupling of the mixing vessel to the upper housing section when in the coupling position and uncouples the mixing vessel from the upper housing section when in the uncoupling position.

Exhibit 27

Claim Chart Comparing the GSEICE Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

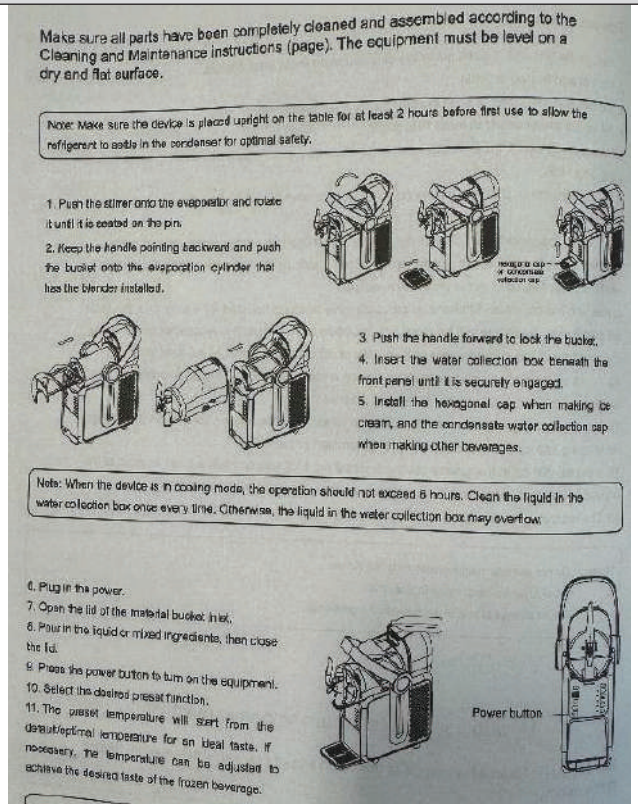
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 27

Claim Chart Comparing the GSEICE Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

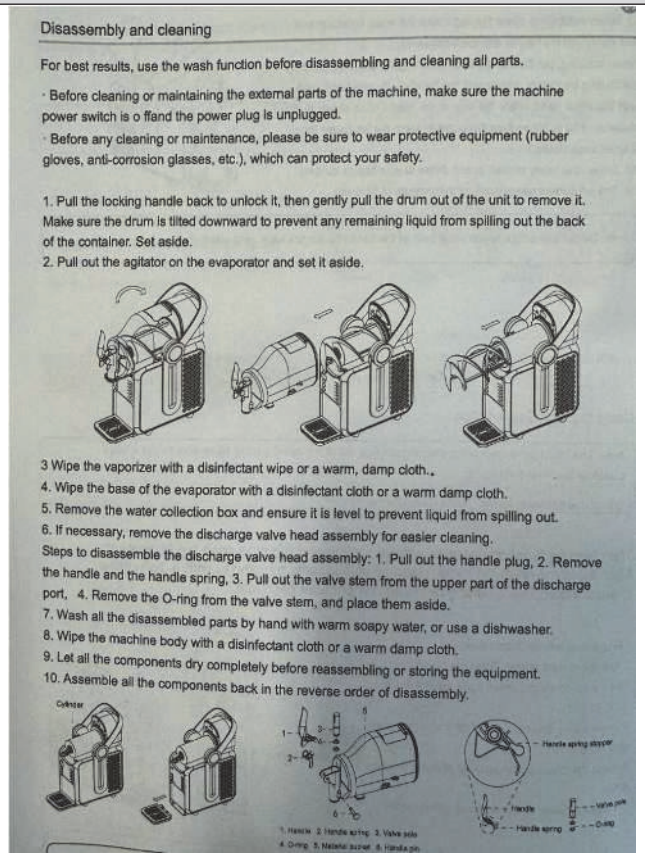
Claim Element	Accused Product
	 Disassembly and cleaning For best results, use the wash function before disassembling and cleaning all parts. · Before cleaning or maintaining the external parts of the machine, make sure the machine power switch is o ffand the power plug is unplugged. · Before any cleaning or maintenance, please be sure to wear protective equipment (rubber gloves, anti-corrosion glasses, etc.), which can protect your safety. 1. Pull the locking handle back to unlock it, then gently pull the drum out of the unit to remove it. Make sure the drum is tilted downward to prevent any remaining liquid from spilling out the back of the container. Set aside. 2. Pull out the agitator on the evaporator and set it aside. 3 Wipe the vaporizer with a disinfectant wipe or a warm, damp cloth., 4. Wipe the base of the evaporator with a disinfectant cloth or a warm damp cloth. 5. Remove the water collection box and ensure it is level to prevent liquid from spilling out. 6. If necessary, remove the discharge valve head assembly for easier cleaning. Steps to disassemble the discharge valve head assembly: 1. Pull out the handle plug, 2. Remove the handle and the handle spring, 3. Pull out the valve stem from the upper part of the discharge port, 4. Remove the O-ring from the valve stem, and place them aside. 7. Wash all the disassembled parts by hand with warm soapy water, or use a dishwasher. 8. Wipe the machine body with a disinfectant cloth or a warm damp cloth. 9. Let all the components dry completely before reassembling or storing the equipment. 10. Assemble all the components back in the reverse order of disassembly. Accused Product Instruction Manual.

Exhibit 27

Claim Chart Comparing the GSEICE Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	**Accused Product**
	Photographs of Accused Product (annotated). *Id.*, Cl. 24[a].
24[h]: wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.	When the cam feature of the Accused Product is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal about the first opening.

Exhibit 27

Claim Chart Comparing the GSEICE Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

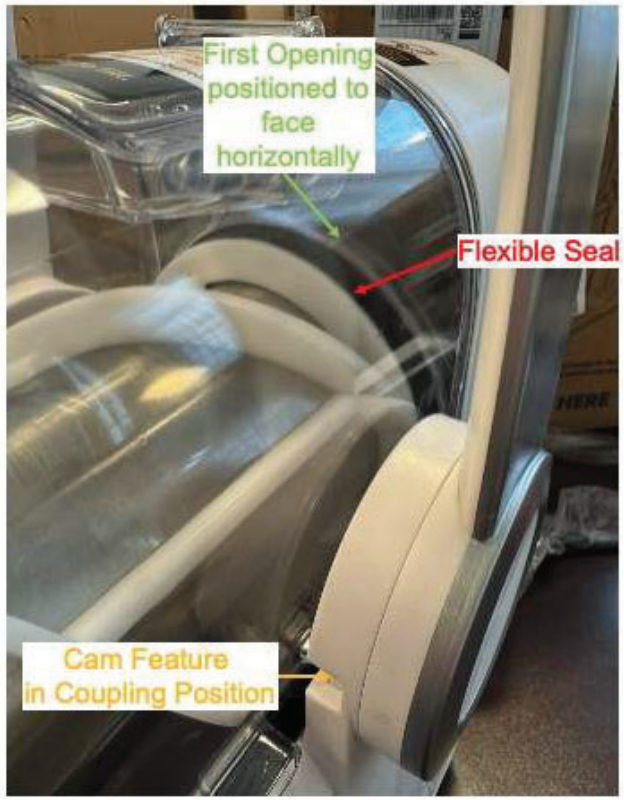
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
30. The frozen drink maker of claim 24, wherein the housing comprises a lever moveable relative to the upper housing section, wherein moving the lever to a first position moves the cam feature into the coupling	The lever of the Accused Product is moveable relative to the upper housing section.

Exhibit 27

Claim Chart Comparing the GSEICE Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
position, and wherein, when in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling of the mixing vessel to the upper housing section.	 Photographs of Accused Product (annotated). Moving the lever of the Accused Product to a first position moves the cam feature into the coupling position. When in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling the mixing vessel to the upper housing section.

Exhibit 27

Claim Chart Comparing the GSEICE Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

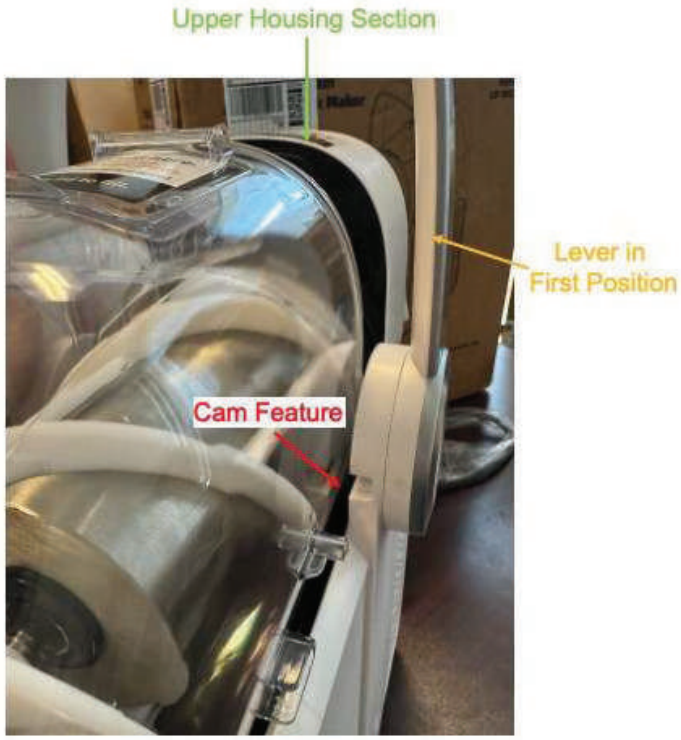
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 27

Claim Chart Comparing the GSEICE Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

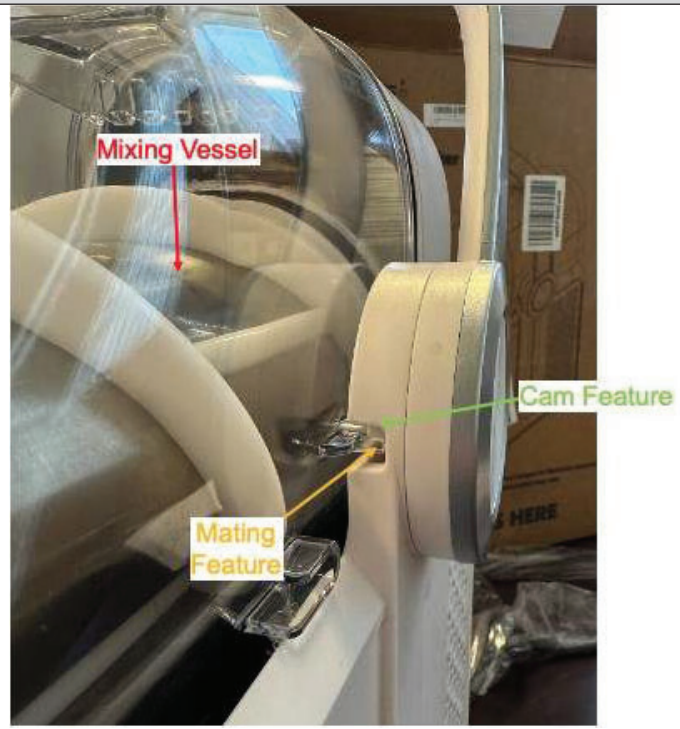
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

EXHIBIT 28

Exhibit 28
Claim Chart Comparing the HBN Frozen Drink Maker to U.S. Patent No. 12,593,855

Below is a chart that applies asserted exemplary independent claim 24 of U.S. Patent No. 12,593,855 (the "'855 Patent") to the accused HBN Frozen Drink Maker ("Accused Product"), purchased at the following listing: www.amazon.com/dp/B0FR7P2KXS (ASIN B0FR7P2KXS).

The arguments and evidence cited in the chart below are representative and Plaintiffs reserve the right to rely on additional arguments and evidence to show that the above-identified accused product infringes exemplary independent claim 24 of the '855 Patent.

Claim Element	**Accused Product**
24[Pre.]: A frozen drink maker comprising:	 Accused Product Packaging.

Exhibit 28
Claim Chart Comparing the HBN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

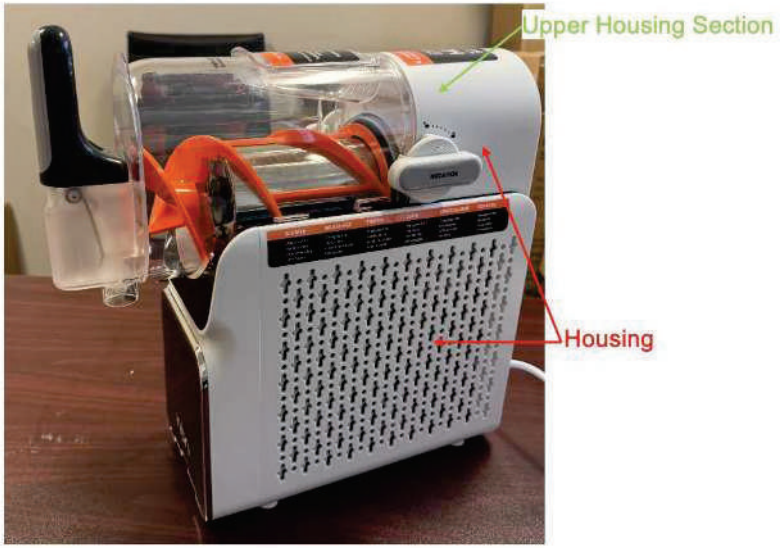
Claim Element	Accused Product
24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;	 Photograph of Accused Product (annotated). The cam feature of the Accused Product is moveable between a coupling position and uncoupling position.

Exhibit 28
Claim Chart Comparing the HBN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	Photographs of Accused Product (annotated).

Exhibit 28
Claim Chart Comparing the HBN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

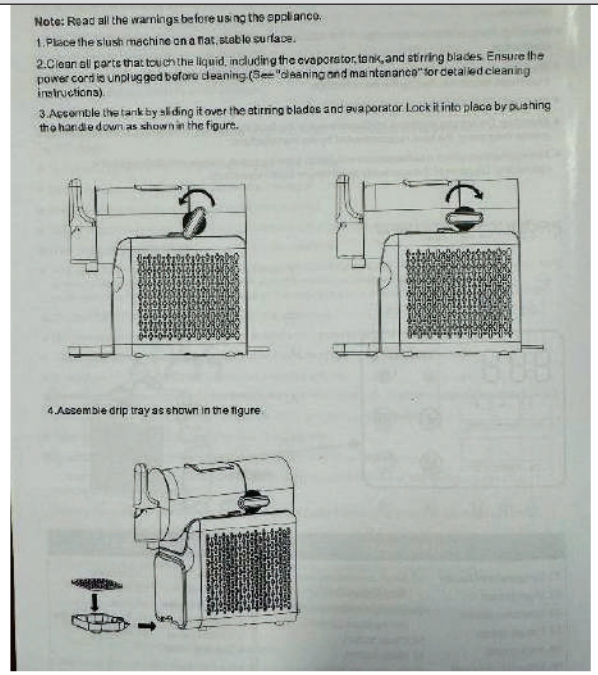
Claim Element	Accused Product
	 Accused Product Instruction Manual.
24[b]: a mixing vessel to receive a drink product, the mixing vessel having:	The mixing vessel is configured to receive a drink product.

Exhibit 28
Claim Chart Comparing the HBN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

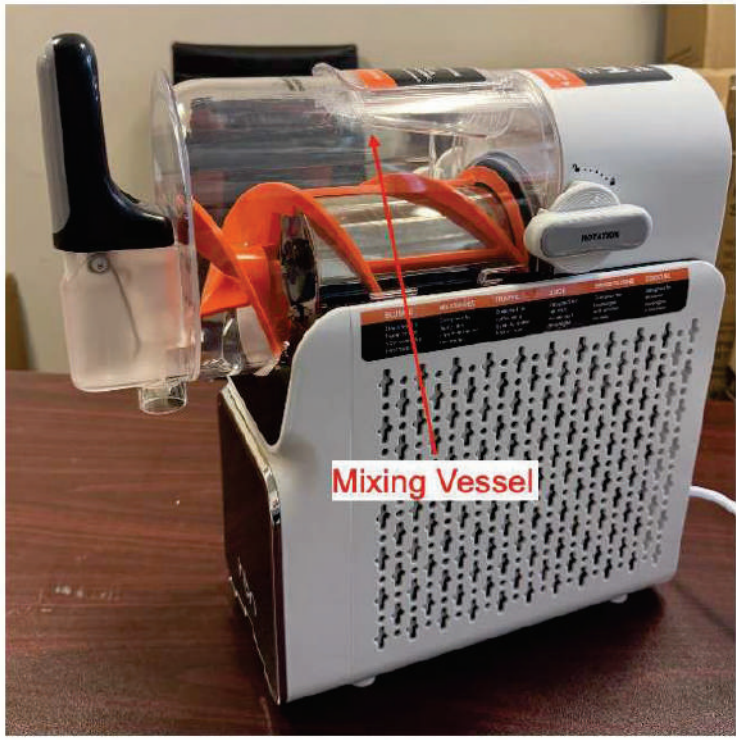
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 28
Claim Chart Comparing the HBN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

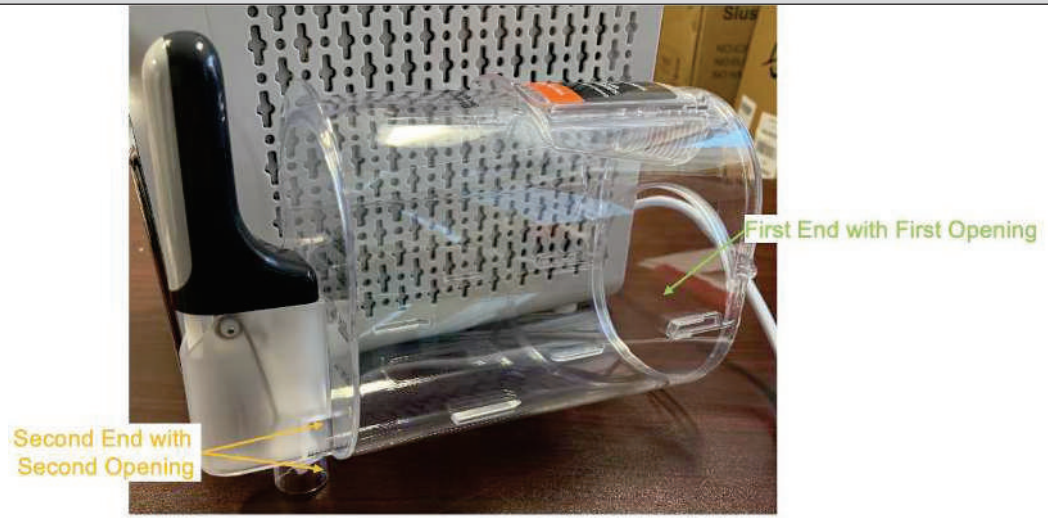
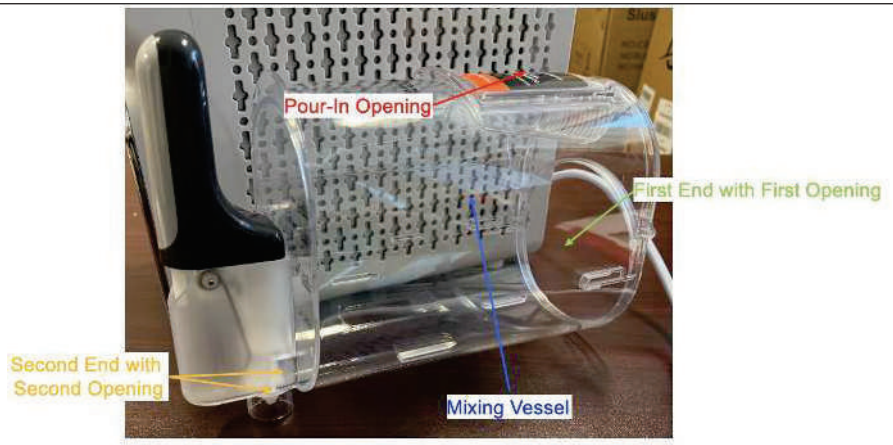
Claim Element	Accused Product
24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and	 Photograph of Accused Product (annotated). The second opening of the mixing vessel of the Accused Product is configured to dispense a drink product.
24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;	

Exhibit 28
Claim Chart Comparing the HBN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

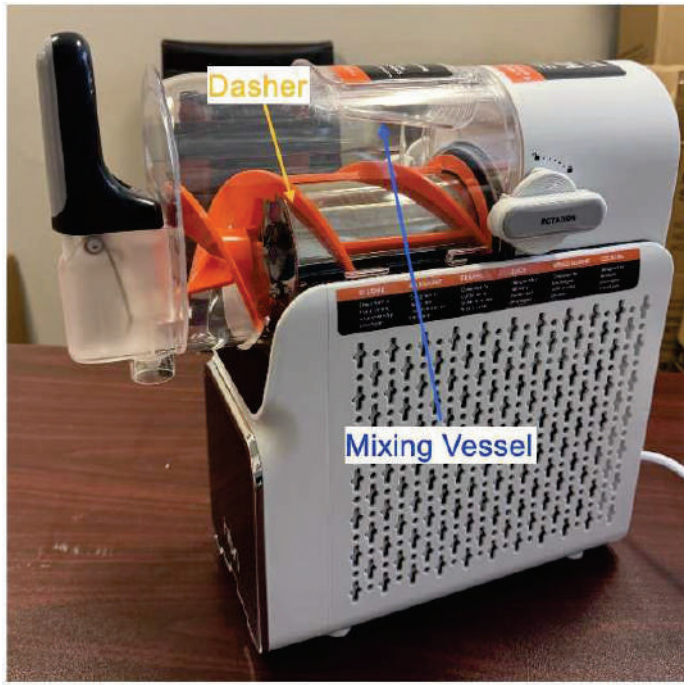
Claim Element	Accused Product
	Photograph of Accused Product (annotated).
24[c]: a dasher configured to rotate in the mixing vessel;	The dasher of the Accused Product is configured to rotate in the mixing vessel to stir the drink product.  Photograph of Accused Product (annotated).
24[d]: a motor to drive the dasher;	The Accused Product includes a motor that drives the dasher to rotate it to stir the drink product.

Exhibit 28
Claim Chart Comparing the HBN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

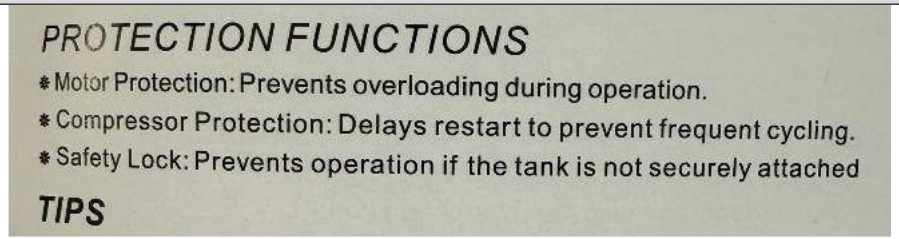
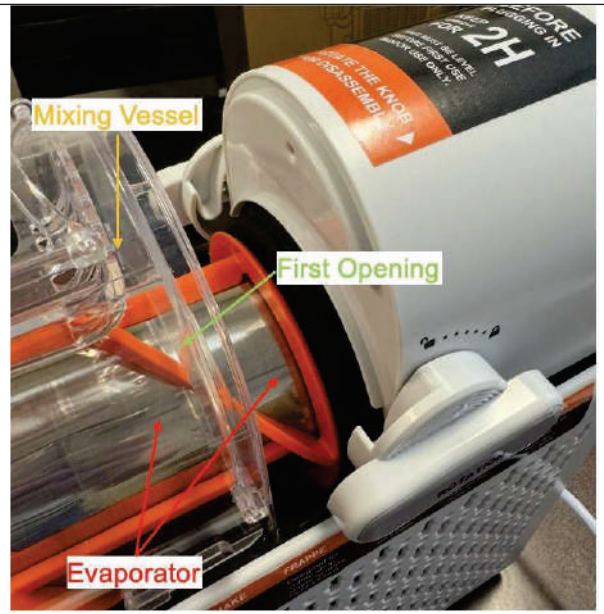
Claim Element	Accused Product
	 Accused Product Instruction Manual. As confirmed by product testing, during operation a motor of the frozen drink maker drives the dasher to rotate.
24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and	 Photograph of Accused Product (annotated).

Exhibit 28

Claim Chart Comparing the HBN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

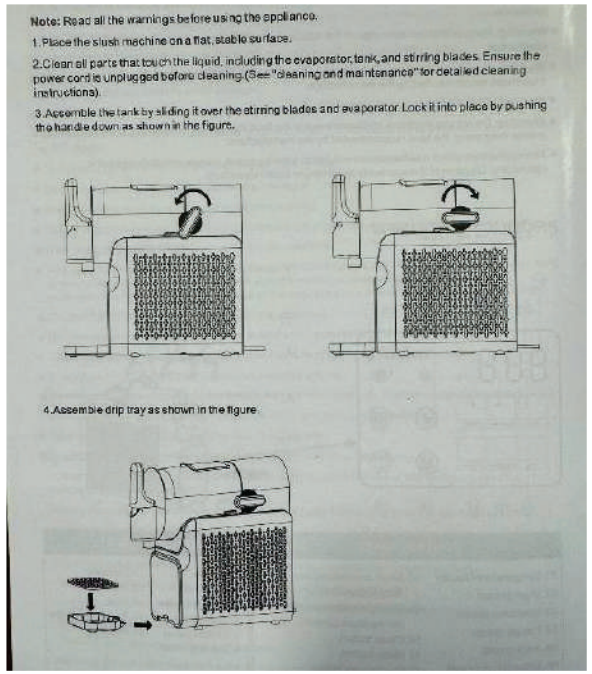
Claim Element	Accused Product
	The evaporator is received through the first opening of the mixing vessel.  Accused Product Instruction Manual.

Exhibit 28

Claim Chart Comparing the HBN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
24[f]: a flexible seal arranged proximate to the upper housing section;	 Photograph of Accused Product (annotated). As confirmed by product testing, the flexible seal comprises a flexible material.
24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position, and	The cam feature of the Accused Product controls the coupling of the mixing vessel to the upper housing section when in the coupling position and uncouples the mixing vessel from the upper housing section when in the uncoupling position.

Exhibit 28

Claim Chart Comparing the HBN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

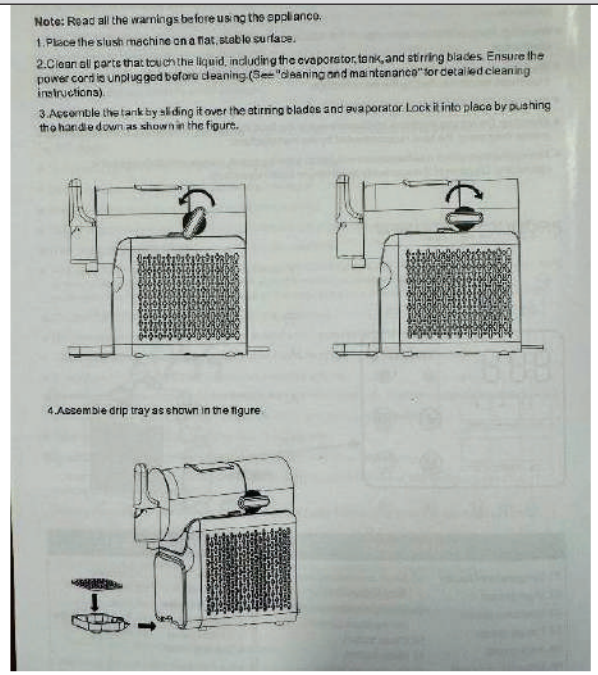
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 28

Claim Chart Comparing the HBN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

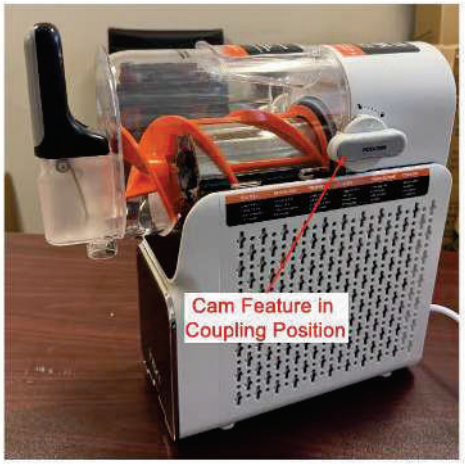
Claim Element	**Accused Product**
	 Photographs of Accused Product (annotated). *Id.*, Cl. 24[a].
24[h]: wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.	When the cam feature of the Accused Product is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal about the first opening.

Exhibit 28

Claim Chart Comparing the HBN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

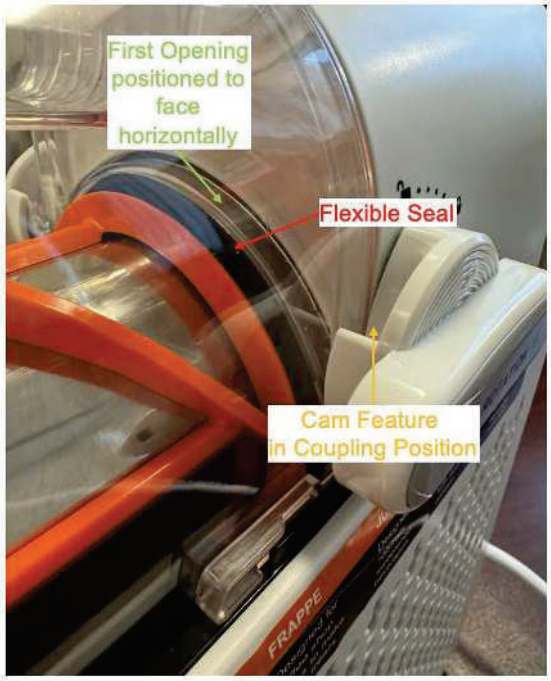
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

EXHIBIT 29

Exhibit 29
Claim Chart Comparing the Maipsig Frozen Drink Maker to U.S. Patent No. 12,593,855

Below is a chart that applies asserted exemplary independent claim 24 and 30 of U.S. Patent No. 12,593,855 (the "'855 Patent") to the accused Maipsig Frozen Drink Maker ("Accused Product"), purchased at the following listing: www.amazon.com/dp/B0F7GZYL7B (ASIN B0F7GZYL7B).

The arguments and evidence cited in the chart below are representative and Plaintiffs reserve the right to rely on additional arguments and evidence to show that the above-identified accused product infringes exemplary independent claim 24 and 30 of the '855 Patent.

Claim Element	Accused Product
24[Pre.]: A frozen drink maker comprising:	 Accused Product Packaging.

Exhibit 29
Claim Chart Comparing the Maipsig Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

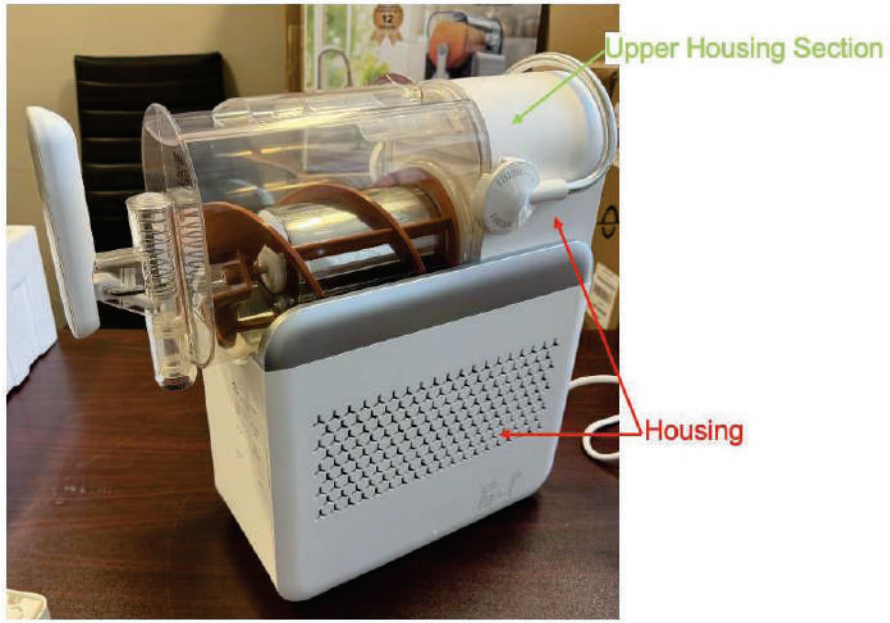
Claim Element	Accused Product
24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;	 Photograph of Accused Product (annotated). The cam feature of the Accused Product is moveable between a coupling position and uncoupling position.

Exhibit 29
Claim Chart Comparing the Maipsig Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

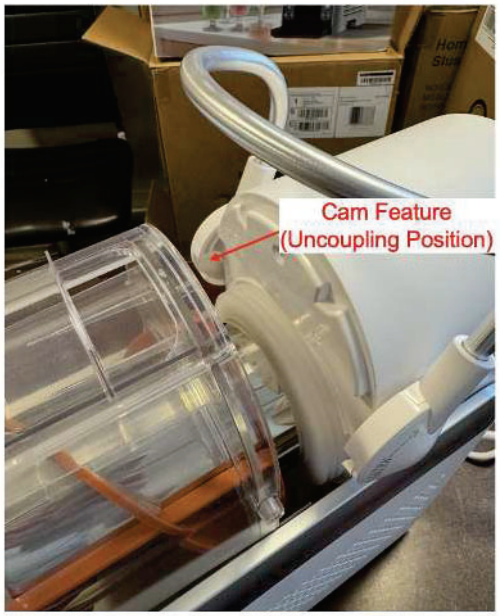
Claim Element	Accused Product
	 Photographs of Accused Product (annotated).

Exhibit 29
Claim Chart Comparing the Maipsig Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

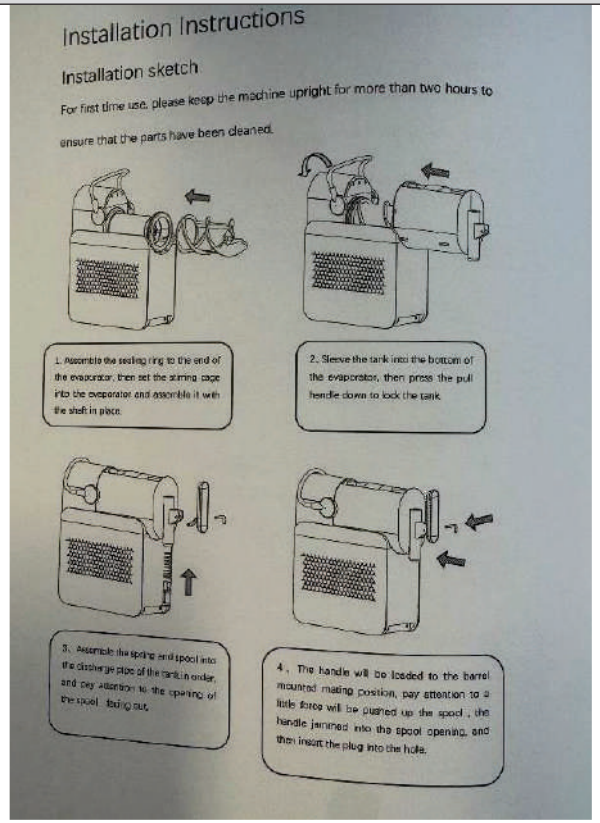
Claim Element	Accused Product
	 Accused Product Instruction Manual.
24[b]: a mixing vessel to receive a drink product, the mixing vessel having:	The mixing vessel is configured to receive a drink product.

Exhibit 29
Claim Chart Comparing the Maipsig Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

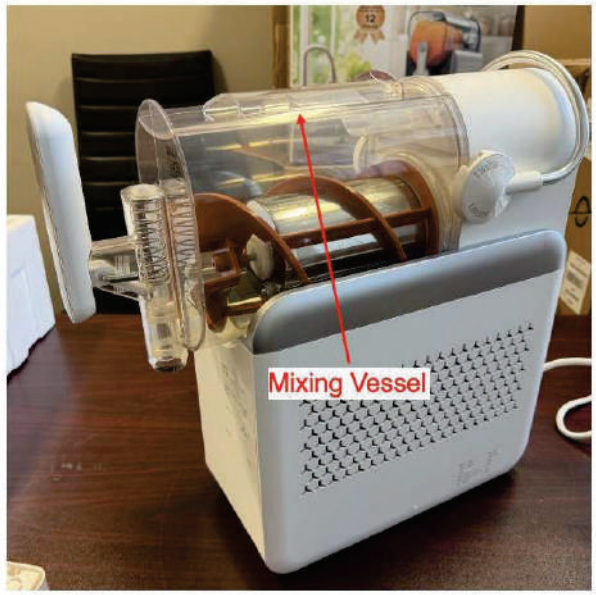
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 29
Claim Chart Comparing the Maipsig Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

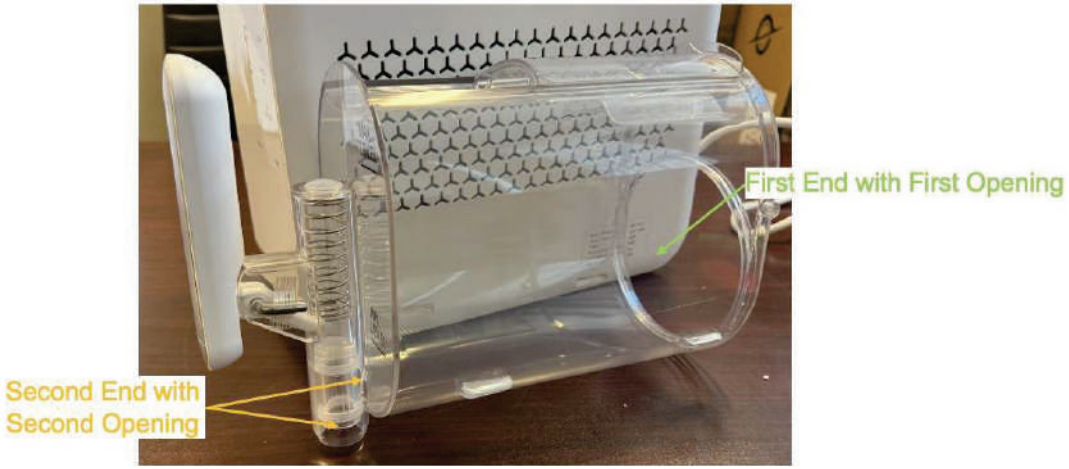
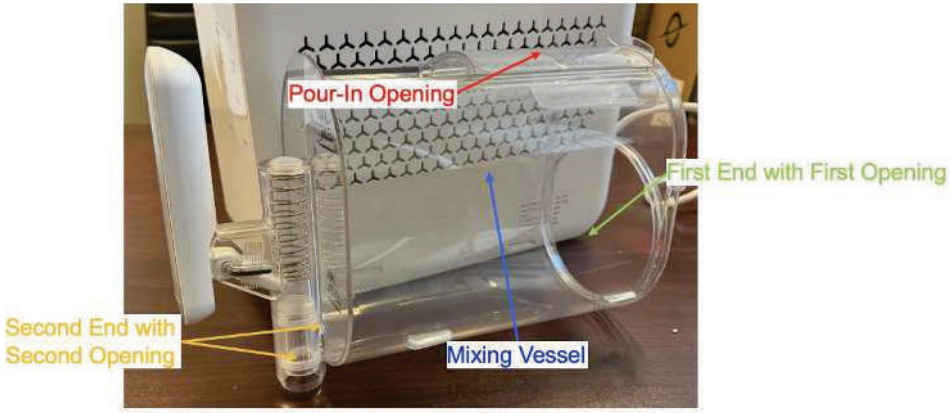
Claim Element	Accused Product
24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and	 Photograph of Accused Product (annotated). The second opening of the mixing vessel of the Accused Product is configured to dispense a drink product.
24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;	 Photograph of Accused Product (annotated).

