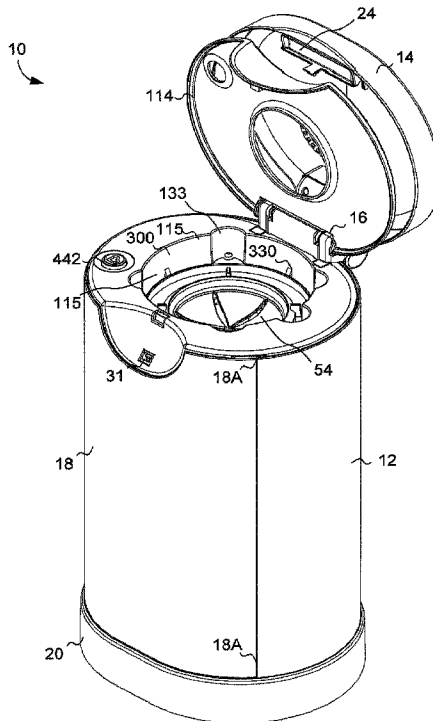




(86) **Date de dépôt PCT/PCT Filing Date:** 2015/12/11
 (87) **Date publication PCT/PCT Publication Date:** 2016/06/16
 (45) **Date de délivrance/Issue Date:** 2024/01/09
 (85) **Entrée phase nationale/National Entry:** 2017/06/12
 (86) **N° demande PCT/PCT Application No.:** US 2015/065404
 (87) **N° publication PCT/PCT Publication No.:** 2016/094879
 (30) **Priorité/Priority:** 2014/12/11 (US62/090,558)

(51) **Cl.Int./Int.Cl. B65F 1/06** (2006.01),
B65F 1/14 (2006.01), **B65F 1/16** (2006.01),
A61L 9/00 (2006.01)
 (72) **Inventeurs/Inventors:**
 DUNN, STEVEN BRYAN, US;
 HATHERILL, MARK A., US;
 JOHNSON, NEVIN D., US;
 SAXTON, MATTHEW JOSEPH, US
 (73) **Propriétaire/Owner:**
 MUNCHKIN, INC., US
 (74) **Agent:** DEETH WILLIAMS WALL LLP

(54) **Titre : RECIPIENT SERVANT A RECEVOIR PLUSIEURS ASSEMBLAGES DE SAC SOUPLE**
 (54) **Title : CONTAINER FOR RECEIVING MULTIPLE FLEXIBLE BAG ASSEMBLIES**



(57) **Abrégé/Abstract:**

Containers are described which can accommodate a variety of flexible bag assemblies used for containing waste. Internal accommodating structures are designed to accommodate and secure various types of bag assemblies, including single bag assemblies and cassettes.

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(10) International Publication Number
WO 2016/094879 A1

(43) International Publication Date
16 June 2016 (16.06.2016)

- (51) International Patent Classification:

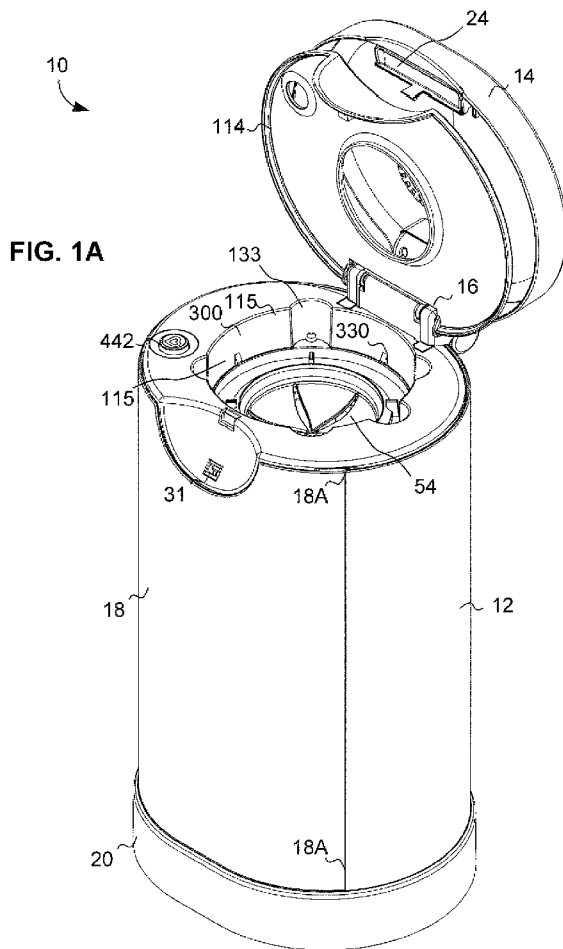
B65F 1/14 (2006.01)	B65F 1/16 (2006.01)
B65F 1/06 (2006.01)	A61L 9/00 (2006.01)
- (21) International Application Number:
PCT/US2015/065404
- (22) International Filing Date:
11 December 2015 (11.12.2015)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
62/090,558 11 December 2014 (11.12.2014) US
- (71) Applicant: MUNCHKIN, INC. [US/—]; 7835 Gloria Avenue, Van Nuys, CA 91343 (US).

- (72) Inventors: DUNN, Steven, Bryan; 2069 Coldwater Canyon, Beverly Hills, CA 90210 (US). HATHERILL, Mark, A.; 1225 Beverly Green Drive, Beverly Hills, CA 90212 (US). JOHNSON, Nevin, D.; 18333 Hatteras Street, #43, Tarzana, CA 91356 (US). SAXTON, Matthew, Joseph; 30473 Mulholland Hwy, #4, Agoura, CA 91301 (US).
- (74) Agent: MOAZZAM, Fariborz; Munchkin, INC., c/o Mozzam & Associates, LLC, 7601 Lewinsville Road, Suite 304, Mclean, VA 22102 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,

[Continued on next page]

(54) Title: CONTAINER FOR RECEIVING MULTIPLE FLEXIBLE BAG ASSEMBLIES

(57) Abstract: Containers are described which can accommodate a variety of flexible bag assemblies used for containing waste. Internal accommodating structures are designed to accommodate and secure various types of bag assemblies, including single bag assemblies and cassettes.



WO 2016/094879 A1

WO 2016/094879 A1 

HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ,

Published:

— with international search report (Art. 21(3))

CONTAINER FOR RECEIVING MULTIPLE FLEXIBLE BAG ASSEMBLIES

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application claims priority to U.S. Provisional Patent Application Serial No. 62/090,558, filed December 11, 2014.

TECHNICAL FIELD

[0002] The subject disclosure relates to a waste disposal and system. More specifically, to a multi-component container system, such as a pail assembly, being configured for use with various bag assemblies, including a single use bag and/or a cassette having a resilient flexible tubing packed therein.

BRIEF DESCRIPTION OF THE DRAWINGS

[0003] Various exemplary embodiments of this disclosure will be described in detail, wherein like reference numerals refer to identical or similar components or steps, with reference to the following figures, wherein:

- [0004]** FIGS. 1A-1B illustrate top and detailed perspective views, respectively, of a pail assembly according to the subject disclosure.
- [0005]** FIG. 2 depicts a top perspective view of the pail assembly with the internal lid closed.
- [0006]** FIG. 3 shows a top perspective view of the pail assembly with the lid closed.
- [0007]** FIG. 4 illustrates a cross section view of the pail assembly.
- [0008]** FIG. 5 depicts a cross section of a lid latching mechanism for the lid.
- [0009]** FIG. 6 shows a partial perspective cut away view of the transmission mechanism of the pail assembly.
- [0010]** FIG. 7 illustrates another partial perspective cut away view of the transmission mechanism of the pail assembly.
- [0011]** FIG. 8 depicts a partial cross section cut away view of the transmission mechanism of the pail assembly.
- [0012]** FIG. 9 shows a cross section view of the flexible bag used in the pail assembly.
- [0013]** FIG. 10 illustrates a cross section view of the cassette used in the pail assembly.
- [0014]** FIG. 11 depicts an enlarged cross section view of the first and second support structure and transmission assembly in the pail assembly.

[0015] FIGS. 12A and 12B show enlarged cross section and detailed views, respectively, of the first and second support structure in the pail assembly.

[0016] FIG. 13 illustrates a top perspective view of the flexible bag used in the first support structure of the pail assembly.

[0017] FIG. 14 depicts a top view of the frame structure of the flexible bag used in the pail assembly.

[0018] FIG. 15 shows a top perspective view of the pail assembly with the internal lid disposed over the housing.

[0019] FIGS. 16-18 illustrate a top, bottom and cross section view of an exemplary cassette.

[0020] FIGS. 19A-19B show cross section and detailed views, respectively, of the cassette used in the second support structure of the pail assembly.

[0021] FIG. 20 shows a top perspective view of the cassette positioned within the second support structure of the pail assembly.

[0022] FIG. 21 illustrates a top perspective view of the cassette positioned within the second support structure and the internal lid of the pail assembly.

[0023] FIG. 22 depicts an enlarged cross section view of the cassette positioned within the second support structure of the pail assembly.

[0024] FIG. 23 shows a front view of the pail assembly.

[0025] FIG. 24 illustrates a rear view of the pail assembly.

[0026] FIGS. 25-28 depict a left, a right, a top and bottom view of the pail assembly.

[0027] FIG. 29 shows a front cross section view of the pail assembly with the cassette disposed therein.

[0028] FIG. 30 depicts a front top perspective view of the pail assembly with foot pedal and lid open.

[0029] FIG. 31 depicts a back top perspective view of the pail assembly with foot pedal.

[0030] FIG. 32 shows a front view of the pail assembly with the foot pedal assembly.

[0031] FIG. 33 illustrates a rear view of the pail assembly with the foot pedal assembly.

[0032] FIGS. 34-37 depict a left, a right, a top and bottom view of the pail assembly.

[0033] FIG. 38 shows a front cross section view of the pail assembly with the cassette and foot pedal disposed therein.

[0034] FIG. 39 illustrates a lower cross section view of the foot pedal assembly disposed in the pail assembly.

[0035] FIGS. 40-43 depict various views of an upper and lower push rod of a push rod connection in the pail assembly.

[0036] FIGS. 44-46 show various views the door latching mechanism in the pail assembly.

[0037] FIGS. 47-48 show a back and side cross section view of the pail assembly with the cassette and foot pedal disposed therein.

[0038] FIG. 49 shows a front cross section view of the pail assembly with the foot pedal mechanism disposed therein.

[0039] FIGS. 50-52 show a front perspective view and detailed views, of an exemplary latching mechanism for the internal lid of the pail assembly.

DETAILED DESCRIPTION

[0040] Particular embodiments of the present invention will now be described in greater detail with reference to the figures.

[0041] FIGS. 1-4 illustrate a container, such as a diaper pail assembly or system, 10 adapted to receive multiple flexible bag assemblies. The diaper pail assembly or system 10 includes a housing 12 enclosed by a lid member 14. As shown in FIG. 4, a waste chamber 113 is positioned within the housing 12 above an interior storage space 13 and is configured to receive an article of waste within a flexible bag assembly 110.

[0042] As shown in FIG 1B, a first support structure 200 and a second support structure 300 accommodate various style of bag inserts, whether they are single use bags or a cassette having a roll of tubing, as will be described in more detail below. A first support structure 200 includes recesses 133 having a semi-circular shape are used to accommodate single use bags by receiving their external tabs, and securing those tabs in place by use of tab clip 135. A second support structure 300 includes key

projections 60 or protruding keys that project upward a predetermined distance so that they mate with apertures at a bottom portion of an insertable cassette. A circular bottom receiving plate 331 is held into location by tabs 330 located on the interior wall of annular cylindrical recess 115 and is used to serve as the base for all types of receiving bag assemblies. The mechanisms for these exemplary bag assemblies will be described in more detail below.

[0043] The lid member 14 is connected to the housing 12 by a hinge mechanism 16 so that the lid member 14 can be moved by a user, such as a parent or caregiver, between an open position that is shown in FIGS. 1-2 and a closed position that is shown in FIG. 3.

[0044] The flexible bag assembly may come in various embodiments. In a first embodiment, the flexible bag assembly may be embodied as a flexible bag frame 214, such as a single use bag shown in FIGS. 9 and 14 and described in more detail below. In a second embodiment, the flexible bag assembly may be embodied as a length of a packed flexible tubing 312 drawn from within a cassette 310, such as the cassette 310 and tubing 312 as shown in FIGS. 10 and 18 and described in more detail below.

[0045] The waste chamber 113 shown in FIG. 4 is constructed to include a first support structure 200 to secure the flexible bag 210. The waste chamber 113 is further constructed to include a second support structure 300 to secure and support a cassette 310 from which the flexible tubing 312 is drawn from the cassette 310. The waste chamber 113 is resilient enough to accommodate various designs of bag assemblies and

bag assemblies may be designed to accommodate the accommodating structure of waste chamber 113.

[0046] A first support structure 200 is configured to receive the flexible bag assembly being constructed as a single-use bag 210 of a flexible material 212 attached to a frame 120 such as shown in FIG. 14. The frame 120 may be releasably mounted to the first support structure 200 in the housing 12. In position, the first support structure 200 may be constructed to prevent the frame 120 of the flexible bag 210 from rotating inside of the housing 12. The single use bag is described in further detail as Figure 21 in U.S. Patent 8,833,592.

For sake of brevity, the physical description of the single use bag will not be repeated again here.

[0047] As shown in Figures 12A and B, when the single use bag assembly 210 is inserted into the system, an outer edge 120 of the single use bag frame is tucked underneath tabs clips 135 positioned around the annular ring of the waste chamber 113. Only the outer edge 120 of the single use bag assembly 210 is shown in FIG. 12 B without further detail of the structure and bag of the single use bag assembly 210 for sake of simplicity in order to show the positioning of the assembly 210 within the tab clips 135. Key projections 60 primarily used in the second support structure 300 serve to lift the outer edge 120 of the single bag assembly 210 such that the top of the key projections 60 act as the seat for bag assembly 210. The frame 120 is secured between in the recess formed

underneath tab clips 135. This positioning gives the single use bag assembly 210 a more secure position within the waste chamber 113 and ensures that the bag assembly 210 remains firmly in place whenever further waste is deposited into the bag assembly.