Exhibit 29
Claim Chart Comparing the Maipsig Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
24[c]: a dasher configured to rotate in the mixing vessel;	The dasher of the Accused Product is configured to rotate in the mixing vessel to stir the drink product. Photograph of Accused Product (annotated).
24[d]: a motor to drive the dasher;	The Accused Product includes a motor that drives the dasher to rotate it to stir the drink product. As confirmed by product testing, during operation a motor of the frozen drink maker drives

Exhibit 29
Claim Chart Comparing the Maipsig Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

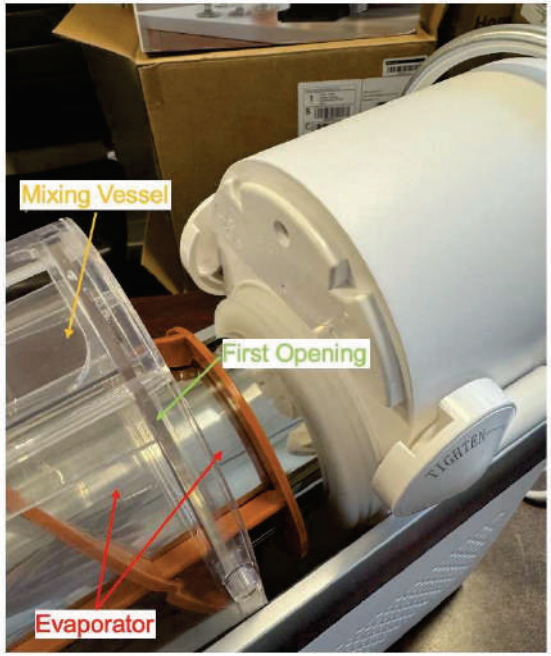
Claim Element	Accused Product
	the dasher to rotate.
24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and	 Photograph of Accused Product (annotated). The evaporator is received through the first opening of the mixing vessel.

Exhibit 29

Claim Chart Comparing the Maipsig Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

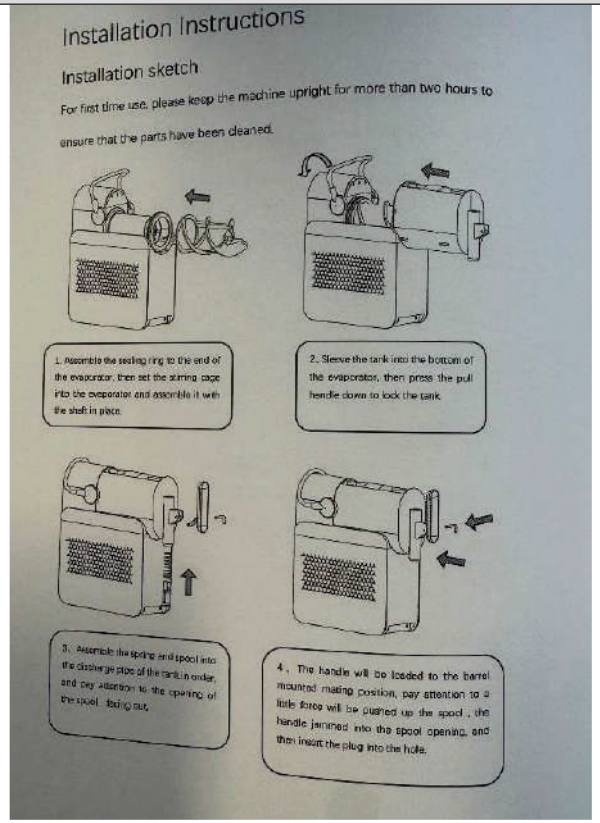
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 29

Claim Chart Comparing the Maipsig Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
24[f]: a flexible seal arranged proximate to the upper housing section;	 Photograph of Accused Product (annotated). As confirmed by product testing, the flexible seal comprises a flexible material.
24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling	The cam feature of the Accused Product controls the coupling of the mixing vessel to the upper housing section when in the coupling position and uncouples the mixing vessel from the upper housing section when in the uncoupling position.

Exhibit 29

Claim Chart Comparing the Maipsig Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

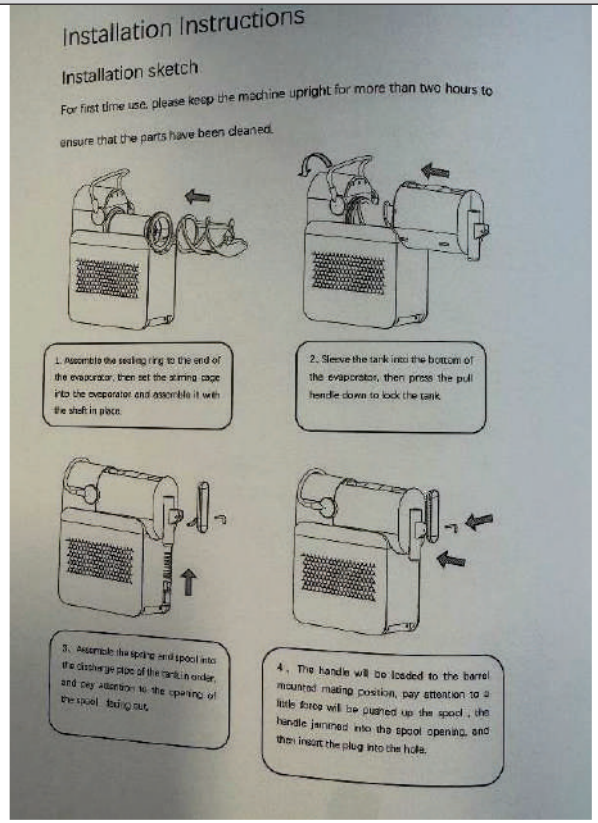
Claim Element	Accused Product
the mixing vessel from the upper housing section when in the uncoupling position, and	 Accused Product Instruction Manual.

Exhibit 29

Claim Chart Comparing the Maipsig Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	Photographs of Accused Product (annotated). *Id.*, Cl. 24[a].
24[h]: wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.	When the cam feature of the Accused Product is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal about the first opening.

Exhibit 29

Claim Chart Comparing the Maipsig Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

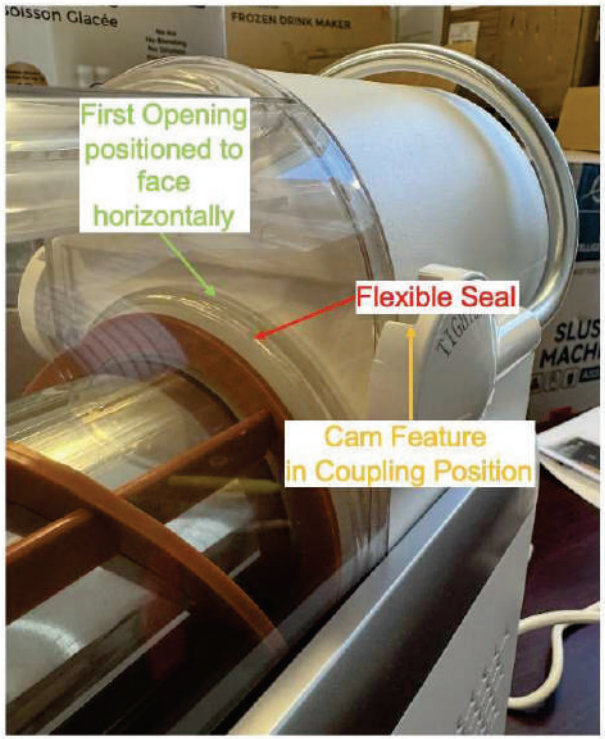
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
30. The frozen drink maker of claim 24, wherein the housing comprises a lever moveable relative to the upper housing section, wherein moving the lever to a first position moves the cam feature into the coupling position, and wherein, when in the	The lever of the Accused Product is moveable relative to the upper housing section.

Exhibit 29

Claim Chart Comparing the Maipsig Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling of the mixing vessel to the upper housing section.	Photographs of Accused Product (annotated). Moving the lever of the Accused Product to a first position moves the cam feature into the coupling position. When in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling the mixing vessel to the upper housing section.

Exhibit 29

Claim Chart Comparing the Maipsig Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

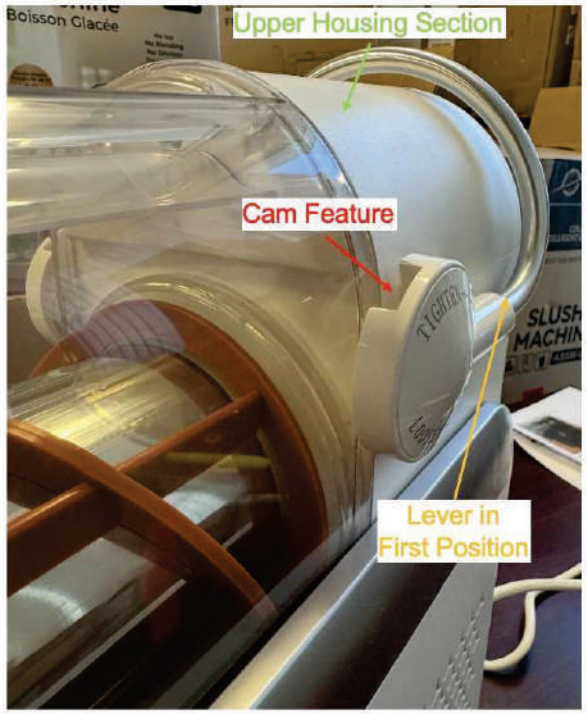
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 29

Claim Chart Comparing the Maipsig Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

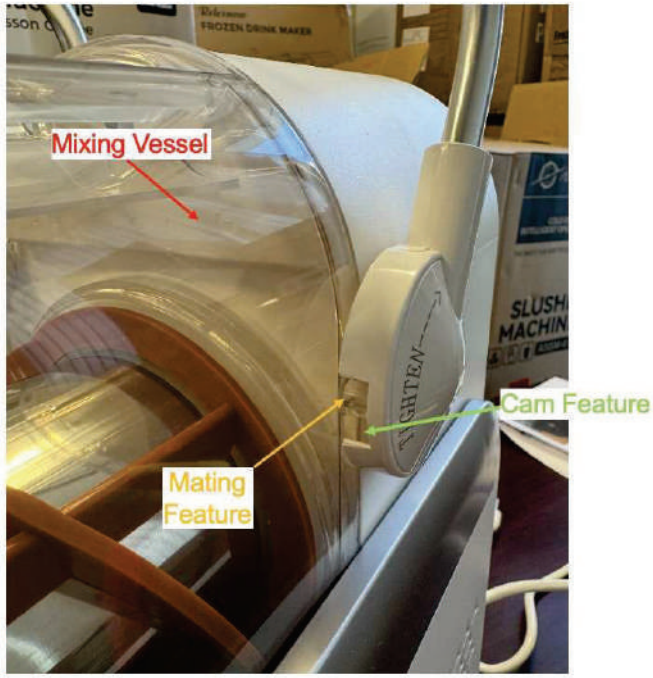
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

EXHIBIT 30

Exhibit 30
Claim Chart Comparing the Mazzen Frozen Drink Maker to U.S. Patent No. 12,593,855

Below is a chart that applies asserted exemplary independent claim 24 and 30 of U.S. Patent No. 12,593,855 (the "'855 Patent") to the accused Mazzen Frozen Drink Maker ("Accused Product"), purchased at the following listing: www.amazon.com/dp/B0G3WM3L9F (ASIN B0G3WM3L9F).

The arguments and evidence cited in the chart below are representative and Plaintiffs reserve the right to rely on additional arguments and evidence to show that the above-identified accused product infringes exemplary independent claim 24 and 30 of the '855 Patent.

Claim Element	**Accused Product**
24[Pre.]: A frozen drink maker comprising:	 Accused Product Packaging.

Exhibit 30
Claim Chart Comparing the Mazzen Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Accused Product Packaging.

Exhibit 30
Claim Chart Comparing the Mazzen Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

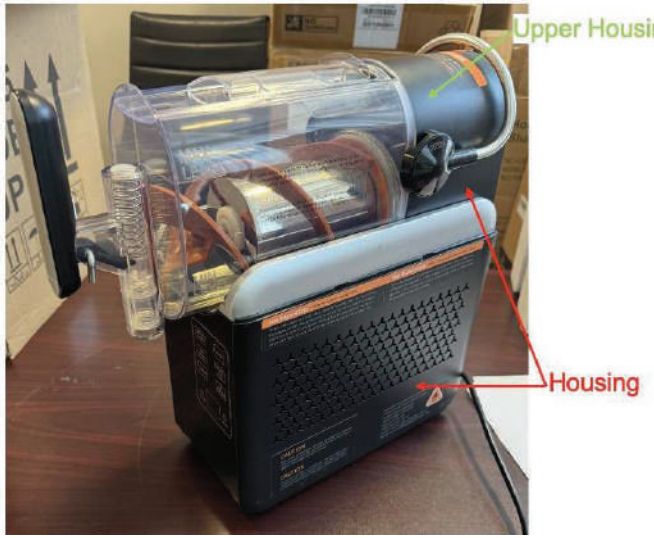
Claim Element	Accused Product
24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;	 Photograph of Accused Product (annotated). The cam feature of the Accused Product is moveable between a coupling position and uncoupling position.

Exhibit 30
Claim Chart Comparing the Mazzen Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

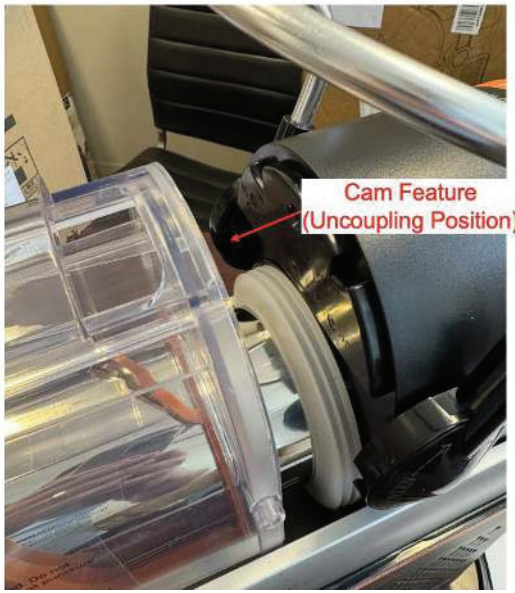
Claim Element	Accused Product
	 Photographs of Accused Product (annotated).

Exhibit 30
Claim Chart Comparing the Mazzen Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

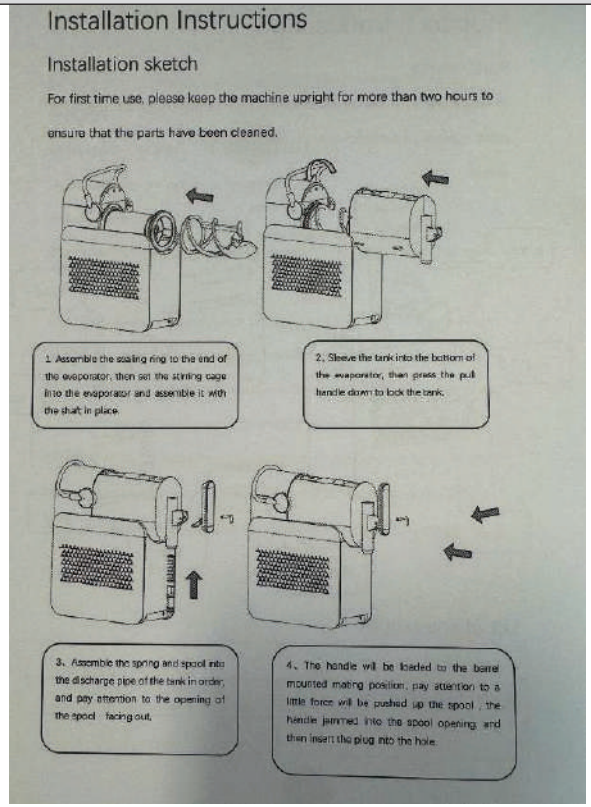
Claim Element	Accused Product
	 Accused Product Instruction Manual.
24[b]: a mixing vessel to receive a drink product, the mixing vessel having:	The mixing vessel is configured to receive a drink product.

Exhibit 30
Claim Chart Comparing the Mazzen Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

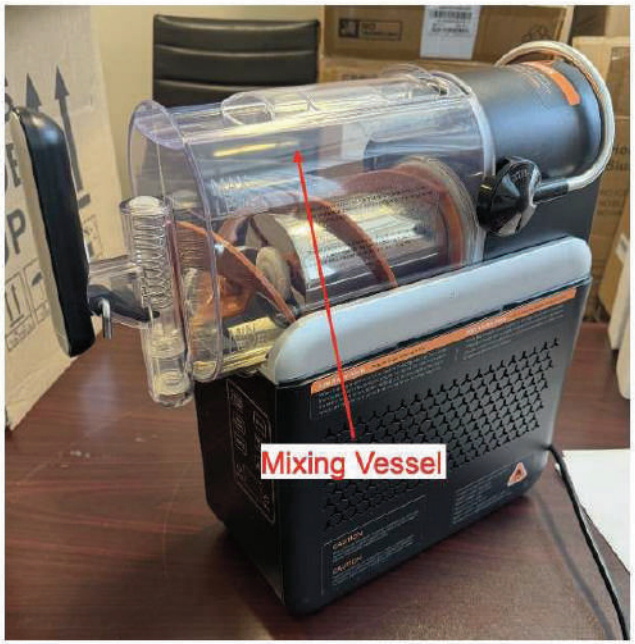
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 30
Claim Chart Comparing the Mazzen Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

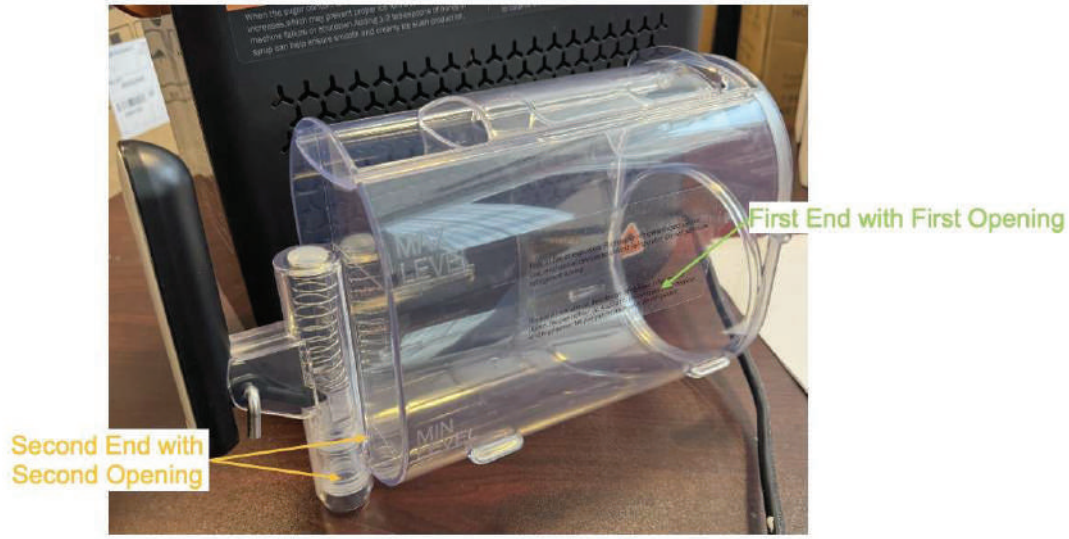
Claim Element	Accused Product
24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and	 Photograph of Accused Product (annotated). The second opening of the mixing vessel of the Accused Product is configured to dispense a drink product.

Exhibit 30
Claim Chart Comparing the Mazzen Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

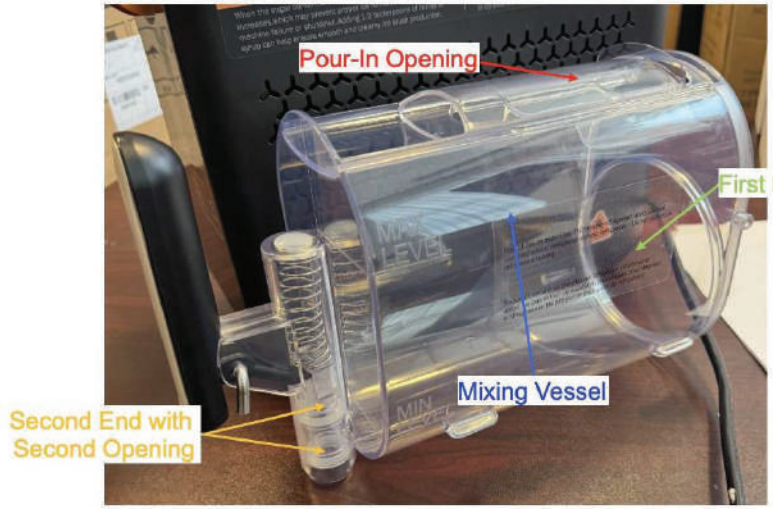
Claim Element	Accused Product
24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;	 Photograph of Accused Product (annotated).
24[c]: a dasher configured to rotate in the mixing vessel;	The dasher of the Accused Product is configured to rotate in the mixing vessel to stir the drink product.

Exhibit 30

Claim Chart Comparing the Mazzen Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

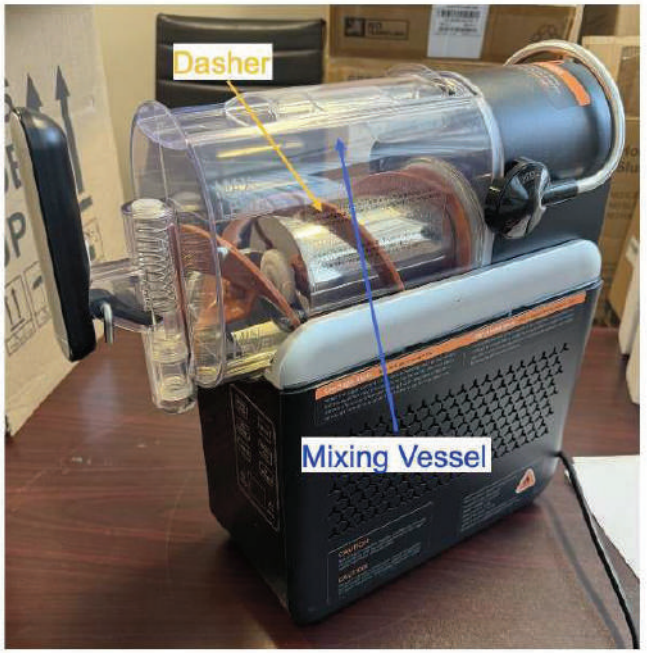
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
24[d]: a motor to drive the dasher;	The Accused Product includes a motor that drives the dasher to rotate it to stir the drink product. As confirmed by product testing, during operation a motor of the frozen drink maker drives the dasher to rotate.

Exhibit 30

Claim Chart Comparing the Mazzen Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

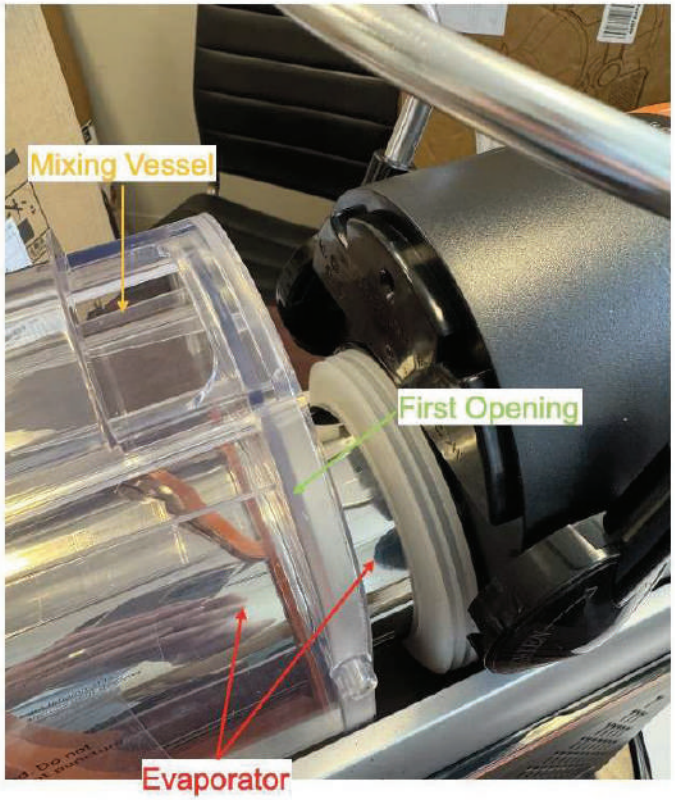
Claim Element	Accused Product
24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and	 Photograph of Accused Product (annotated). The evaporator is received through the first opening of the mixing vessel.

Exhibit 30

Claim Chart Comparing the Mazzen Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

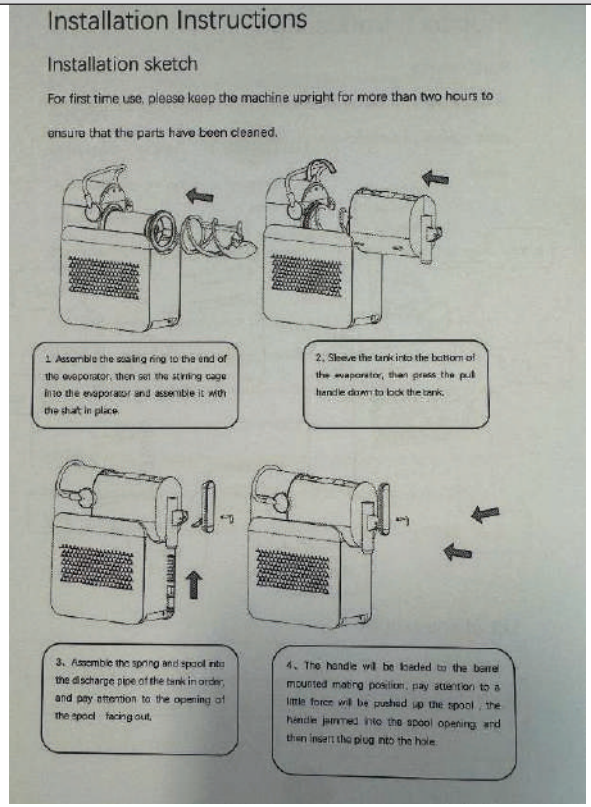
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 30

Claim Chart Comparing the Mazzen Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

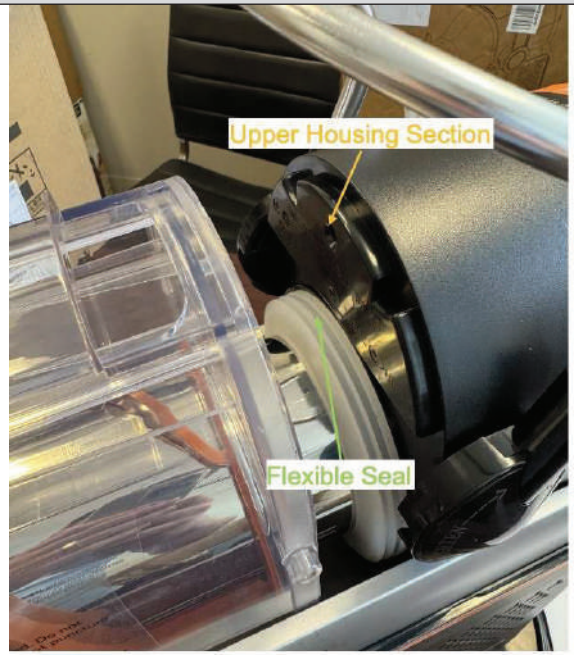
Claim Element	Accused Product
24[f]: a flexible seal arranged proximate to the upper housing section;	 Photograph of Accused Product (annotated). As confirmed by product testing, the flexible seal comprises a flexible material.
24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position, and	The cam feature of the Accused Product controls the coupling of the mixing vessel to the upper housing section when in the coupling position and uncouples the mixing vessel from the upper housing section when in the uncoupling position.

Exhibit 30

Claim Chart Comparing the Mazzen Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

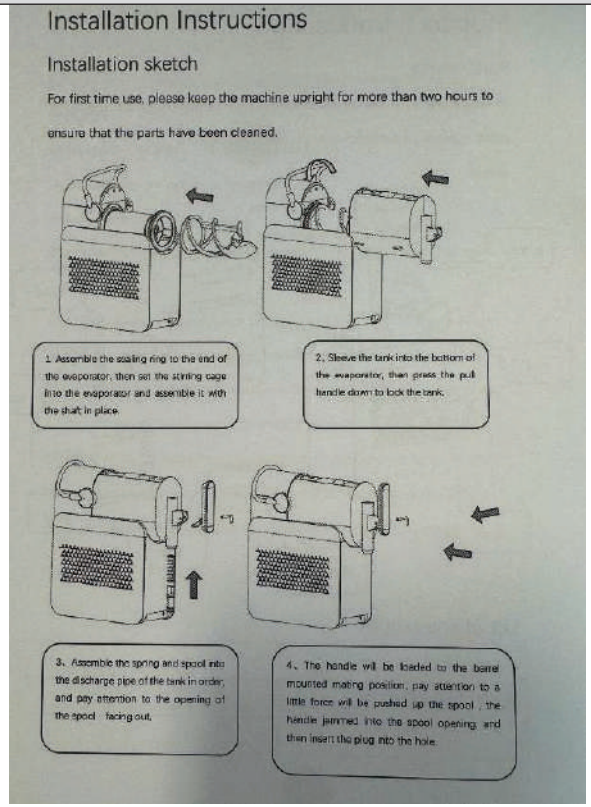
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 30

Claim Chart Comparing the Mazzen Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

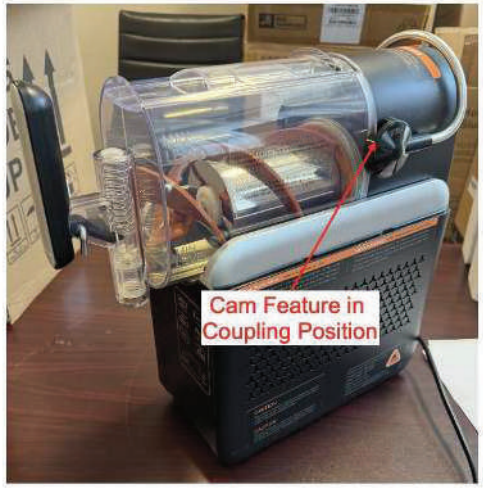
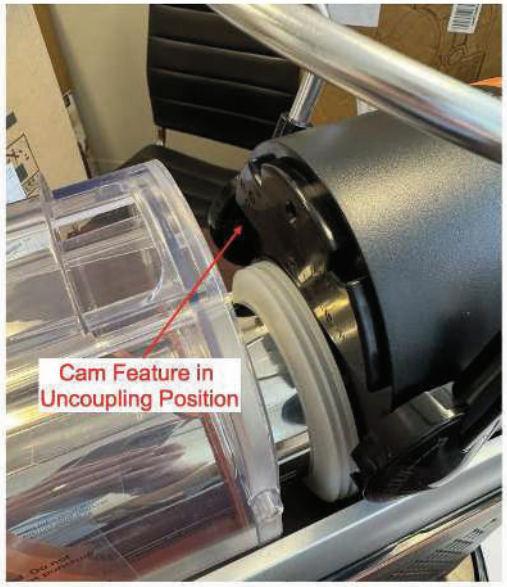
Claim Element	**Accused Product**
	  Photographs of Accused Product (annotated). *Id.*, Cl. 24[a].
24[h]: wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.	When the cam feature of the Accused Product is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal about the first opening.

Exhibit 30

Claim Chart Comparing the Mazzen Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

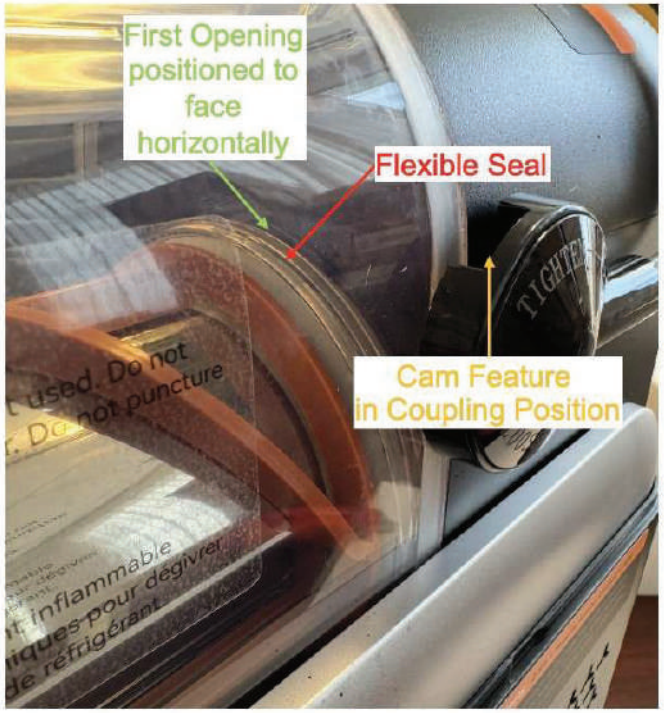
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
30. The frozen drink maker of claim 24, wherein the housing comprises a lever moveable relative to the upper housing section, wherein moving the lever to a first position moves the cam feature into the coupling position, and wherein, when in the	The lever of the Accused Product is moveable relative to the upper housing section.

Exhibit 30

Claim Chart Comparing the Mazzen Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling of the mixing vessel to the upper housing section.	 Photographs of Accused Product (annotated). Moving the lever of the Accused Product to a first position moves the cam feature into the coupling position. When in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling the mixing vessel to the upper housing section.

Exhibit 30

Claim Chart Comparing the Mazzen Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

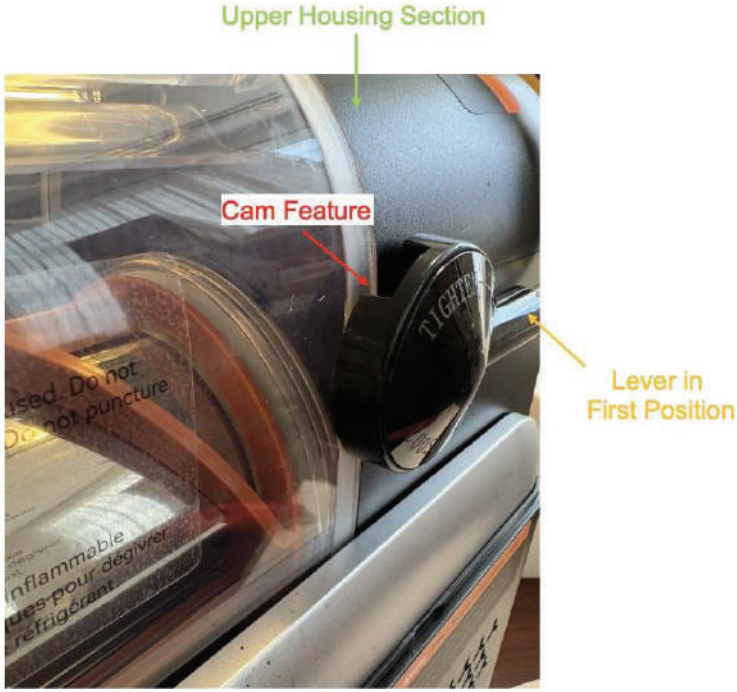
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 30

Claim Chart Comparing the Mazzen Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

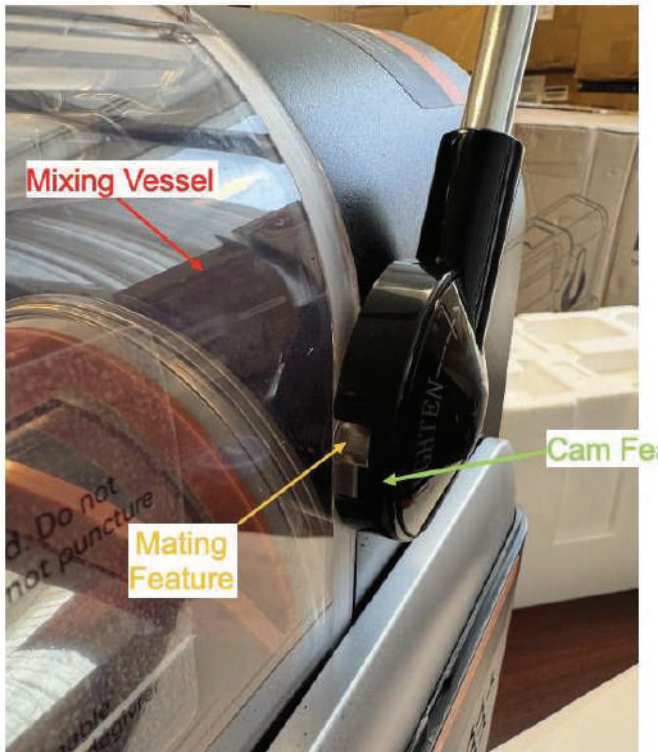
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

EXHIBIT 31

Exhibit 31
Claim Chart Comparing the MuliVid Frozen Drink Maker to U.S. Patent No. 12,593,855

Below is a chart that applies asserted exemplary independent claim 24 and 30 of U.S. Patent No. 12,593,855 (the "'855 Patent") to the accused MuliVid Frozen Drink Maker ("Accused Product"), purchased at the following listing: www.amazon.com/dp/B0FQNZFLL2 (ASIN B0FQNZFLL2).

The arguments and evidence cited in the chart below are representative and Plaintiffs reserve the right to rely on additional arguments and evidence to show that the above-identified accused product infringes exemplary independent claim 24 and 30 of the '855 Patent.

Claim Element	Accused Product
24[Pre.]: A frozen drink maker comprising:	 Accused Product Packaging.

Exhibit 31
Claim Chart Comparing the MuliVid Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;	 Photograph of Accused Product (annotated). The cam feature of the Accused Product is moveable between a coupling position and uncoupling position.

Exhibit 31
Claim Chart Comparing the MuliVid Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	Photographs of Accused Product (annotated).

Exhibit 31
Claim Chart Comparing the MuliVid Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Accused Product Instruction Manual.
24[b]: a mixing vessel to receive a drink product, the mixing vessel having:	The mixing vessel is configured to receive a drink product.

Exhibit 31
Claim Chart Comparing the MuliVid Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 31
Claim Chart Comparing the MuliVid Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

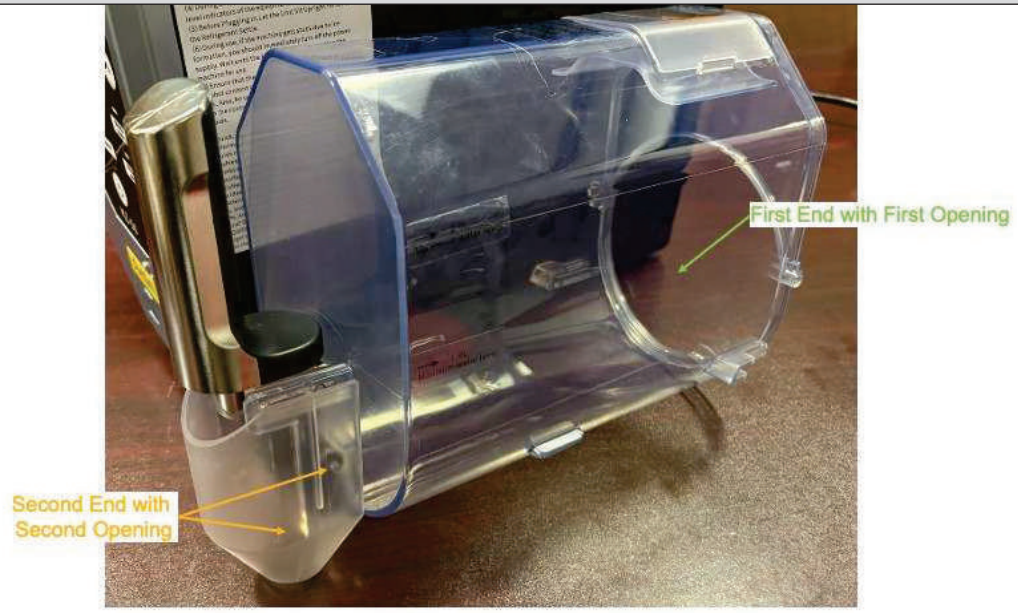
Claim Element	Accused Product
24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and	 Photograph of Accused Product (annotated). The second opening of the mixing vessel of the Accused Product is configured to dispense a drink product.

Exhibit 31
Claim Chart Comparing the MuliVid Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

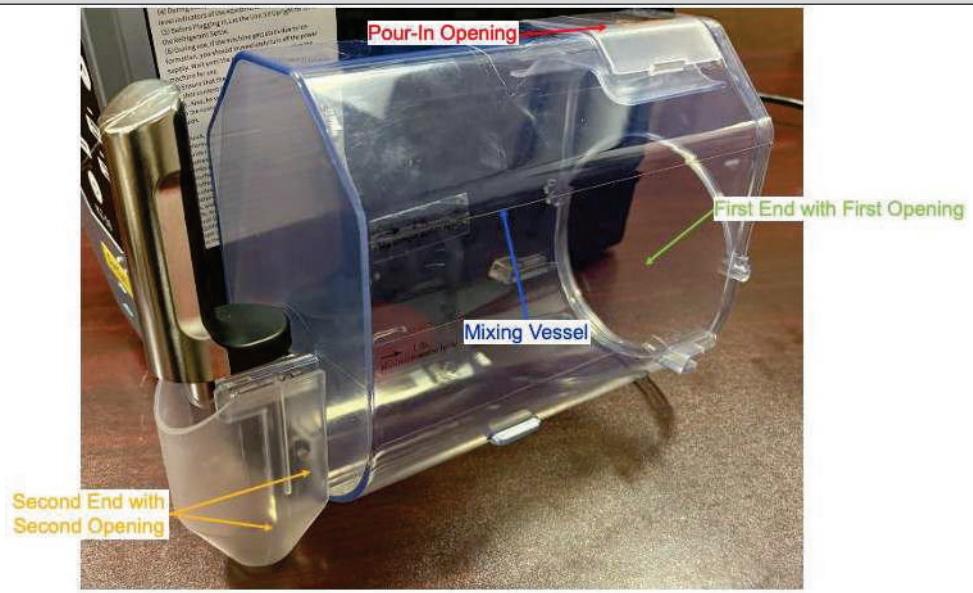
Claim Element	Accused Product
24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;	 Photograph of Accused Product (annotated).
24[c]: a dasher configured to rotate in the mixing vessel;	The dasher of the Accused Product is configured to rotate in the mixing vessel to stir the drink product.

Exhibit 31
Claim Chart Comparing the MuliVid Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
24[d]: a motor to drive the dasher;	The Accused Product includes a motor that drives the dasher to rotate it to stir the drink product.

Exhibit 31

Claim Chart Comparing the MuliVid Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

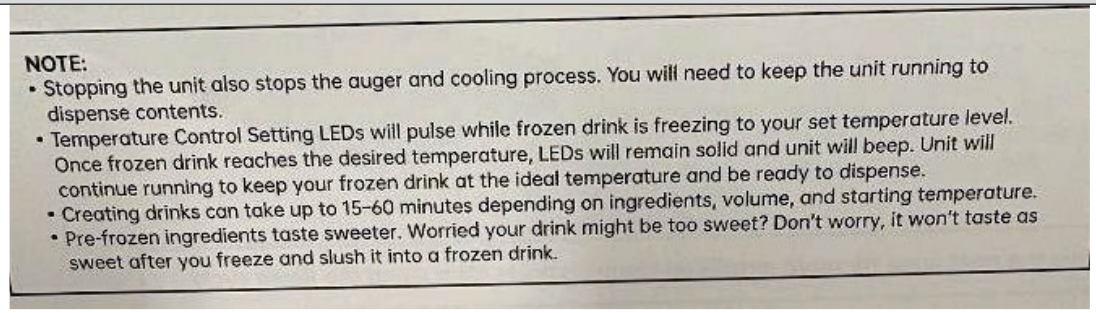
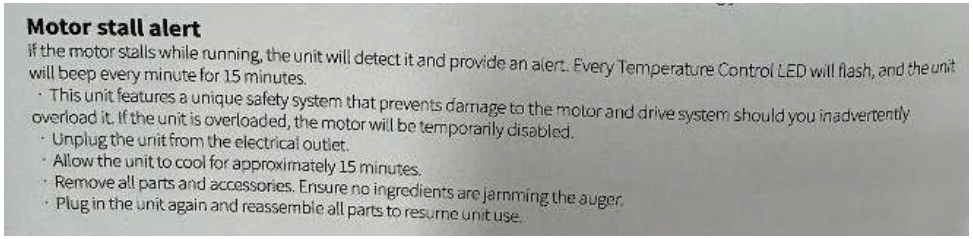
Claim Element	Accused Product
	 **NOTE:** • Stopping the unit also stops the auger and cooling process. You will need to keep the unit running to dispense contents. • Temperature Control Setting LEDs will pulse while frozen drink is freezing to your set temperature level. Once frozen drink reaches the desired temperature, LEDs will remain solid and unit will beep. Unit will continue running to keep your frozen drink at the ideal temperature and be ready to dispense. • Creating drinks can take up to 15-60 minutes depending on ingredients, volume, and starting temperature. • Pre-frozen ingredients taste sweeter. Worried your drink might be too sweet? Don't worry, it won't taste as sweet after you freeze and slush it into a frozen drink. Accused Product Instruction Manual.  **Motor stall alert** If the motor stalls while running, the unit will detect it and provide an alert. Every Temperature Control LED will flash, and the unit will beep every minute for 15 minutes. · This unit features a unique safety system that prevents damage to the motor and drive system should you inadvertently overload it. If the unit is overloaded, the motor will be temporarily disabled. · Unplug the unit from the electrical outlet. · Allow the unit to cool for approximately 15 minutes. · Remove all parts and accessories. Ensure no ingredients are jamming the auger. · Plug in the unit again and reassemble all parts to resume unit use. Accused Product Instruction Manual. As confirmed by product testing, during operation a motor of the frozen drink maker drives the dasher to rotate.

Exhibit 31

Claim Chart Comparing the MuliVid Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

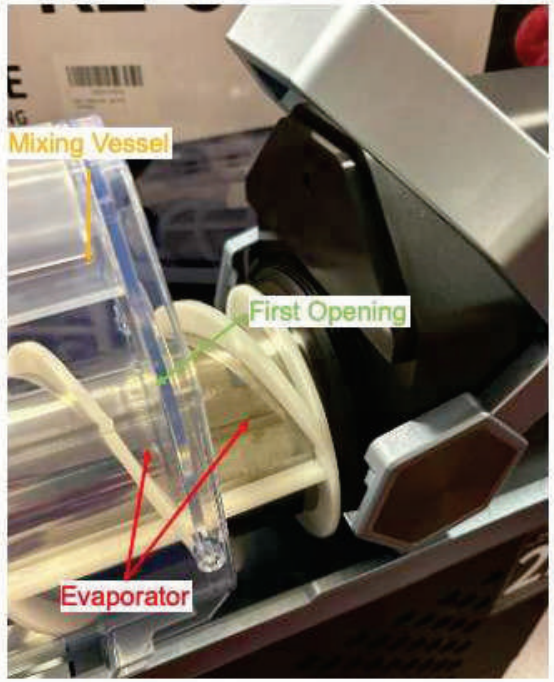
Claim Element	Accused Product
24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and	 Photograph of Accused Product (annotated). The evaporator is received through the first opening of the mixing vessel.

Exhibit 31

Claim Chart Comparing the MuliVid Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 31

Claim Chart Comparing the MuliVid Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
24[f]: a flexible seal arranged proximate to the upper housing section;	 Photograph of Accused Product (annotated). As confirmed by product testing, the flexible seal comprises a flexible material.
24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling	The cam feature of the Accused Product controls the coupling of the mixing vessel to the upper housing section when in the coupling position and uncouples the mixing vessel from the upper housing section when in the uncoupling position.

Exhibit 31

Claim Chart Comparing the MuliVid Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
the mixing vessel from the upper housing section when in the uncoupling position, and	 Accused Product Instruction Manual.

Exhibit 31

Claim Chart Comparing the MuliVid Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Photographs of Accused Product (annotated). *Id.*, Cl. 24[a].
24[h]: wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.	When the cam feature of the Accused Product is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal about the first opening.

Exhibit 31

Claim Chart Comparing the MuliVid Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

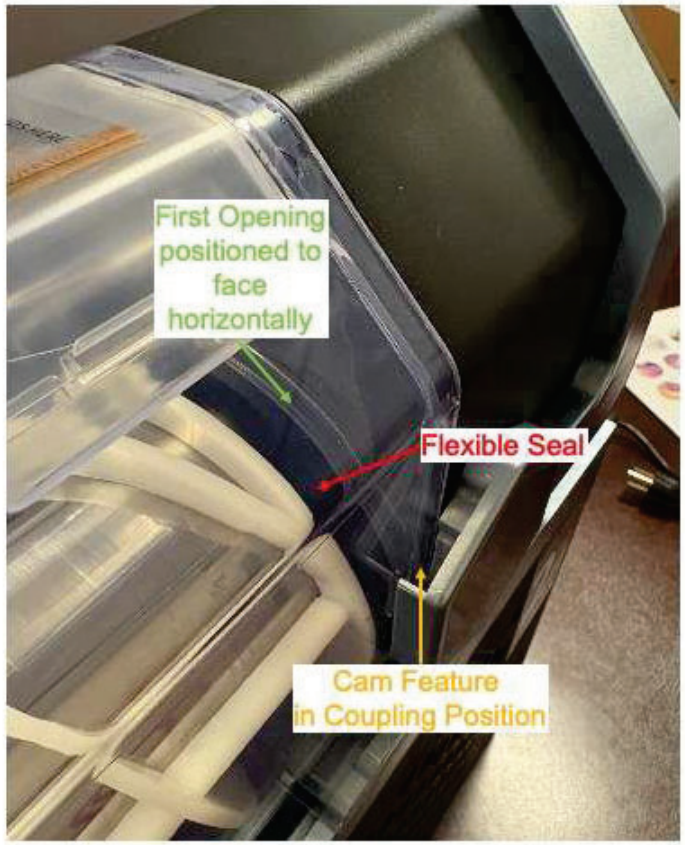
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
30. The frozen drink maker of claim 24, wherein the housing comprises a lever moveable relative to the upper housing section, wherein moving the lever to a first position moves the	The lever of the Accused Product is moveable relative to the upper housing section.

Exhibit 31

Claim Chart Comparing the MuliVid Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
cam feature into the coupling position, and wherein, when in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling of the mixing vessel to the upper housing section.	Photographs of Accused Product (annotated). Moving the lever of the Accused Product to a first position moves the cam feature into the coupling position. When in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling the mixing vessel to the upper housing section.

Exhibit 31

Claim Chart Comparing the MuliVid Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 31

Claim Chart Comparing the MuliVid Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

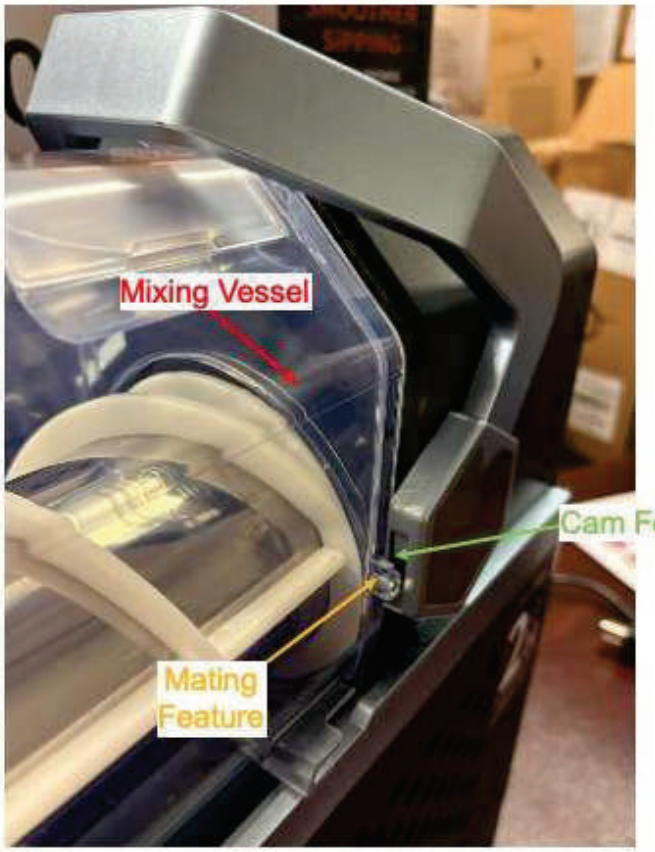
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

EXHIBIT 32

Exhibit 32
Claim Chart Comparing the NutriChef Frozen Drink Maker to U.S. Patent No. 12,593,855

Below is a chart that applies asserted exemplary independent claim 24 and 30 of U.S. Patent No. 12,593,855 (the "'855 Patent") to the accused NutriChef Frozen Drink Maker ("Accused Product"), purchased at the following listing: www.amazon.com/dp/B0GNNP6SNB (ASIN B0GNNP6SNB).

The arguments and evidence cited in the chart below are representative and Plaintiffs reserve the right to rely on additional arguments and evidence to show that the above-identified accused product infringes exemplary independent claim 24 and 30 of the '855 Patent.

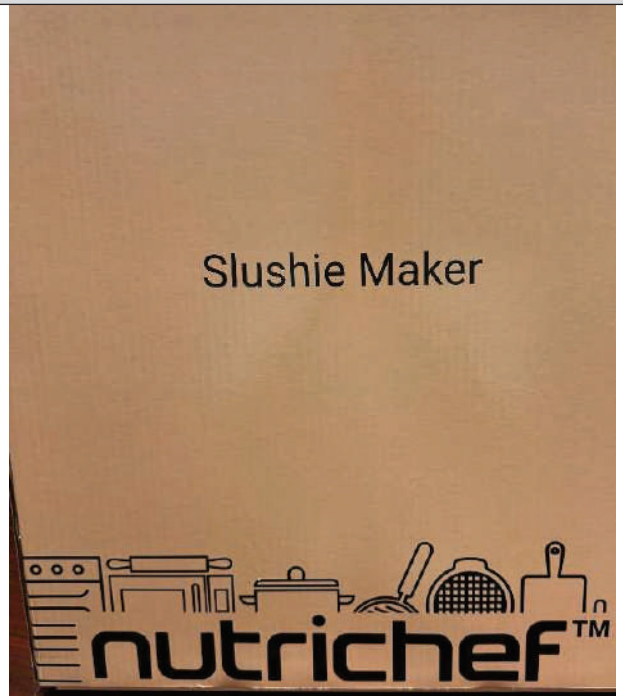
Claim Element	**Accused Product**
24[Pre.]: A frozen drink maker comprising:	 Accused Product Packaging.

Exhibit 32
Claim Chart Comparing the NutriChef Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

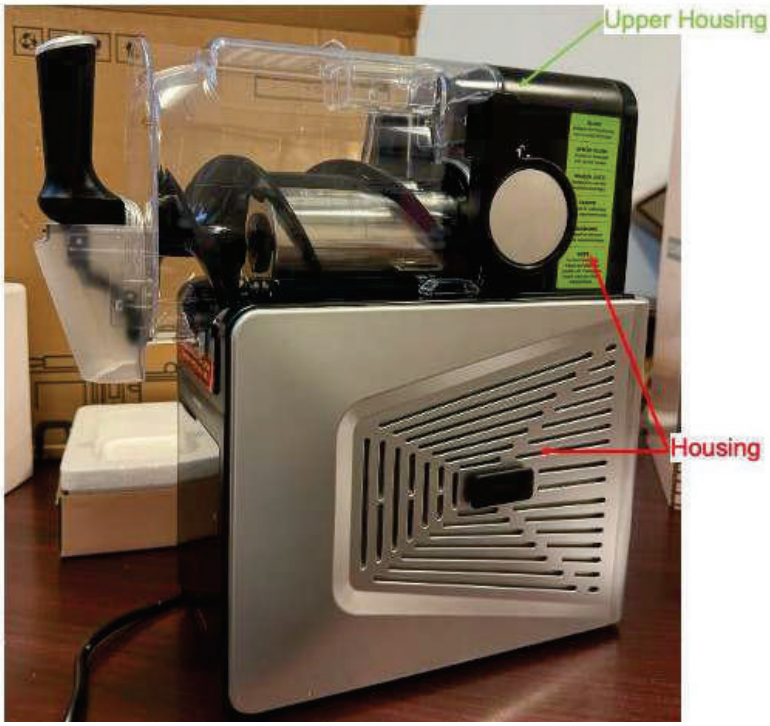
Claim Element	Accused Product
24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;	 Photograph of Accused Product (annotated). The cam feature of the Accused Product is moveable between a coupling position and uncoupling position.

Exhibit 32
Claim Chart Comparing the NutriChef Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Photographs of Accused Product (annotated).

Exhibit 32
Claim Chart Comparing the NutriChef Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

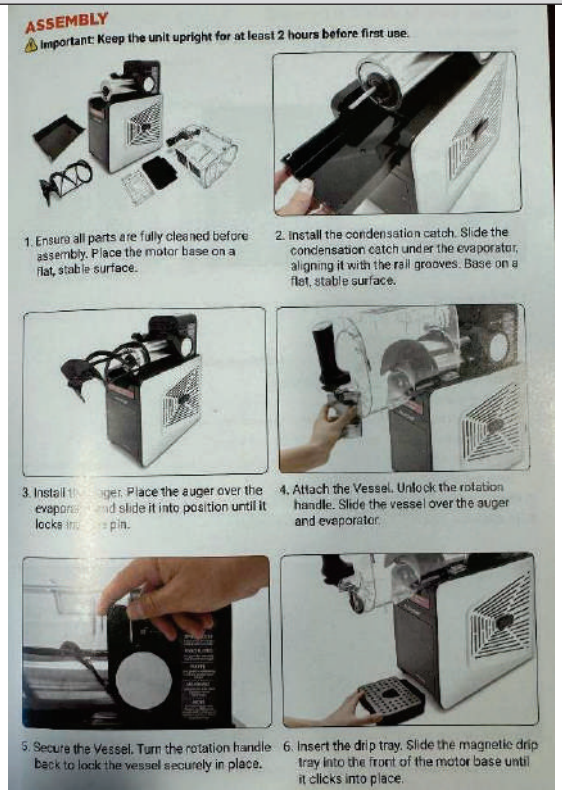
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 32
Claim Chart Comparing the NutriChef Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

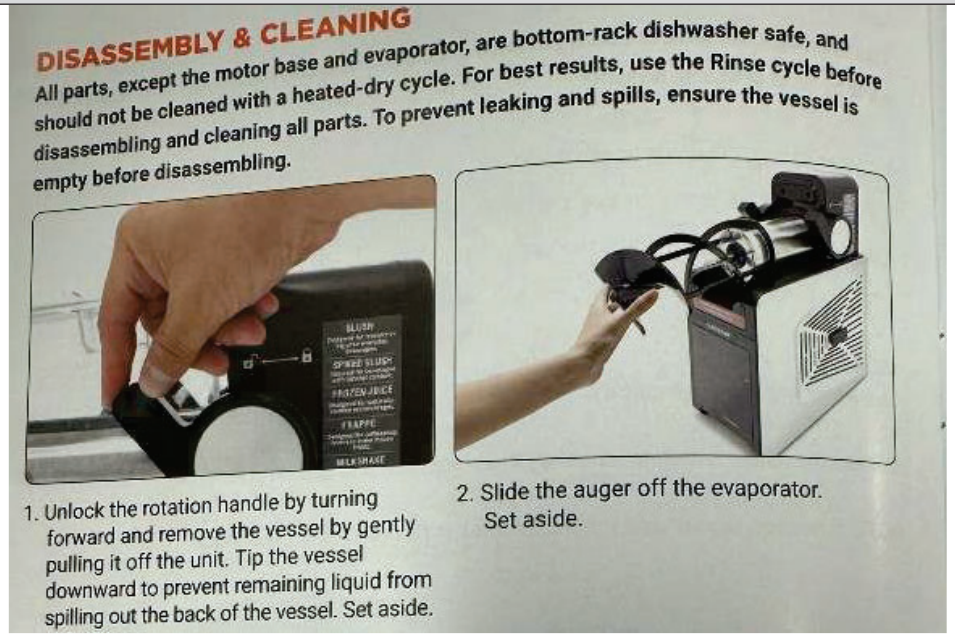
Claim Element	Accused Product
	 Accused Product Instruction Manual.
24[b]: a mixing vessel to receive a drink product, the mixing vessel having:	The mixing vessel is configured to receive a drink product.

Exhibit 32
Claim Chart Comparing the NutriChef Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

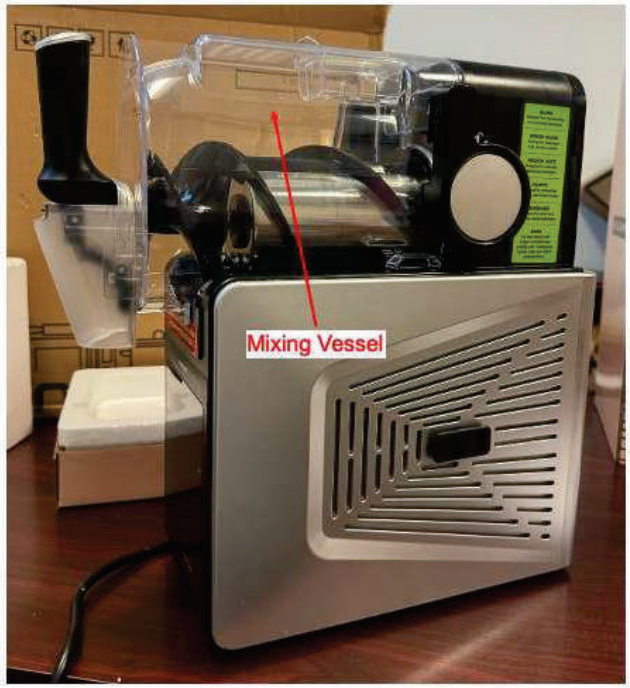
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 32
Claim Chart Comparing the NutriChef Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and	Photograph of Accused Product (annotated). The second opening of the mixing vessel of the Accused Product is configured to dispense a drink product.

Exhibit 32
Claim Chart Comparing the NutriChef Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

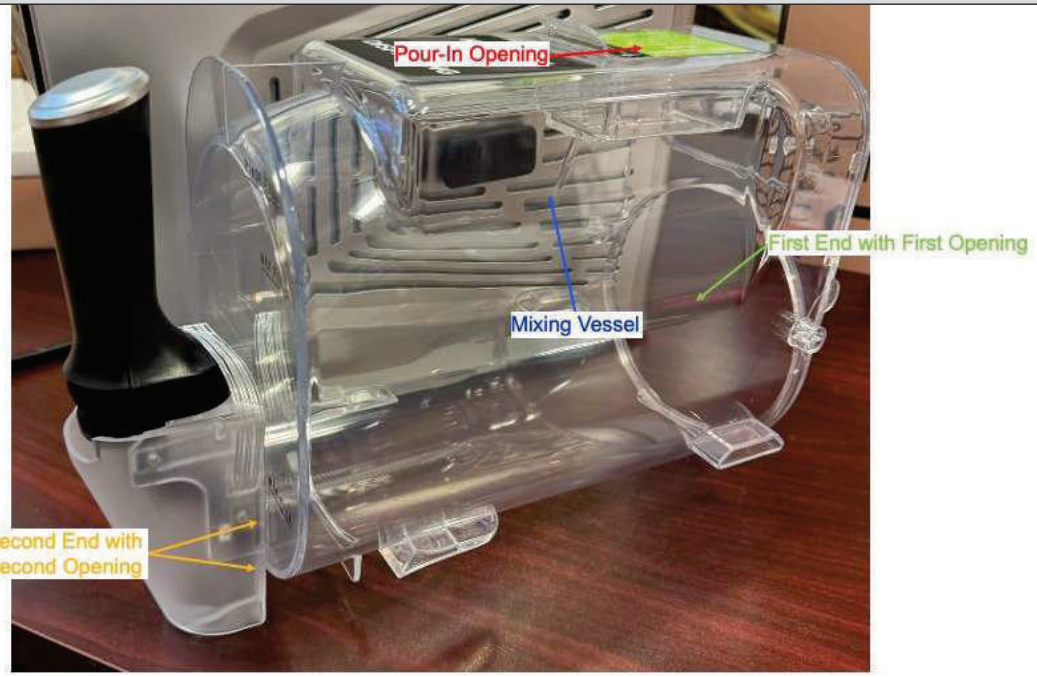
Claim Element	Accused Product
24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;	 Photograph of Accused Product (annotated).
24[c]: a dasher configured to rotate in the mixing vessel;	The dasher of the Accused Product is configured to rotate in the mixing vessel to stir the drink product.

Exhibit 32

Claim Chart Comparing the NutriChef Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

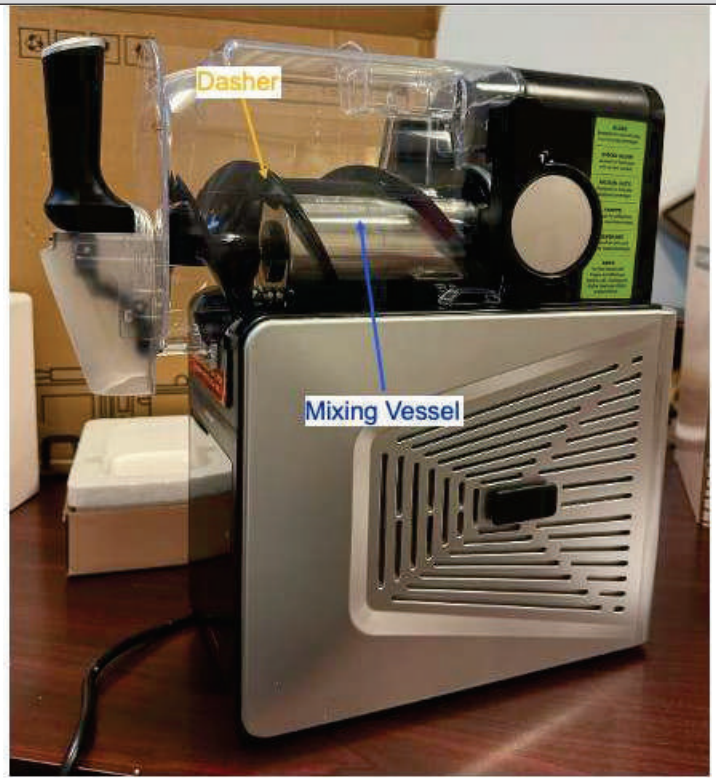
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
24[d]: a motor to drive the dasher;	The Accused Product includes a motor that drives the dasher to rotate it to stir the drink product. As confirmed by product testing, during operation a motor of the frozen drink maker drives the dasher to rotate.

Exhibit 32

Claim Chart Comparing the NutriChef Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

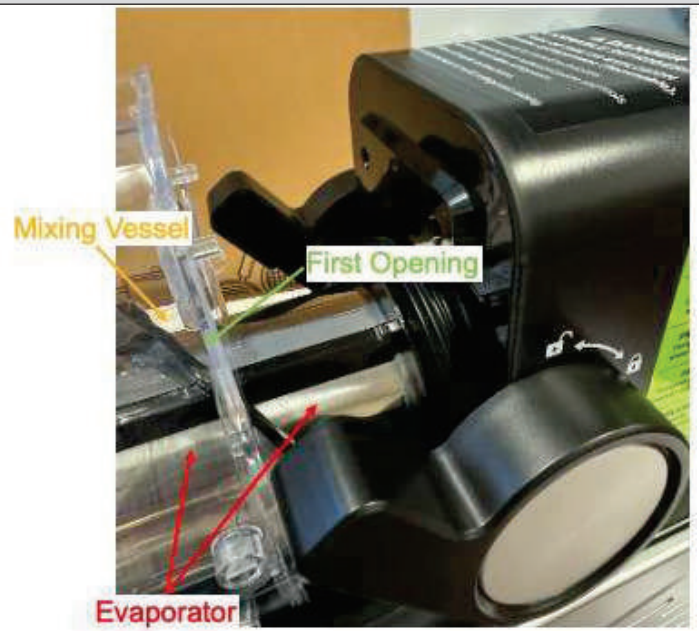
Claim Element	Accused Product
24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and	 Photograph of Accused Product (annotated). The evaporator is received through the first opening of the mixing vessel.

Exhibit 32

Claim Chart Comparing the NutriChef Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

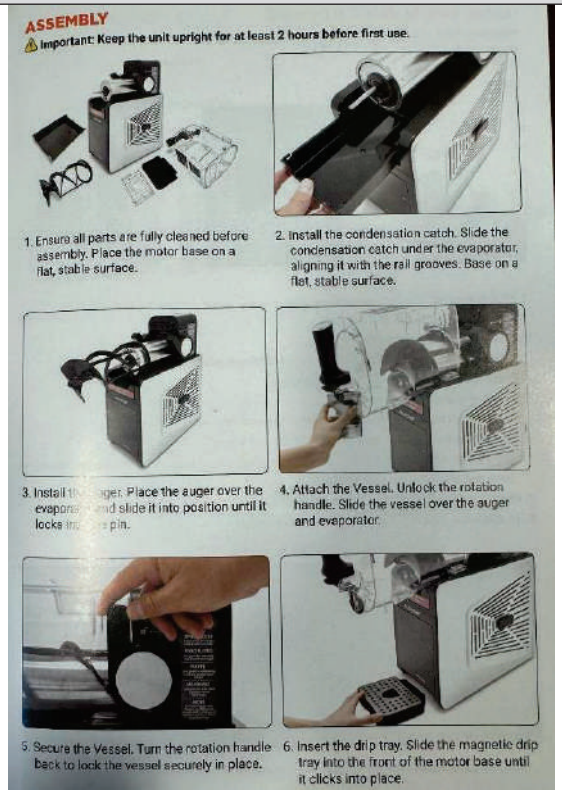
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 32

Claim Chart Comparing the NutriChef Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

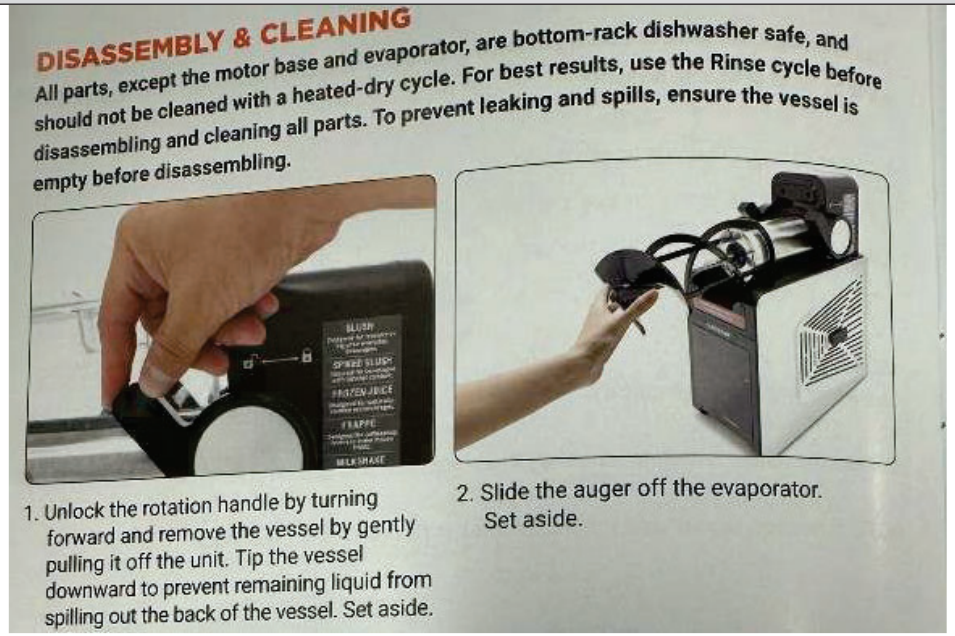
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 32

Claim Chart Comparing the NutriChef Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
24[f]: a flexible seal arranged proximate to the upper housing section;	 Photograph of Accused Product (annotated). As confirmed by product testing, the flexible seal comprises a flexible material.
24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper	The cam feature of the Accused Product controls the coupling of the mixing vessel to the upper housing section when in the coupling position and uncouples the mixing vessel from the upper housing section when in the uncoupling position.

Exhibit 32

Claim Chart Comparing the NutriChef Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

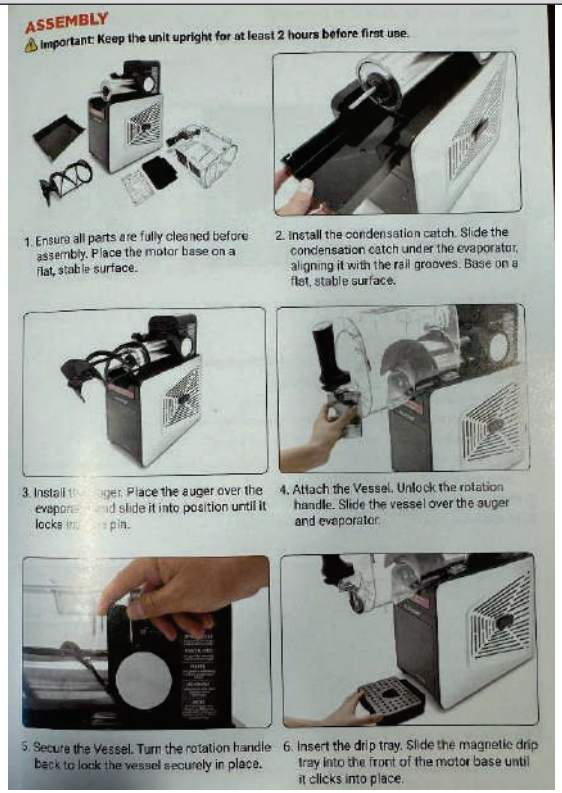
Claim Element	Accused Product
housing section when in the uncoupling position, and	 Accused Product Instruction Manual.

Exhibit 32

Claim Chart Comparing the NutriChef Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

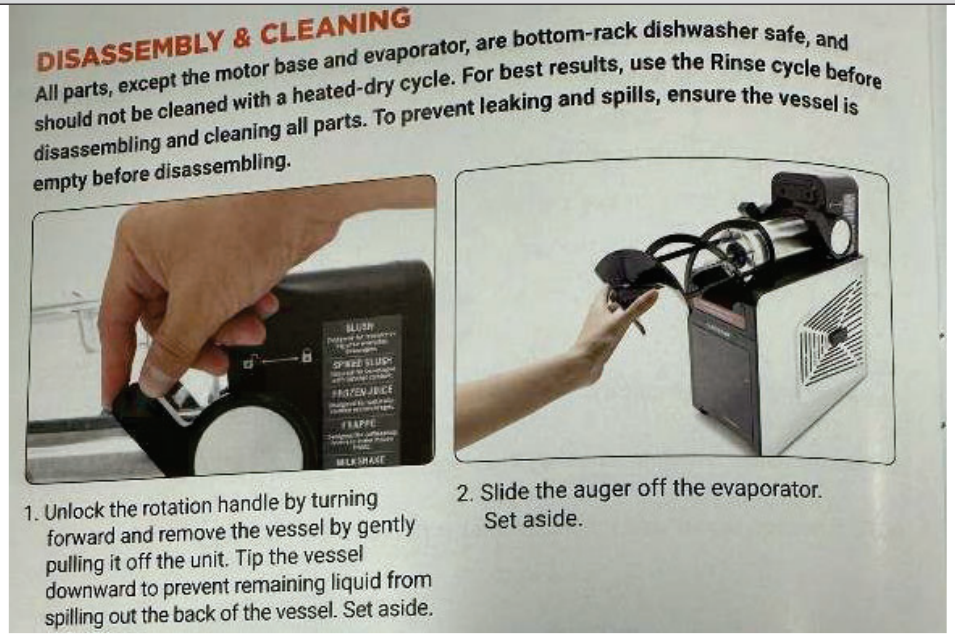
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 32

Claim Chart Comparing the NutriChef Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	**Accused Product**
	Photographs of Accused Product (annotated). *Id.*, Cl. 24[a].
24[h]: wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.	When the cam feature of the Accused Product is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal about the first opening.

Exhibit 32

Claim Chart Comparing the NutriChef Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

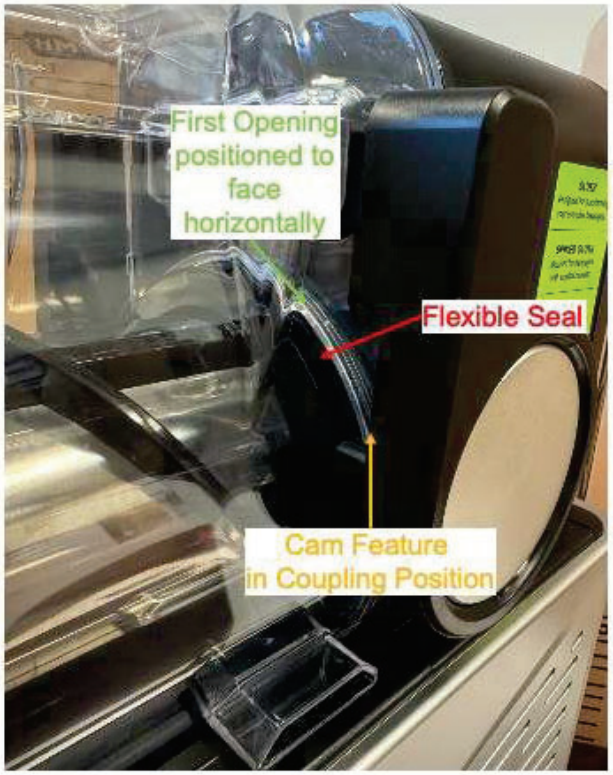
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
30. The frozen drink maker of claim 24, wherein the housing comprises a lever moveable relative to the upper housing section, wherein moving the lever to a first position moves the cam feature into the coupling	The lever of the Accused Product is moveable relative to the upper housing section.