[0048] A second support structure 300 is configured to receive the cassette 310 including the packed length of a flexible tubing 312 as shown in FIG. 10. As shown in FIGS. 10 and 18, the flexible tubing 312 is drawn from within the cassette 310 and fed out of the cassette 310 and through the waste chamber 113 and into the storage space 13 while in use. A knot (not shown) may be tied at the lower end of the flexible tubing 312 to construct a closed lower end bag enclosure.

[0049] An internal lid 114 is provided between the lid 14 and the housing 12 that opens and closes over the waste chamber 113 as shown in FIGS. 1-2. The internal lid 114 may also utilize the hinge mechanism 16 used to secure the lid member 14 to the housing 12. The internal lid 114 is provided to prevent the flexible tubing 312 of the cassette 310 from being drawn outward from within the cassette 310 and feeding more tubing 312 when an article of waste is pushed into the flexible tubing 312 within the waste chamber 113.

[0050] As shown in FIGS. 10, 19A and 19B, the second support structure 300 accommodates the cassette 310 such that the internal apertures 133 on the bottom portion of the cassette 310 receive key projections 60 and essentially lock the cassette 310 in place within the

waste chamber 113. Further, when the internal lid 114 is closed, an internal downward projection 169 on the internal lid serves to press down and essentially lock the cassette 310 in position to a degree such that the corresponding interior upper portion 179 of the cassette 310 receives the downward force of the downward projection 169, and secures the cassette in place and presses down on the tube 312 with enough force as to prevent the downward movement of the tube 312 each time further waste is disposed within the container. Upon release of the internal lid 114, the tubing 312 may be pulled out and cut to tie and dispose of the used tubing, as needed. The tubing 312 is then pulled down further to tie a knot and start a subsequent bag 312.

[0051] An odor remediating insert 40 attached to the lid 14 of the diaper pail assembly 10 as shown in FIG. 2. The odor remediating insert 40 is used to reduce and eliminate foul odors from emanating from within the housing 12 of the diaper pail assembly 10.

[0052] A rotatable sealing and gripping mechanism 54 is provided in the waste chamber 113 as shown in FIG. 1. The rotatable sealing and gripping mechanism 54 has a resilient opening in a flexible material is provided through which the flexible bag may pass through a passage therein.

[0053] A transmission mechanism 56 is provide and adapted to rotate the rotatable sealing and gripping mechanism 54. In use, the rotatable sealing and gripping mechanism 54 is rotated by the transmission mechanism 56 causing the rotatable sealing and gripping mechanism 54 to

twist a portion of the flexible material to seal the passage of the flexible bag closed. As will be shown in a later embodiment, a foot pedal may be configured and adapted to open or close the lid 14, and/or to engage the transmission mechanism 56 to rotate the rotatable member.

[0054] As shown in FIG. 4, the housing 12 defines an interior storage space 13 into which various waste packages are placed and stored in use. The housing 12 can be accessed by a parent or a caregiver by opening a door 18. The door 18 is hingedly mounted at hinge 18A with respect to the housing 12.

[0055] The diaper pail assembly 10 includes a base portion 20 that is constructed and arranged to support the housing 12 on an underlying horizontal surface such as a floor or a carpet. The base portion 20 encircles the bottom of the housing 12 and provides the bottom surface for the interior storage space 13.

[0056] The base portion 20 includes structure 44 for aligning and centering a diaper pail bag within the interior storage space 13 of the housing 12. The aligning and centering structure 44 includes a bottom surface 46 defining a lowermost extent of the interior storage space 13 that includes a central, substantially flat portion 48 and an annular curved portion 50 surrounding the substantially flat portion 48.

[0057] A door latching mechanism may be provided on the door 18 for permitting the consumer to open and close the door 18. The door latching

mechanism selectively locks the door 18 in a closed position as shown in FIG. 1A.

[0058] FIG. 5 shows a lid latching mechanism 24 integrated into the lid 14. The lid latching mechanism 24 includes a laterally expandable latch member 26 that is movably mounted on the lid member 14 and a mating recess 28 that is defined in the housing 12. A button or actuating surface 30 is movably mounted on a side of the lid member 14 that is opposite the hinge mechanism 16 so as to permit substantially vertically upward and downward movement with respect to the lid member 14. A slotted plunger member 32 is integral with an underside of the actuating surface 30 and arranged to cam against outer cam surfaces 25 of an opposed pair of pivotally mounted laterally expandable latch members 34, 36 when the actuating surface 30 is depressed by a consumer. Latch members 34, 36 are biased by an internal spring towards the open position that is shown in FIG. 5. The lid latching mechanism 24 is described in further detail as Figure 4 in U.S. Patent 8,833,592 (hereinafter “592 patent”).

For sake of brevity, the physical description of the lid latching mechanism will not be repeated again here.

[0059] As shown in FIG. 2, the odor remediating insert 40 is provided on an underside of the lid member 14. The odor remediating insert 40 or a powder dispensing assembly may be incorporated. An exemplary powder dispensing assembly may incorporate the method of operation described in

U.S. patent application Ser. No. 12/609,136, filed Oct. 30, 2009.

[0060] When a user desires to open the lid member 14 of the diaper pail assembly 10 in order to install a diaper pail bag or dispose an odiferous waste package such as a used disposable diaper, the user may depress an actuator button 30 (such as shown in the '592 patent), which will drive the plunger 32 downwardly, causing the plunger 32 to contact the outer cam surfaces 25 of the respective latch members 34, 36. This will cause the latch members 34, 36 to disengage from the recess 28 and enable the lid member 14 to be lifted upwardly.

[0061] As shown in FIG. 1A, an undercut 31 or recess is preferably defined in the housing 12 on an opposite side of housing 12 from the hinge mechanism 16 in order to give the consumer space to be able to exert lifting pressure on a lifting surface of the lid member 14. This will enable a user to easily lift the lid member 14 after the lid latching mechanism 24 has been disengaged.

[0062] FIGS. 1-2 depict the internal lid 114 that pivots about the hinge mechanism 16. FIG. 1 depicts the internal lid 114 in an open position and FIG. 2 depicts the internal lid 114 in a closed position. In the closed position, the internal lid 114 is adapted to secure the flexible tubing from extending into the interior storage space 13 within the housing 12. The internal lid 114 does this by pressing down onto the tubing of a flexible

diaper pail bag 112 and preventing the flexible tubing from being drawn from within the cassette when a user pushes a waste article into the flexible diaper pail bag 112 as discussed elsewhere.

[0063] A rotatable sealing and gripping member 54 is provided in the diaper pail assembly 10. The rotatable sealing and gripping member 54 is constructed and arranged to create a restricted portion within the flexible diaper pail bag 112 in order to provide a temporary odor seal. This is accomplished by gripping and twisting the flexible diaper pail bag 112 in order to provide a temporary seal, as will be described in greater detail below. Alternatively, the restricted portion of the flexible diaper pail bag 112 could be created by pinching or folding a portion of the flexible bag 112 instead of by twisting it.

[0064] A transmission mechanism 56 is provided for causing rotation of the rotatable sealing member 54 for a predetermined rotational distance when the lid member 14 is moved from the open position shown in FIG. 1 to the closed position shown in FIG. 3. The transmission mechanism 56 includes a push rod member 58, visible in FIGS. 1-2 and 5-7, that is caused and constrained to slide linearly downwardly when the lid member 14 is closed and linearly upwardly when it is opened. The transmission mechanism 56 is designed so as not to cause any movement of the rotatable sealing member 54 when the lid member 14 is pivoted upwardly from the closed position to the open position.

[0065] The push rod member 58 of the transmission mechanism 56 includes a toothed rack portion 60 as shown in FIG. 6. The push rod member 58 permits vertical movement thereof with respect to the housing 12 by a slotted channel within the internal housing frame 70. A rack engaging gear 59 is mounted for rotation with respect to the internal housing frame 70 in such a manner that it is permitted a limited amount of vertical movement with respect to the internal housing frame 70. Rack engaging gear 59 has teeth that are operatively engaged with corresponding teeth on the toothed rack portion 60 when the rack engaging gear 59 is in its lowermost vertical position. The transmission mechanism 56 is described in further detail as Figure 12 in the `592 patent.

For

sake of brevity, a detailed physical description of the transmission mechanism will not be repeated again here. However, such a mechanism is used herein for the movement of the sealing member 54.

[0066] As shown in FIG. 9, when the lid member 14 is pivoted downwardly by a user from the open position that is shown in FIG. 1 to the closed position that is shown in FIG. 3, the push rod member 58 will be driven downwardly and the rotatable flexible bag retaining and sealing member 54 will be driven by the gear train mechanism 61 to rotate for the predetermined angular distance, thereby creating a twisted portion 121 in an intermediate portion 115 of the flexible bag 110 that is between a lower or bottom portion 116 and an upper portion 114. This is diagrammatically

shown in FIGS. 9 and 10 for the use with the flexible bag 212 in the first support structure 200, or for use with the flexible tubing 312 drawn from the cassette 310 provided in the second support structure 300.

[0067] FIGS. 6, 11 and 12 show the interconnection between the rotatable sealing and gripping member 54, the transmission mechanism 56 and the gear train mechanism 61. The gear train mechanism 61 is operatively interconnected when the push rod member 58 moves downwardly, because the rack engaging gear 59 is in its lowermost vertical position and operatively engaged with the second compound gear 62. However, when the lid member 14 is pivoted upwardly from the closed position to the open position, the rack engaging gear 59 is lifted upwardly out of engagement with the second compound gear 62. Accordingly the gear train mechanism 61 will be disengaged and there will be no rotation of the flexible bag retaining and sealing member 54 when the lid member 14 is opened, which allows the twisted flexible bag 112 to remain closed. .

[0068] A clutch mechanism is provided in the event that the gear train mechanism becomes jammed. Internal forces within the gear train mechanism will cause the clutch mechanism to permit a relative amount of relative movement between the first gear portion and the second gear portion of the second compound gear. The clutch mechanism may include two relatively slidable components that are biased together by a spring member which is operatively interposed between the second compound gear and the internal housing frame.

[0069] The diaper pail assembly 10 is versatile in that various flexible bag assemblies 210, 310, etc. may be used therein. That is, at least shown herein, a single-use flexible bag 212 may be used in combination with the first support structure 200 as shown in FIG. 9. Alternatively, a cassette 310 including a length of flexible tubing 312 may be used in combination with the second support structure 300 as shown in FIG. 10.

[0070] The first support structure 200 is constructed within the waste chamber 113 as shown in FIGS. 1, 9 and 13-14. Within the waste chamber 113, a cylindrical recess 115 is provided within the housing 12 to define an inner housing into which the flexible bag 212 or the cassette 310 may be disposed. The cylindrical recess 115 includes a plurality of recesses 133 into which radially outwardly extending projections 132, 134, 136, 138 of the frame 214 of the flexible bag 210 may be registered and secured during use. The outwardly extending projections 132, 134, 136, 138 of the frame 214 are shown in FIG. 14. The plurality of recesses 133 in the housing 12 receive the respective projections 132, 134, 136, 138 in such a manner that the bag frame 214 is secured against rotation relative to the cylindrical recess 115 within the housing 12. The bag frame 214 is securely oriented and aligned in a horizontal position, such as shown in FIG. 9, when the projections 132, 134, 136, 138 are received within the respective recesses 133.

[0071] The first support structure 200 is positioned at the lower end of the cylindrical recess 115 and includes retaining projections 135 in each of

the respective recesses 133 for releasably locking the respective projection 132, 134, 136, 138 within the respective recess 133. The retaining projections 135 may be fabricated from a substantially rigid plastic material and are integral with the housing 12 of the diaper pail assembly 10.

[0072] In use, the bag frame 214 of the flexible bag 210 is sufficiently flexible to permit the user to manipulate the bag frame 214 into and out of the secured position. Each of the projections 132, 134, 136, 138 on the bag frame 214 are positioned beneath the respective retaining projections 135 and secured in place. The flexible material 212 of the flexible bag 210 is pushed through the rotatable sealing and gripping mechanism 54 such that the majority of its volume is disposed in the interior storage space 13 within the chamber 12 as shown in FIG. 9. As shown in FIG. 15, the internal lid 114 is closed over the waste chamber 113 and an item of waste can be pushed through the twist 120 formed in the flexible material 212 of the flexible bag 210.

[0073] The second support structure 300 is also defined by the cylindrical recess 115 within the waste chamber 113. The walls of the cylindrical recess 115 define the outer boundary for the cassette 310 such as shown in FIG. 10. As shown in FIGS. 10 and 18, the flexible tubing 312 is drawn from within the cassette 310 and fed out of the cassette 310 and through the rotatable sealing and gripping mechanism 54 while in use. A knot may be tied at the lower end of the flexible tubing 312 to construct a

closed lower end bag enclosure to seal off the lower end of the flexible tubing 312 to form a container.

[0074] An exemplary cassette 310 that may be used in the diaper pail assembly 10 is shown in top and bottom perspective view in FIGS. 16-17, and side cross section view in FIG. 18. The cassette for dispensing pleated tubing may be provided as described in co-pending US patent application serial number 62/078,915, filed November 12, 2014, or the cassette as described in co-pending US patent application serial number 13/688,139, filed November 28, 2014.

[0075] FIGS. 16-18 depict upper and lower perspective views of the cassette 310 into which a pleated flexible tubing 312 is received, as shown in FIG. 18. A plurality of apertures 133 is disposed in a radial configuration at the lower end of the cassette 310. As shown, the apertures 133 may be elongated, radially extending inwardly lengthwise from a first end 133a disposed in a bottom wall 23, to a second end 133b inwardly extending adjacent to the intersection of the angular wall 22 and the inner wall 21. The apertures 133 may be cut into the angular wall 22 and the bottom wall 23 and disposed concentrically about in a radial pattern.

[0076] The apertures 133 provide various advantages. First, during installation of the air-tight packing of the flexible packed tubing 312 into the U-shaped lower annular body of the cassette 310, the various apertures

133 serve as vent holes allowing air trapped below the packed tubing to vent out of the lower annular body through the apertures 133.

[0077] Alternatively, another significant advantage to the apertures 133 is the ability to control the rotation of the cassette 310. For example, FIGS. 1B and 19B show the apertures 133 functioning as key holes into which a mating key 60 may be aligned and disposed. The key 60 is attached to a portion of the housing 12. As shown, a laterally extending portion of a support structure attached to the housing 12 includes an upwardly projecting key 60 that mates with at least one of the apertures 133. In position within the second support structure 300, the key 60 positioned within one of the apertures 133 prevents the cassette 310 from being rotated while in use. The key 60 is constructed to be aligned to mate with at least one of the apertures 133. The key 60 may engage any portion of the aperture 133 and cause the cassette 310 to rotate, or prevent the cassette 310 from rotating by arresting the movement of the cassette 310.

[0078] In use, the cassette 310 is positioned within the cylindrical recess 115 of the housing 12 such as shown in FIG. 20. In position, the protruding key 60 of is aligned with and inserted into at least one aperture 133. The internal lid 114 is locked into position over the cassette 310 and the flexible tubing 312 is secured in position as shown in FIG. 21.

[0079] In detail, FIG. 22 depicts the interconnection between the internal lid 114, the cassette 310 and the flexible tubing 312 drawn from within the cassette 310. When the internal lid 114 is locked over the cassette 310

and the flexible tubing 312 is also secured in position, a slight compression force acts on the flexible tubing 312 to hold it in position at a junction where an inner curved portion 116 of the internal lid 114 is biased against an outer surface of the annular cover 340. In this manner, when a user pushes an article of waste through the opening 350 in the flexible tubing 312, the downward pressure of pushing the article of waste into the opening 350 in the flexible tubing 312 does not overcome the compression gripping force on the flexible tubing 312 between the inner curved portion 169 of the internal lid 114 and the outer surface 342 of the annular cover 340 thereby preventing any further tubing 312 from being pulled out of the cassette 310 while the internal lid 114 is closed shut.

[0080] The diaper pail assembly 10 may be constructed in a variety of different shapes and or sizes. FIGS. 23-29 illustrate front, rear, right, left side, top, bottom and a cross section view of one exemplary embodiment for the diaper pail assembly 10. In an alternative construction, the diaper pail assembly 10 may be embodied with a foot pedal mechanism 400. FIGS. 30-38 perspective, illustrate front, rear, right, left side, top, bottom and a cross section view of another exemplary embodiment for the diaper pail assembly 10 including the foot pedal mechanism 400.

[0081] The foot pedal mechanism 400 may be used in the diaper pail assembly 10 such as shown in FIG. 39. The foot pedal mechanism 400 may utilize the basic structure of the lower end of the foot pedal mechanism such as shown in US Patent 2,910,206 (expired).

[0082] As shown in FIG. 39, the pedal bar 412 has a fulcrum 418 at a midpoint to pivot the pedal bar 412 in a seesaw motion when the foot pedal 414 disposed at a first end of the foot pedal mechanism 400 is depressed. A push rod connection mechanism 405 includes a secure mating connection between a first vertical bar 416 and the second vertical bar 58. The push rod connection mechanism 405 is attached to a second end of the foot pedal bar 412 and translates upward when the first end of the foot pedal mechanism 400 is depressed. The upward motion of the first vertical bar 416 is attached by the secure mating connection to the upper second vertical bar 58. The upper end of the second vertical bar 58 engages the lid 14 and forces the lid 14 open when the foot pedal 414 is depressed.

[0083] FIGS. 38-43 depict various images of the push rod connection 405 between the first vertical bar 416 and the second vertical bar 58. The lower first vertical bar 416 is in communication with a depressible projection 414. The peripheral end of the lower first vertical bar 416 has a tapered end 422.

[0084] The second vertical bar 58 includes a lower open end 430 adapted to receive the tapered end 422 of the first vertical bar 416. The second vertical bar 58 includes an opening 432 into which the projection 420 may slide into such as shown in FIG. 41.

[0085] The embodiment show in FIGS. 40-43 allow for the body portion 12 and base portion 20 to be separately manufactured and shipped disconnected. They may easily be connected using the seat belt locking mechanism shown in these figures. Disconnection is simply initiated by depressing the projection 420 from the opening 432 to disengage the connection between 58 and 416, thereby separating the body portion 12 from base portion 20.

[0086] FIGS. 1-2 and 44-46 illustrate a button 442 for an exemplary door latching mechanism 440. When the button 442 is depressed, the door latching mechanism 440 is engaged and the door 18 on the housing 12 may be released for access into the interior storage space 13 portion of the housing 12.

[0087] As shown in FIGS. 44-46, the door latching mechanism 440 includes a vertical post 444 connected to the button 442 that translates along a guide 445. The vertical post 444 includes at least one male latch 446 that can be removably latched to a female locking opening 450 disposed on the door 18 of the housing 12. In use, the vertical post 444 moves downward when the button 442 is depressed a predetermined distance so that the latch 446 can clear the catch 450. Spring 441 maintains the guide 445 in an upward position until the button 442 is pressed, thereby releasing the door latching mechanism 440 from the door 18.

[0088] As shown in FIGS. 47-48, a single vertical foot pedal arm 111 may be used instead of the mechanism shown in FIGS. 40-43. In this embodiment, depressing of the foot pedal portion 414 serves to act against a downward force of spring 419 and push the foot pedal arm 111 in a vertical manner for a limited distance as determined by guide 11, which translates to the turning of the transmission mechanism 56 to open the lid 14.

[0089] As shown in FIGS. 37, 39 and 48, foot pedal 14 has raised ribs 611 underneath it, which serve as a hard stop to ensure a limit to the downward movement of foot pedal 414. The extent of the ribs underneath the foot pedal 414 is only so much as to allow for the opening of the lid 14, but not so much as to flip the lid over and possibly tip the container 12. The raised ribs also serve to provide a stable constant surface with the floor upon full downward press of the foot pedal 414 such that the raised ribs are flush against a hard surface, or are buried into a soft surface, such as carpet. This feature allows for the activation of the opening of the lid 14 without tipping over the container 12.

[0090] As shown in FIGS. 49-52, the internal lid 114 may be released from its downward locked position upon depressing a latch button 701. Pushing the latch button 701 disengages its attached catch mechanism 702 from a receiving latch hook 703 on the interior lid 114. Further, the internal lid 114 contains a button accommodating orifice 704 which is

designed to allow the user access to button 442 that releases the door 18, without having to open the internal lid 114.

[0091] The illustrations and examples provided herein are for explanatory purposes and are not intended to limit the scope of the appended claims. It will be recognized by those skilled in the art that changes or modifications may be made to the above described embodiment without departing from the broad inventive concepts of the invention. It is understood therefore that the invention is not limited to the particular embodiment which is described, but is intended to cover all modifications and changes within the scope and spirit of the invention.

WHAT IS CLAIMED IS:

1. A container, comprising:

a housing having a waste chamber configured to receive a waste disposal unit, the waste chamber comprising:

a first stationary support member adapted to receive a bag of a flexible material attached to a frame, wherein the frame is releasably mounted to the housing and rotationally fixed with respect to the housing; and

a second stationary support member adapted to securely receive a cassette having a tubing of the flexible material packed therein;

a top lid attached to the housing through a lid hinge; and

an internal lid attached to the housing through the lid hinge, wherein the internal lid is provided between the top lid and the housing.

2. The container of claim 1, further comprising recesses on the first stationary support member to accommodate specifically positioned tabs on a peripheral edge of the frame of the bags.

3. The container of claim 2, further comprising tab clips positioned within the recesses to secure the tabs on the peripheral edge of the frame of the bags.

4. The container of claim 1, further comprising a receiving well with a depth such that the cassette can be received in its entirety within the receiving well.

5. The container of claim 3, further comprising protruding keys positioned in a base portion of the waste chamber.

6. The container of claim 5, wherein the protruding keys are configured to mate with apertures located on an underside of the cassette to prevent the cassette from moving once placed into the waste chamber.

7. The container of claim 5, wherein the protruding keys are configured to displace a portion of the frame of the single-use bag from an opposite side of the tab clips with respect to the frame to secure the bag in place.

8. The container of claim 1, wherein the top lid is openable upon pressing of a pedal in connection to the housing.

9. The container of claim 8, wherein the pedal includes ribs on its underside which fully contact a ground surface upon complete pressing of the pedal and provide structural stability to the housing when the top lid is opened.

10. The container of claim 1, wherein the top lid includes a deodorizing chamber for housing a deodorizer.

11. The container of claim 1, further comprising:
a rotatable member having a resilient opening through which a passage of the flexible material is provided, where in use the rotatable member twists a portion of the flexible material to seal the passage closed; and
a transmission mechanism adapted to rotate the rotatable member.

12. The container of claim 11, wherein the transmission mechanism is initiated by closing the top lid.

13. The container of claim 1, wherein the internal lid includes an open aperture with access to the waste chamber when the internal lid is closed.

14. The container of claim 1, wherein the open aperture of the internal lid has a curved edge directed internally to the waste chamber, the curved edge contacts a portion of the cassette such that the cassette is securely positioned in place when the internal lid is closed.

15. The container of claim 14, further comprising:
a rotatable member having a resilient opening through which a passage of the flexible material is provided, where in use the rotatable member twists a

portion of the flexible material to seal the passage closed, and wherein the curved edge of the internal lid applies enough pressure to the cassette that the tubing of flexible material remains in place when waste material is inserted into the rotatable member.

16. A container, comprising:

a housing having a waste chamber configured to receive a waste disposal unit, the waste chamber comprising:

a first stationary support member having recesses disposed in the first stationary support member to accommodate and rotationally secure specifically positioned tabs on the frame of a bag, wherein the frame is rotationally secured to the housing; and

a second stationary support member having protruding keys positioned in a base portion adapted to rotationally secure a cassette having a tubing of a flexible material packed therein;

a top lid attached to the housing through a lid hinge; and

an internal lid attached to the housing through the lid hinge, wherein the internal lid is provided between the top lid and the housing.

17. A container, comprising:

a housing having a waste chamber configured to receive a waste disposal unit, the waste chamber comprising:

a first stationary support member adapted to receive a bag of a flexible material attached to a frame, wherein the frame is releasably mounted to the housing and rotationally secured with respect to the housing; and

a second stationary support member adapted to securely receive a cassette having a tubing of the flexible material packed therein;

a top lid attached to the housing through a lid hinge; and

an intermediate lid attached to the housing through the lid hinge, and which provides access to the waste chamber, wherein the intermediate lid includes an open aperture with access to the waste chamber when the intermediate lid is closed, and wherein the intermediate lid is provided between the top lid and the housing.