Exhibit 32

Claim Chart Comparing the NutriChef Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
position, and wherein, when in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling of the mixing vessel to the upper housing section.	 Photographs of Accused Product (annotated). Moving the lever of the Accused Product to a first position moves the cam feature into the coupling position. When in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling the mixing vessel to the upper housing section.

Exhibit 32

Claim Chart Comparing the NutriChef Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 32

Claim Chart Comparing the NutriChef Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

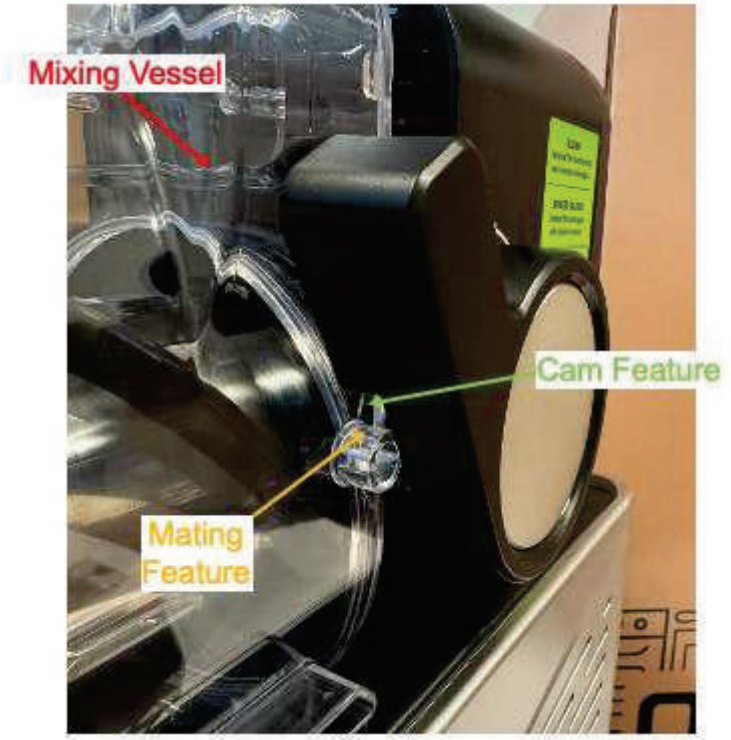
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

EXHIBIT 33

Exhibit 33
Claim Chart Comparing the Ontravelo Frozen Drink Maker to U.S. Patent No. 12,593,855

Below is a chart that applies asserted exemplary independent claim 24 and 30 of U.S. Patent No. 12,593,855 (the "'855 Patent") to the accused Ontravelo Frozen Drink Maker ("Accused Product"), purchased at the following listing: www.amazon.com/dp/B0FR7J6MWS (ASIN B0FR7J6MWS).

The arguments and evidence cited in the chart below are representative and Plaintiffs reserve the right to rely on additional arguments and evidence to show that the above-identified accused product infringes exemplary independent claim 24 and 30 of the '855 Patent.

Claim Element	Accused Product
24[Pre.]: A frozen drink maker comprising:	 Accused Product Packaging.

Exhibit 33
Claim Chart Comparing the Ontravelo Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

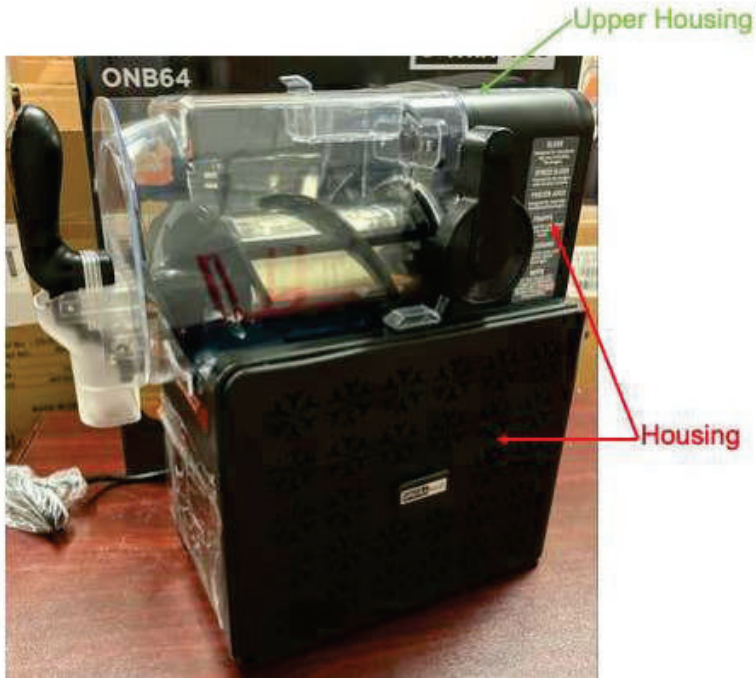
Claim Element	Accused Product
24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;	 Photograph of Accused Product (annotated). The cam feature of the Accused Product is moveable between a coupling position and uncoupling position.

Exhibit 33
Claim Chart Comparing the Ontravelo Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

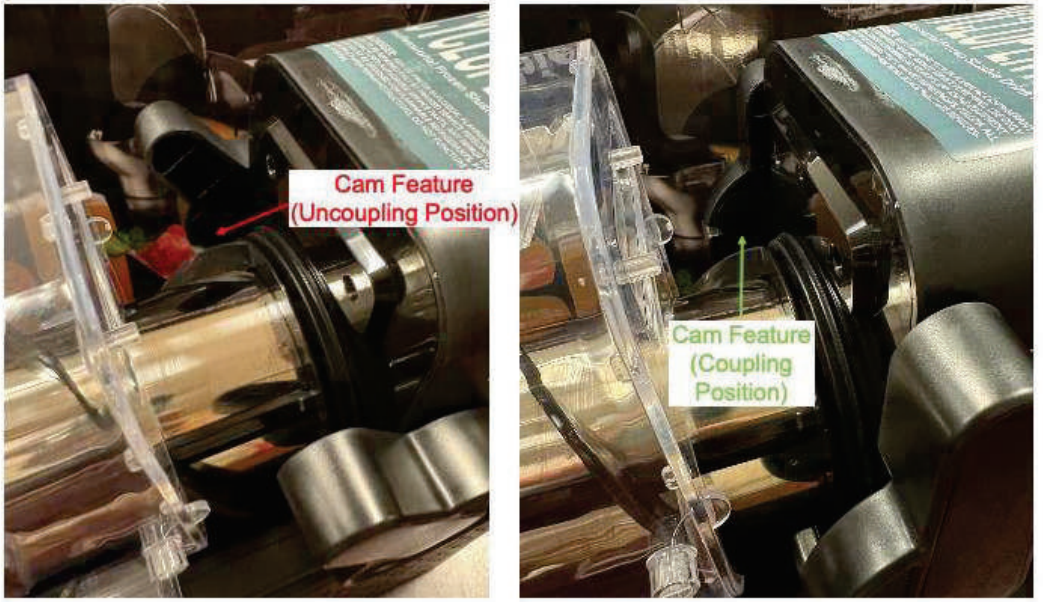
Claim Element	Accused Product
	 Photographs of Accused Product (annotated).

Exhibit 33
Claim Chart Comparing the Ontravelo Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

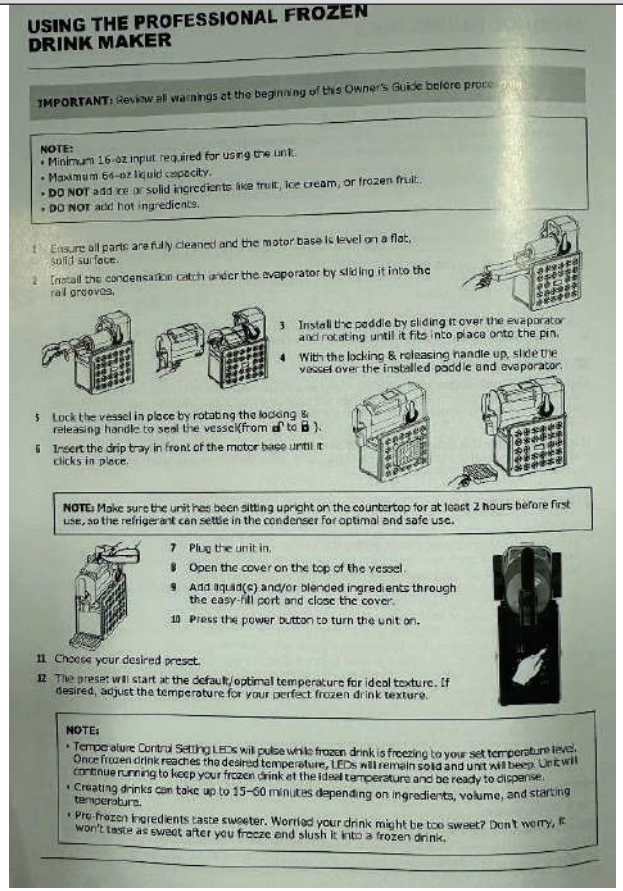
Claim Element	Accused Product
	 Accused Product Instruction Manual.
24[b]: a mixing vessel to receive a drink product, the mixing vessel having:	The mixing vessel is configured to receive a drink product.

Exhibit 33
Claim Chart Comparing the Ontravelo Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

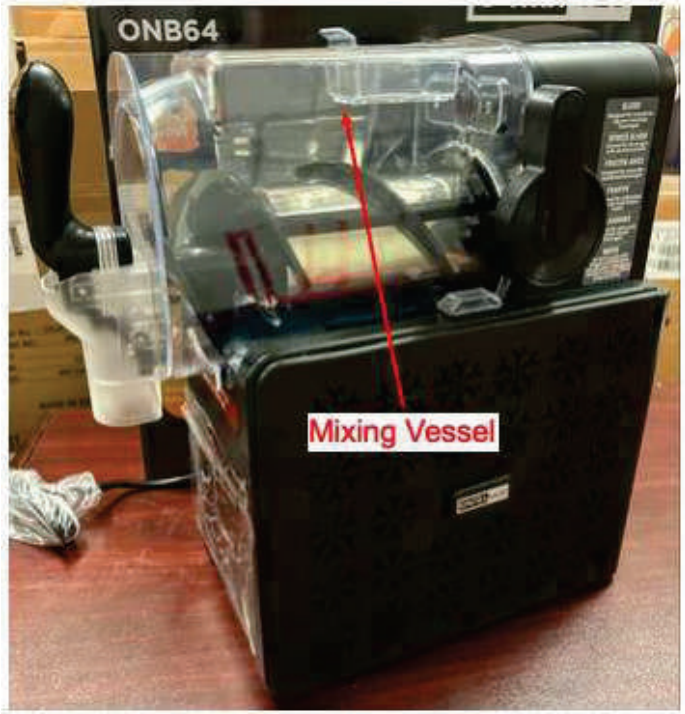
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 33
Claim Chart Comparing the Ontravelo Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

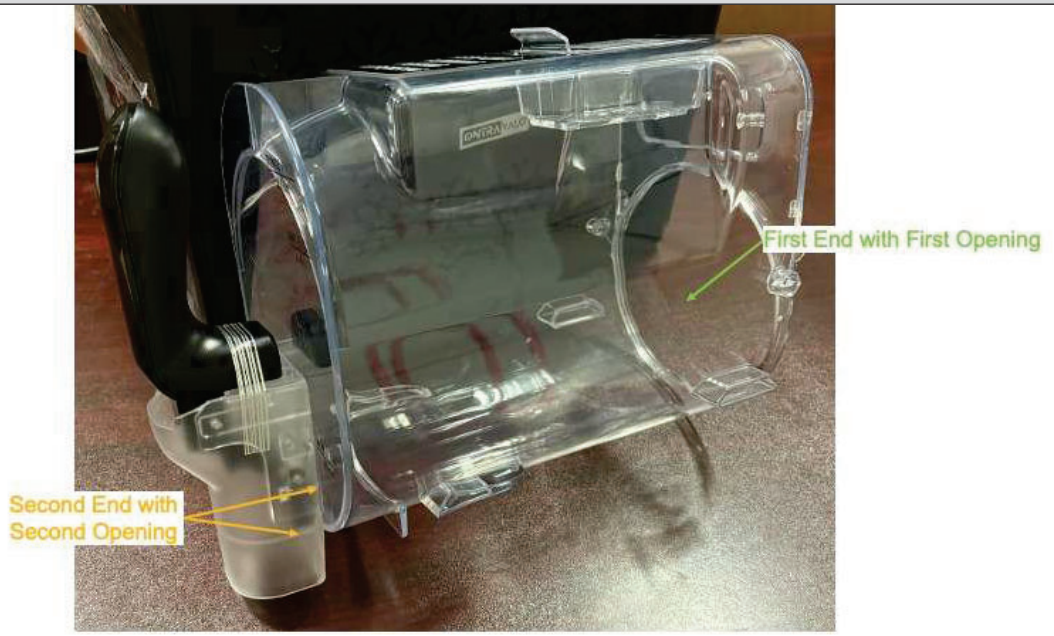
Claim Element	Accused Product
24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and	 Photograph of Accused Product (annotated). The second opening of the mixing vessel of the Accused Product is configured to dispense a drink product.

Exhibit 33
Claim Chart Comparing the Ontravelo Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

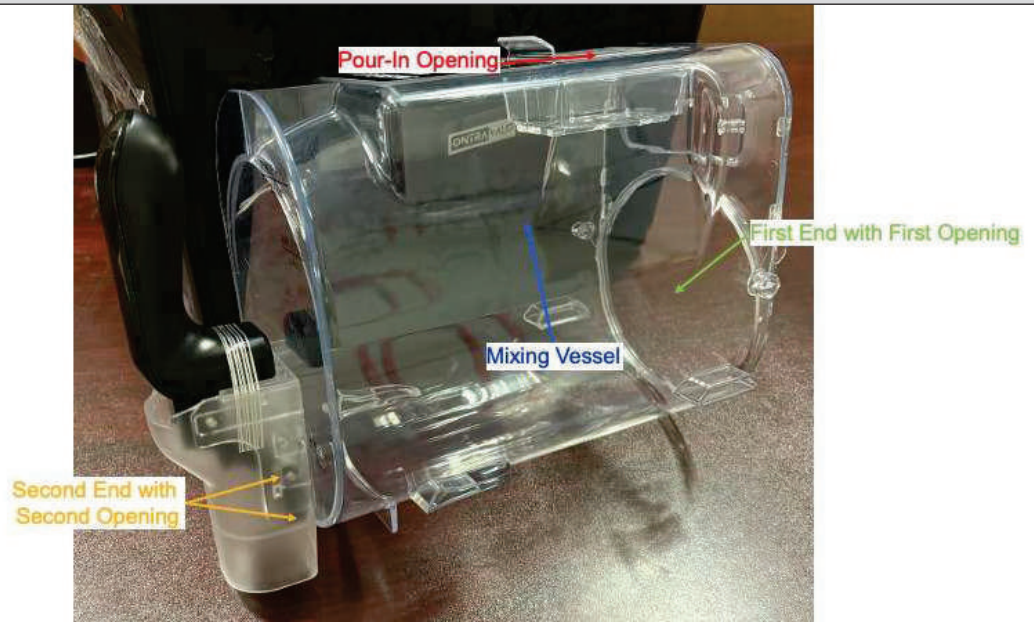
Claim Element	Accused Product
24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;	 Photograph of Accused Product (annotated).
24[c]: a dasher configured to rotate in the mixing vessel;	The dasher of the Accused Product is configured to rotate in the mixing vessel to stir the drink product.

Exhibit 33
Claim Chart Comparing the Ontravelo Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

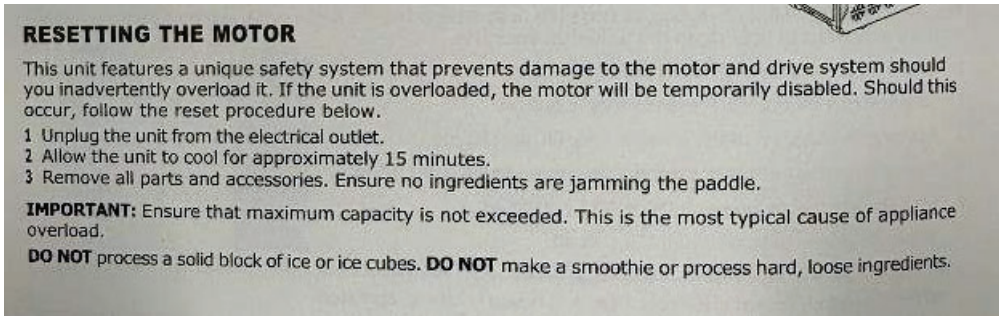
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
24[d]: a motor to drive the dasher;	The Accused Product includes a motor that drives the dasher to rotate it to stir the drink product. 

Exhibit 33

Claim Chart Comparing the Ontravelo Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

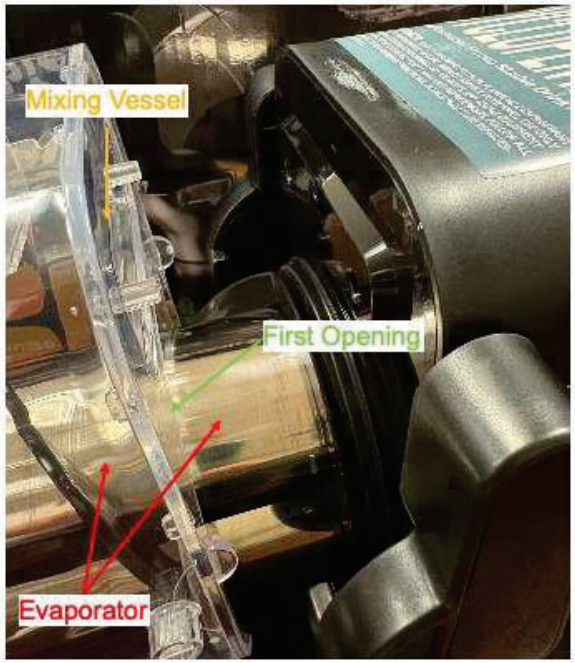
Claim Element	Accused Product
	Accused Product Instruction Manual. As confirmed by product testing, during operation a motor of the frozen drink maker drives the dasher to rotate.
24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and	 Photograph of Accused Product (annotated). The evaporator is received through the first opening of the mixing vessel.

Exhibit 33

Claim Chart Comparing the Ontravelo Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

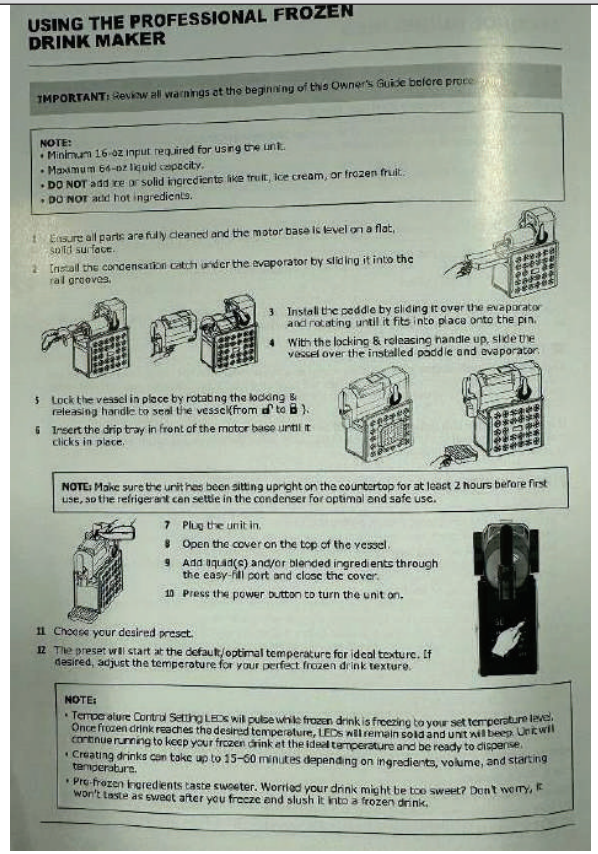
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 33

Claim Chart Comparing the Ontravelo Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

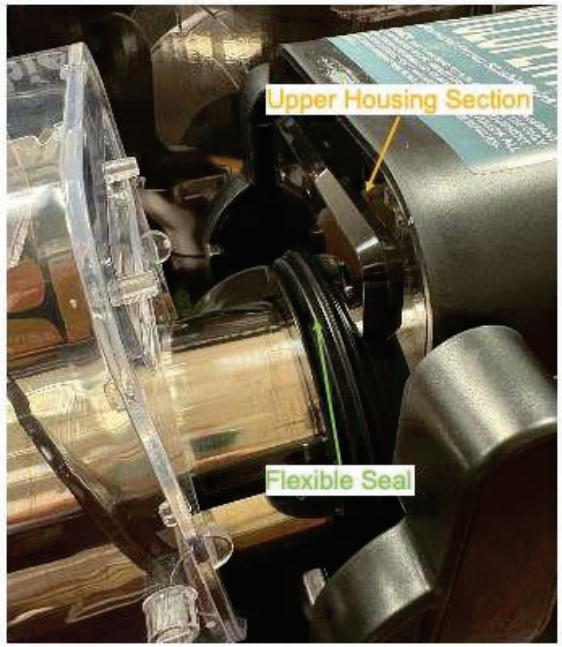
Claim Element	Accused Product
24[f]: a flexible seal arranged proximate to the upper housing section;	 Photograph of Accused Product (annotated). As confirmed by product testing, the flexible seal comprises a flexible material.
24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position, and	The cam feature of the Accused Product controls the coupling of the mixing vessel to the upper housing section when in the coupling position and uncouples the mixing vessel from the upper housing section when in the uncoupling position.

Exhibit 33

Claim Chart Comparing the Ontravelo Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

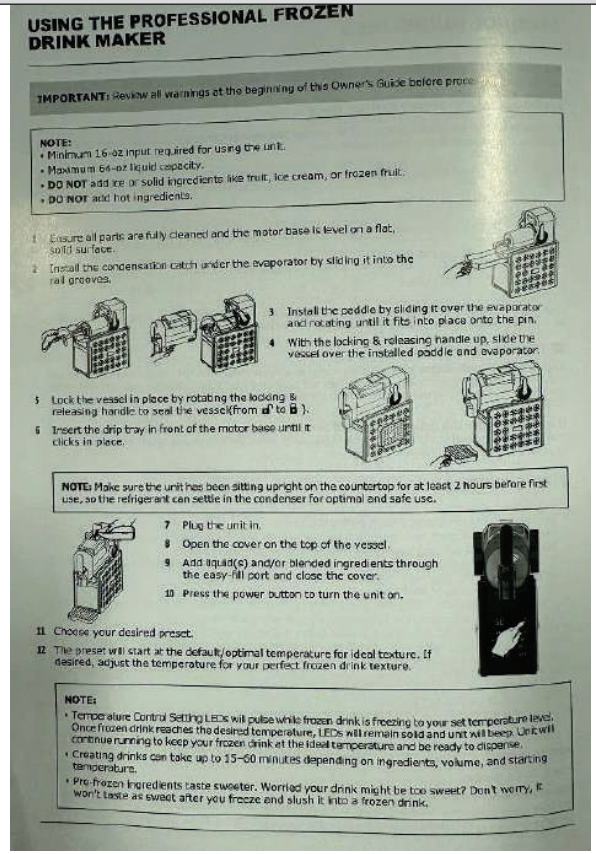
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 33

Claim Chart Comparing the Ontravelo Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

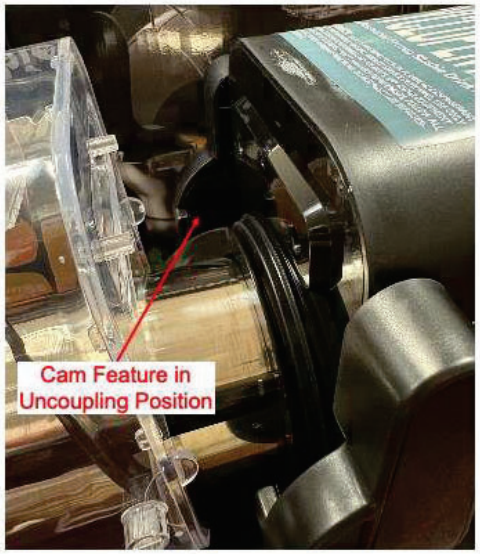
Claim Element	**Accused Product**
	 Photographs of Accused Product (annotated). *Id.*, Cl. 24[a].
24[h]: wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.	When the cam feature of the Accused Product is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal about the first opening.

Exhibit 33

Claim Chart Comparing the Ontravelo Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

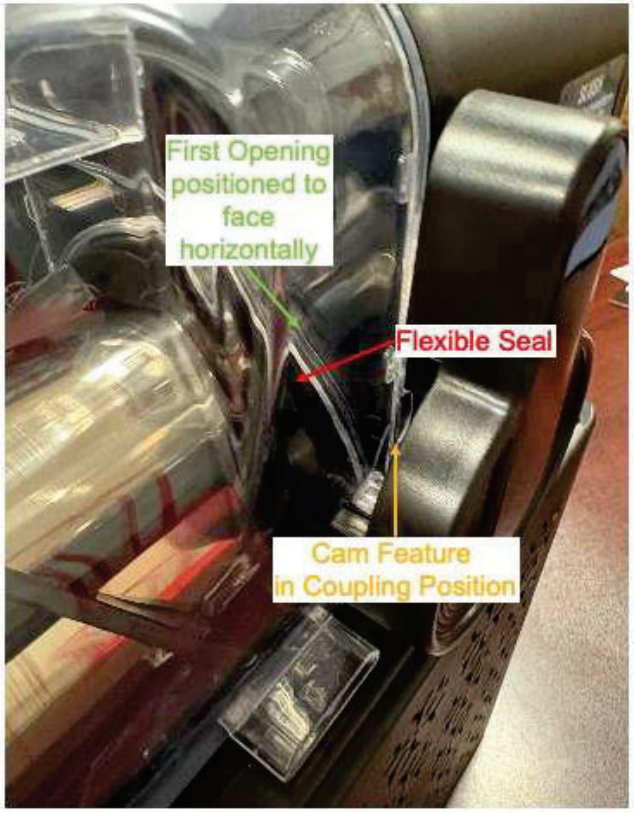
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
30. The frozen drink maker of claim 24, wherein the housing comprises a lever moveable relative to the upper housing section, wherein moving the lever to a first position moves the cam feature into the coupling	The lever of the Accused Product is moveable relative to the upper housing section.

Exhibit 33

Claim Chart Comparing the Ontravelo Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
position, and wherein, when in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling of the mixing vessel to the upper housing section.	 Photographs of Accused Product (annotated). Moving the lever of the Accused Product to a first position moves the cam feature into the coupling position. When in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling the mixing vessel to the upper housing section.

Exhibit 33

Claim Chart Comparing the Ontravelo Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

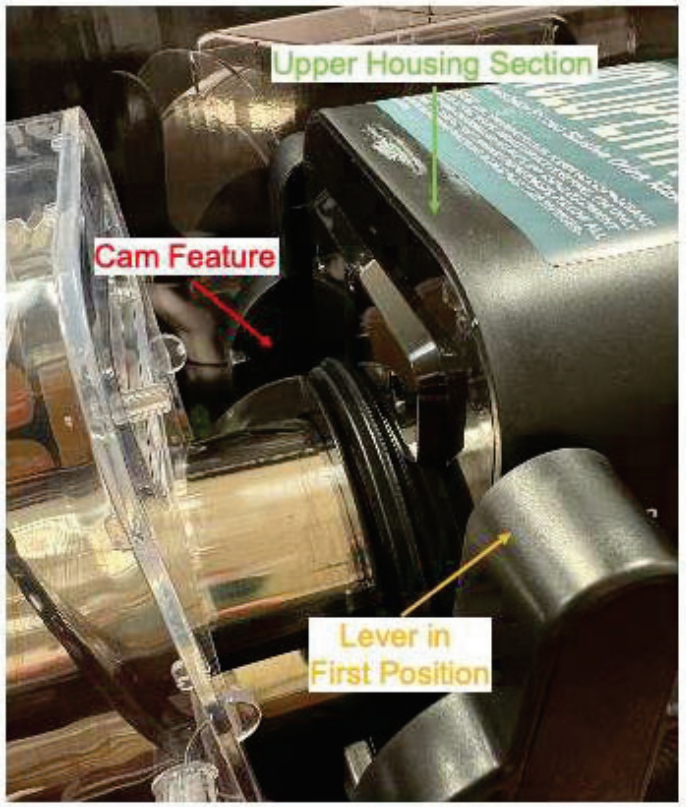
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 33

Claim Chart Comparing the Ontravelo Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

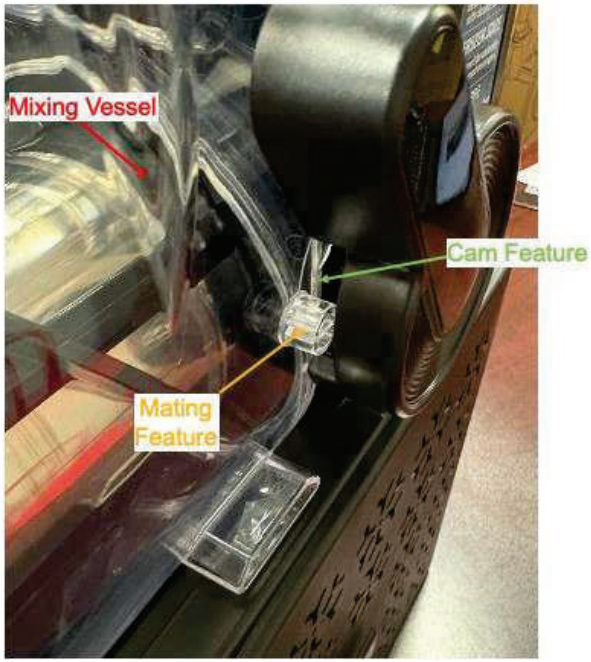
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

EXHIBIT 34

Exhibit 34
Claim Chart Comparing the Ryrot Frozen Drink Maker to U.S. Patent No. 12,593,855

Below is a chart that applies asserted exemplary independent claim 24 of U.S. Patent No. 12,593,855 (the "'855 Patent") to the accused Ryrot Frozen Drink Maker ("Accused Product"), purchased at the following listing: www.amazon.com/dp/B0FGNGYGPD (ASIN B0FGNGYGPD).

The arguments and evidence cited in the chart below are representative and Plaintiffs reserve the right to rely on additional arguments and evidence to show that the above-identified accused product infringes exemplary independent claim 24 of the '855 Patent.

Claim Element	Accused Product
24[Pre.]: A frozen drink maker comprising:	 Accused Product Packaging.

Exhibit 34
Claim Chart Comparing the Ryrot Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

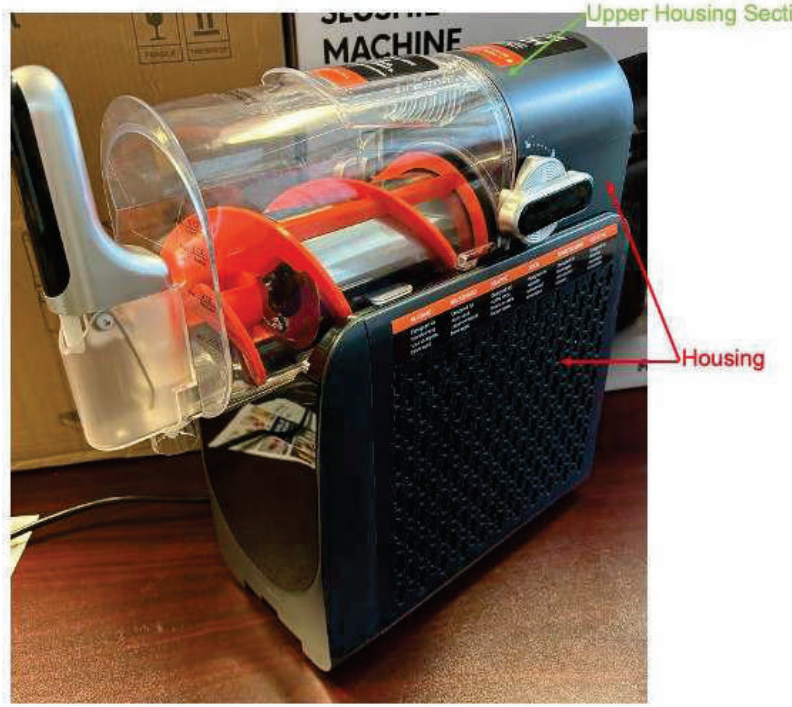
Claim Element	Accused Product
24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;	 Photograph of Accused Product (annotated). The cam feature of the Accused Product is moveable between a coupling position and uncoupling position.

Exhibit 34
Claim Chart Comparing the Ryrot Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Photographs of Accused Product (annotated).

Exhibit 34
Claim Chart Comparing the Ryrot Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

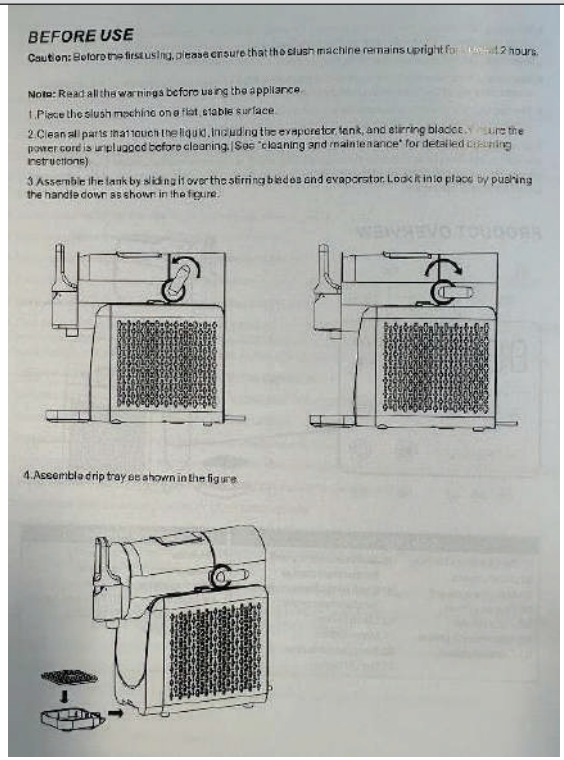
Claim Element	Accused Product
	 Accused Product Instruction Manual.
24[b]: a mixing vessel to receive a drink product, the mixing vessel having:	The mixing vessel is configured to receive a drink product.

Exhibit 34
Claim Chart Comparing the Ryrot Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

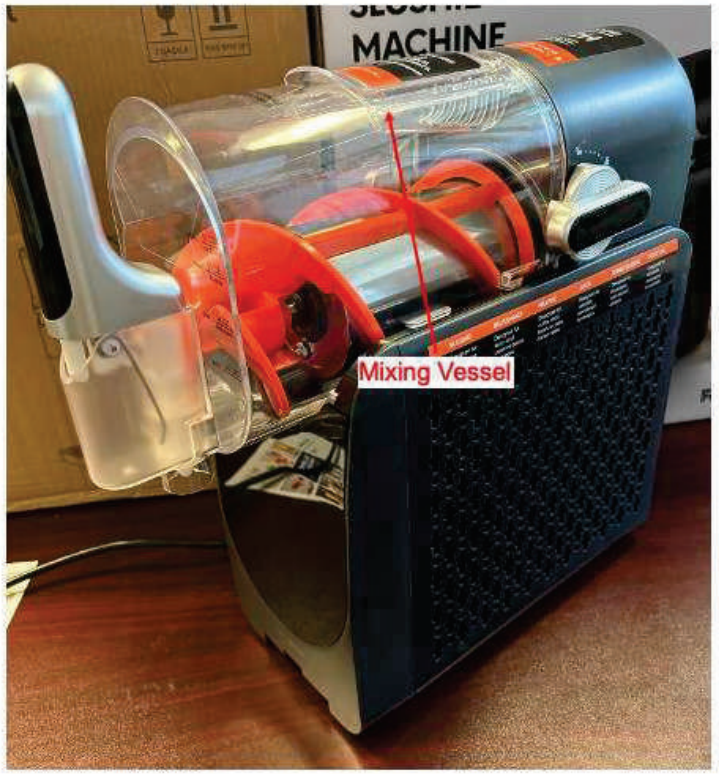
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 34
Claim Chart Comparing the Ryrot Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

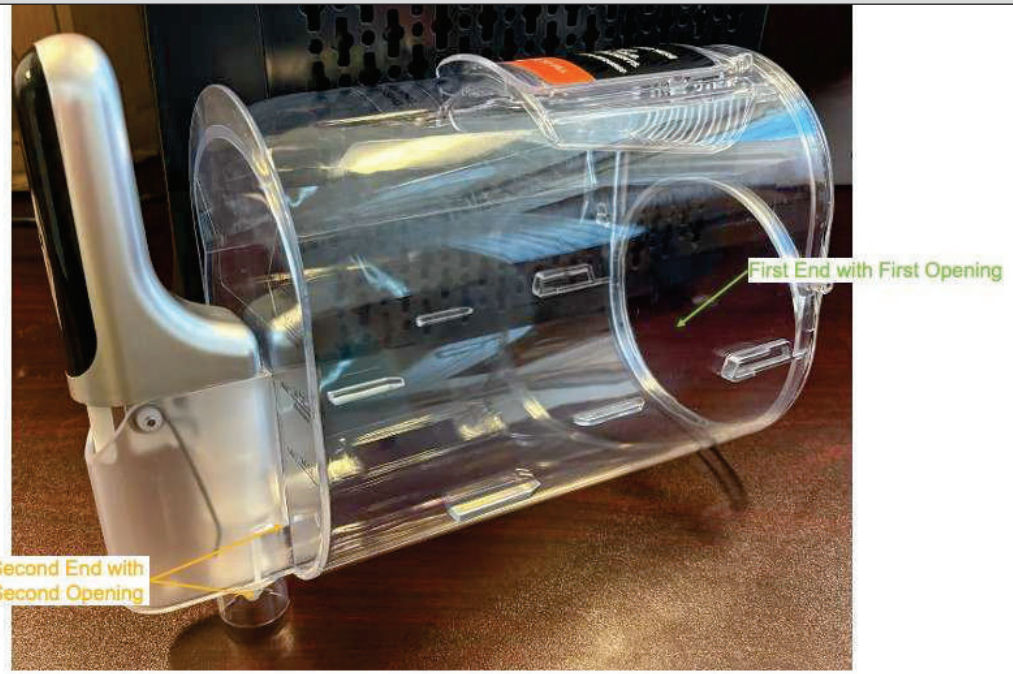
Claim Element	Accused Product
24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and	 Photograph of Accused Product (annotated). The second opening of the mixing vessel of the Accused Product is configured to dispense a drink product.