1/40

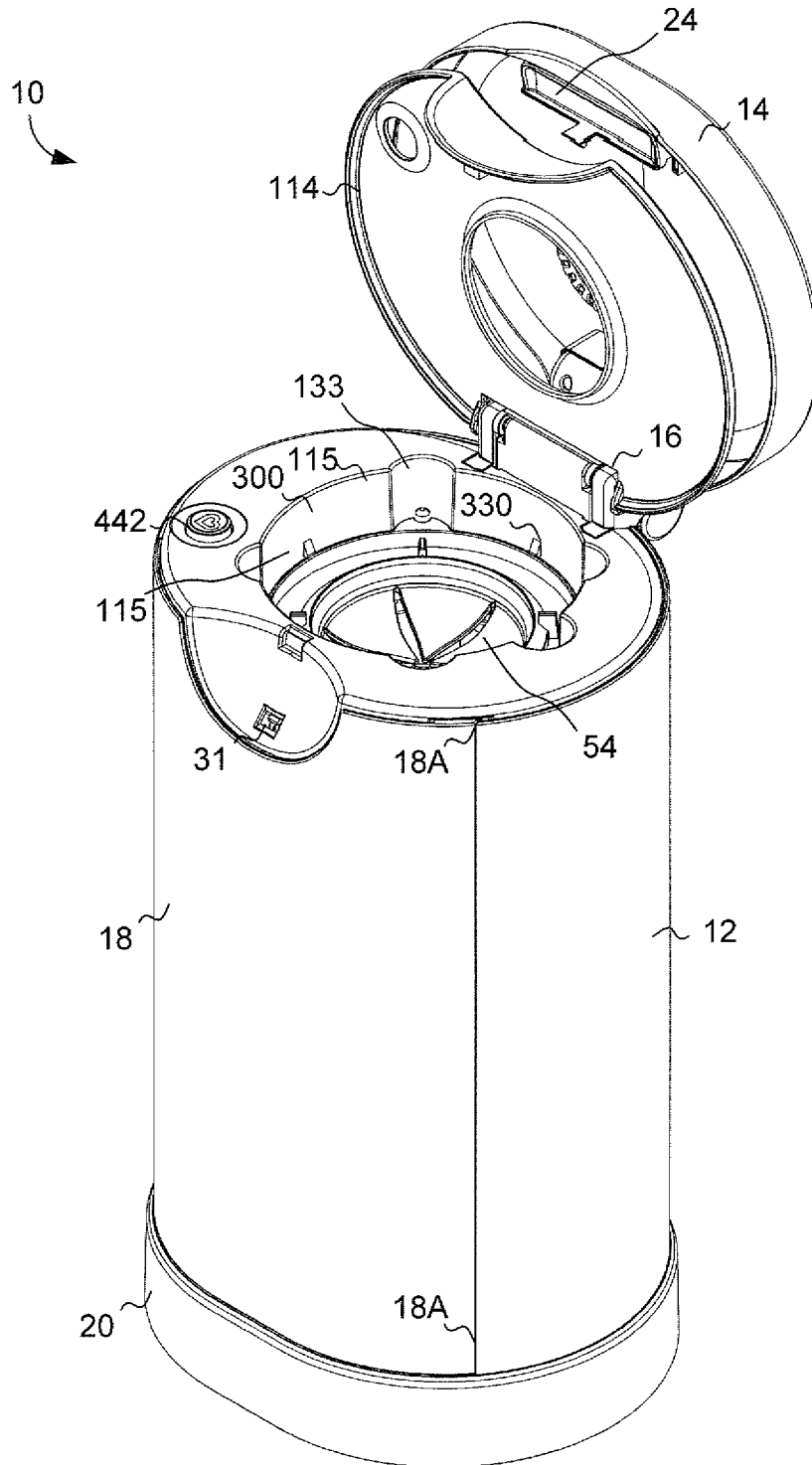


FIG. 1A

2/40

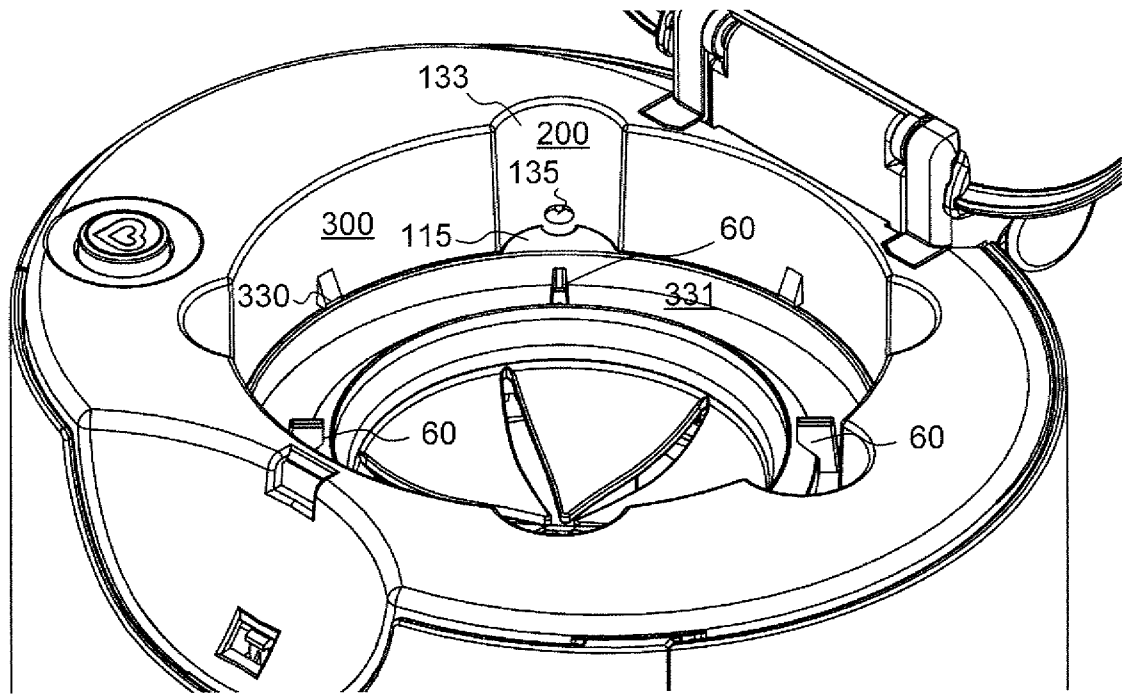


FIG. 1B

3/40

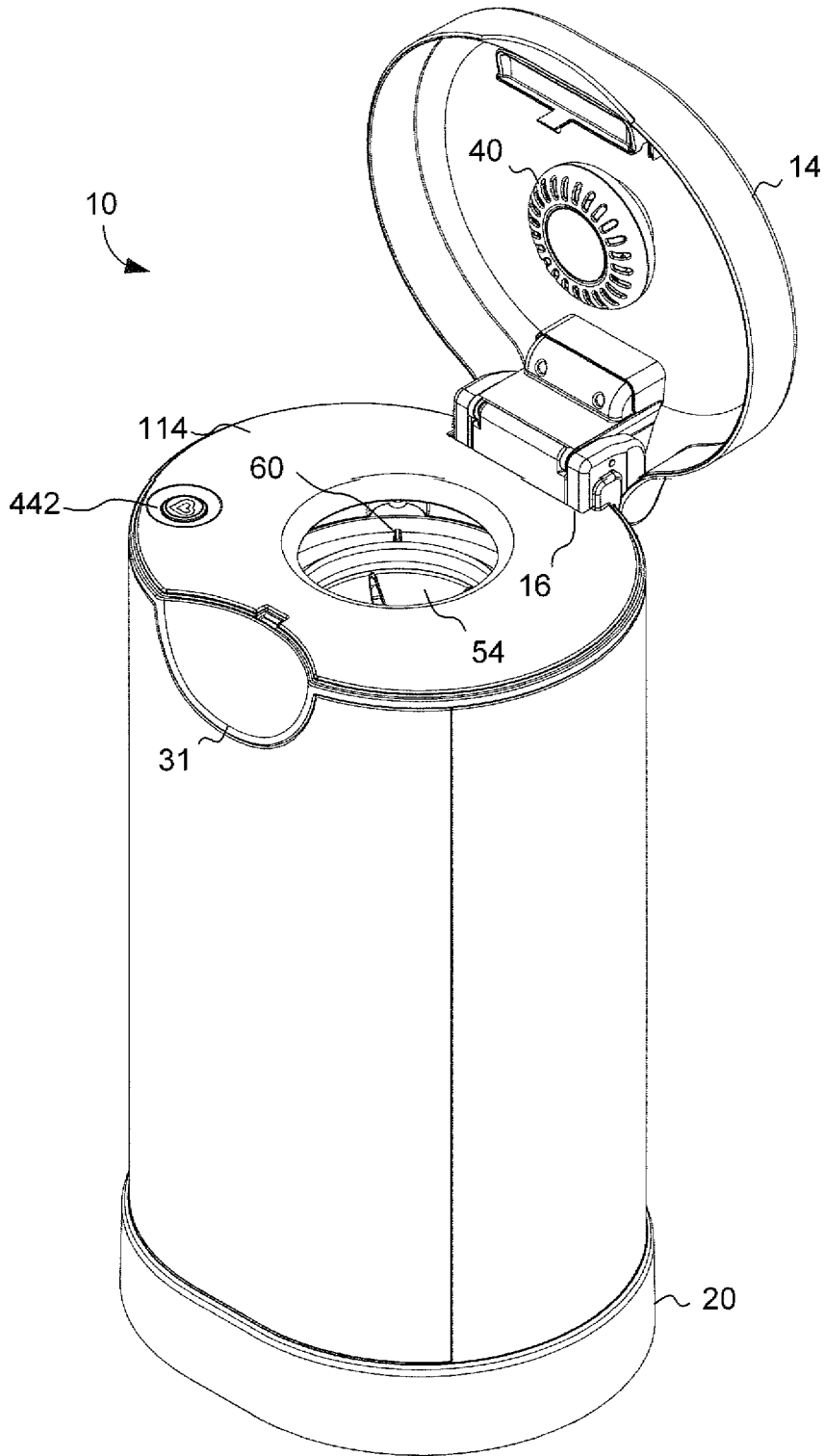


FIG. 2

4/40

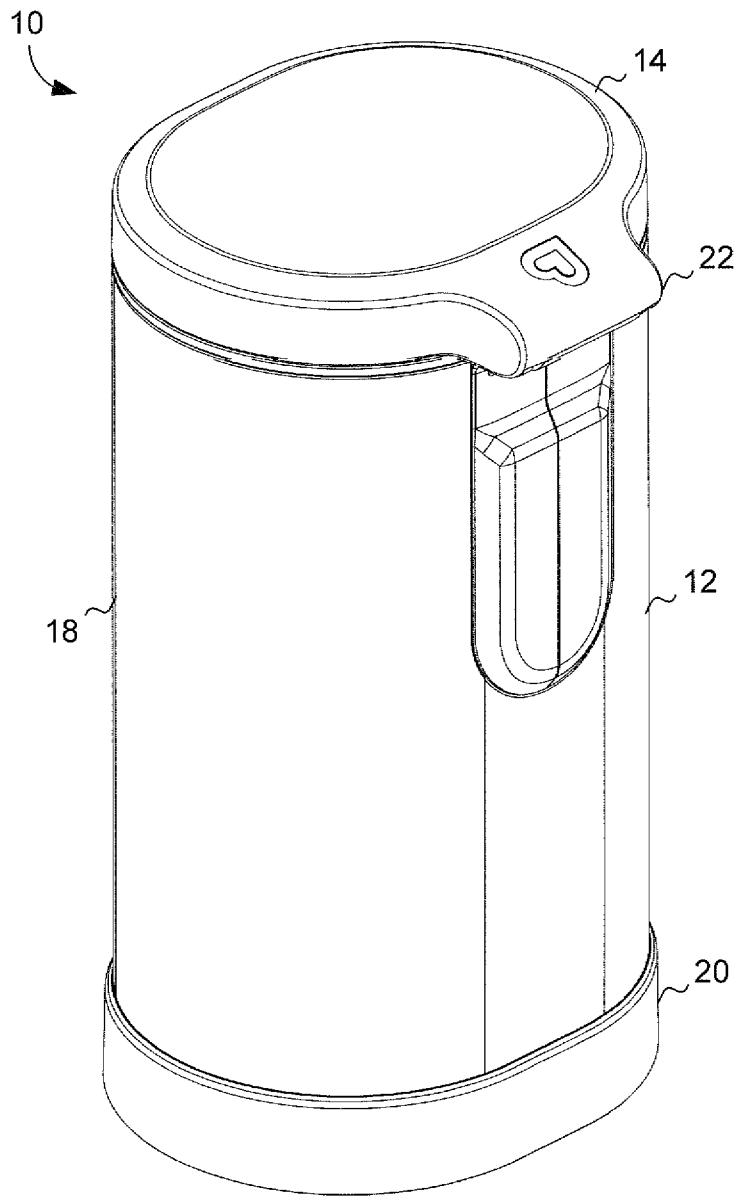


FIG. 3

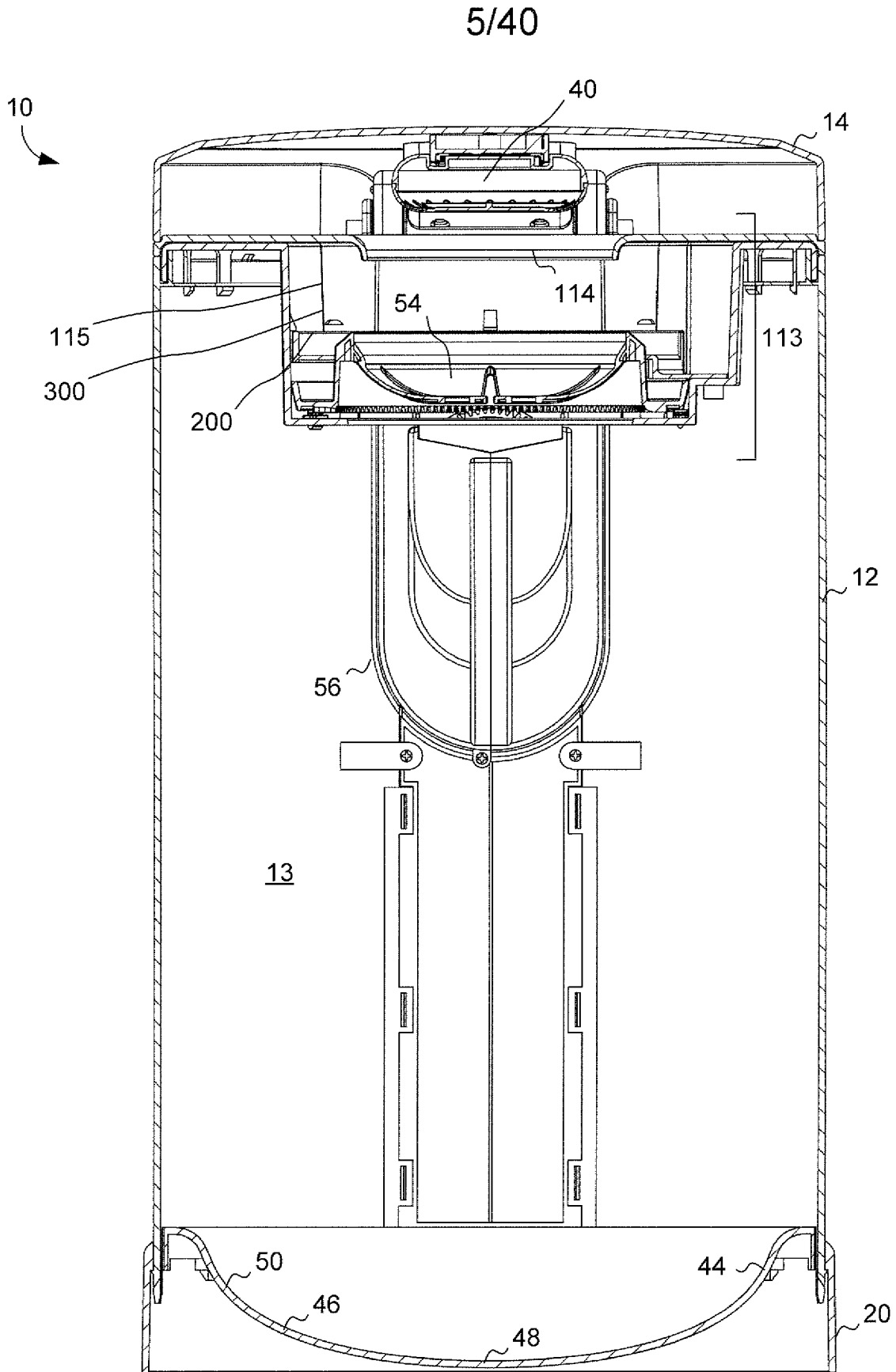


FIG. 4

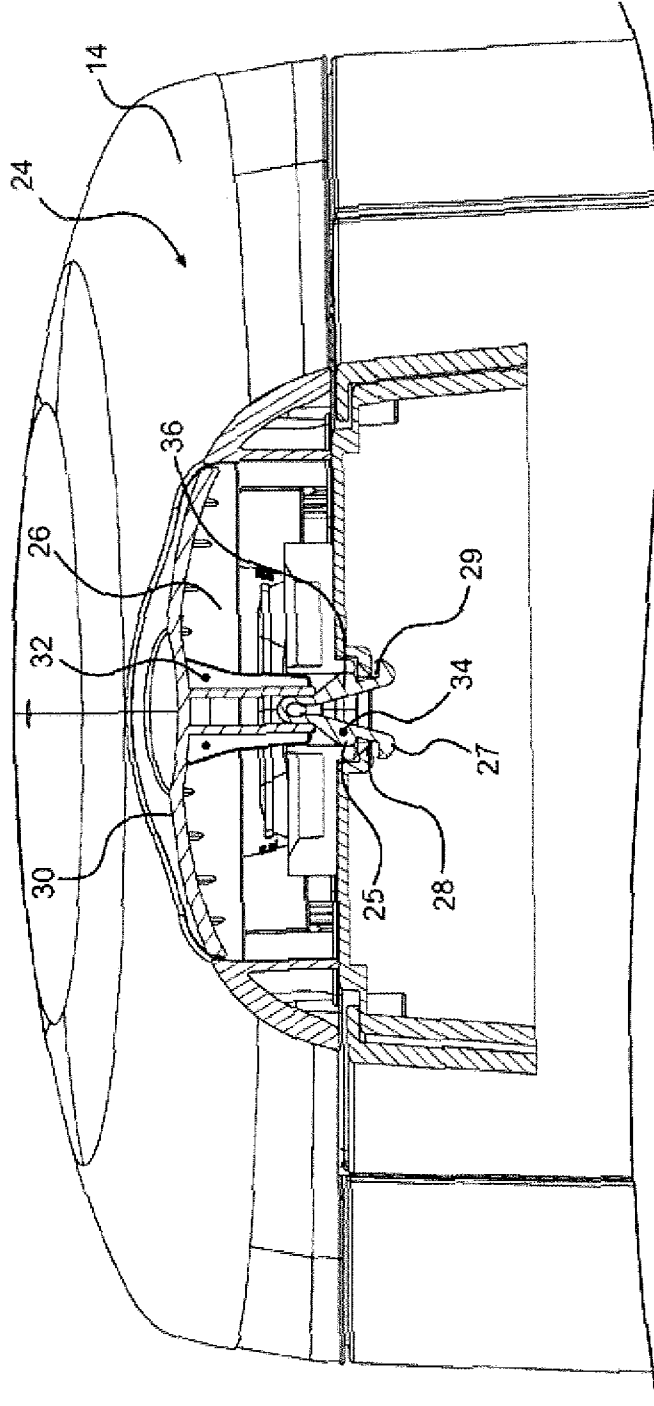


FIG. 5

7/40

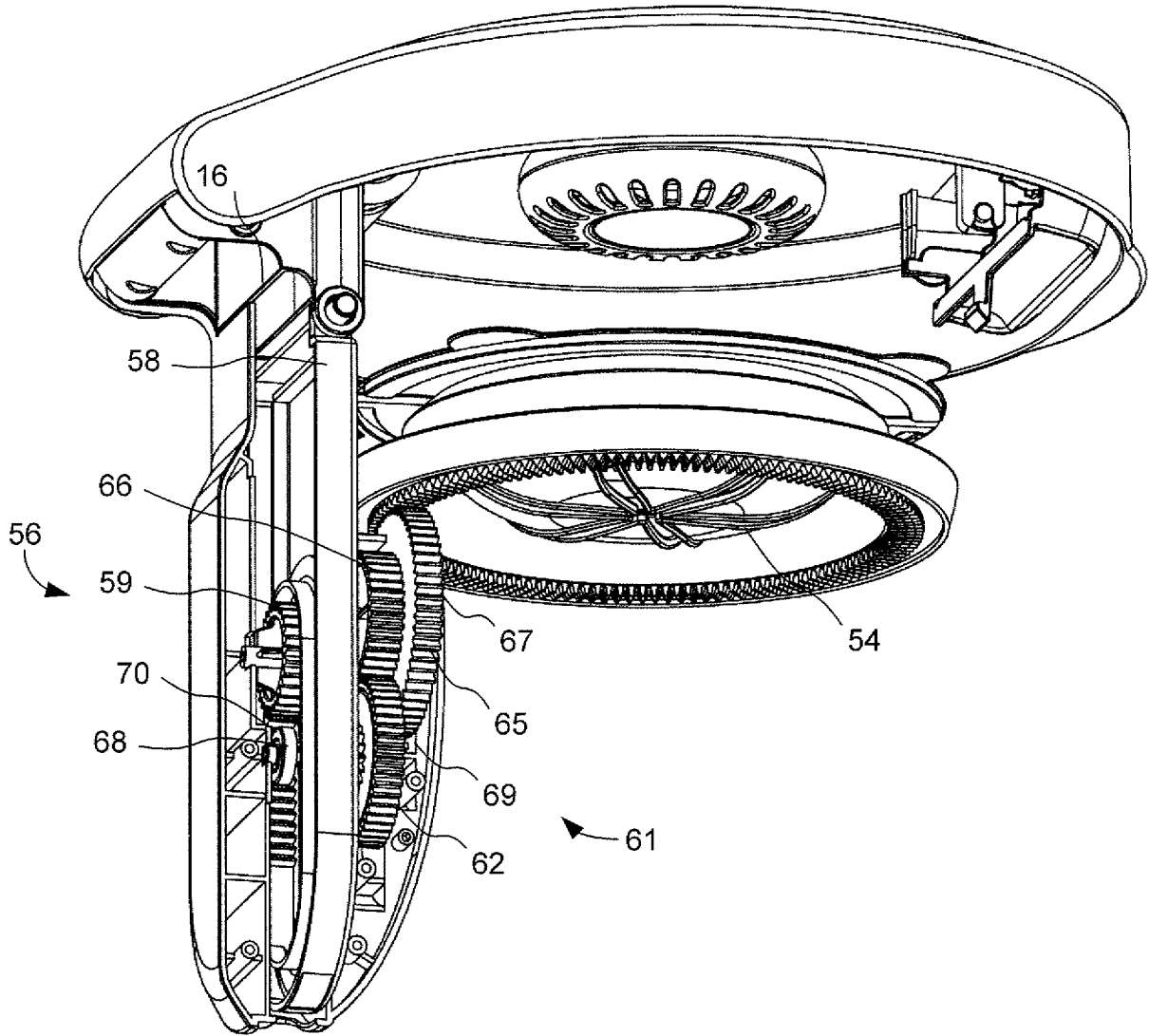


FIG. 6

8/40

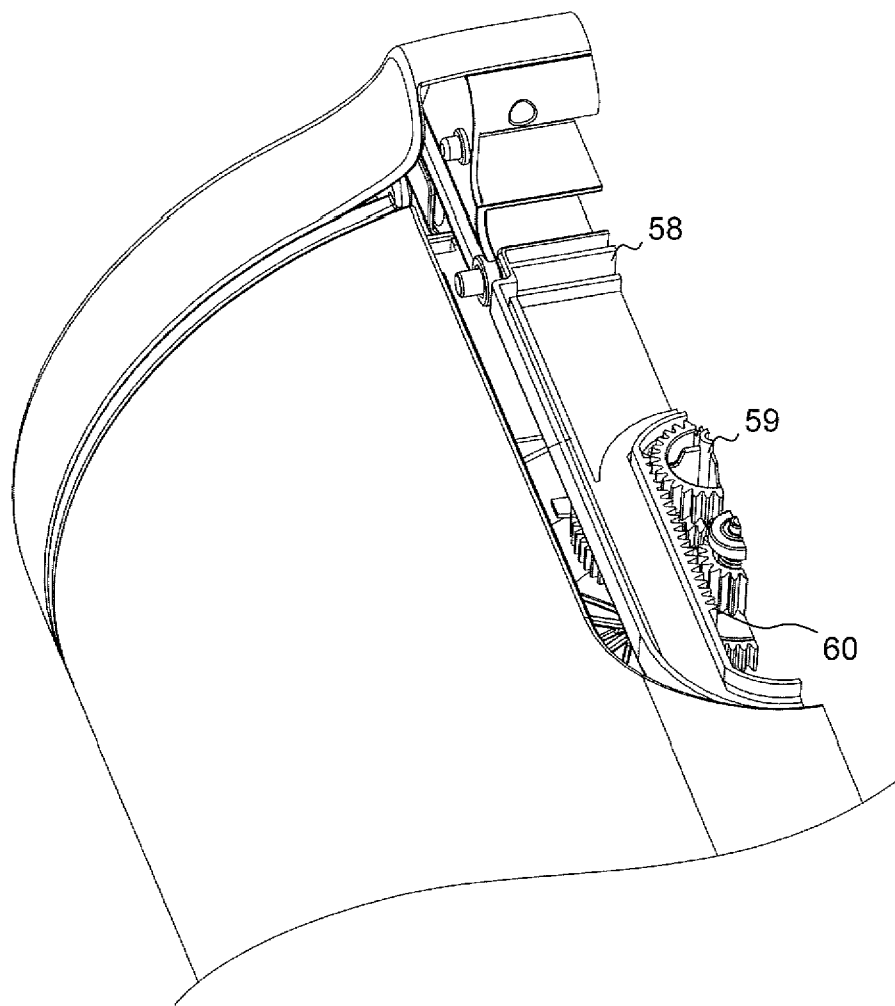


FIG. 7

9/40

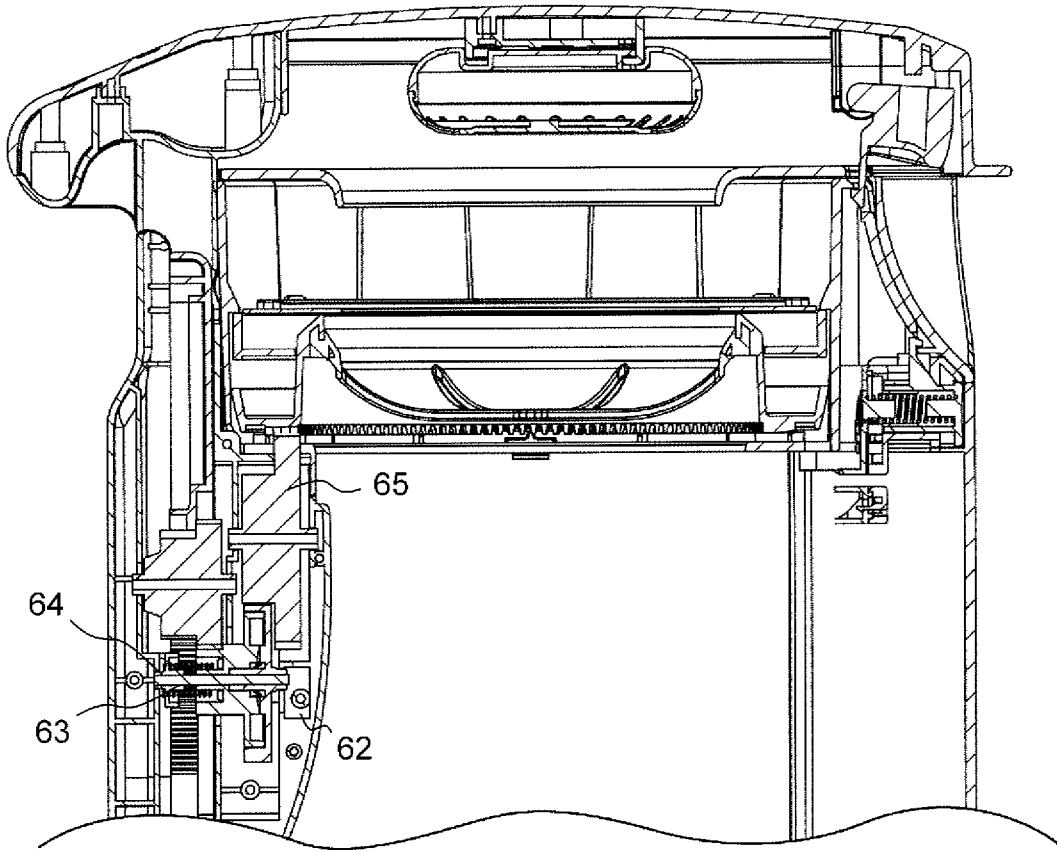


FIG. 8

10/40