Exhibit 34
Claim Chart Comparing the Ryrot Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

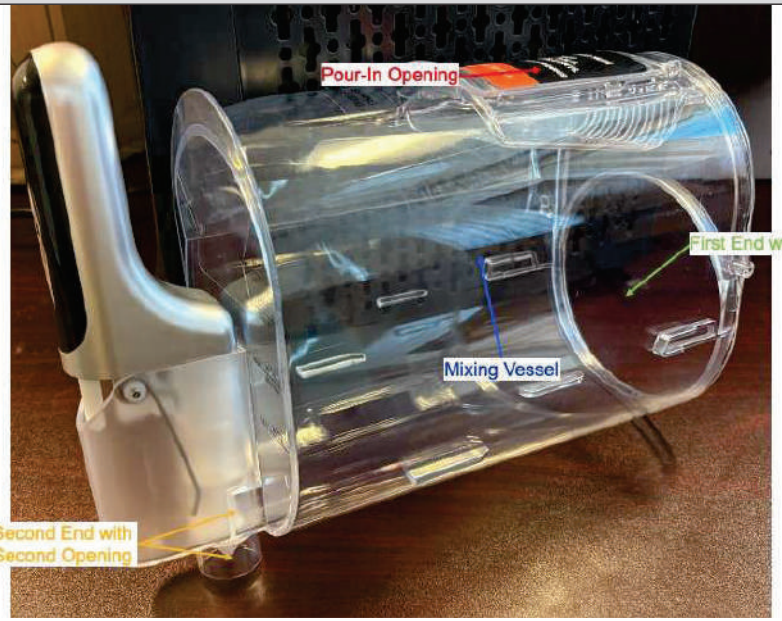
Claim Element	Accused Product
24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;	 Photograph of Accused Product (annotated).
24[c]: a dasher configured to rotate in the mixing vessel;	The dasher of the Accused Product is configured to rotate in the mixing vessel to stir the drink product.

Exhibit 34
Claim Chart Comparing the Ryrot Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
24[d]: a motor to drive the dasher;	The Accused Product includes a motor that drives the dasher to rotate it to stir the drink product.

Exhibit 34

Claim Chart Comparing the Ryrot Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

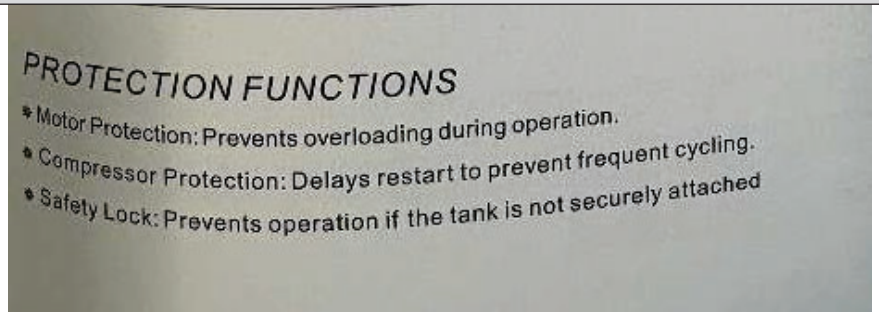
Claim Element	Accused Product
	 Accused Product Instruction Manual. As confirmed by product testing, during operation a motor of the frozen drink maker drives the dasher to rotate.

Exhibit 34

Claim Chart Comparing the Ryrot Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

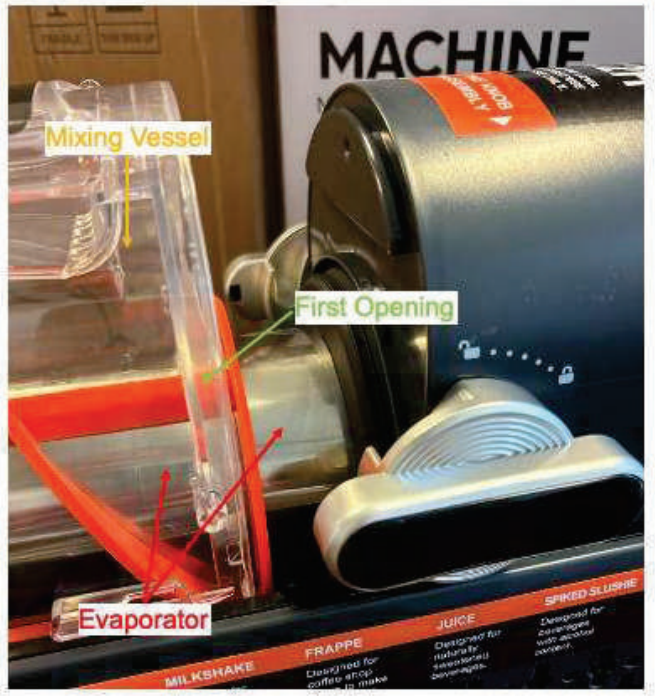
Claim Element	Accused Product
24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and	 Photograph of Accused Product (annotated). The evaporator is received through the first opening of the mixing vessel.

Exhibit 34

Claim Chart Comparing the Ryrot Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

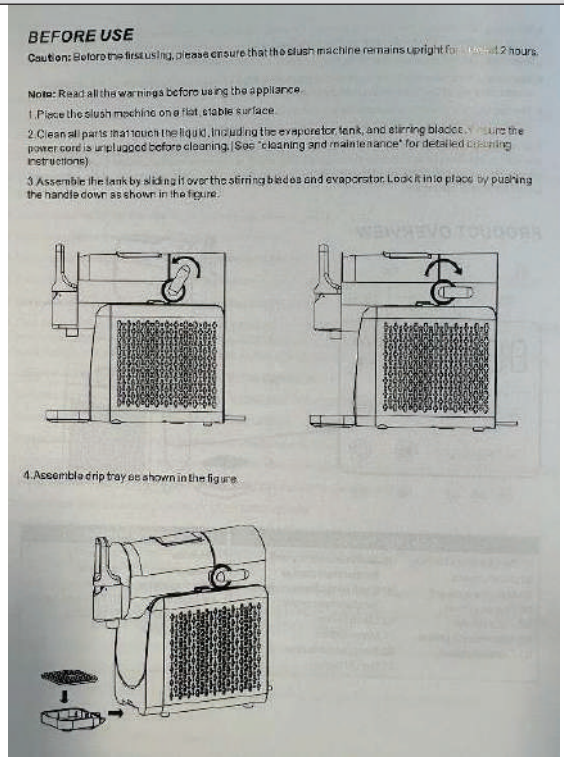
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 34

Claim Chart Comparing the Ryrot Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
24[f]: a flexible seal arranged proximate to the upper housing section;	 Photograph of Accused Product (annotated). As confirmed by product testing, the flexible seal comprises a flexible material.
24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position, and	The cam feature of the Accused Product controls the coupling of the mixing vessel to the upper housing section when in the coupling position and uncouples the mixing vessel from the upper housing section when in the uncoupling position.

Exhibit 34

Claim Chart Comparing the Ryrot Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

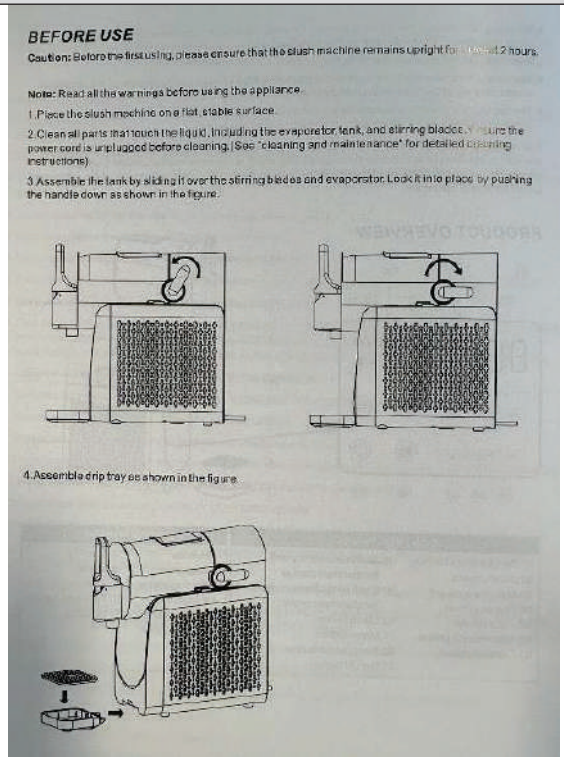
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 34

Claim Chart Comparing the Ryrot Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

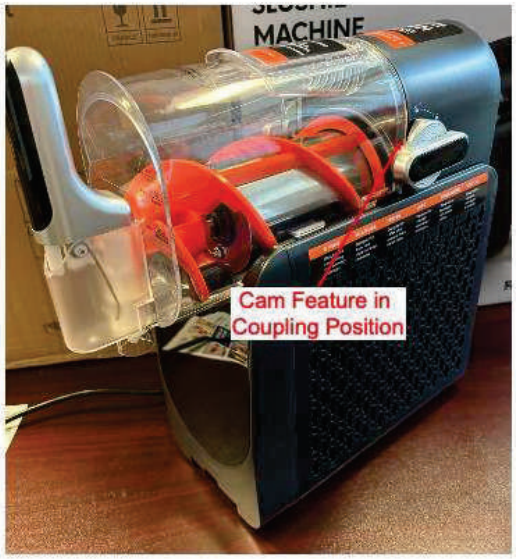
Claim Element	**Accused Product**
	 Photographs of Accused Product (annotated). *Id.*, Cl. 24[a].
24[h]: wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.	When the cam feature of the Accused Product is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal about the first opening.

Exhibit 34

Claim Chart Comparing the Ryrot Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

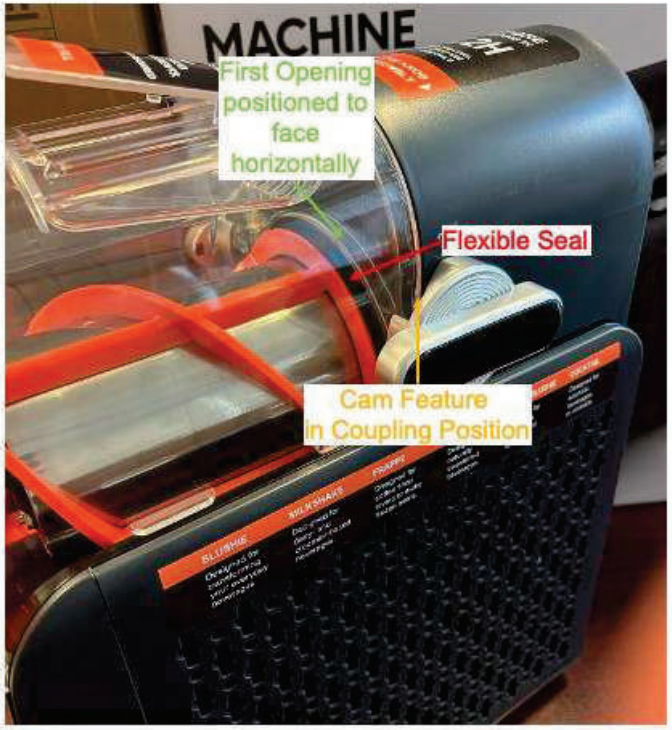
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

EXHIBIT 35

Exhibit 35
Claim Chart Comparing the Topteng Frozen Drink Maker to U.S. Patent No. 12,593,855

Below is a chart that applies asserted exemplary independent claim 24 and 30 of U.S. Patent No. 12,593,855 (the "'855 Patent") to the accused Topteng Frozen Drink Maker ("Accused Product"), purchased at the following listing: www.amazon.com/dp/B0FQP7RB9N (ASIN B0FQP7RB9N).

The arguments and evidence cited in the chart below are representative and Plaintiffs reserve the right to rely on additional arguments and evidence to show that the above-identified accused product infringes exemplary independent claim 24 and 30 of the '855 Patent.

Claim Element	**Accused Product**
24[Pre.]: A frozen drink maker comprising:	 Accused Product Packaging.

Exhibit 35
Claim Chart Comparing the Topteng Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Accused Product Packaging.

Exhibit 35
Claim Chart Comparing the Topteng Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;	 Photograph of Accused Product (annotated). The cam feature of the Accused Product is moveable between a coupling position and uncoupling position.

Exhibit 35
Claim Chart Comparing the Topteng Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Photographs of Accused Product (annotated).

Exhibit 35
Claim Chart Comparing the Topteng Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

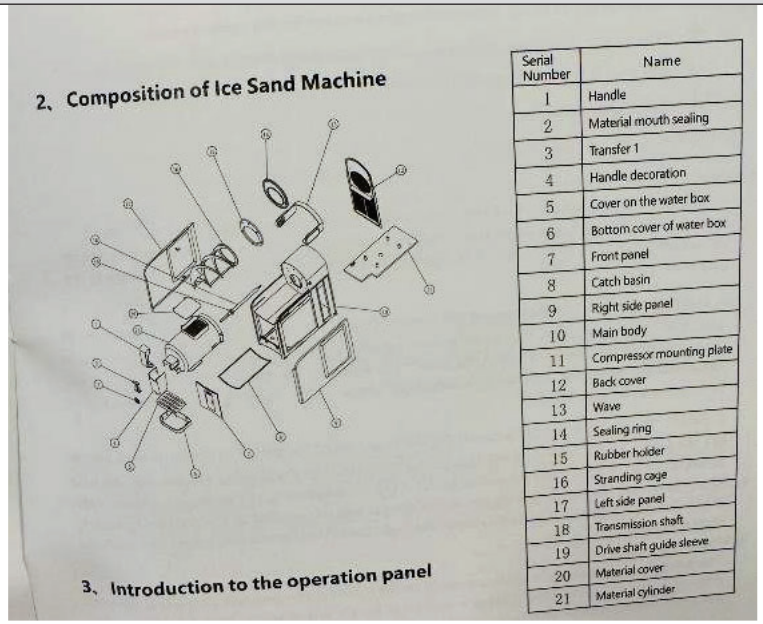
Claim Element	Accused Product
	 Accused Product Instruction Manual.
24[b]: a mixing vessel to receive a drink product, the mixing vessel having:	The mixing vessel is configured to receive a drink product.

Exhibit 35
Claim Chart Comparing the Topteng Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

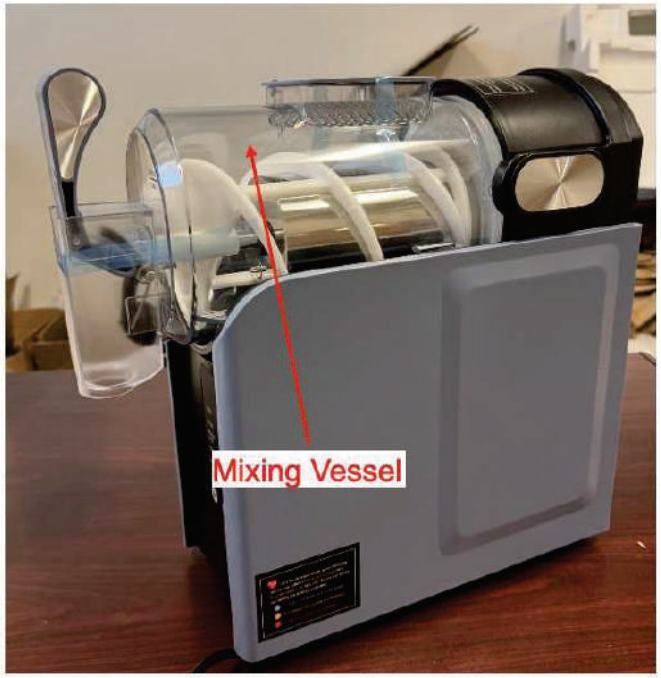
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 35
Claim Chart Comparing the Topteng Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

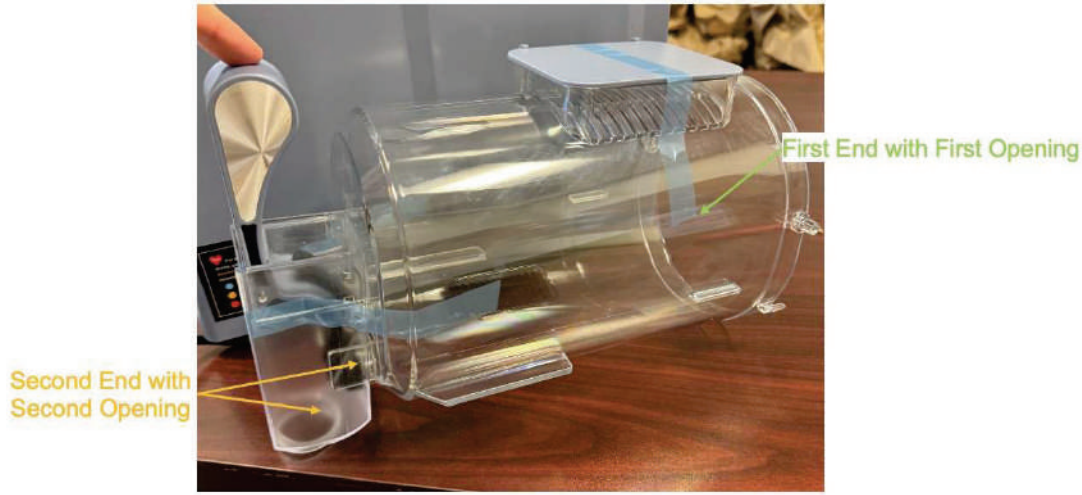
Claim Element	Accused Product
24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and	 Photograph of Accused Product (annotated). The second opening of the mixing vessel of the Accused Product is configured to dispense a drink product.

Exhibit 35
Claim Chart Comparing the Topteng Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

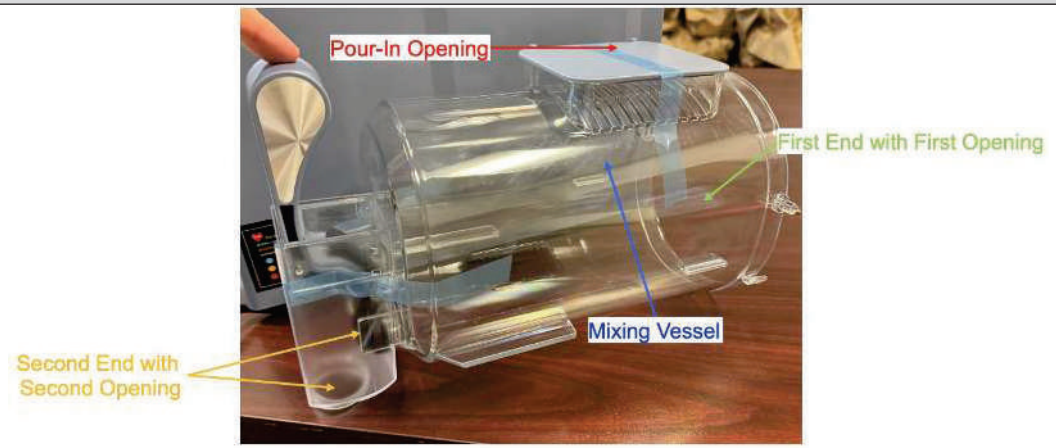
Claim Element	Accused Product
24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;	 Photograph of Accused Product (annotated).
24[c]: a dasher configured to rotate in the mixing vessel;	The dasher of the Accused Product is configured to rotate in the mixing vessel to stir the drink product.

Exhibit 35

Claim Chart Comparing the Topteng Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

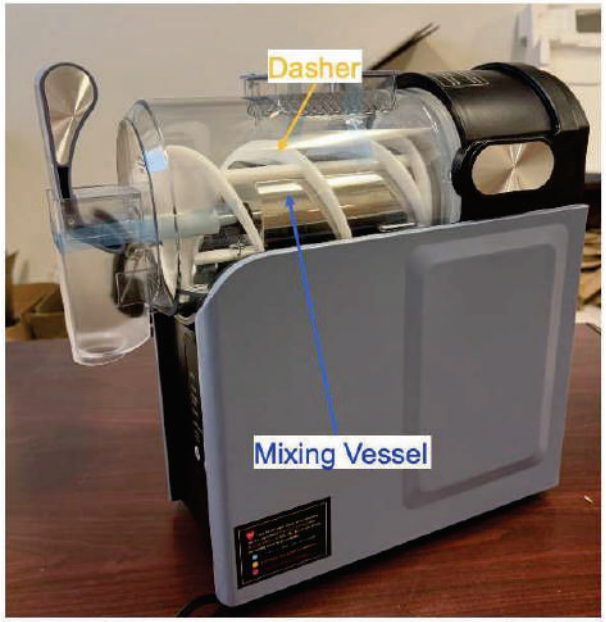
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
24[d]: a motor to drive the dasher;	The Accused Product includes a motor that drives the dasher to rotate it to stir the drink product.

Exhibit 35

Claim Chart Comparing the Topteng Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

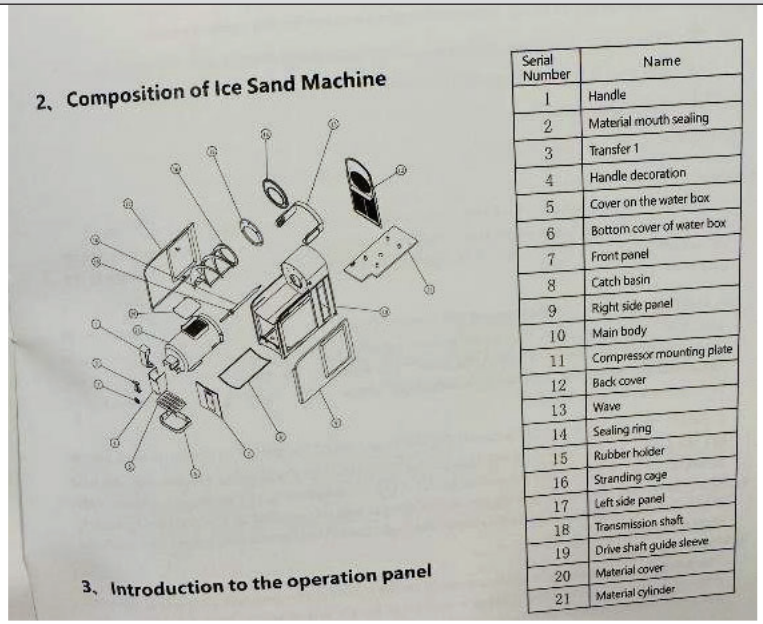
Claim Element	Accused Product
	 Serial Number / Name 1 Handle 2 Material mouth sealing 3 Transfer 1 4 Handle decoration 5 Cover on the water box 6 Bottom cover of water box 7 Front panel 8 Catch basin 9 Right side panel 10 Main body 11 Compressor mounting plate 12 Back cover 13 Wave 14 Sealing ring 15 Rubber holder 16 Stranding cage 17 Left side panel 18 Transmission shaft 19 Drive shaft guide sleeve 20 Material cover 21 Material cylinder Accused Product Instruction Manual. As confirmed by product testing, during operation a motor of the frozen drink maker drives the dasher to rotate.
24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and	The evaporator is received through the first opening of the mixing vessel.

Exhibit 35

Claim Chart Comparing the Topteng Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 35

Claim Chart Comparing the Topteng Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
24[f]: a flexible seal arranged proximate to the upper housing section;	 Photograph of Accused Product (annotated). As confirmed by product testing, the flexible seal comprises a flexible material.
24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the	The cam feature of the Accused Product controls the coupling of the mixing vessel to the upper housing section when in the coupling position and uncouples the mixing vessel from the upper housing section when in the uncoupling position.

Exhibit 35

Claim Chart Comparing the Topteng Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
uncoupling position, and	Photographs of Accused Product (annotated). *Id.*, Cl. 24[a].
24[h]: wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.	When the cam feature of the Accused Product is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal about the first opening.

Exhibit 35

Claim Chart Comparing the Topteng Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

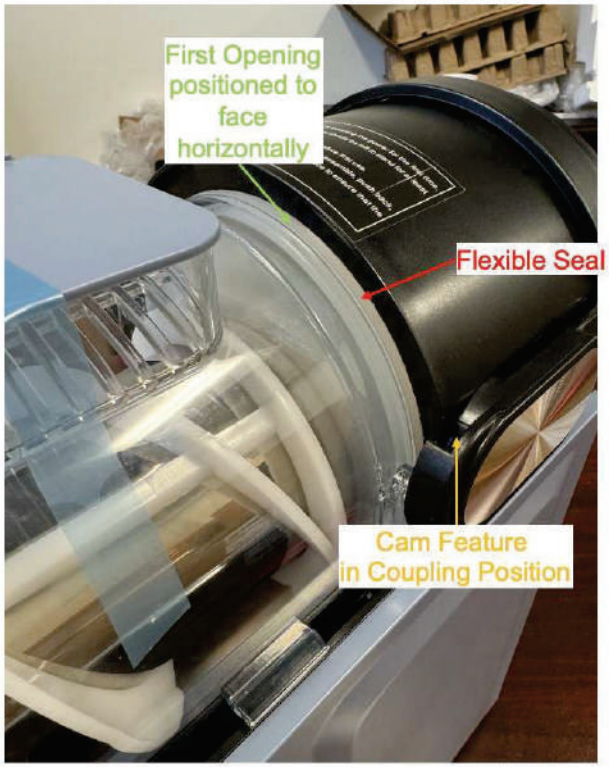
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
30. The frozen drink maker of claim 24, wherein the housing comprises a lever moveable relative to the upper housing section, wherein moving the lever to a first position moves the cam feature into the coupling position, and wherein, when in the	The lever of the Accused Product is moveable relative to the upper housing section.

Exhibit 35

Claim Chart Comparing the Topteng Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling of the mixing vessel to the upper housing section.	Photographs of Accused Product (annotated). Moving the lever of the Accused Product to a first position moves the cam feature into the coupling position. When in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling the mixing vessel to the upper housing section.

Exhibit 35

Claim Chart Comparing the Topteng Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

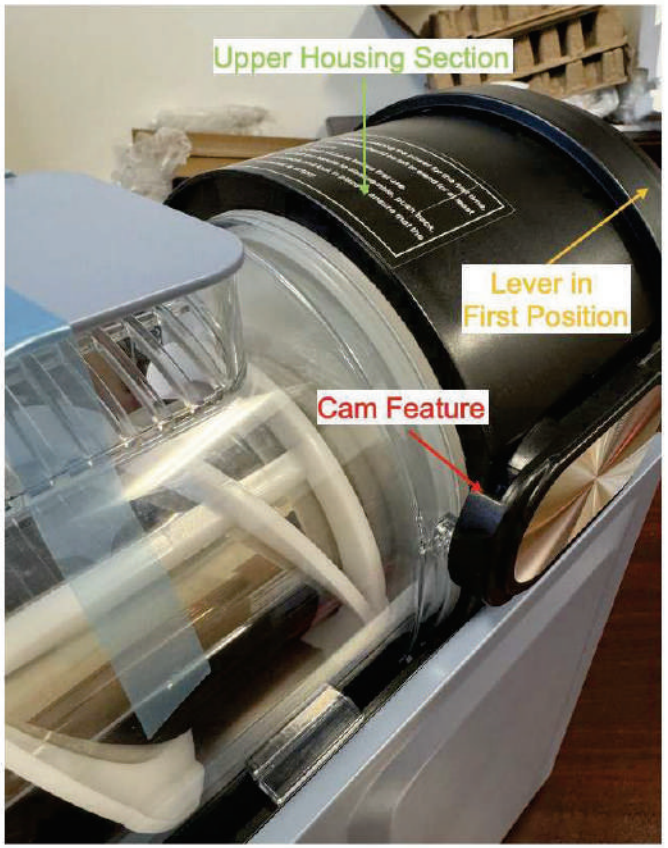
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 35

Claim Chart Comparing the Topteng Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

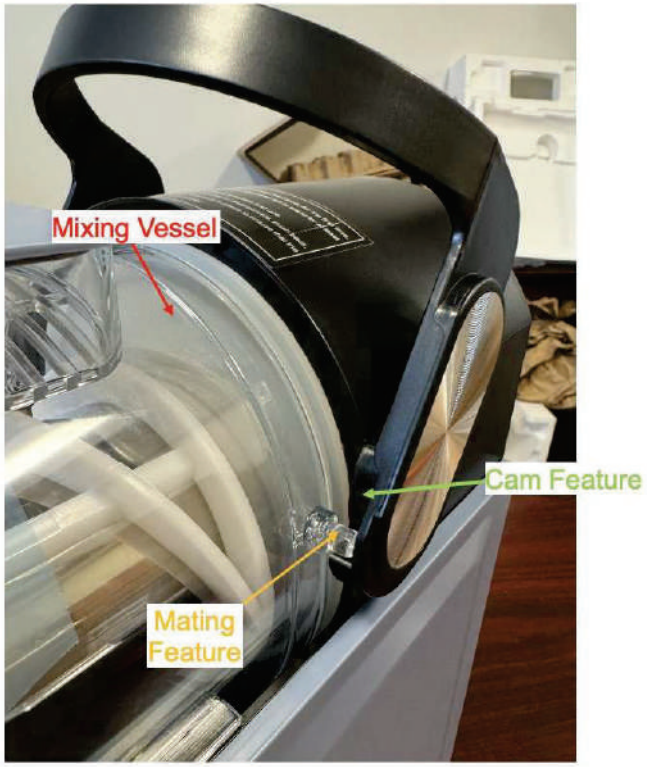
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

EXHIBIT 36

Exhibit 36
Claim Chart Comparing the VELPAX Frozen Drink Maker to U.S. Patent No. 12,593,855

Below is a chart that applies asserted exemplary independent claim 24 and 30 of U.S. Patent No. 12,593,855 (the "'855 Patent") to the accused VELPAX Frozen Drink Maker ("Accused Product"), purchased at the following listing: www.amazon.com/dp/B0GKVSTCWK (ASIN B0GKVSTCWK).

The arguments and evidence cited in the chart below are representative and Plaintiffs reserve the right to rely on additional arguments and evidence to show that the above-identified accused product infringes exemplary independent claim 24 and 30 of the '855 Patent.

Claim Element	Accused Product
24[Pre.]: A frozen drink maker comprising:	 Accused Product Packaging.

Exhibit 36
Claim Chart Comparing the VELPAX Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;	 Photograph of Accused Product (annotated). The cam feature of the Accused Product is moveable between a coupling position and uncoupling position.

Exhibit 36
Claim Chart Comparing the VELPAX Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Photographs of Accused Product (annotated).

Exhibit 36
Claim Chart Comparing the VELPAX Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

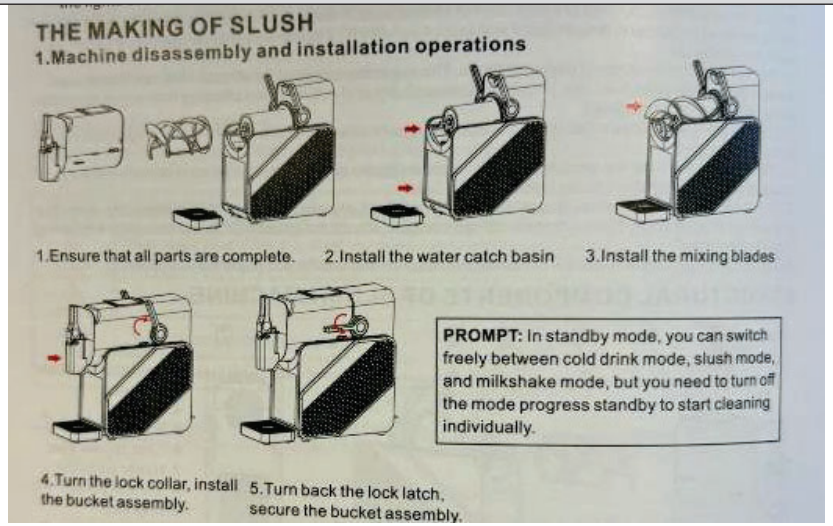
Claim Element	Accused Product
	 Accused Product Instruction Manual.
24[b]: a mixing vessel to receive a drink product, the mixing vessel having:	The mixing vessel is configured to receive a drink product.

Exhibit 36
Claim Chart Comparing the VELPAX Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

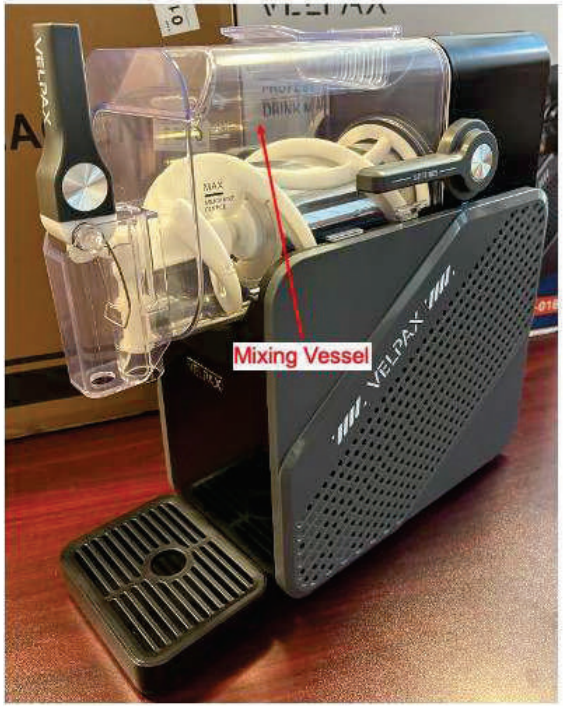
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 36
Claim Chart Comparing the VELPAX Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

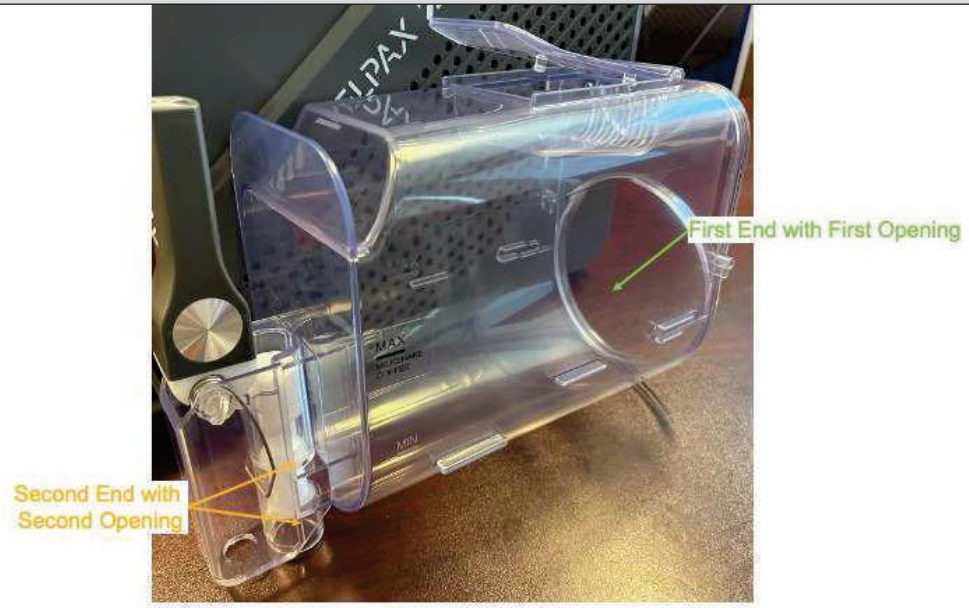
Claim Element	Accused Product
24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and	 Photograph of Accused Product (annotated). The second opening of the mixing vessel of the Accused Product is configured to dispense a drink product.

Exhibit 36
Claim Chart Comparing the VELPAX Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

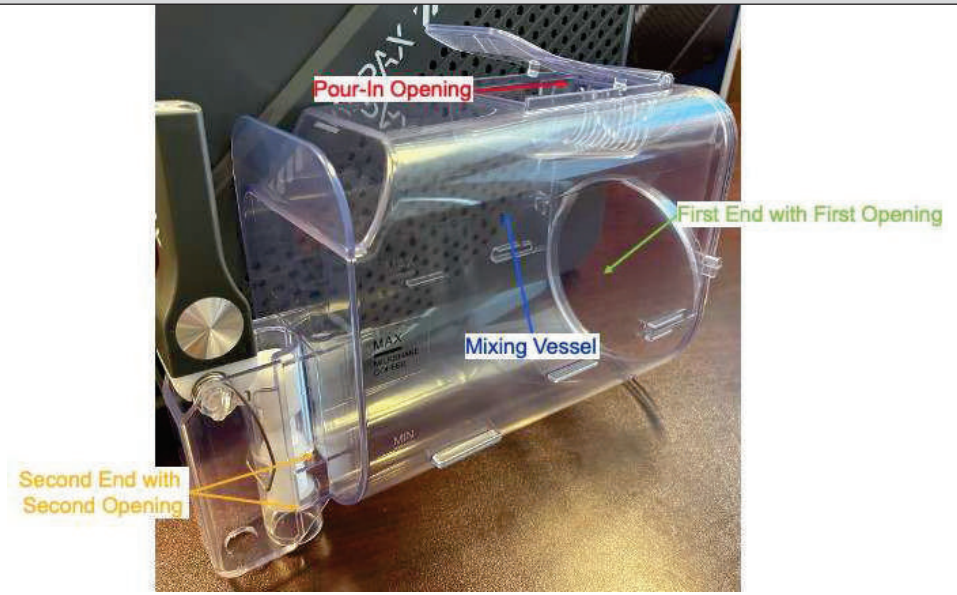
Claim Element	Accused Product
24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;	 Photograph of Accused Product (annotated).
24[c]: a dasher configured to rotate in the mixing vessel;	The dasher of the Accused Product is configured to rotate in the mixing vessel to stir the drink product.

Exhibit 36
Claim Chart Comparing the VELPAX Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

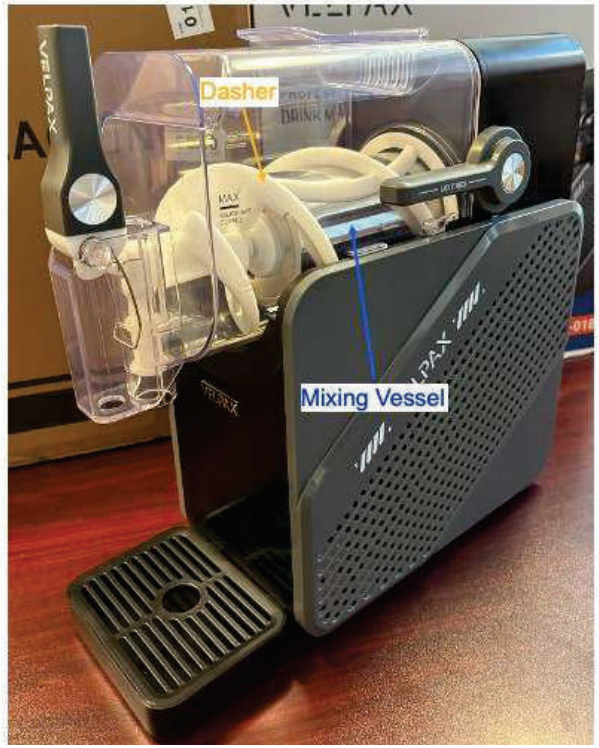
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
24[d]: a motor to drive the dasher;	The Accused Product includes a motor that drives the dasher to rotate it to stir the drink product.