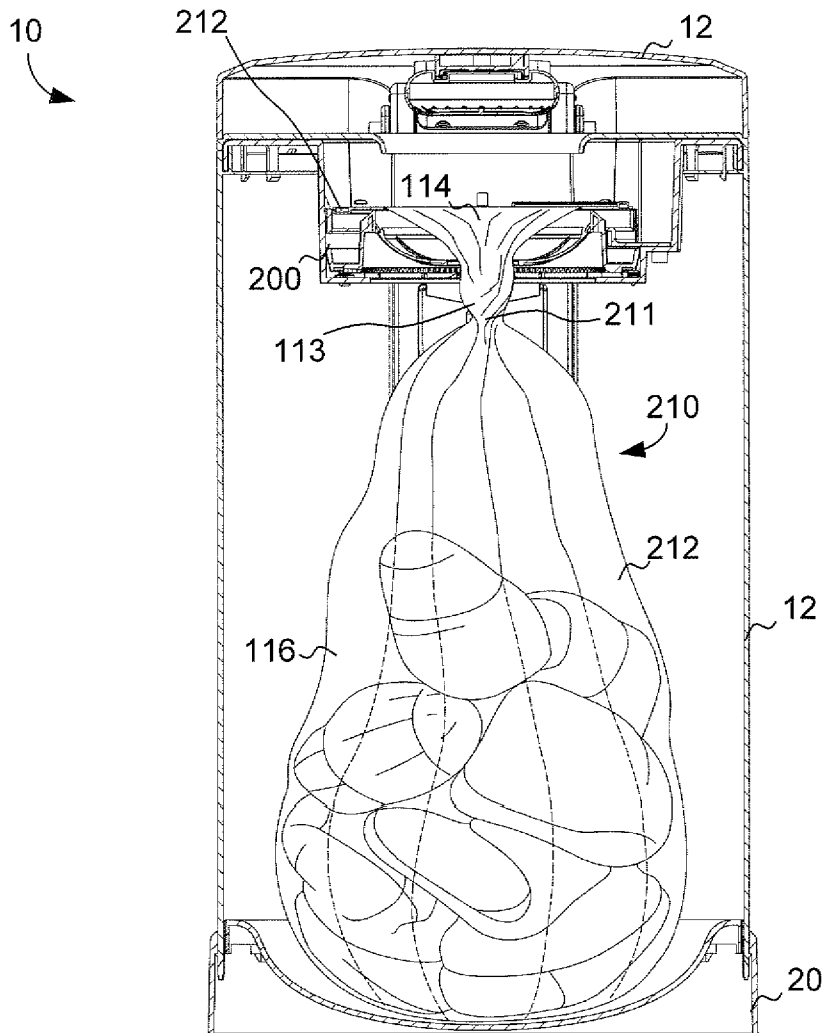


FIG. 9

11/40

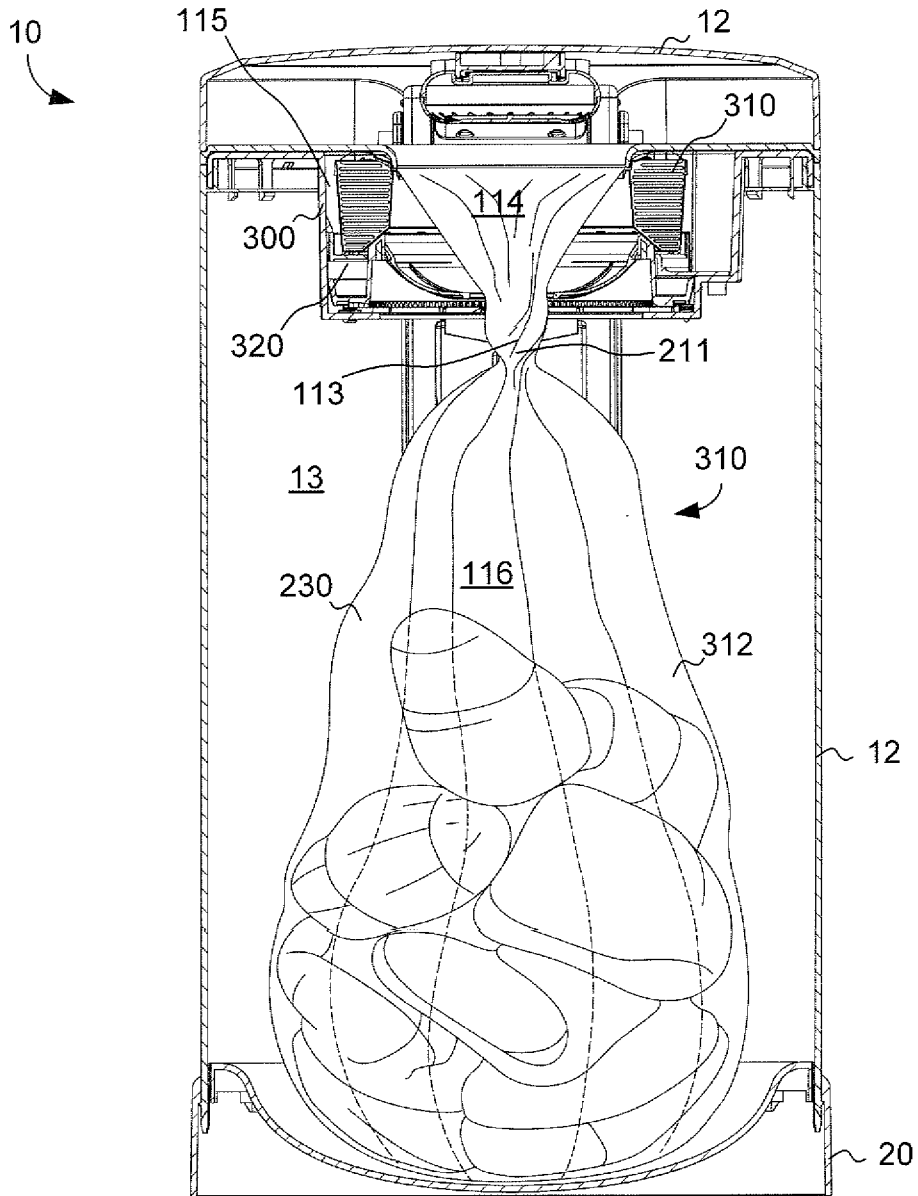


FIG. 10

12/40

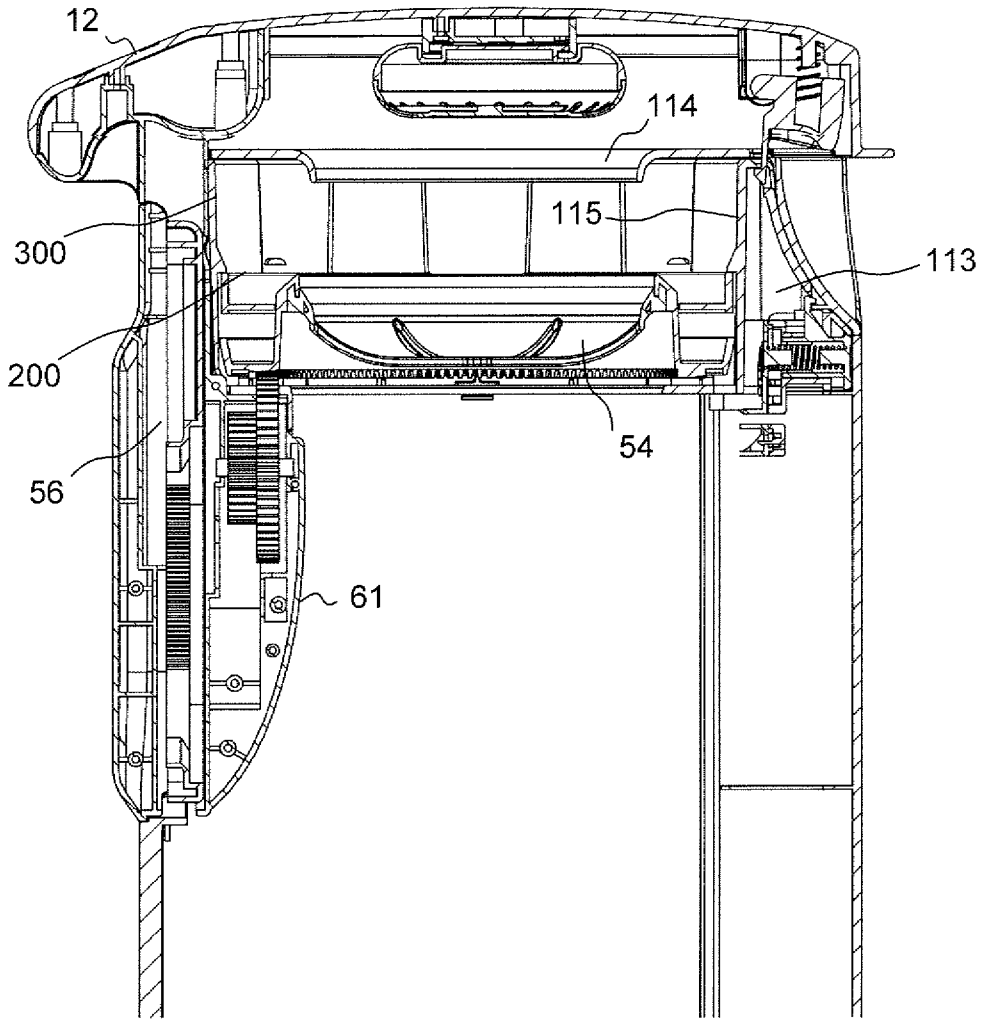


FIG. 11

13/40

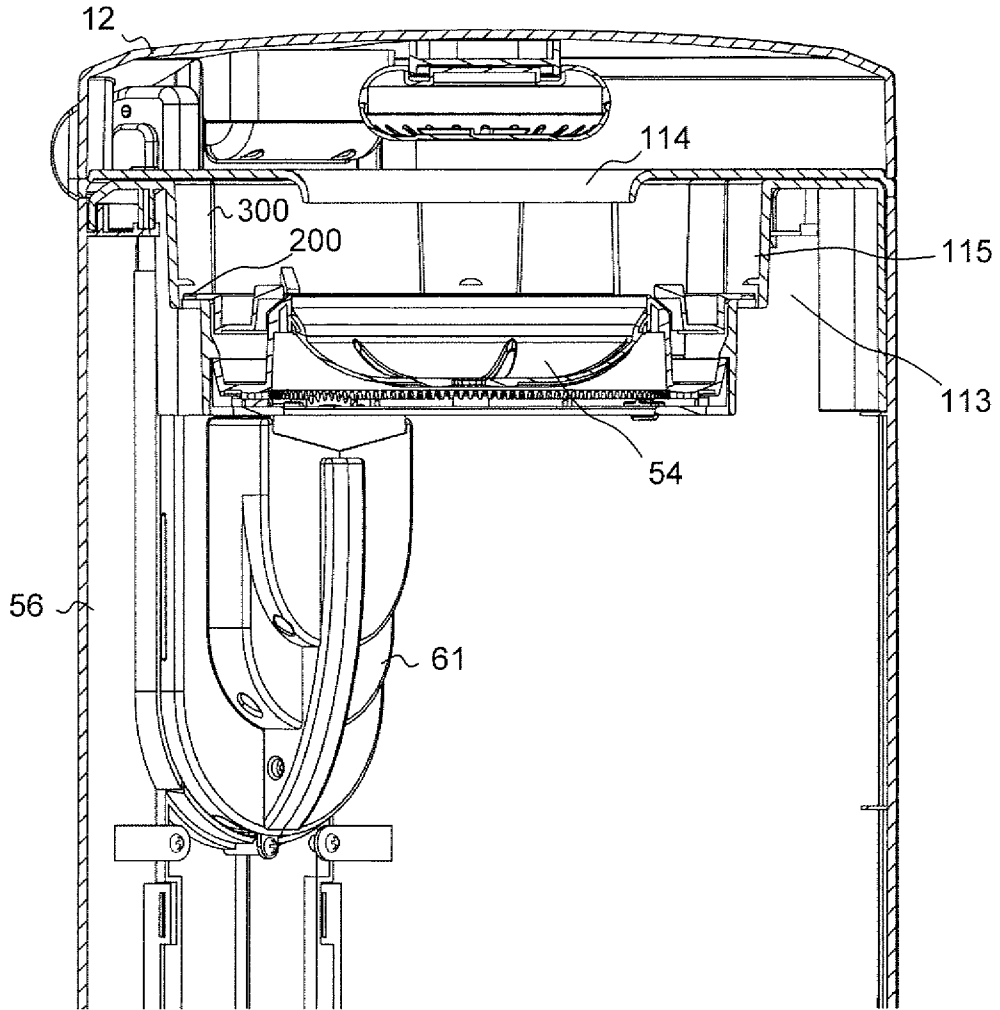


FIG. 12A

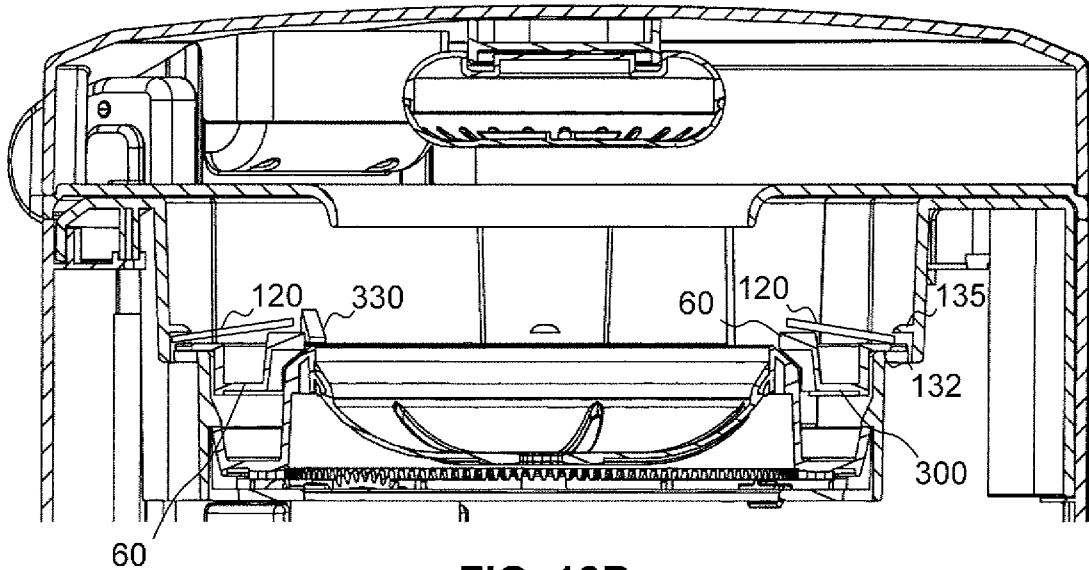


FIG. 12B

14/40

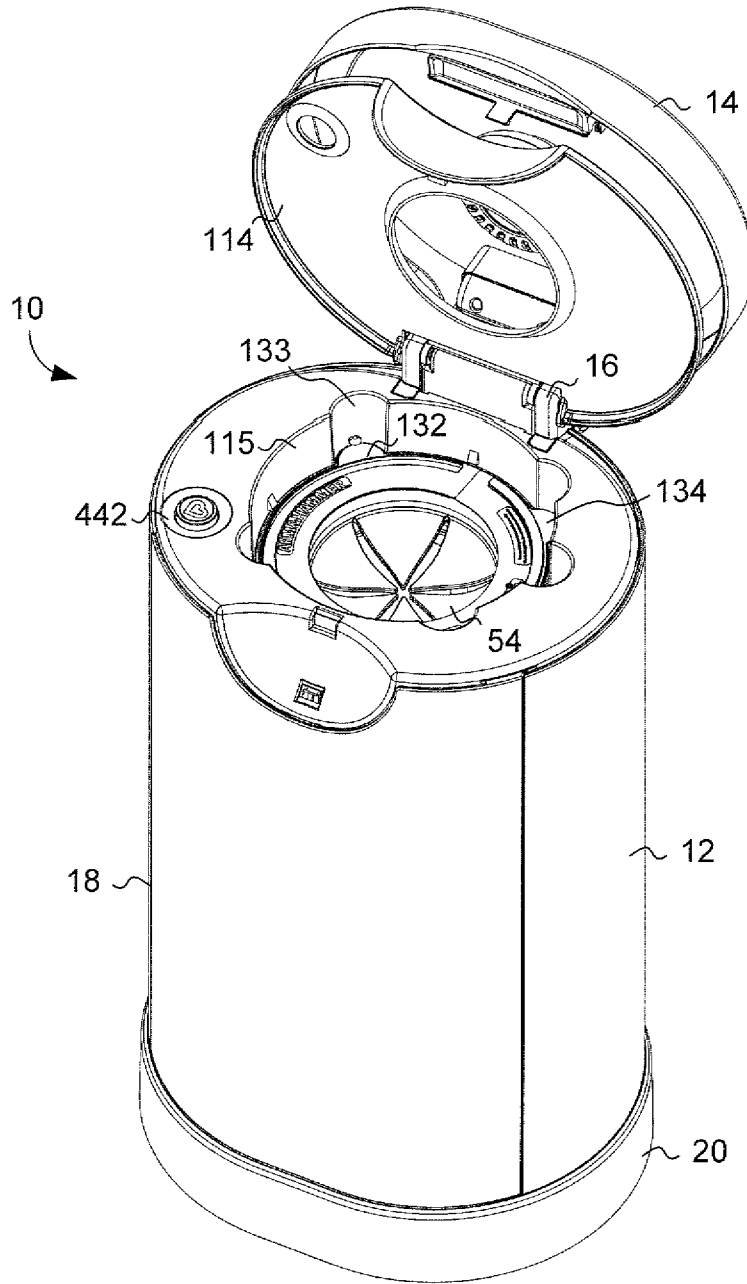


FIG. 13

15/40

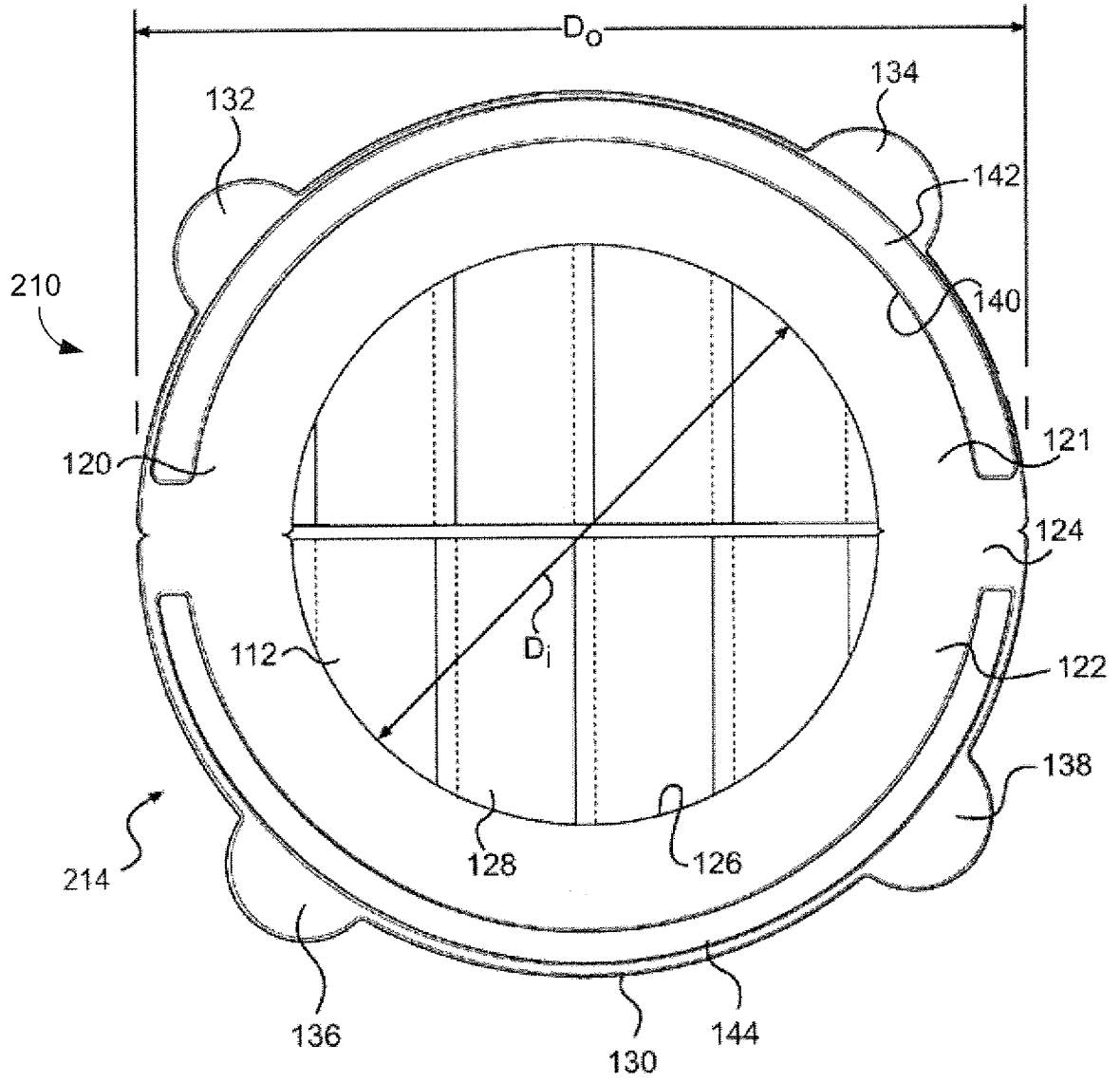


FIG. 14

16/40

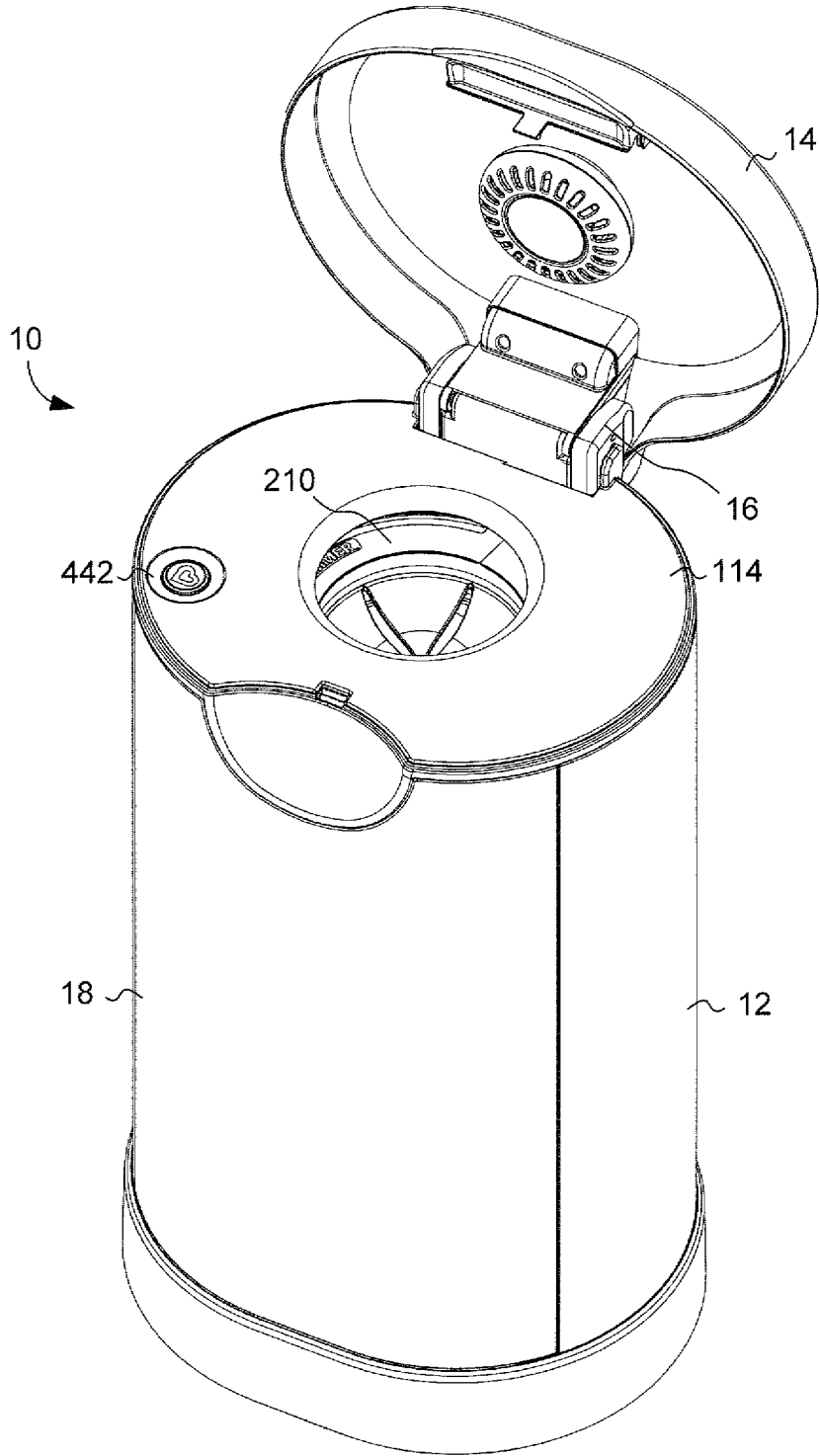


FIG. 15

17/40

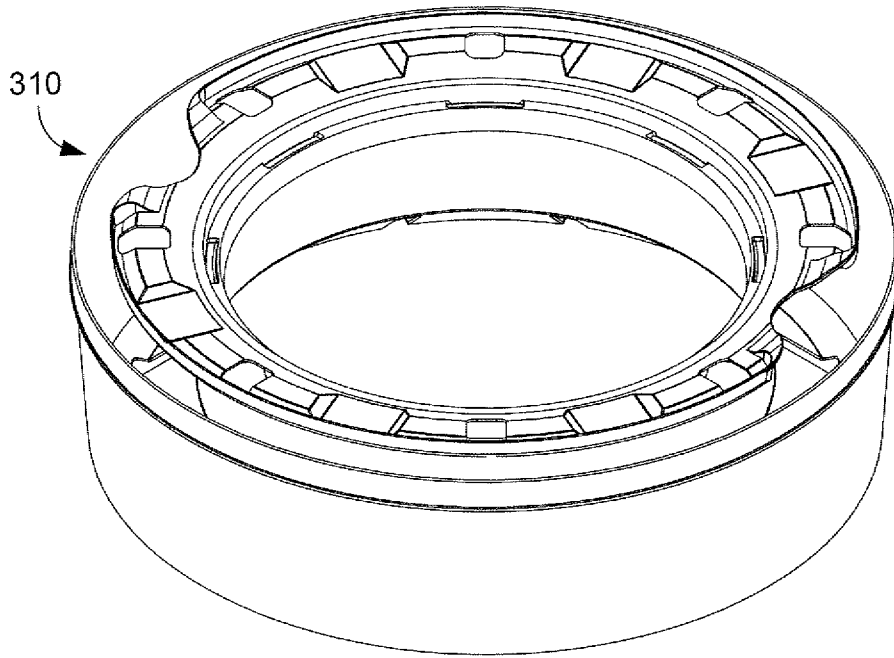


FIG. 16

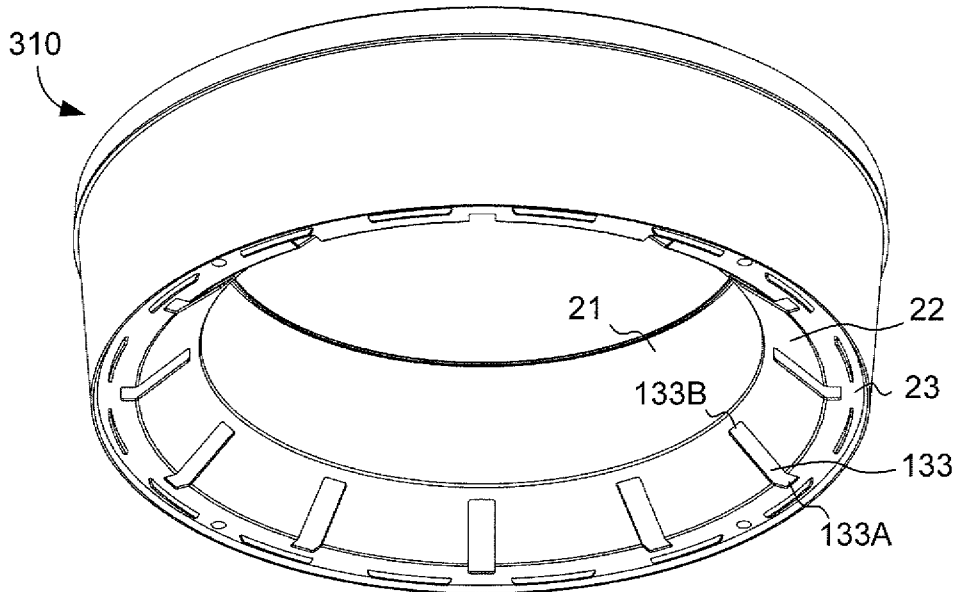