Exhibit 36

Claim Chart Comparing the VELPAX Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

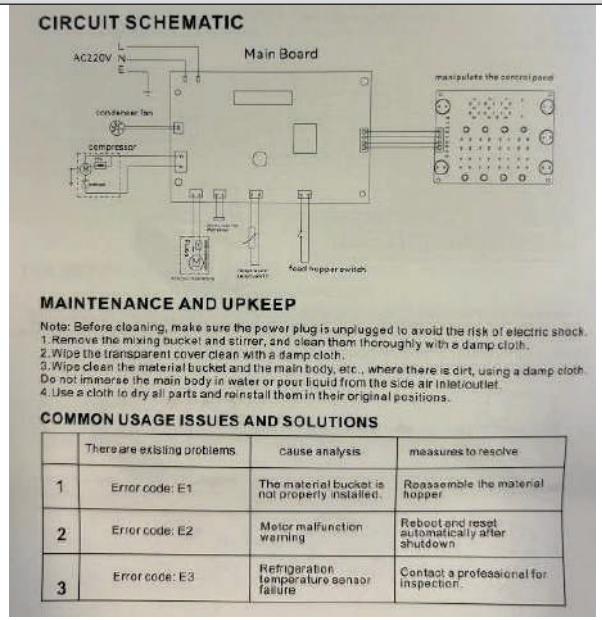
Claim Element	Accused Product
	 Accused Product Instruction Manual. As confirmed by product testing, during operation a motor of the frozen drink maker drives the dasher to rotate.

Exhibit 36

Claim Chart Comparing the VELPAX Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and	 Photograph of Accused Product (annotated). The evaporator is received through the first opening of the mixing vessel.

Exhibit 36

Claim Chart Comparing the VELPAX Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

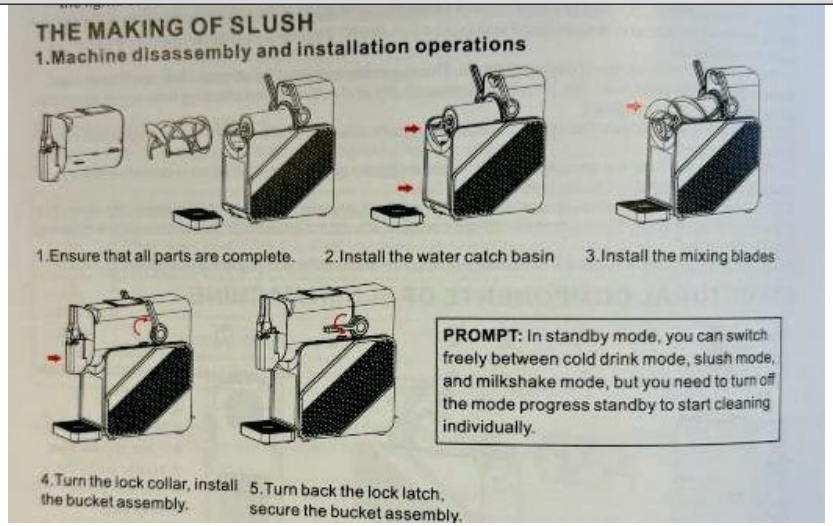
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 36

Claim Chart Comparing the VELPAX Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

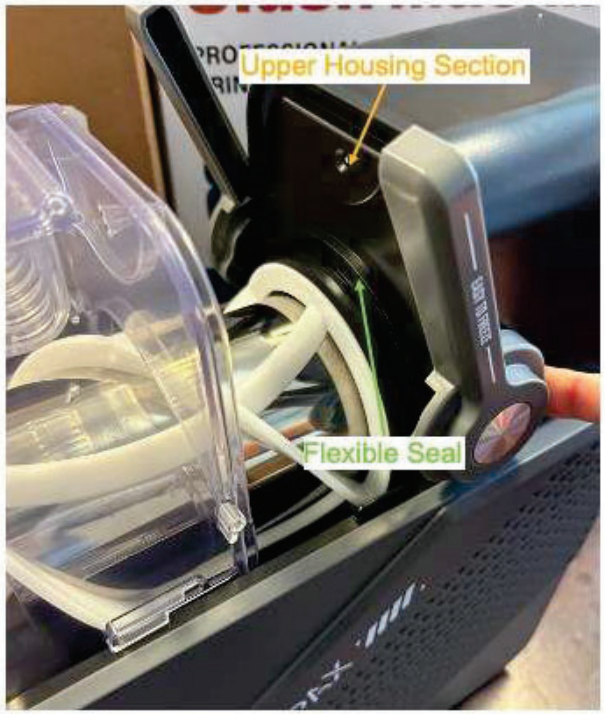
Claim Element	Accused Product
24[f]: a flexible seal arranged proximate to the upper housing section;	 Photograph of Accused Product (annotated). As confirmed by product testing, the flexible seal comprises a flexible material.
24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the	The cam feature of the Accused Product controls the coupling of the mixing vessel to the upper housing section when in the coupling position and uncouples the mixing vessel from the upper housing section when in the uncoupling position.

Exhibit 36

Claim Chart Comparing the VELPAX Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

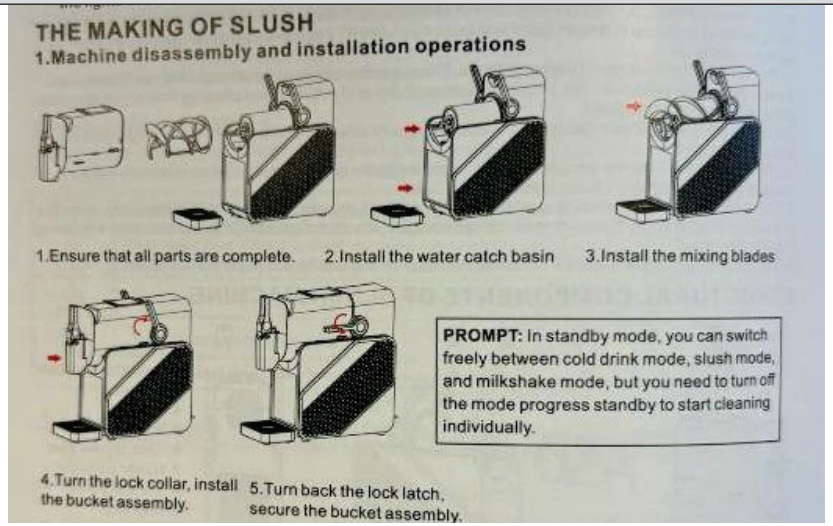
Claim Element	Accused Product
uncoupling position, and	 Accused Product Instruction Manual.

Exhibit 36

Claim Chart Comparing the VELPAX Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	Photographs of Accused Product (annotated). *Id.*, Cl. 24[a].
24[h]: wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.	When the cam feature of the Accused Product is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal about the first opening.

Exhibit 36

Claim Chart Comparing the VELPAX Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

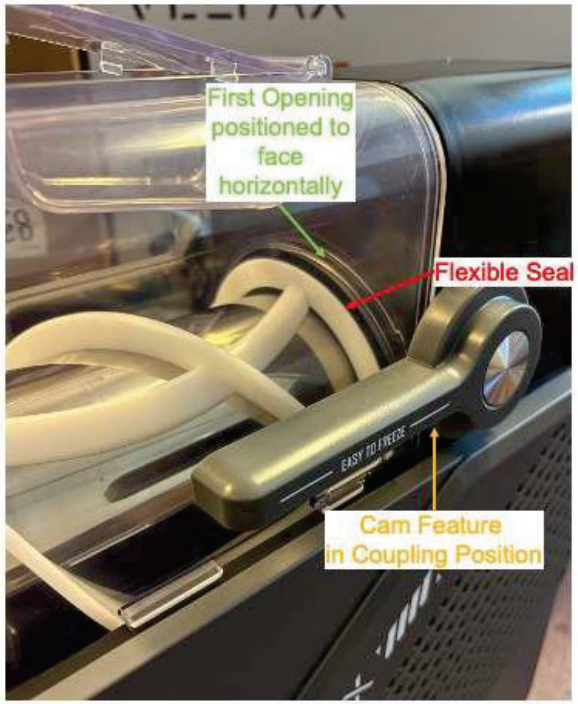
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
30. The frozen drink maker of claim 24, wherein the housing comprises a lever moveable relative to the upper housing section, wherein moving the lever to a first position moves the cam feature into the coupling position, and wherein, when in the coupling position, the cam feature	The lever of the Accused Product is moveable relative to the upper housing section.

Exhibit 36

Claim Chart Comparing the VELPAX Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

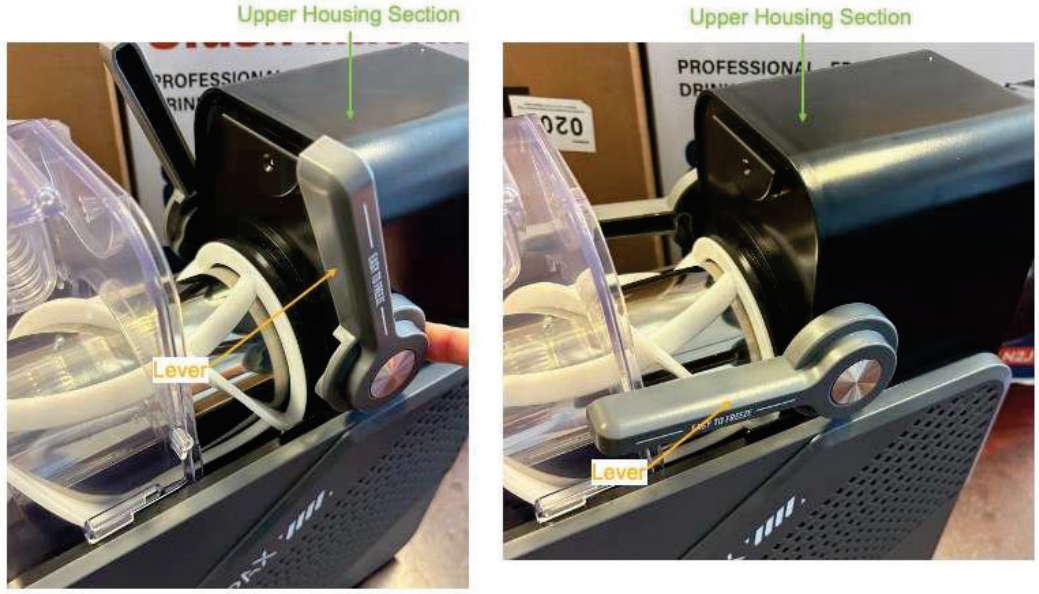
Claim Element	Accused Product
engages at least one mating feature on the mixing vessel to control coupling of the mixing vessel to the upper housing section.	 Photographs of Accused Product (annotated). Moving the lever of the Accused Product to a first position moves the cam feature into the coupling position. When in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling the mixing vessel to the upper housing section.

Exhibit 36

Claim Chart Comparing the VELPAX Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 36

Claim Chart Comparing the VELPAX Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

EXHIBIT 37

Exhibit 37
Claim Chart Comparing the VNN Frozen Drink Maker to U.S. Patent No. 12,593,855

Below is a chart that applies asserted exemplary independent claim 24 of U.S. Patent No. 12,593,855 (the "'855 Patent") to the accused VNN Frozen Drink Maker (the "Accused Product"). This Accused Product was purchased at the following listings:

- https://www.amazon.com/dp/B0F8TYD6L6 (ASIN B0F8TYD6L6)
- https://www.amazon.com/VNN-Slushie-Machine-Auto-Clean-Margaritas/dp/B0F8TS6LBB (ASIN B0F8TS6LBB)

Inspection of the Accused Products purchased at each of the foregoing listings confirms that each is identical, varying only in color. The following contentions use photographs taken of one of the Accused Products, but each feature shown is identically present (with the exception of color) in all purchased Accused Products.

The arguments and evidence cited in the chart below are representative and Plaintiffs reserve the right to rely on additional arguments and evidence to show that the above-identified accused product infringes exemplary independent claim 24 of the '855 Patent.

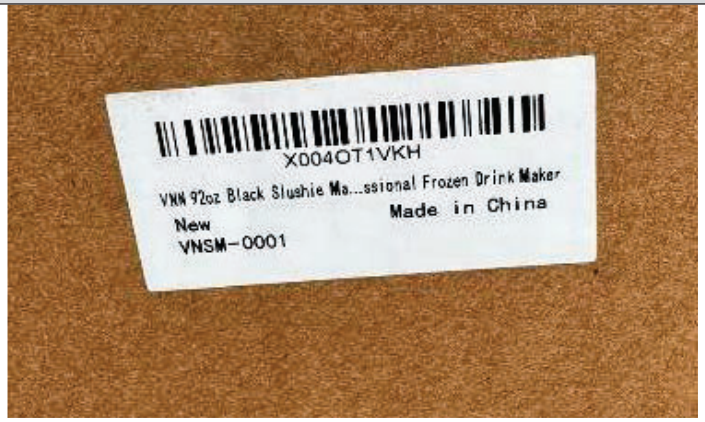
Claim Element	**Accused Product**
24[Pre.]: A frozen drink maker comprising:	 Accused Product Packaging.

Exhibit 37
Claim Chart Comparing the VNN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Accused Product Packaging.

Exhibit 37
Claim Chart Comparing the VNN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

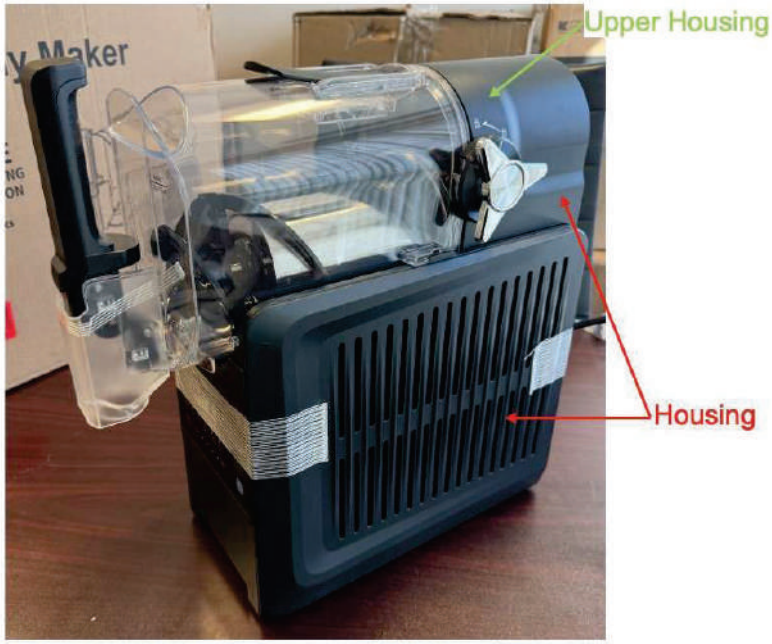
Claim Element	Accused Product
24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;	 Photograph of Accused Product (annotated). The cam feature of the Accused Product is moveable between a coupling position and uncoupling position.

Exhibit 37
Claim Chart Comparing the VNN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	Photographs of Accused Product (annotated).

Exhibit 37
Claim Chart Comparing the VNN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

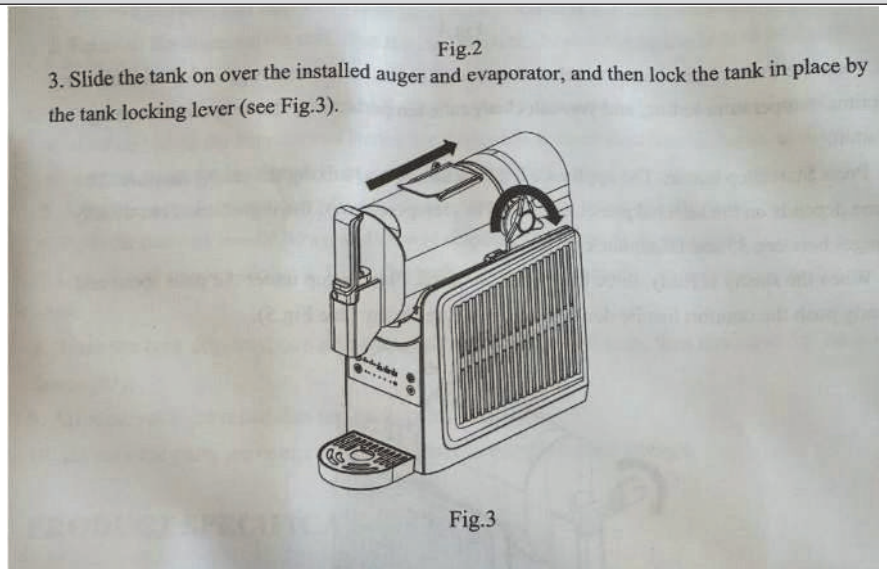
Claim Element	Accused Product
	 Accused Product Instruction Manual.
24[b]: a mixing vessel to receive a drink product, the mixing vessel having:	The mixing vessel is configured to receive a drink product.

Exhibit 37
Claim Chart Comparing the VNN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

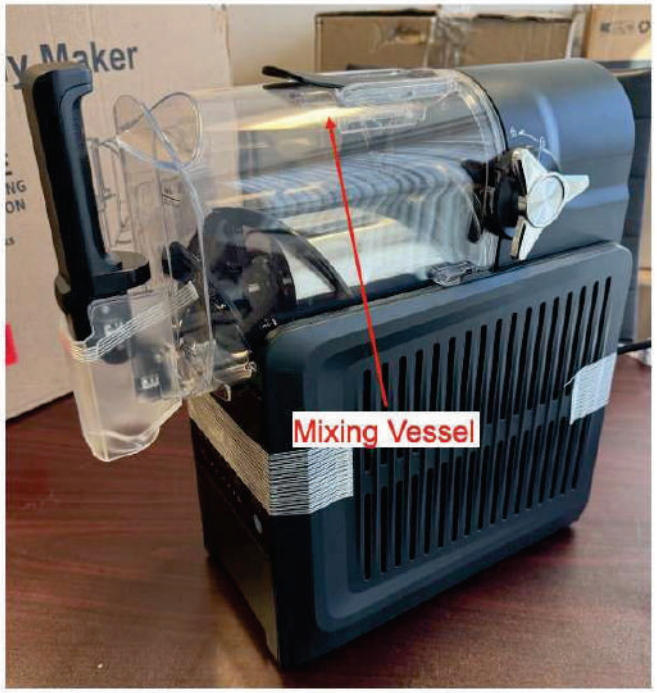
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 37
Claim Chart Comparing the VNN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

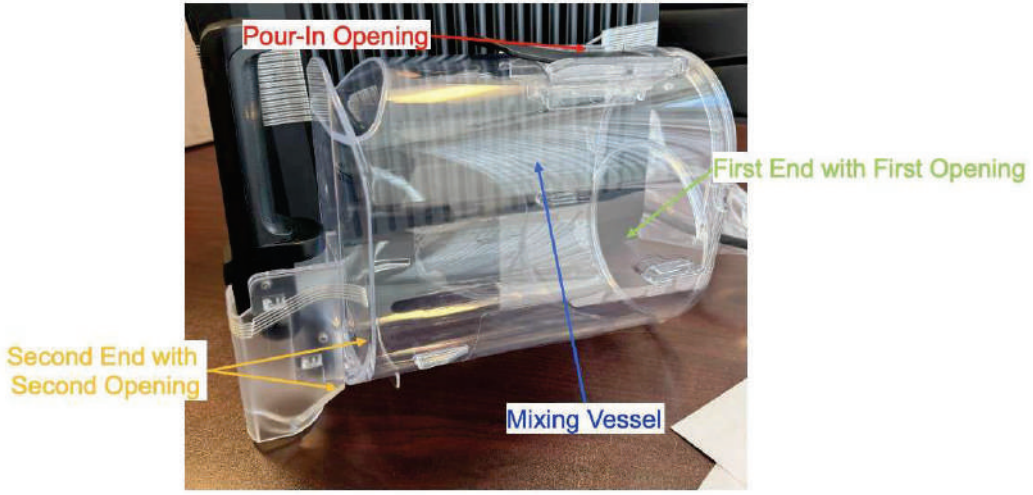
Claim Element	Accused Product
24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and	 Photograph of Accused Product (annotated). The second opening of the mixing vessel of the Accused Product is configured to dispense a drink product.
24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;	

Exhibit 37
Claim Chart Comparing the VNN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

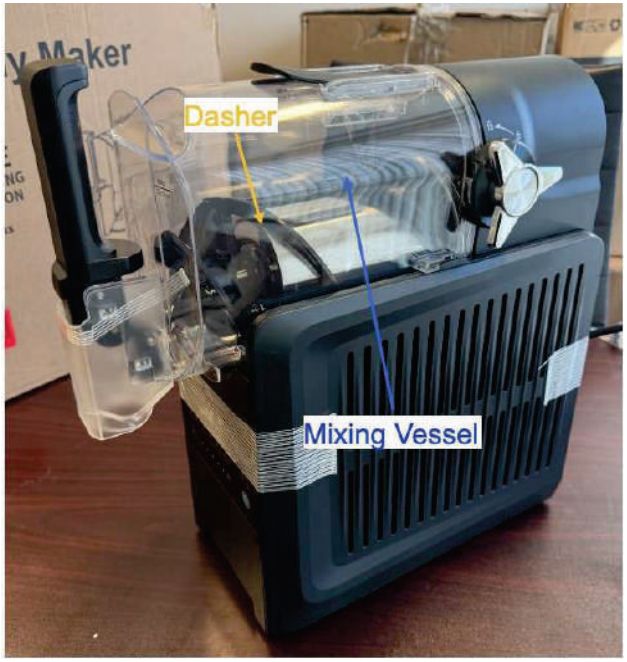
Claim Element	Accused Product
	Photograph of Accused Product (annotated).
24[c]: a dasher configured to rotate in the mixing vessel;	The dasher of the Accused Product is configured to rotate in the mixing vessel to stir the drink product.  Photograph of Accused Product (annotated).
24[d]: a motor to drive the dasher;	The Accused Product includes a motor that drives the dasher to rotate it to stir the drink product. As confirmed by product testing, during operation a motor of the frozen drink maker drives the dasher to rotate.

Exhibit 37

Claim Chart Comparing the VNN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

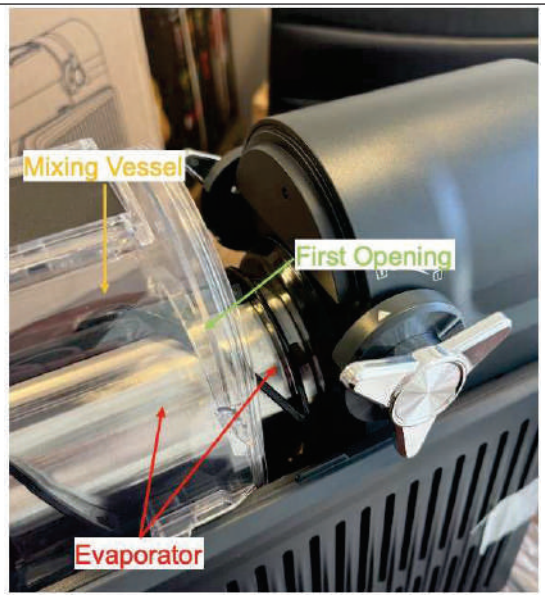
Claim Element	Accused Product
24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and	 Photograph of Accused Product (annotated). The evaporator is received through the first opening of the mixing vessel.

Exhibit 37

Claim Chart Comparing the VNN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

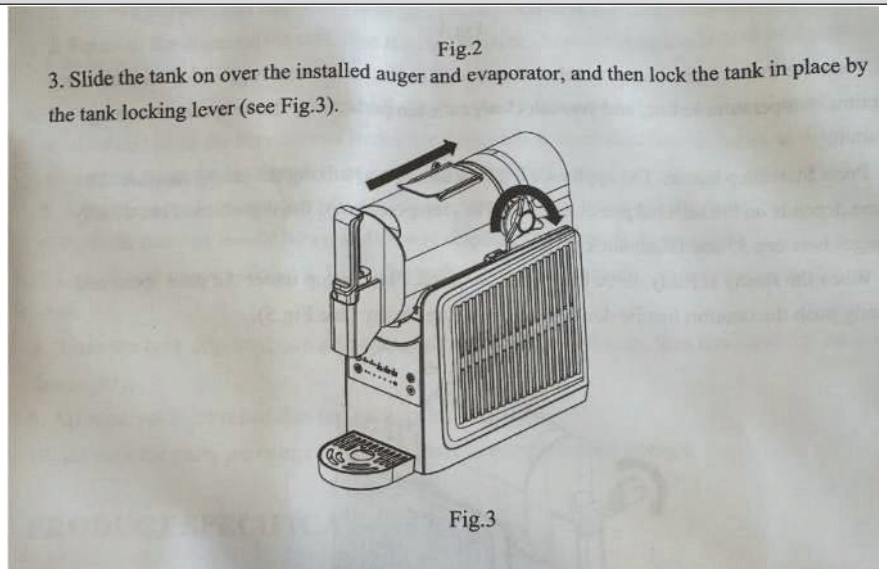
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 37

Claim Chart Comparing the VNN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

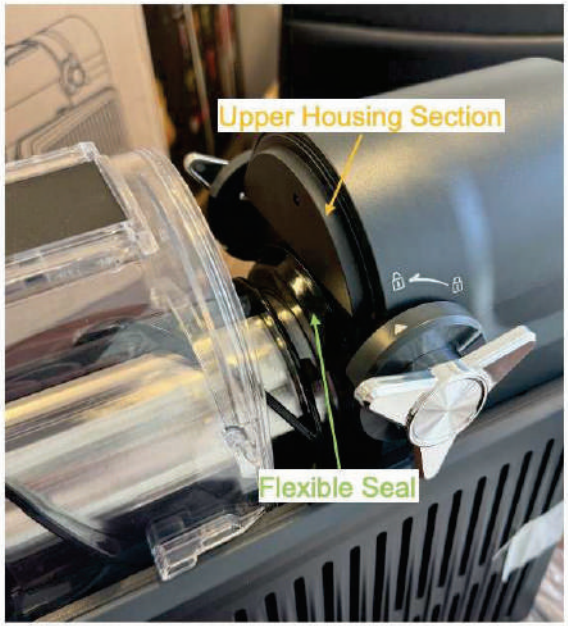
Claim Element	Accused Product
24[f]: a flexible seal arranged proximate to the upper housing section;	 Photograph of Accused Product (annotated). As confirmed by product testing, the flexible seal comprises a flexible material.
24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position, and	The cam feature of the Accused Product controls the coupling of the mixing vessel to the upper housing section when in the coupling position and uncouples the mixing vessel from the upper housing section when in the uncoupling position.

Exhibit 37

Claim Chart Comparing the VNN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

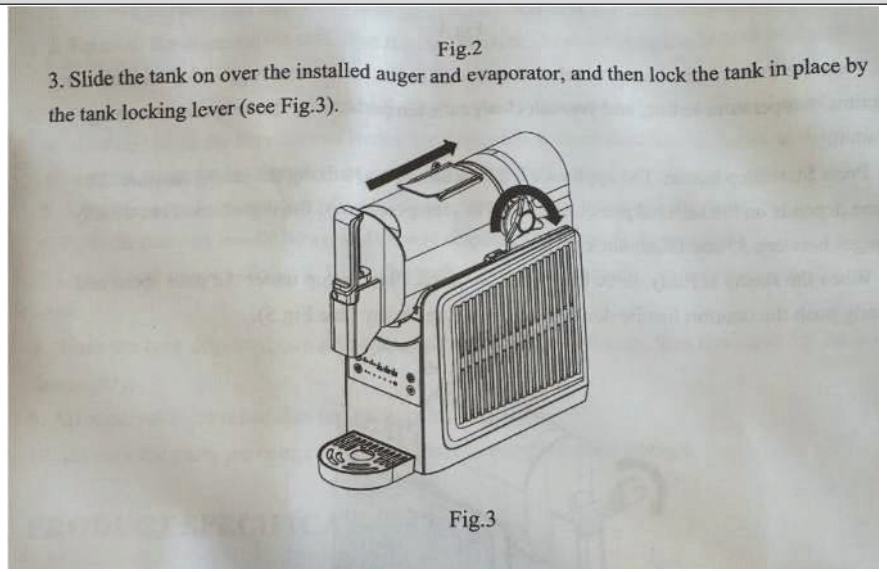
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 37

Claim Chart Comparing the VNN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	**Accused Product**
	Photographs of Accused Product (annotated). *Id.*, Cl. 24[a].
24[h]: wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.	When the cam feature of the Accused Product is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal about the first opening.

Exhibit 37

Claim Chart Comparing the VNN Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

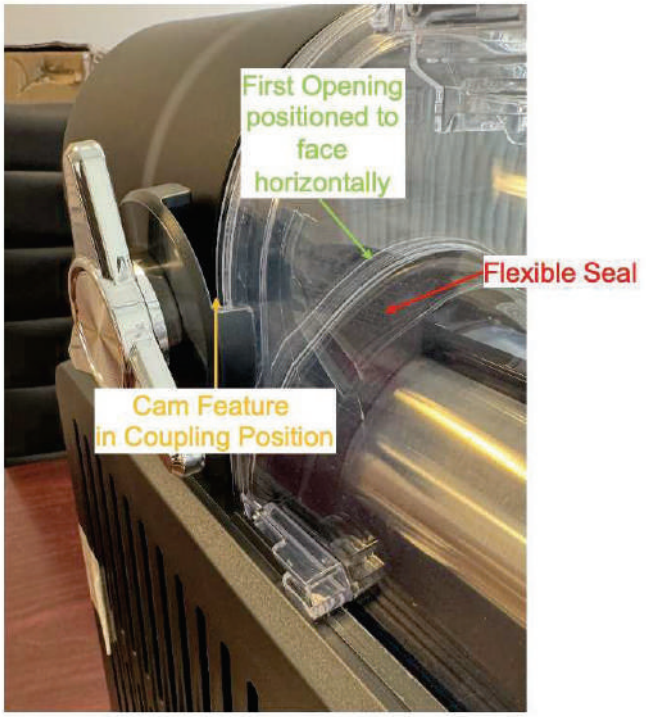
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

EXHIBIT 38

Exhibit 38
Claim Chart Comparing the Wetie Frozen Drink Maker to U.S. Patent No. 12,593,855

Below is a chart that applies asserted exemplary independent claim 24 and 30 of U.S. Patent No. 12,593,855 (the "'855 Patent") to the accused Wetie Frozen Drink Maker ("Accused Product"), purchased at the following listing: www.amazon.com/dp/B0FNCGGZXZ (ASIN B0FNCGGZXZ).

The arguments and evidence cited in the chart below are representative and Plaintiffs reserve the right to rely on additional arguments and evidence to show that the above-identified accused product infringes exemplary independent claim 24 and 30 of the '855 Patent.

Claim Element	Accused Product
24[Pre.]: A frozen drink maker comprising:	 Accused Product Packaging.

Exhibit 38
Claim Chart Comparing the Wetie Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

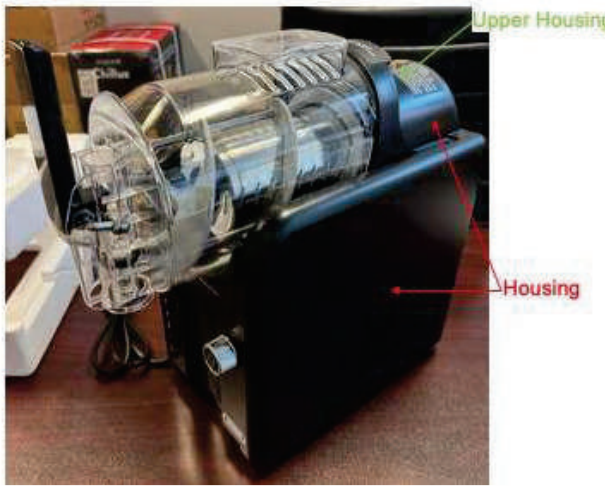
Claim Element	Accused Product
24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;	 Photograph of Accused Product (annotated). The cam feature of the Accused Product is moveable between a coupling position and uncoupling position.

Exhibit 38
Claim Chart Comparing the Wetie Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

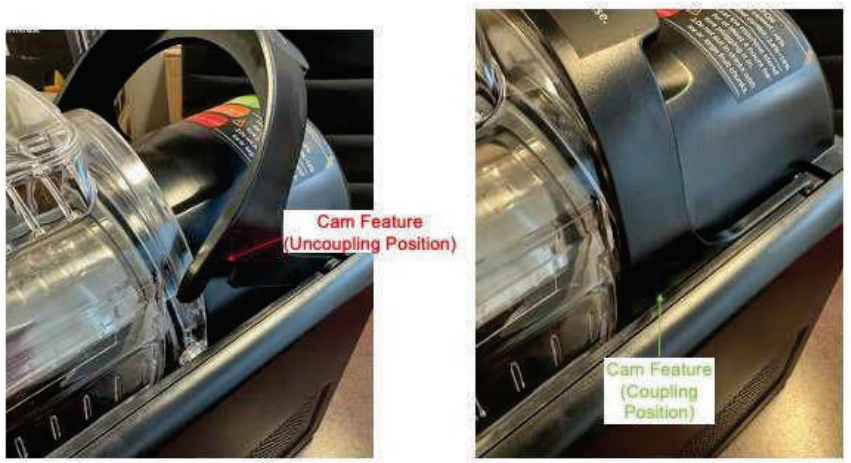
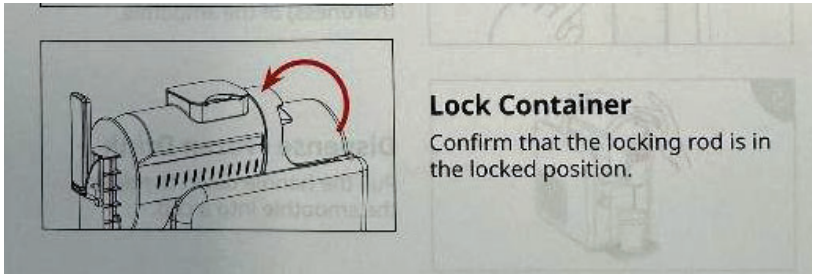
Claim Element	Accused Product
	 Photographs of Accused Product (annotated).  Accused Product Instruction Manual.

Exhibit 38
Claim Chart Comparing the Wetie Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

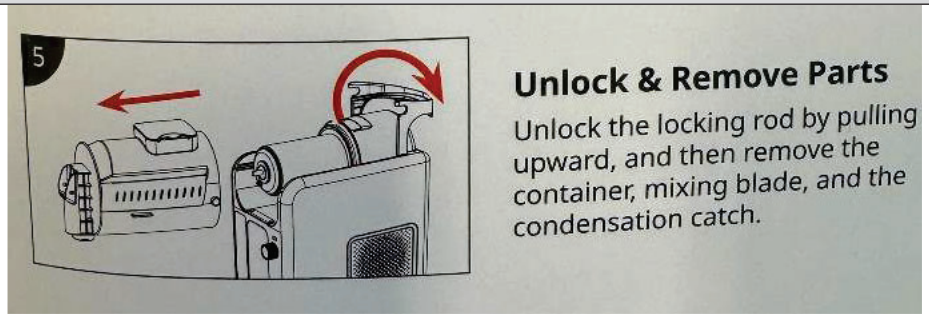
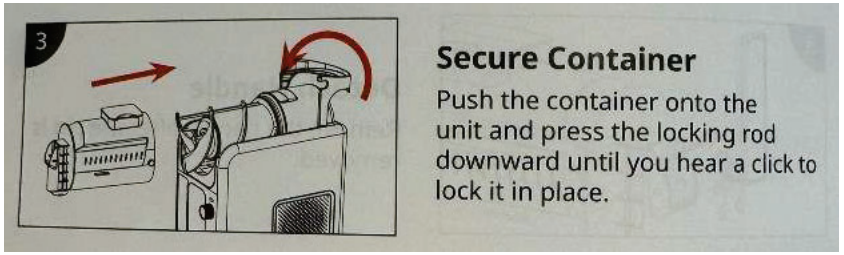
Claim Element	Accused Product
	 Accused Product Instruction Manual.  Accused Product Instruction Manual.
24[b]: a mixing vessel to receive a drink product, the mixing vessel having:	The mixing vessel is configured to receive a drink product.

Exhibit 38
Claim Chart Comparing the Wetie Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

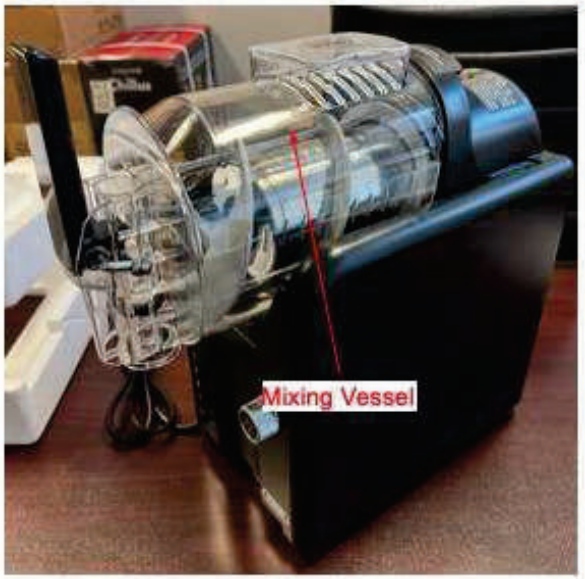
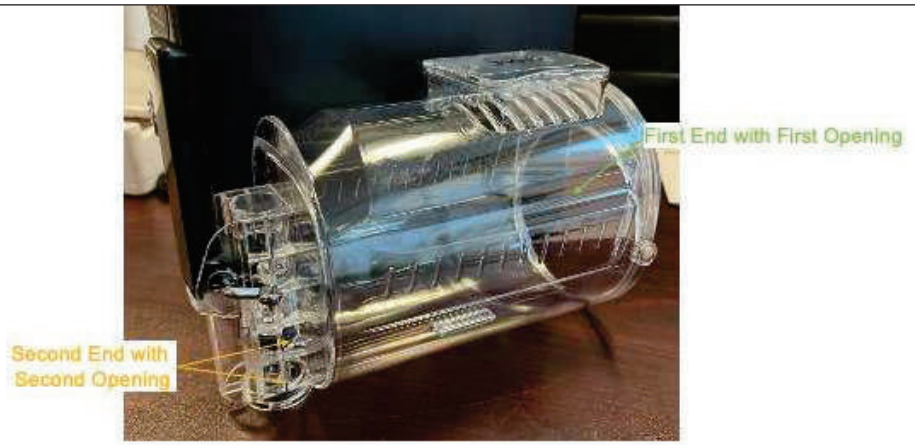
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and	 Photograph of Accused Product (annotated).

Exhibit 38
Claim Chart Comparing the Wetie Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

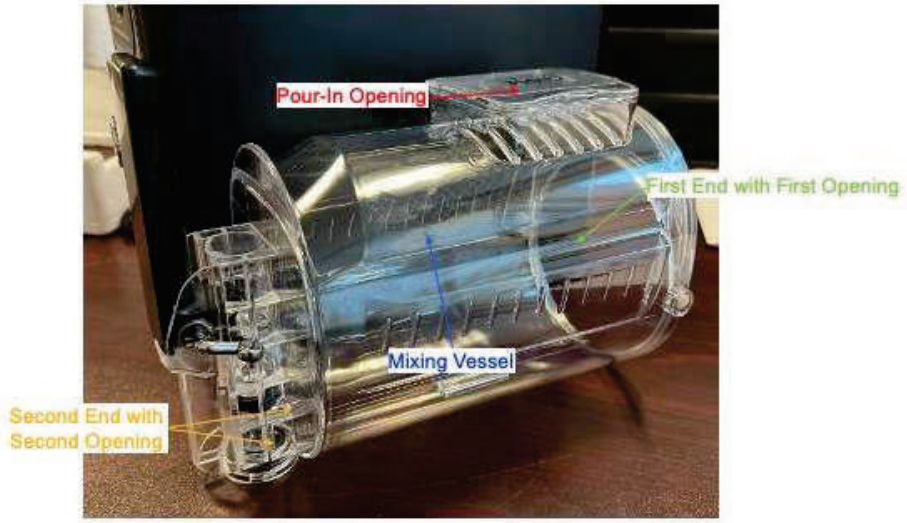
Claim Element	Accused Product
	The second opening of the mixing vessel of the Accused Product is configured to dispense a drink product.
24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;	 Photograph of Accused Product (annotated).
24[c]: a dasher configured to rotate in the mixing vessel;	The dasher of the Accused Product is configured to rotate in the mixing vessel to stir the drink product.

Exhibit 38
Claim Chart Comparing the Wetie Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

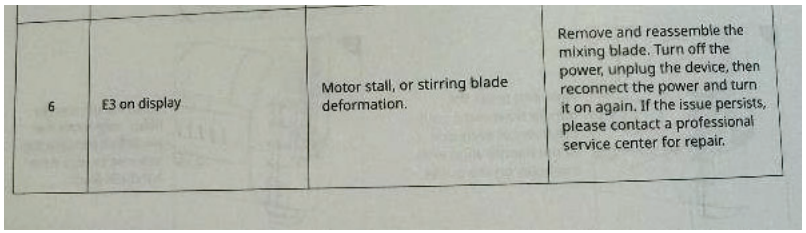
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
24[d]: a motor to drive the dasher;	The Accused Product includes a motor that drives the dasher to rotate it to stir the drink product.  Accused Product Instruction Manual.

Exhibit 38
Claim Chart Comparing the Wetie Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

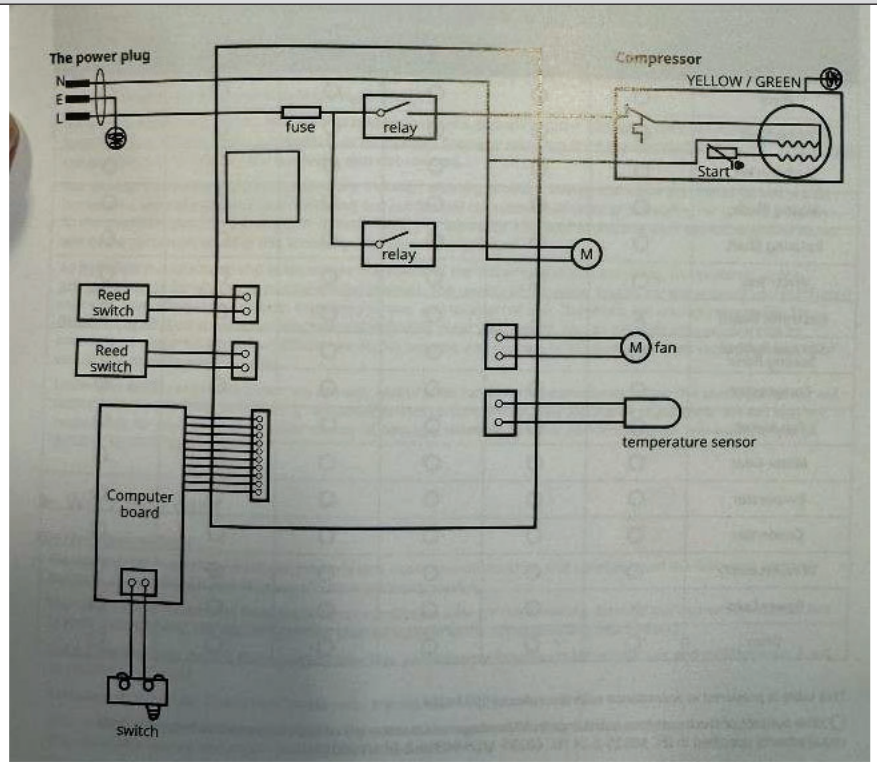
Claim Element	Accused Product
	 Accused Product Instruction Manual. As confirmed by product testing, during operation a motor of the frozen drink maker drives the dasher to rotate.

Exhibit 38

Claim Chart Comparing the Wetie Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

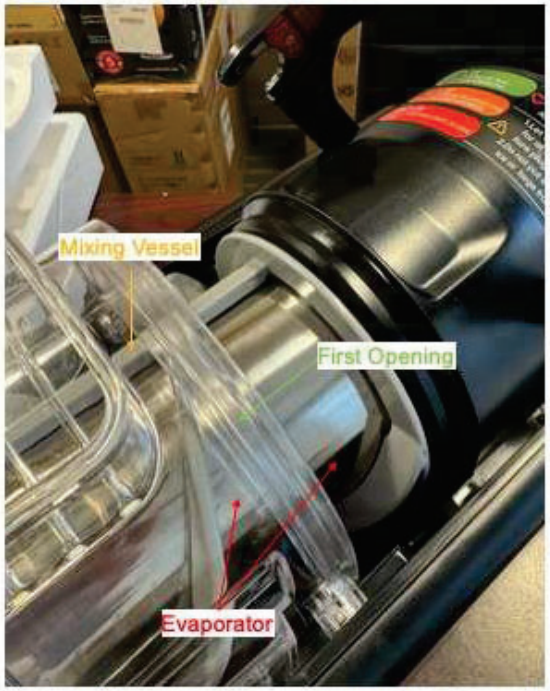
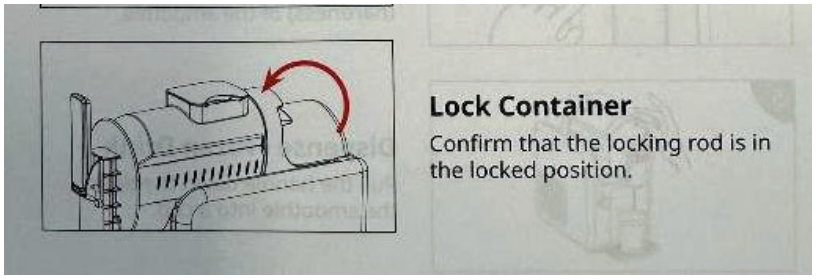
Claim Element	Accused Product
24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and	 Photograph of Accused Product (annotated). The evaporator is received through the first opening of the mixing vessel. 

Exhibit 38

Claim Chart Comparing the Wetie Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

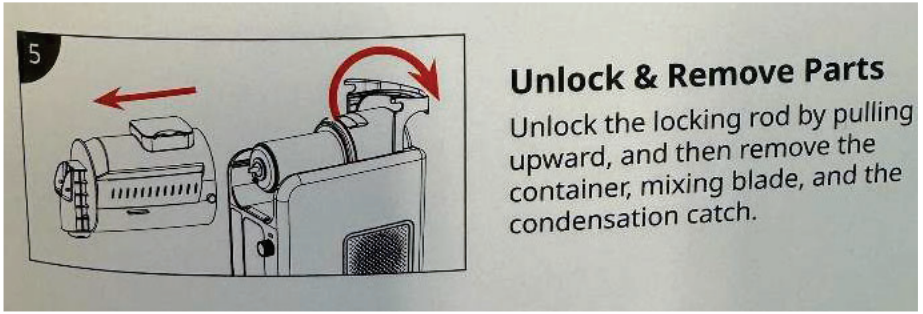
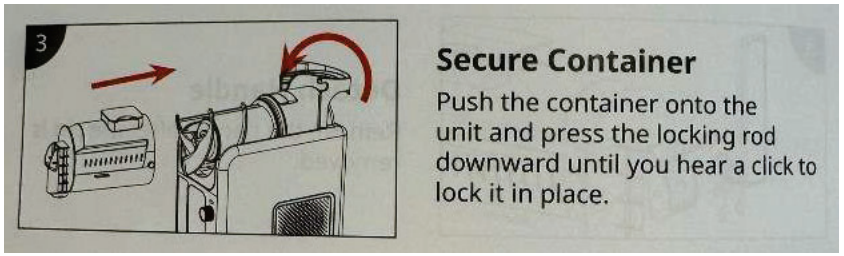
Claim Element	Accused Product
	Accused Product Instruction Manual.  Accused Product Instruction Manual.  Accused Product Instruction Manual.

Exhibit 38

Claim Chart Comparing the Wetie Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
24[f]: a flexible seal arranged proximate to the upper housing section;	 Photograph of Accused Product (annotated). As confirmed by product testing, the flexible seal comprises a flexible material.
24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position, and	The cam feature of the Accused Product controls the coupling of the mixing vessel to the upper housing section when in the coupling position and uncouples the mixing vessel from the upper housing section when in the uncoupling position.

Exhibit 38

Claim Chart Comparing the Wetie Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

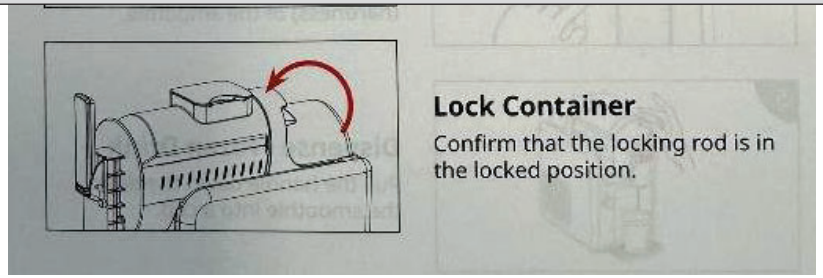
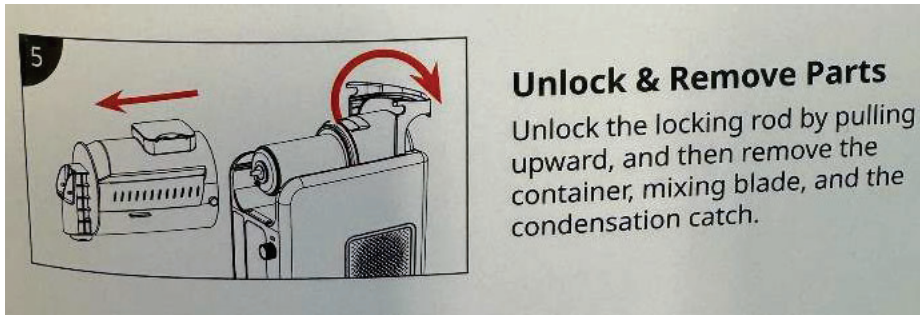
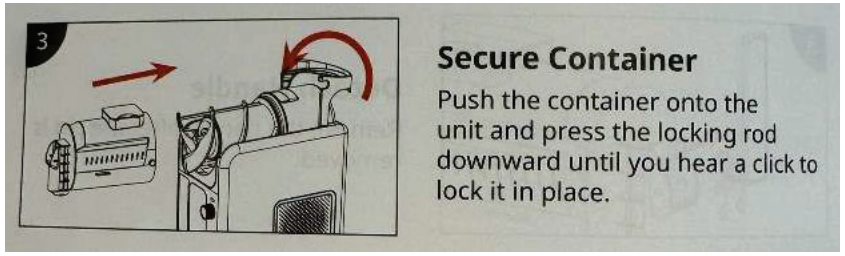
Claim Element	Accused Product
	 Accused Product Instruction Manual.  Accused Product Instruction Manual.  Accused Product Instruction Manual.

Exhibit 38

Claim Chart Comparing the Wetie Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	**Accused Product**
	 Photographs of Accused Product (annotated). *Id.*, Cl. 24[a].
24[h]: wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.	When the cam feature of the Accused Product is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal about the first opening.

Exhibit 38

Claim Chart Comparing the Wetie Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

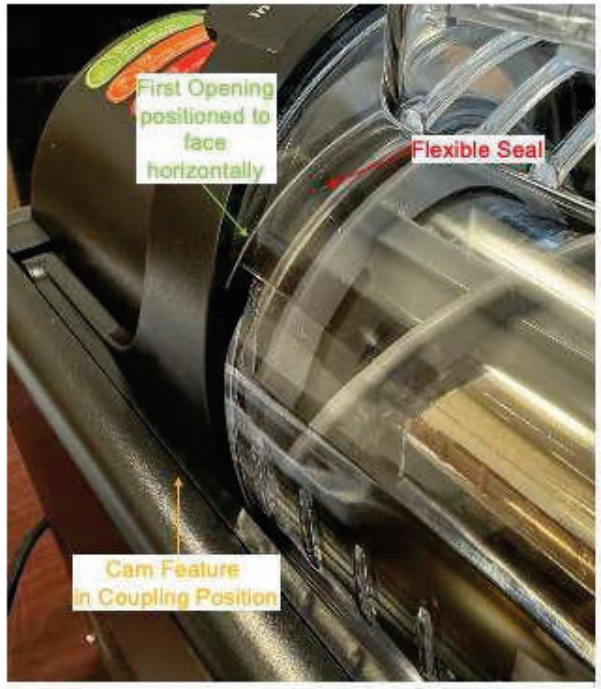
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
30. The frozen drink maker of claim 24, wherein the housing comprises a lever moveable relative to the upper housing section, wherein moving the lever to a first position moves the cam feature into the coupling position, and wherein, when in the coupling position, the cam feature engages at least one mating feature	The lever of the Accused Product is moveable relative to the upper housing section.

Exhibit 38

Claim Chart Comparing the Wetie Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

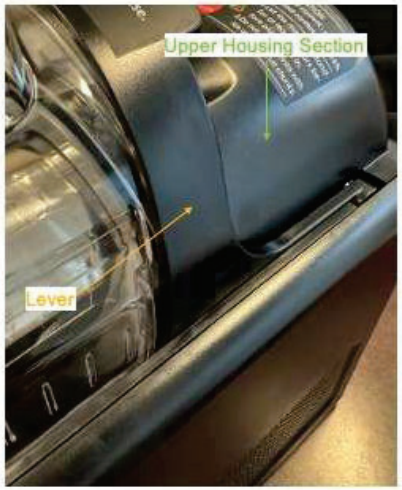
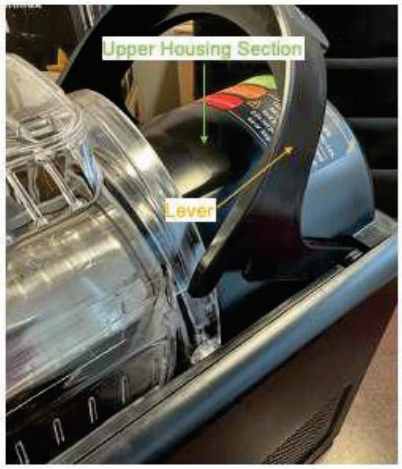
Claim Element	Accused Product
on the mixing vessel to control coupling of the mixing vessel to the upper housing section.	  Photographs of Accused Product (annotated). Moving the lever of the Accused Product to a first position moves the cam feature into the coupling position. When in the coupling position, the cam feature engages at least one mating feature on the mixing vessel to control coupling the mixing vessel to the upper housing section.

Exhibit 38

Claim Chart Comparing the Wetie Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

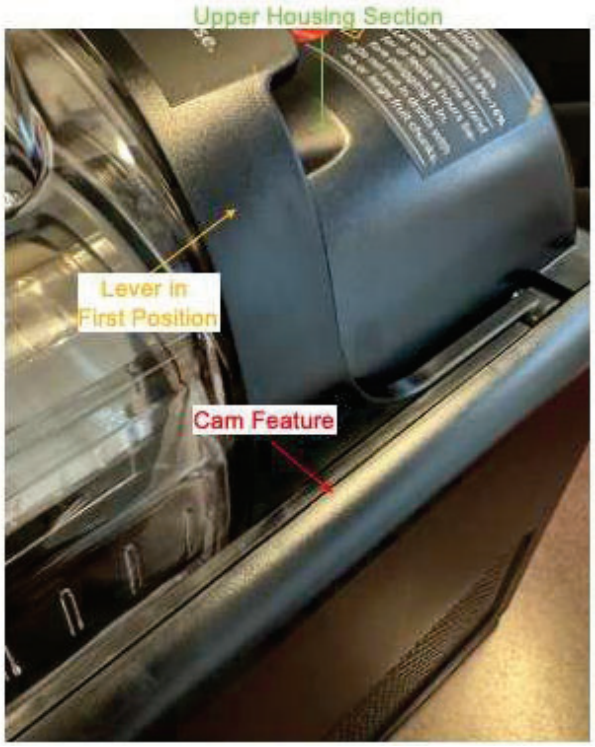
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 38

Claim Chart Comparing the Wetie Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

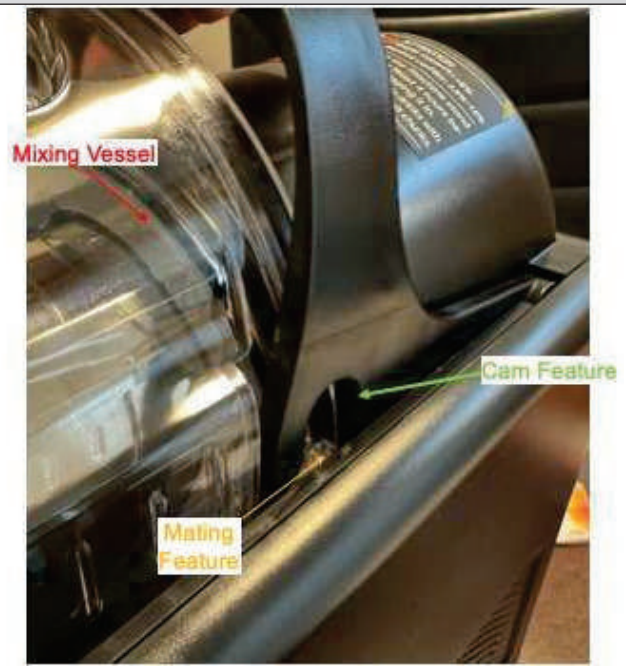
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

EXHIBIT 39

Exhibit 39
Claim Chart Comparing the Wie Frozen Drink Maker to U.S. Patent No. 12,593,855

Below is a chart that applies asserted exemplary independent claim 24 of U.S. Patent No. 12,593,855 (the "'855 Patent") to the accused Wie Frozen Drink Maker ("Accused Product"), purchased at the following listing: https://www.amazon.com/dp/B0FFGR6DG9 (ASIN B0FFGR6DG9).

The arguments and evidence cited in the chart below are representative and Plaintiffs reserve the right to rely on additional arguments and evidence to show that the above-identified accused product infringes exemplary independent claim 24 of the '855 Patent.

Claim Element	Accused Product
24[Pre.]: A frozen drink maker comprising:	 Accused Product Packaging.

Exhibit 39
Claim Chart Comparing the Wie Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;	 Photograph of Accused Product (annotated). The cam feature of the Accused Product is moveable between a coupling position and uncoupling position.

Exhibit 39
Claim Chart Comparing the Wie Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

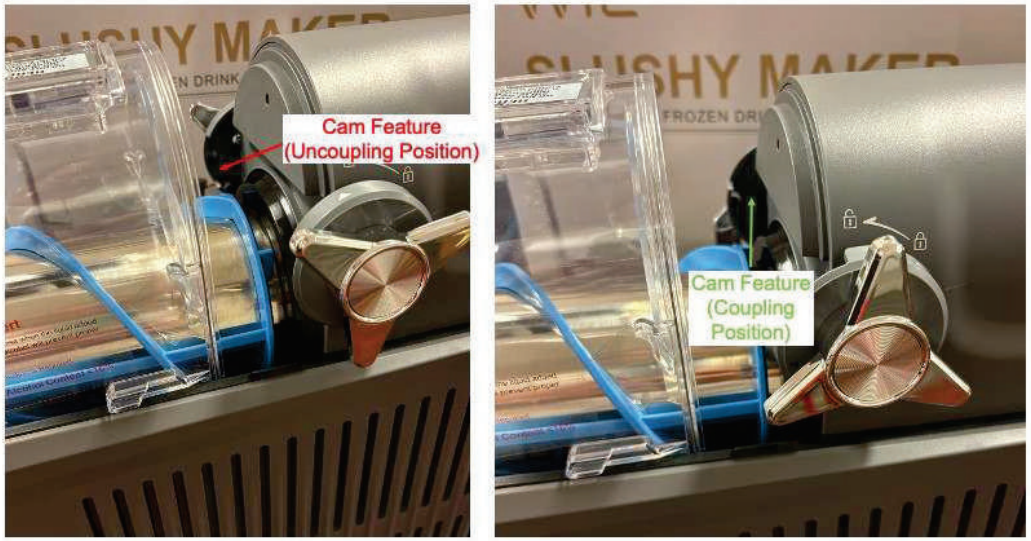
Claim Element	Accused Product
	 Photographs of Accused Product (annotated).

Exhibit 39
Claim Chart Comparing the Wie Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

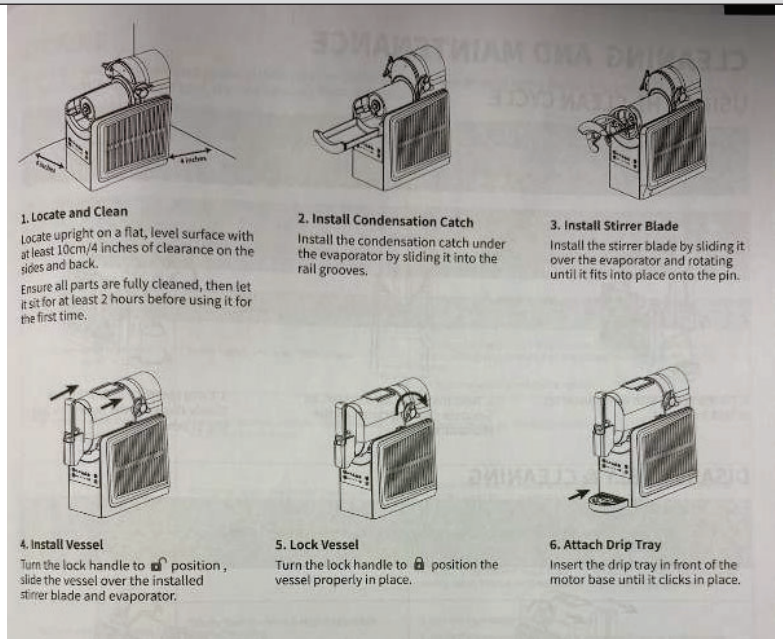
Claim Element	Accused Product
	 Accused Product Instruction Manual.
24[b]: a mixing vessel to receive a drink product, the mixing vessel having:	The mixing vessel is configured to receive a drink product.

Exhibit 39
Claim Chart Comparing the Wie Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

Exhibit 39
Claim Chart Comparing the Wie Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and	 Photograph of Accused Product (annotated). The second opening of the mixing vessel of the Accused Product is configured to dispense a drink product.

Exhibit 39
Claim Chart Comparing the Wie Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

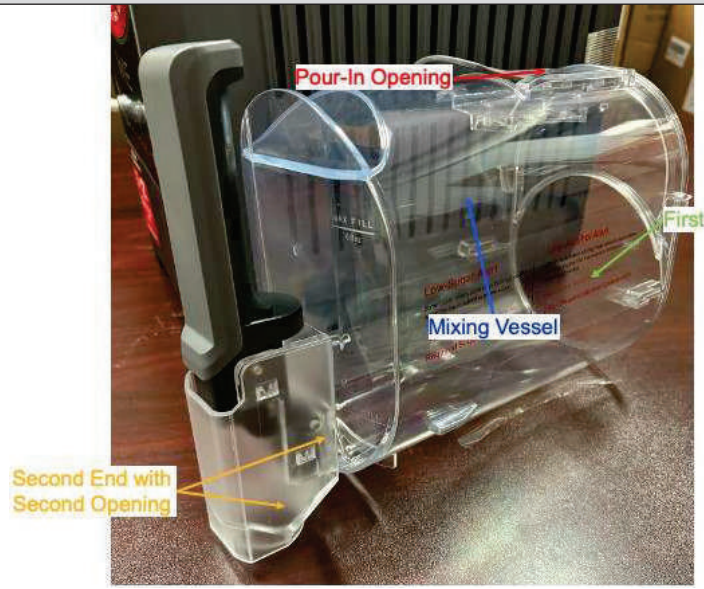
Claim Element	Accused Product
24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;	 Photograph of Accused Product (annotated).
24[c]: a dasher configured to rotate in the mixing vessel;	The dasher of the Accused Product is configured to rotate in the mixing vessel to stir the drink product.

Exhibit 39
Claim Chart Comparing the Wie Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

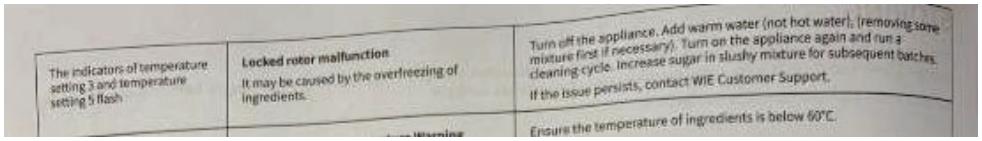
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
24[d]: a motor to drive the dasher;	The Accused Product includes a motor that drives the dasher to rotate it to stir the drink product.  Accused Product Instruction Manual.

Exhibit 39

Claim Chart Comparing the Wie Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

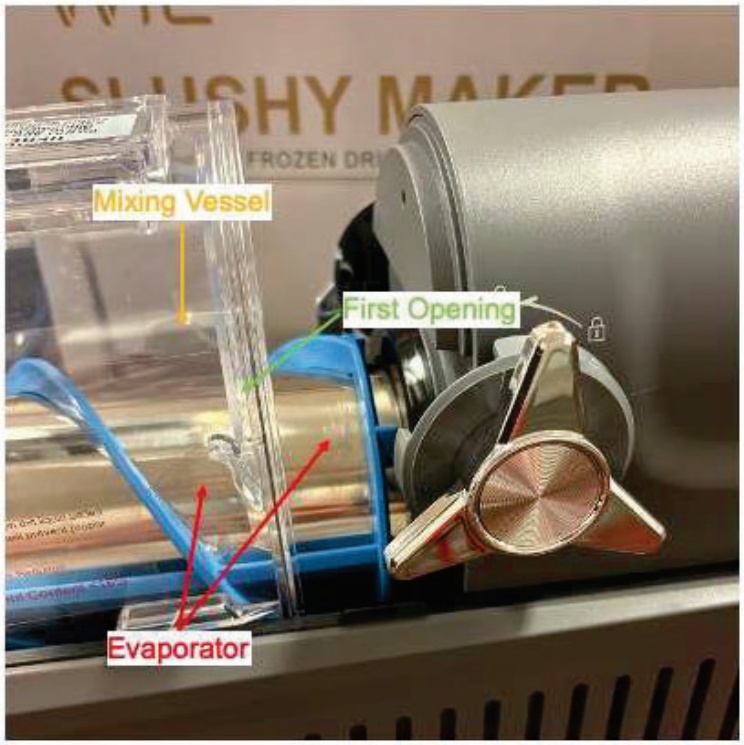
Claim Element	Accused Product
	As confirmed by product testing, during operation a motor of the frozen drink maker drives the dasher to rotate.
24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and	 Photograph of Accused Product (annotated). The evaporator is received through the first opening of the mixing vessel.

Exhibit 39

Claim Chart Comparing the Wie Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

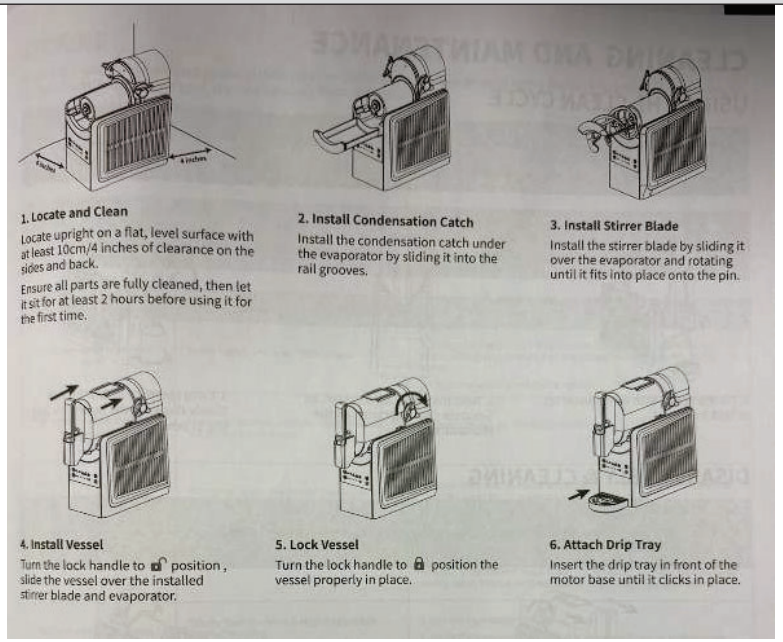
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 39

Claim Chart Comparing the Wie Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

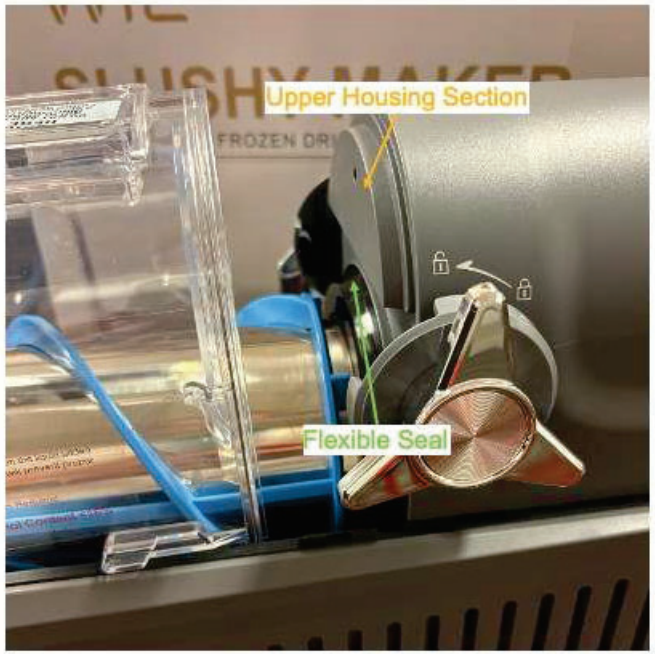
Claim Element	Accused Product
24[f]: a flexible seal arranged proximate to the upper housing section;	 Photograph of Accused Product (annotated). As confirmed by product testing, the flexible seal comprises a flexible material.
24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position, and	The cam feature of the Accused Product controls the coupling of the mixing vessel to the upper housing section when in the coupling position and uncouples the mixing vessel from the upper housing section when in the uncoupling position.

Exhibit 39

Claim Chart Comparing the Wie Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

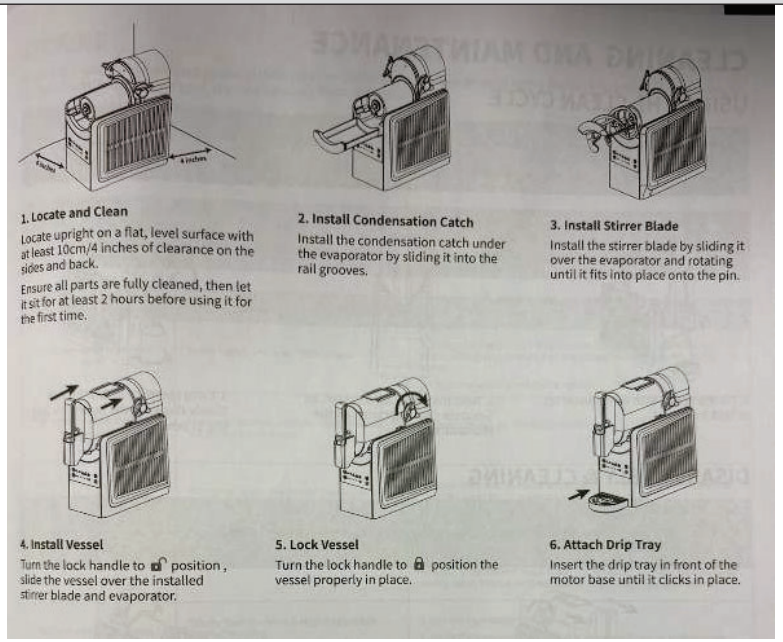
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 39

Claim Chart Comparing the Wie Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

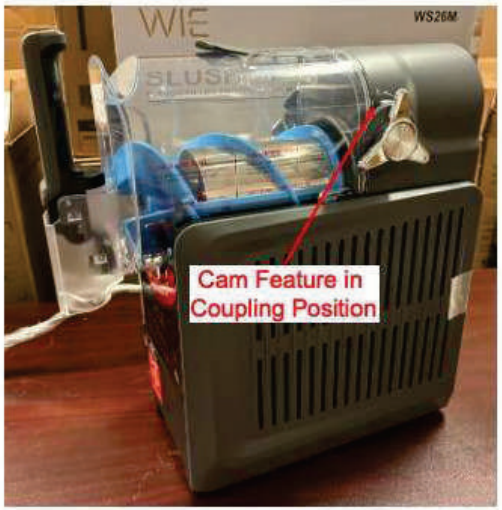
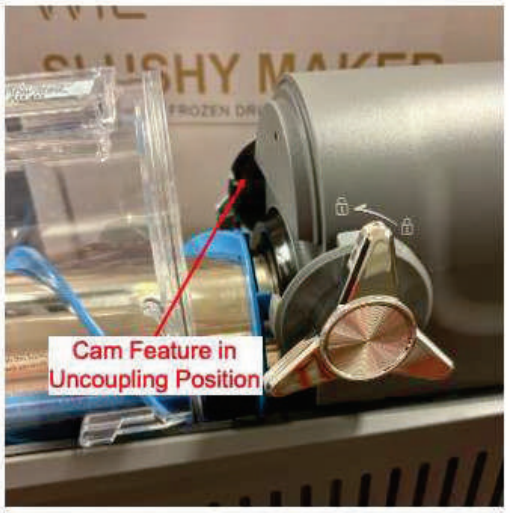
Claim Element	**Accused Product**
	  Photographs of Accused Product (annotated). *Id.*, Cl. 24[a].
24[h]: wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.	When the cam feature of the Accused Product is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal about the first opening.

Exhibit 39

Claim Chart Comparing the Wie Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

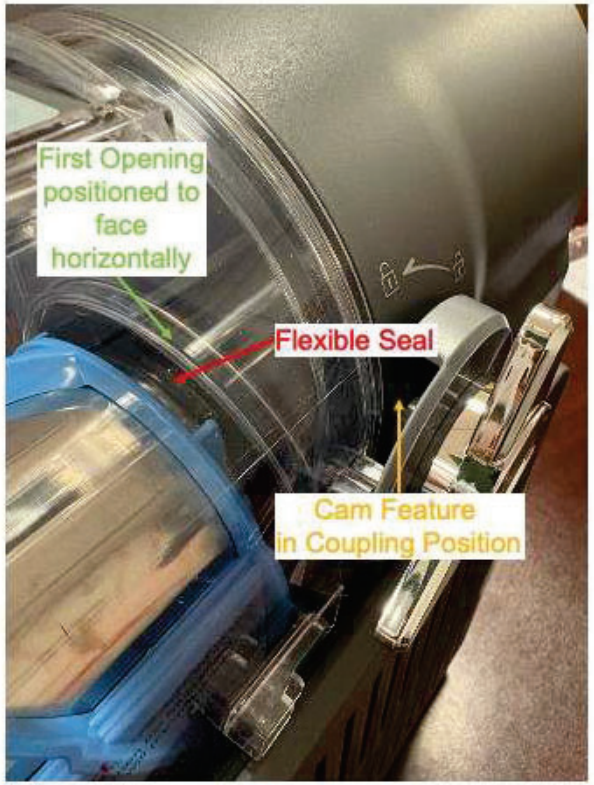
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

EXHIBIT 40

Exhibit 40
Claim Chart Comparing the Wind Shear Frozen Drink Maker to U.S. Patent No. 12,593,855

Below is a chart that applies asserted exemplary independent claim 24 of U.S. Patent No. 12,593,855 (the "'855 Patent") to the accused Wind Shear Frozen Drink Maker ("Accused Product"), purchased at the following listing: www.amazon.com/dp/B0FQJMNKPL (ASIN B0FQJMNKPL).

The arguments and evidence cited in the chart below are representative and Plaintiffs reserve the right to rely on additional arguments and evidence to show that the above-identified accused product infringes exemplary independent claim 24 of the '855 Patent.

Claim Element	Accused Product
24[Pre.]: A frozen drink maker comprising:	 Accused Product Packaging.

Exhibit 40
Claim Chart Comparing the Wind Shear Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

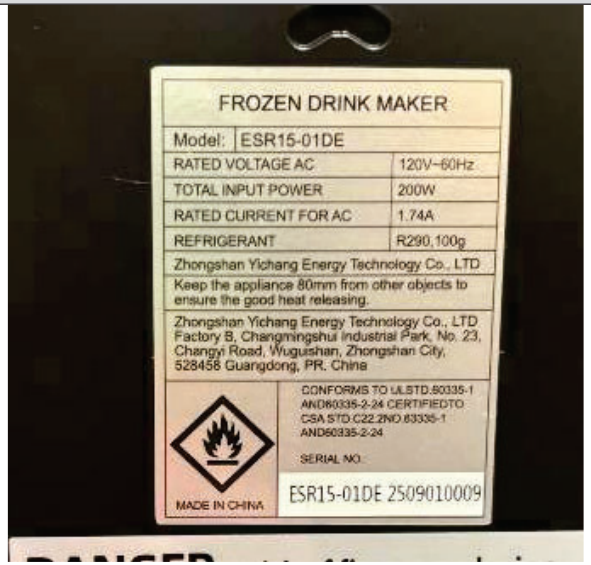
Claim Element	Accused Product
	 Photograph of Accused Product labelling.

Exhibit 40
Claim Chart Comparing the Wind Shear Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

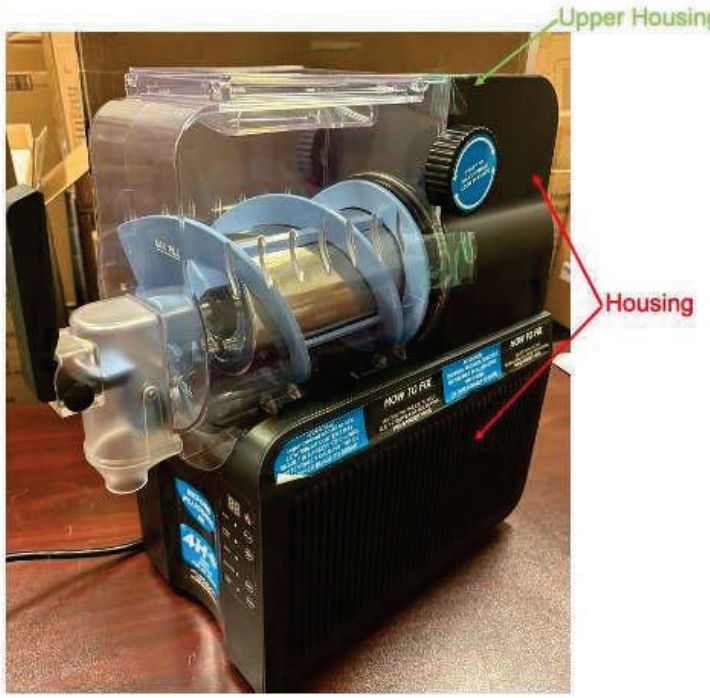
Claim Element	Accused Product
24[a]: a housing comprising an upper housing section and a cam feature moveable between a coupling position and an uncoupling position;	 Photograph of Accused Product (annotated). The cam feature of the Accused Product is moveable between a coupling position and uncoupling position.

Exhibit 40
Claim Chart Comparing the Wind Shear Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

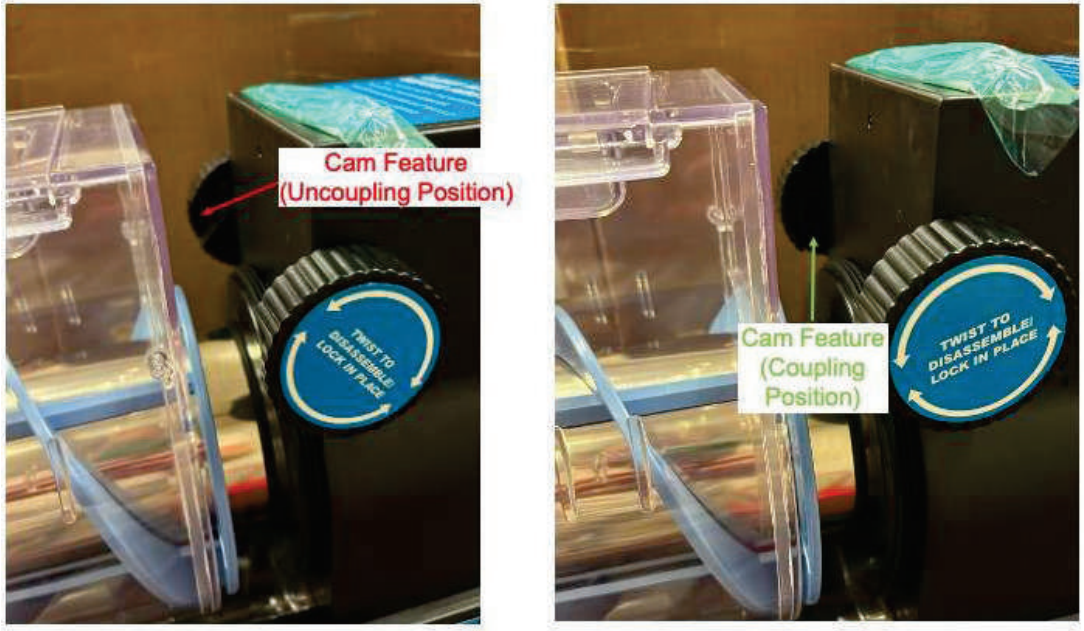
Claim Element	Accused Product
	 Photographs of Accused Product (annotated).

Exhibit 40
Claim Chart Comparing the Wind Shear Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

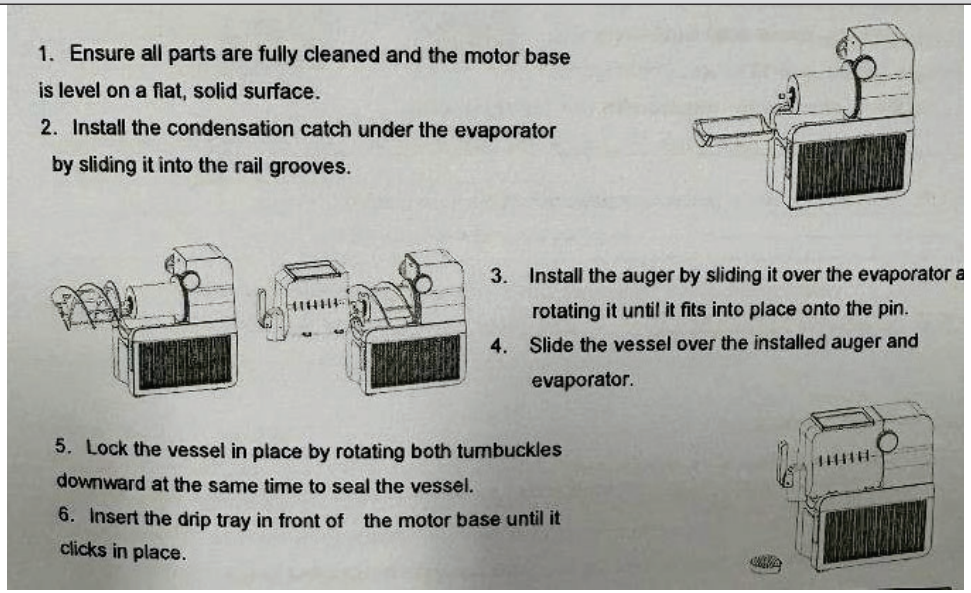
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 40
Claim Chart Comparing the Wind Shear Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

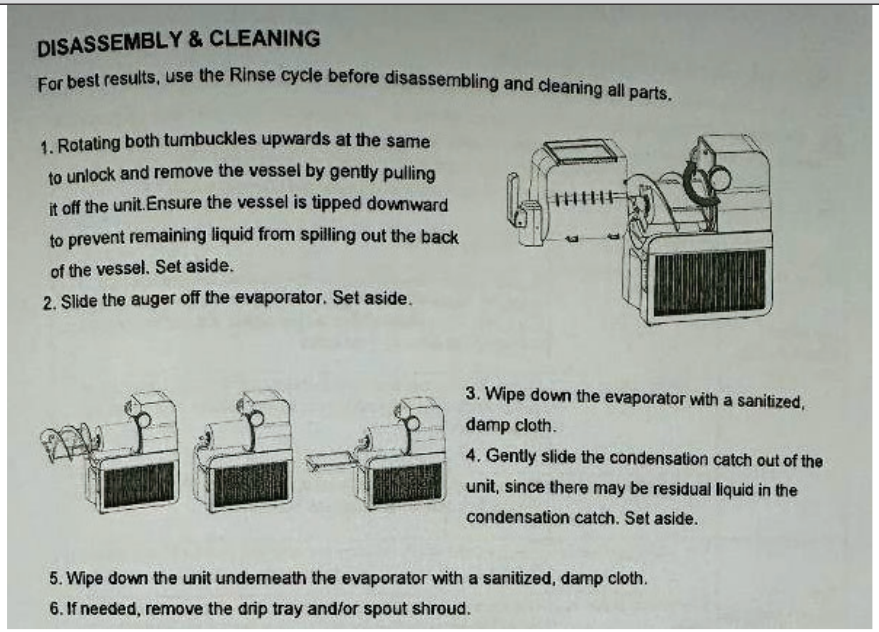
Claim Element	Accused Product
	 Accused Product Instruction Manual.
24[b]: a mixing vessel to receive a drink product, the mixing vessel having:	The mixing vessel is configured to receive a drink product.

Exhibit 40
Claim Chart Comparing the Wind Shear Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	Photograph of Accused Product (annotated).

Exhibit 40
Claim Chart Comparing the Wind Shear Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

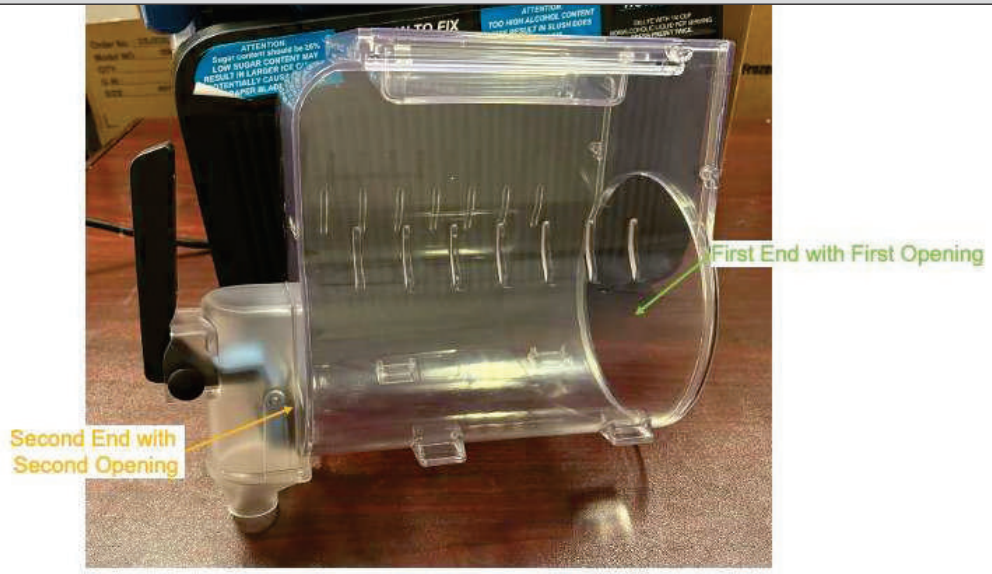
Claim Element	Accused Product
24[b][i]: a first end with a first opening and a second end with a second opening configured to dispense drink product; and	 Photograph of Accused Product (annotated). The second opening of the mixing vessel of the Accused Product is configured to dispense a drink product.

Exhibit 40

Claim Chart Comparing the Wind Shear Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

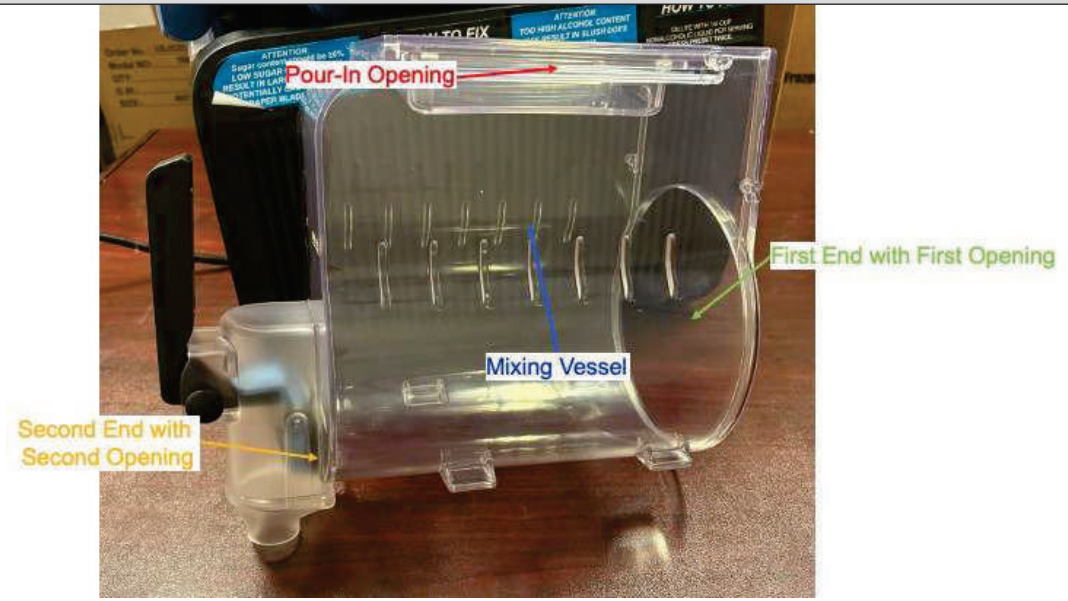
Claim Element	Accused Product
24[b][ii]: a pour-in opening located on the mixing vessel between the first end and the second end;	 Photograph of Accused Product (annotated).
24[c]: a dasher configured to rotate in the mixing vessel;	The dasher of the Accused Product is configured to rotate in the mixing vessel to stir the drink product.

Exhibit 40

Claim Chart Comparing the Wind Shear Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

Claim Element	Accused Product
	 Photograph of Accused Product (annotated).
24[d]: a motor to drive the dasher;	The Accused Product includes a motor that drives the dasher to rotate it to stir the drink product. As confirmed by product testing, during operation a motor of the frozen drink maker drives the dasher to rotate.

Exhibit 40

Claim Chart Comparing the Wind Shear Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

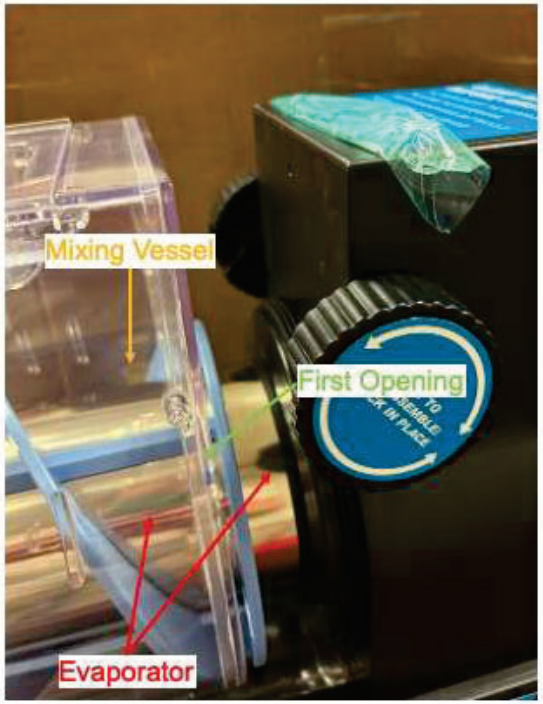
Claim Element	Accused Product
24[e]: an evaporator configured to be received through the first opening and be positioned within the mixing vessel; and	 Photograph of Accused Product (annotated). The evaporator is received through the first opening of the mixing vessel.

Exhibit 40

Claim Chart Comparing the Wind Shear Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

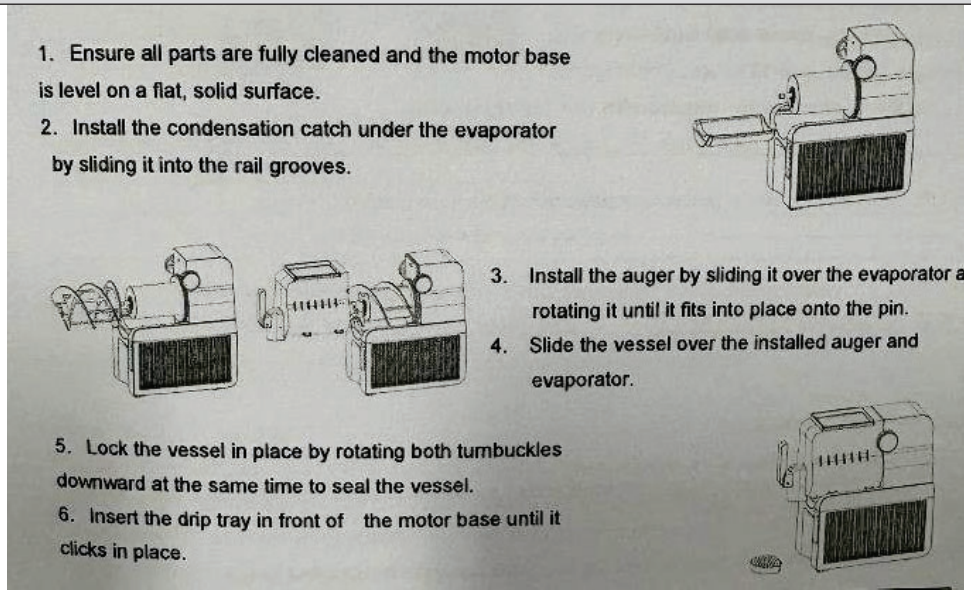
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 40

Claim Chart Comparing the Wind Shear Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

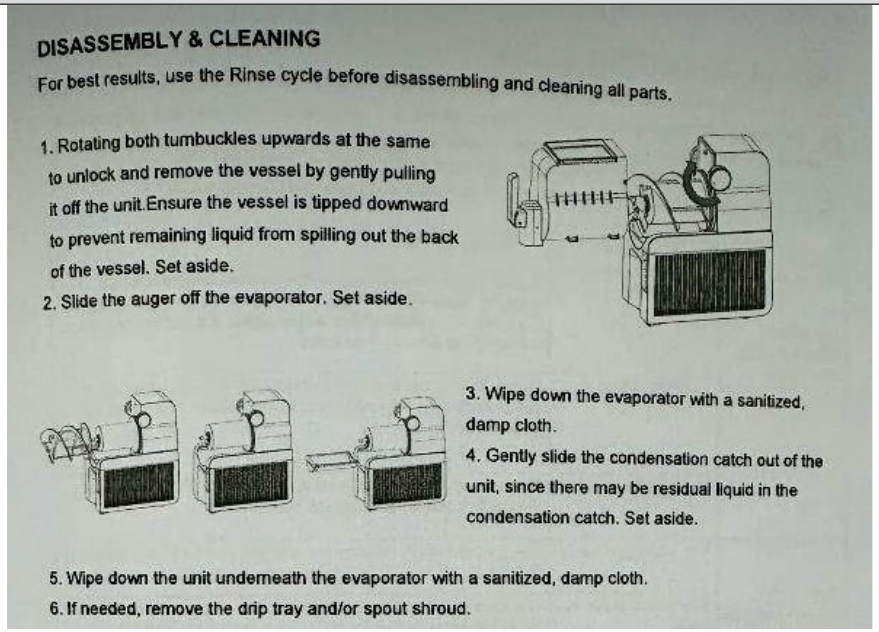
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 40

Claim Chart Comparing the Wind Shear Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

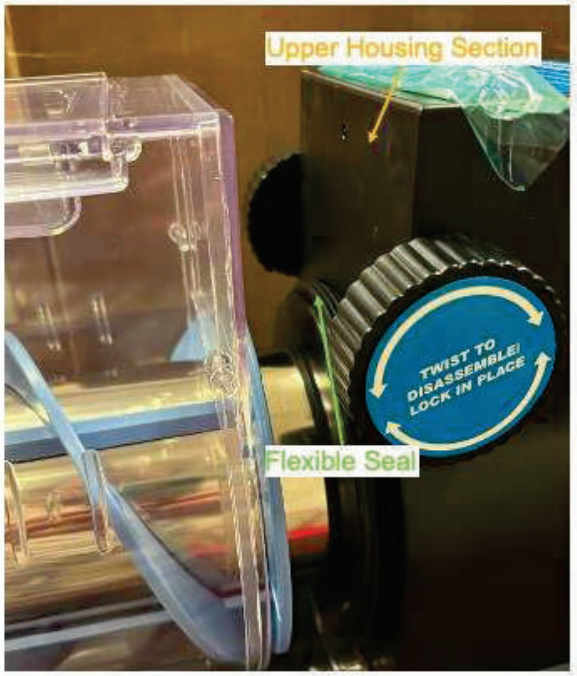
Claim Element	Accused Product
24[f]: a flexible seal arranged proximate to the upper housing section;	 Photograph of Accused Product (annotated). As confirmed by product testing, the flexible seal comprises a flexible material.
24[g]: wherein the cam feature controls coupling the mixing vessel to the upper housing section when in the coupling position and uncoupling the mixing vessel from the upper housing section when in the uncoupling position, and	The cam feature of the Accused Product controls the coupling of the mixing vessel to the upper housing section when in the coupling position and uncouples the mixing vessel from the upper housing section when in the uncoupling position.

Exhibit 40

Claim Chart Comparing the Wind Shear Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

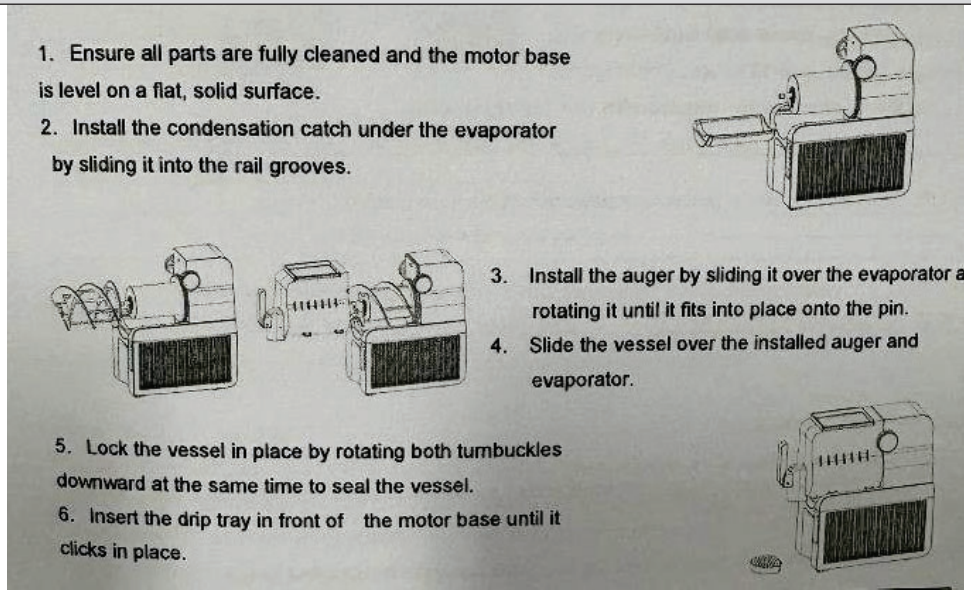
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 40

Claim Chart Comparing the Wind Shear Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

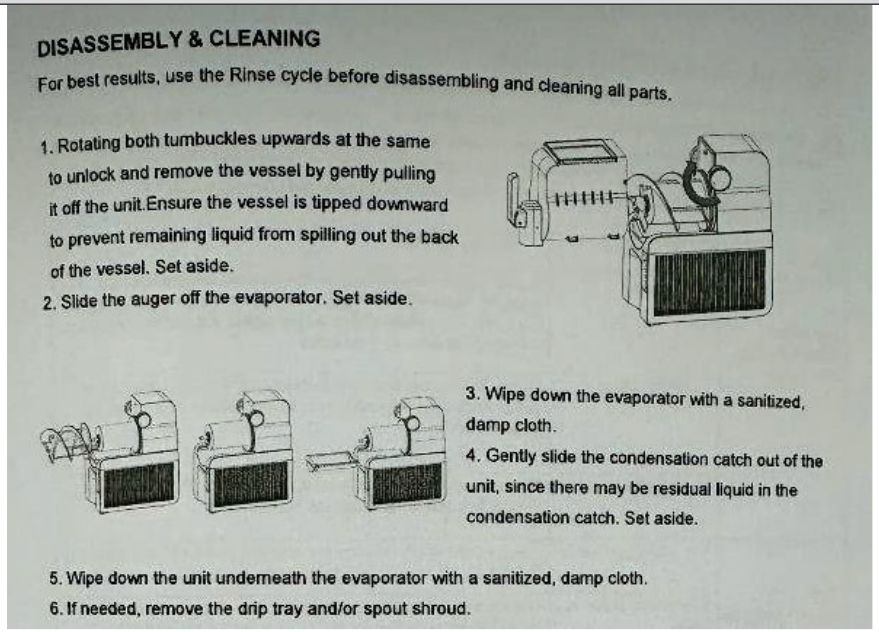
Claim Element	Accused Product
	 Accused Product Instruction Manual.

Exhibit 40

Claim Chart Comparing the Wind Shear Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

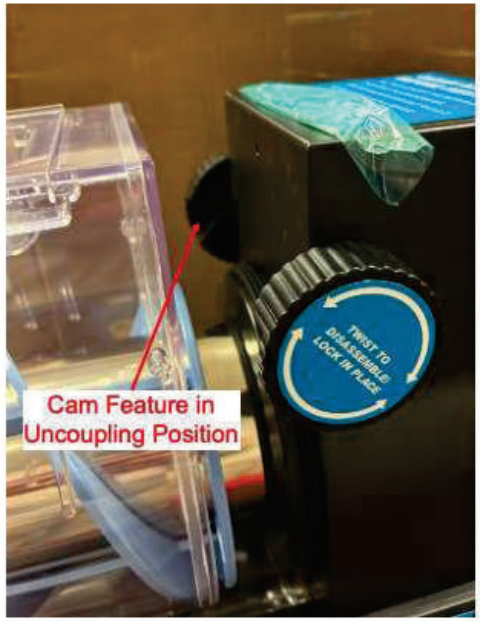
Claim Element	Accused Product
	 Photographs of Accused Product (annotated). *Id.*, Cl. 24[a].
24[h]: wherein, when the cam feature is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal.	When the cam feature of the Accused Product is in the coupling position, the first opening of the mixing vessel is positioned to face horizontally and is sealed by the flexible seal about the first opening.

Exhibit 40

Claim Chart Comparing the Wind Shear Frozen Drink Maker (the "Accused Product") to U.S. Patent No. 12,593,855

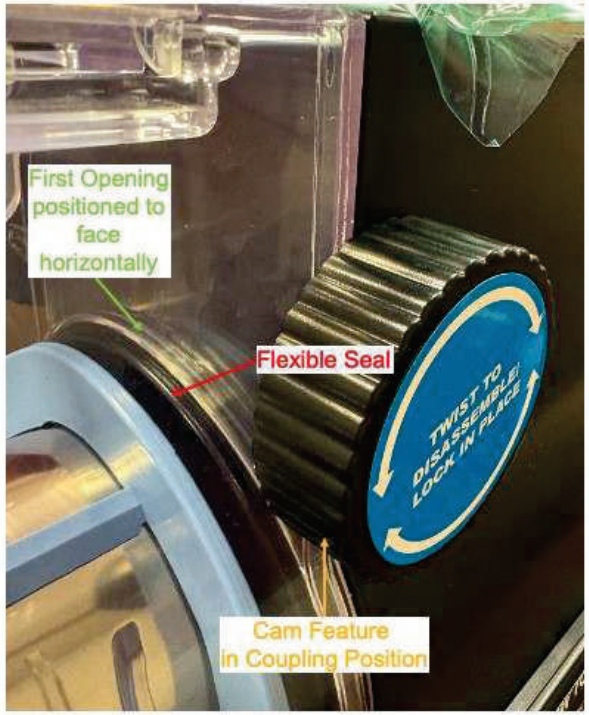
Claim Element	Accused Product
	 Photograph of Accused Product (annotated).

EXHIBIT “4”

IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF FLORIDA

Civil Case No. 1:26-cv-23083 (Consolidated)

SHARKNINJA OPERATING LLC, and SHARKNINJA SALES COMPANY,

Plaintiffs,

v.

THE INDIVIDUALS, CORPORATIONS, LIMITED LIABILITY COMPANIES, PARTNERSHIPS, AND UNINCORPORATED ASSOCIATIONS IDENTIFIED ON SCHEDULE A,

Defendants.

DECLARATION OF DAVID BRZOZOWSKI

I, David Brzozowski, declare and state as follows:

1. I am over 18 years of age, and I have personal knowledge of the facts set forth herein. I make this declaration in support of the Motion for Preliminary Injunction filed by Plaintiffs, SharkNinja Operating LLC and SharkNinja Sales Company (collectively, "SharkNinja"). If called upon to do so, I could and would competently testify to the following facts set forth below.

2. I am counsel for SharkNinja.

3. Counsel for SharkNinja ordered samples of each of the products accused of infringement in this action ("Accused Products").[1] Upon receipt of the Accused Products, either

[1] *SharkNinja Operating LLC et al. v. The Individuals, Corporations, Limited Liability Companies, Partnerships, and Unincorporated Associations Identified on Schedule A*, Case No. 1:26-cv-23083-RAR, Dkt. 10-43 (May 7, 2026) ("Cheek Decl.").

myself or counsel at my direction inspected and photographed each of the Accused Products.

4. Counsel ordered and received three Accused Products offered by Defendant **Keenstar** under Amazon Standard Identification Numbers ("ASINs") B0DTHB6L3K, B0F7KL8BX9, and B0F9L29XPC. Cheek Decl., ¶ 8. Exhibits 1-25 are true and correct copies of photographs I took of two of the **Keenstar** Accused Products that were ordered. Exhibits 26-38 are true and correct copies of photographs taken by counsel at my direction of the third **Keenstar** Accused Product that was ordered.

5. Counsel ordered and received an Accused Product offered by Defendant **Luma Comfort** under ASIN B0F1WC59N5. *Id.*, ¶ 9. Exhibits 39-55 are true and correct copies of photographs I took of the **Luma Comfort** Accused Product that was ordered.

6. Counsel ordered and received four Accused Products offered by Defendant **Relexnow** under ASINs B0DSW3XJ3Q, B0F6MFZCH6, BOFX8JWND5, and B0GJ3JR6H5. *Id.*, ¶ 10. Exhibits 56-104 are true and correct copies of photographs I took of the four **Relexnow** Accused Products that were ordered.

7. Counsel ordered and received an Accused Product offered by Defendant **Bizaura** under Walmart identification number 17857317050. Cheek Decl., ¶ 11. Exhibits 105-115 are true and correct copies of photographs I took of the **Bizaura** Accused Product that was ordered.

8. Counsel ordered and received an Accused Product offered by Defendant **BKPPM** under Amazon Standard Identification Number ("ASIN") B0DT429T6D. Cheek Decl., ¶ 12. Exhibits 116-128 are true and correct copies of photographs I took of the **BKPPM** Accused Product that was ordered.

9. Counsel ordered and received four Accused Products offered by Defendant **Garvee** under ASINs BOG122V5QH, BOGKPHKJlQ, B0GN38T8WB, and BOGS8VMV1P. Cheek

Decl., ¶ 13. Exhibits 158-183 are true and correct copies of photographs I took of two of the **Garvee** Accused Products that were ordered. Exhibits 129-157 are true and correct copies of photographs taken by counsel at my direction of the other two **Garvee** Accused Products that were ordered.

10. Counsel ordered and received an Accused Product offered by Defendant **Generic** under ASIN B0G4CGGSZ6. Cheek Decl., ¶ 14. Inspection of the **Generic** Accused Product revealed that counsel received a Wizaura brand slush machine. Exhibits 184-199 are true and correct copies of photographs taken by counsel at my direction of the **Generic** (Wizaura) Accused Product that was ordered.

11. Counsel ordered and received three Accused Products offered by Defendant **Neoism** under ASINs B0G66MQVVM, B0GCKYIMBZ, and BOGCLKYZLR. Cheek Decl., ¶ 15. Exhibits 200-237 are true and correct copies of photographs I took of the three **Neoism** Accused Products that were ordered.

12. Counsel ordered and received an Accused Product offered by Defendant **Revotio** under ASIN B0FPF8YXCV. Cheek Decl., ¶ 16. Exhibits 238-248 are true and correct copies of photographs I took of the **Revotio** Accused Product that was ordered.

13. Counsel ordered and received an Accused Product offered by Defendant **SUPWIN** under ASIN B0FX2M6CV1. Cheek Decl., ¶ 17. Exhibits 249-259 are true and correct copies of photographs I took of the **SUPWIN** Accused Product that was ordered.

14. Counsel ordered and received an Accused Product offered by Defendant **Sweet** under ASIN B0F8BFBDBV. Cheek Decl., ¶ 18. Inspection of the **Sweet** Accused Product revealed that counsel received a Bizaura brand slush machine. Exhibits 260-272 are true and

correct copies of photographs taken by counsel at my direction of the **Sweet** (Bizaura) Accused Product that was ordered.

15. Counsel ordered and received an Accused Product offered by Defendant **Syintao** under ASIN B0GFRZBM55. Cheek Decl., ¶ 19. Exhibits 273-284 are true and correct copies of photographs I took of the **Syintao** Accused Product that was ordered.

16. Counsel ordered and received two Accused Products offered by Defendant **Aaobosi** under Amazon Standard Identification Numbers ("ASINs") B0FF4S42Q5 and B0FFH37RS6. Cheek Decl., ¶ 20. Exhibits 285-308 are true and correct copies of photographs I took of the two **Aaobosi** Accused Products that were ordered.

17. Counsel ordered and received an Accused Product offered by Defendant **AllTou** under ASIN B0GLFJVZRB. Cheek Decl., ¶ 25. Exhibits 309-318 are true and correct copies of photographs I took of the **AllTou** Accused Product that was ordered.

18. Counsel ordered and received two Accused Products offered by Defendant **Astralship** under ASINs B0FVSSQP4J and B0F48675ZN. Cheek Decl., ¶ 29. Exhibits 319-332 are true and correct copies of photographs I took of one of the **Astralship** Accused Products that was ordered. Exhibits 333-350 are true and correct copies of photographs taken by counsel at my direction of the other **Astralship** Accused Product that was ordered.

19. Counsel ordered and received an Accused Product offered by Defendant **Besococina** under ASIN B0FNK5KDSP. Cheek Decl., ¶ 26. Exhibits 351-363 are true and correct copies of photographs I took of the **Besococina** Accused Product that was ordered.

20. Counsel ordered and received two Accused Products offered by Defendant **Blizzee** under ASINs B0FN13CYSZ and B0FN1WLJK1. Cheek Decl., ¶ 33. Exhibits 364-375 are true and correct copies of photographs I took of one of the **Blizzee** Accused Products that was ordered.

Exhibits 376-394 are true and correct copies of photographs taken by counsel at my direction of the other **Blizzee** Accused Product that was ordered.

21. Counsel ordered and received an Accused Product offered by Defendant **Casidea** under ASIN B0FH7FJ186. Cheek Decl., ¶ 48. Exhibits 395-408 are true and correct copies of photographs I took of the **Casidea** Accused Product that was ordered.

22. Counsel ordered and received an Accused Product offered by Defendant **Cowsar** under ASIN B0GTK7WL43. Cheek Decl., ¶ 21. Exhibits 409-418 are true and correct copies of photographs I took of the **Cowsar** Accused Product that was ordered.

23. Counsel ordered and received an Accused Product offered by Defendant **Crownful** under ASIN B0FXMCG8B3. Cheek Decl., ¶ 30. Exhibits 419-431 are true and correct copies of photographs I took of the **Crownful** Accused Product that was ordered.

24. Counsel ordered and received an Accused Product offered by Defendant **Culvani** under ASIN B0FLSDY79Z. Cheek Decl., ¶ 24. Exhibits 432-440 are true and correct copies of photographs I took of the **Culvani** Accused Product that was ordered.

25. Counsel ordered and received an Accused Product offered by Defendant **Dutepa** under ASIN B0F9FXR3ZT. Cheek Decl., ¶ 34. Exhibits 441-454 are true and correct copies of photographs I took of the **Dutepa** Accused Product that was ordered.

26. Counsel ordered and received an Accused Product offered by Defendant **Fesoiu** under ASIN B0GTSZLPZW. Cheek Decl., ¶ 22. Exhibits 455-467 are true and correct copies of photographs I took of the **Fesoiu** Accused Product that was ordered.

27. Counsel ordered and received two Accused Products offered by Defendant **Fohere** under ASINs B0FR9C7RPY and B0FSQHLWG4. Cheek Decl., ¶ 35. Exhibits 468-486 are true and correct copies of photographs I took of the two **Fohere** Accused Products that were ordered.

28. Counsel ordered and received an Accused Product offered by Defendant **Foyoconven** under ASIN B0FVFKBHF8. Cheek Decl., ¶ 23. Exhibits 487-499 are true and correct copies of photographs I took of the **Foyoconven** Accused Product that was ordered.

29. Counsel ordered and received an Accused Product offered by Defendant **GSEICE** under ASIN BOFQ4NJSJL. Cheek Decl., ¶ 39. Exhibits 524-537 are true and correct copies of photographs I took of the **GSEICE** Accused Product that was ordered.

30. Counsel ordered and received two Accused Products offered by Defendant **GSEICE** under ASINs BOFF9SN2GV and B0FSKR56YN. Cheek Decl., ¶ 38. Exhibits 500-523 and 538-554 are true and correct copies of photographs taken by counsel at my direction of the two **GSEICE** Accused Products that were ordered.

31. Counsel ordered and received an Accused Product offered by Defendant **HBN** under ASIN B0FRTP2KXS. Cheek Decl., ¶ 27. Exhibits 555-567 are true and correct copies of photographs I took of the **HBN** Accused Product that was ordered.

32. Counsel ordered and received an Accused Product offered by Defendant **Maipsig** under ASIN BlFTGZYLIB. Cheek Decl., ¶ 40. Exhibits 568-576 are true and correct copies of photographs I took of the **Maipsig** Accused Product that was ordered.

33. Counsel ordered and received an Accused Product offered by Defendant **Mazzen** under ASIN B0G3WM3L9F. Cheek Decl., ¶ 41. Exhibits 577-586 are true and correct copies of photographs I took of the **Mazzen** Accused Product that was ordered.

34. Counsel ordered and received an Accused Product offered by Defendant **Mulivid** under ASIN B0FQNZFLL2. Cheek Decl., ¶ 42. Exhibits 587-603 are true and correct copies of photographs taken by counsel at my direction of the **Mulivid** Accused Product that was ordered.

35. Counsel ordered and received an Accused Product offered by Defendant **NutriChef** under ASIN B0GNNP6SNB. Cheek Decl., ¶ 31. Exhibits 604-615 are true and correct copies of photographs I took of the **NutriChef** Accused Product that was ordered.

36. Counsel ordered and received an Accused Product offered by Defendant **Ontravelo** under ASIN B0FR7J6MWS. Cheek Decl., ¶ 32. Exhibits 616-629 are true and correct copies of photographs taken by counsel at my direction of the **Ontravelo** Accused Product that was ordered.

37. Counsel ordered and received an Accused Product offered by Defendant **RyRot** under ASIN B0FGNGYGPD. Cheek Decl., ¶ 28. Exhibits 630-644 are true and correct copies of photographs taken by counsel at my direction of the **RyRot** Accused Product that was ordered.

38. Counsel ordered and received an Accused Product offered by Defendant **Topteng** under ASIN B0FQP7RB9N. Cheek Decl., ¶ 43. Exhibits 645-656 are true and correct copies of photographs I took of the **Topteng** Accused Product that was ordered.

39. Counsel ordered and received an Accused Product offered by Defendant **VELPAX** under ASIN B0GKVSTCWK. Cheek Decl., ¶ 44. Exhibits 657-673 are true and correct copies of photographs taken by counsel at my direction of the **VELPAX** Accused Product that was ordered.

40. Counsel ordered and received two Accused Products offered by Defendant **VNN** under ASINs B0F8TS6LBB and B0F8TYD6L6. Cheek Decl., ¶ 36. Exhibits 688-697 are true and correct copies of photographs I took of one of the **VNN** Accused Products that was ordered. Exhibits 674-687 are true and correct copies of photographs taken by counsel at my direction of the other **VNN** Accused Product that was ordered.

41. Counsel ordered and received an Accused Product offered by Defendant **WETIE** under ASIN B0FNCGGZXZ. Cheek Decl., ¶ 45. Exhibits 698-715 are true and correct copies of photographs I took of the **WETIE** Accused Product that was ordered.

42. Counsel ordered and received an Accused Product offered by Defendant **Wie** under ASIN B0FFGR6DG9. Cheek Decl., ¶ 36. Exhibits 716-731 are true and correct copies of photographs taken by counsel at my direction of the **Wie** Accused Product that was ordered.

43. Counsel ordered and received an Accused Product offered by Defendant **Wind Shear** under ASIN B0FQJMNKPL. Cheek Decl., ¶ 46. Exhibits 732-750 are true and correct copies of photographs taken by counsel at my direction of the **Wind Shear** Accused Product that was ordered.

44. I declare under penalty of perjury under the laws of the United States of America the foregoing is true and correct.

I declare under penalty of perjury under the laws of the United States of America the foregoing is true and correct.

Executed this 7th day of May, 2026 in West Hartford, Connecticut.

David Brzozowski

EXHIBITS 1-750 TO THE DECLARATION OF DAVID BRZOZOWSKI TO BE FILED SEPARATELY