FIG. 17

18/40

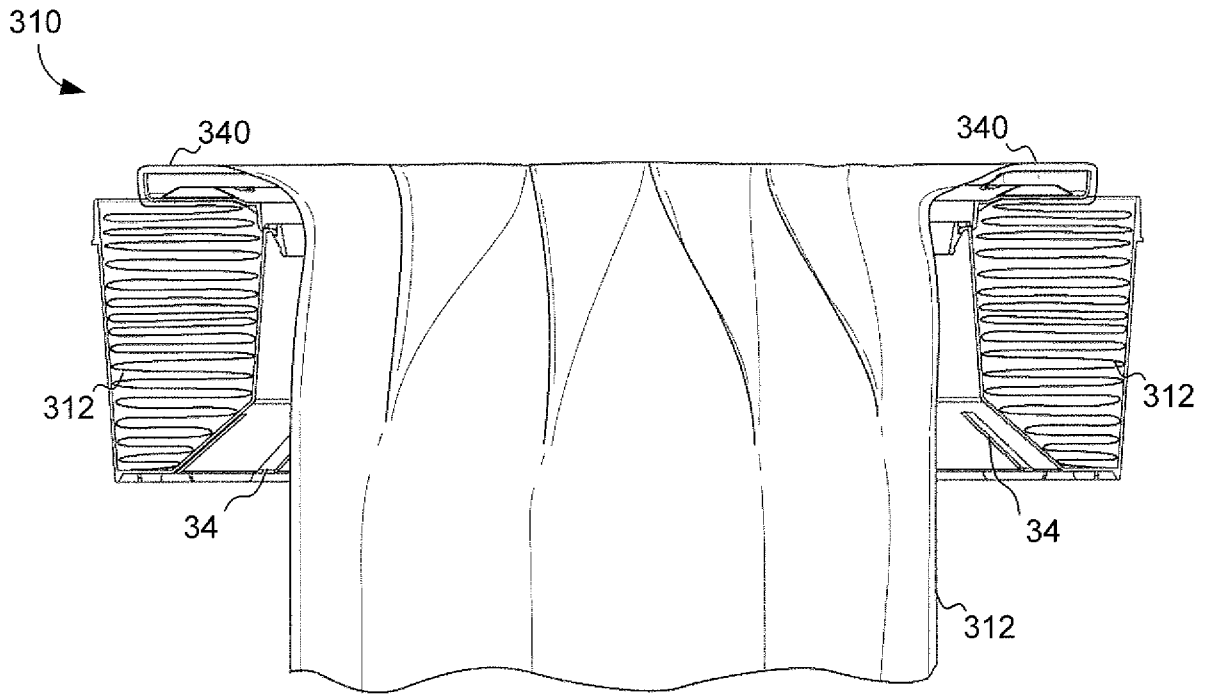


FIG. 18

19/40

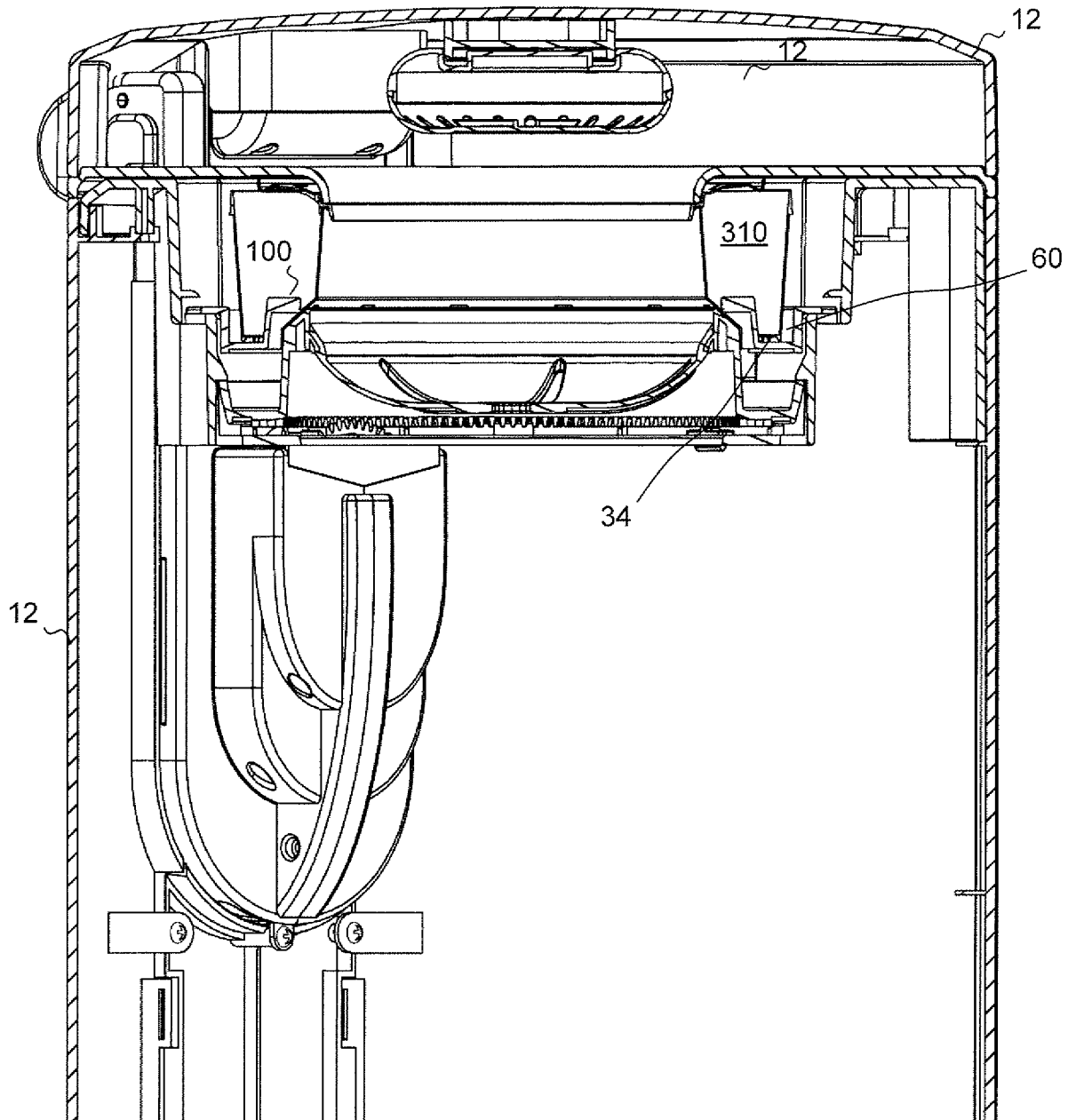


FIG. 19A

20/40

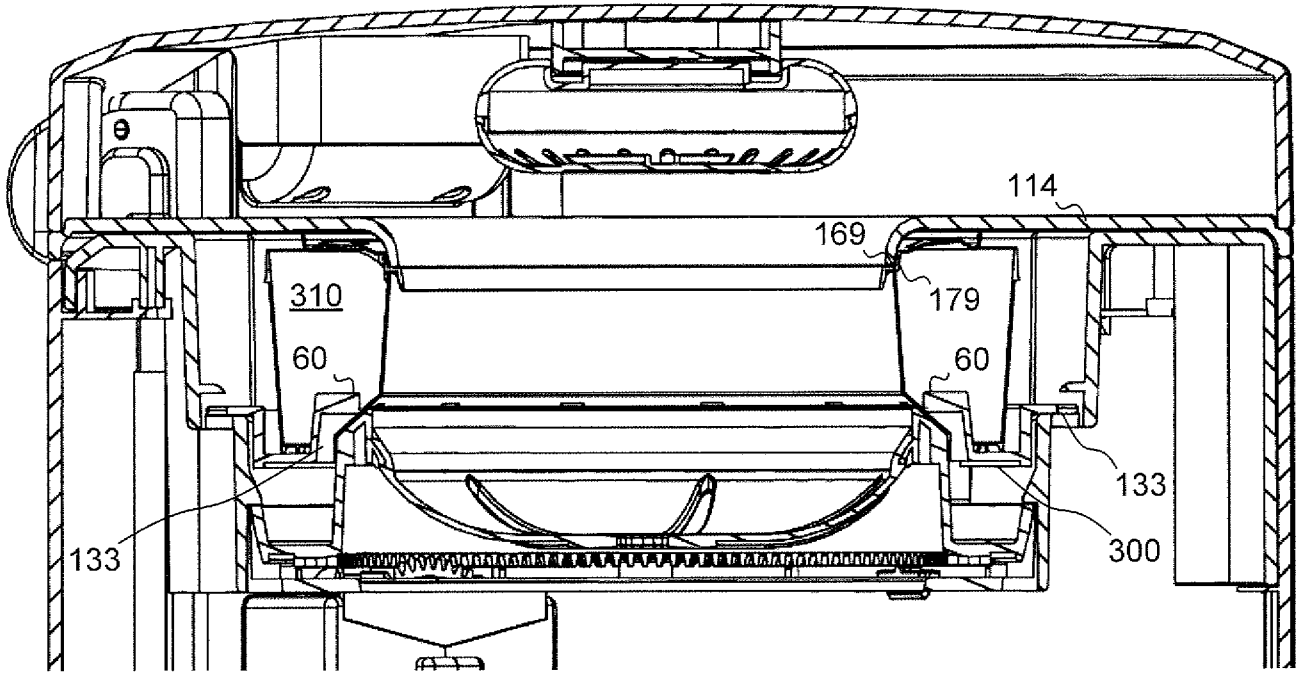


FIG. 19B

21/40

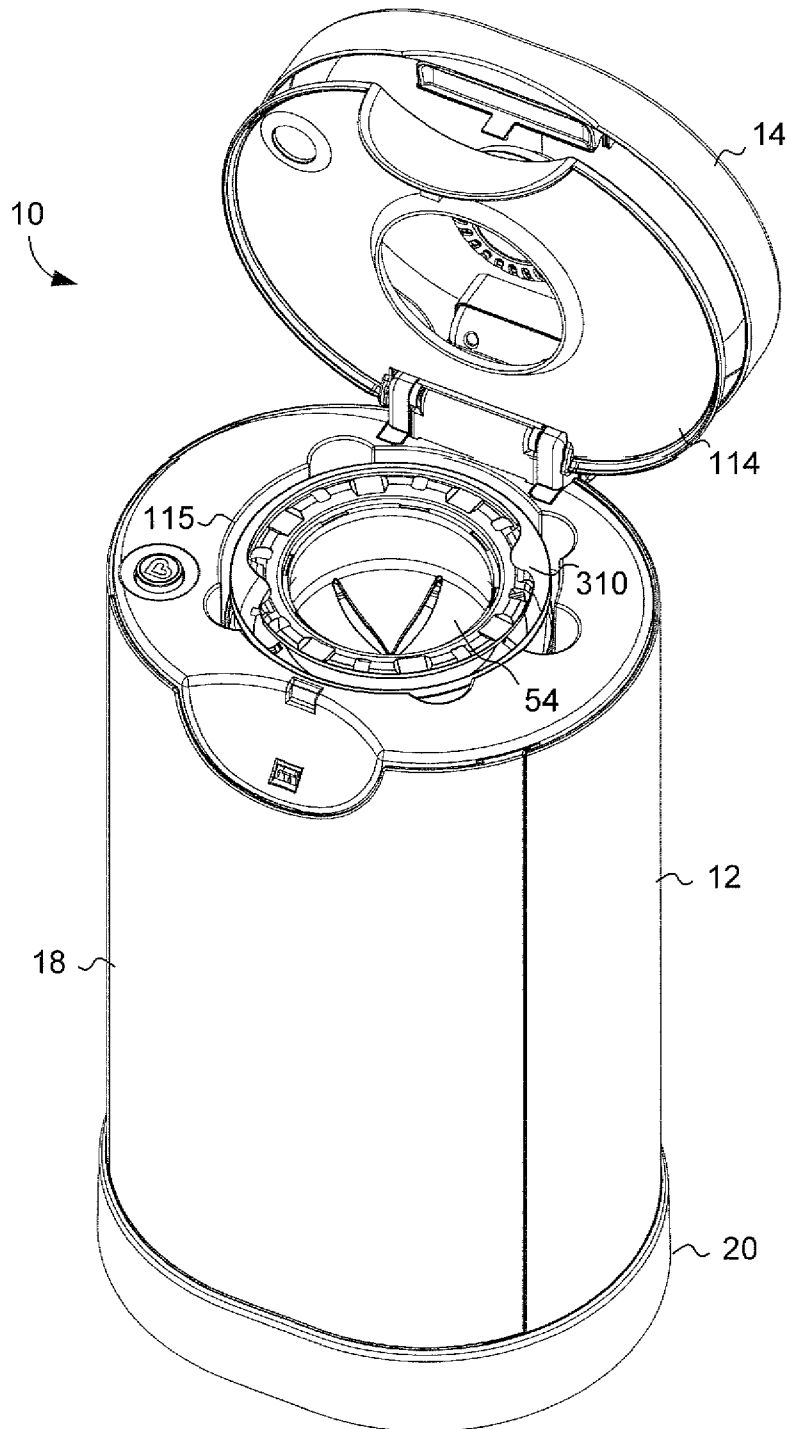


FIG. 20

22/40

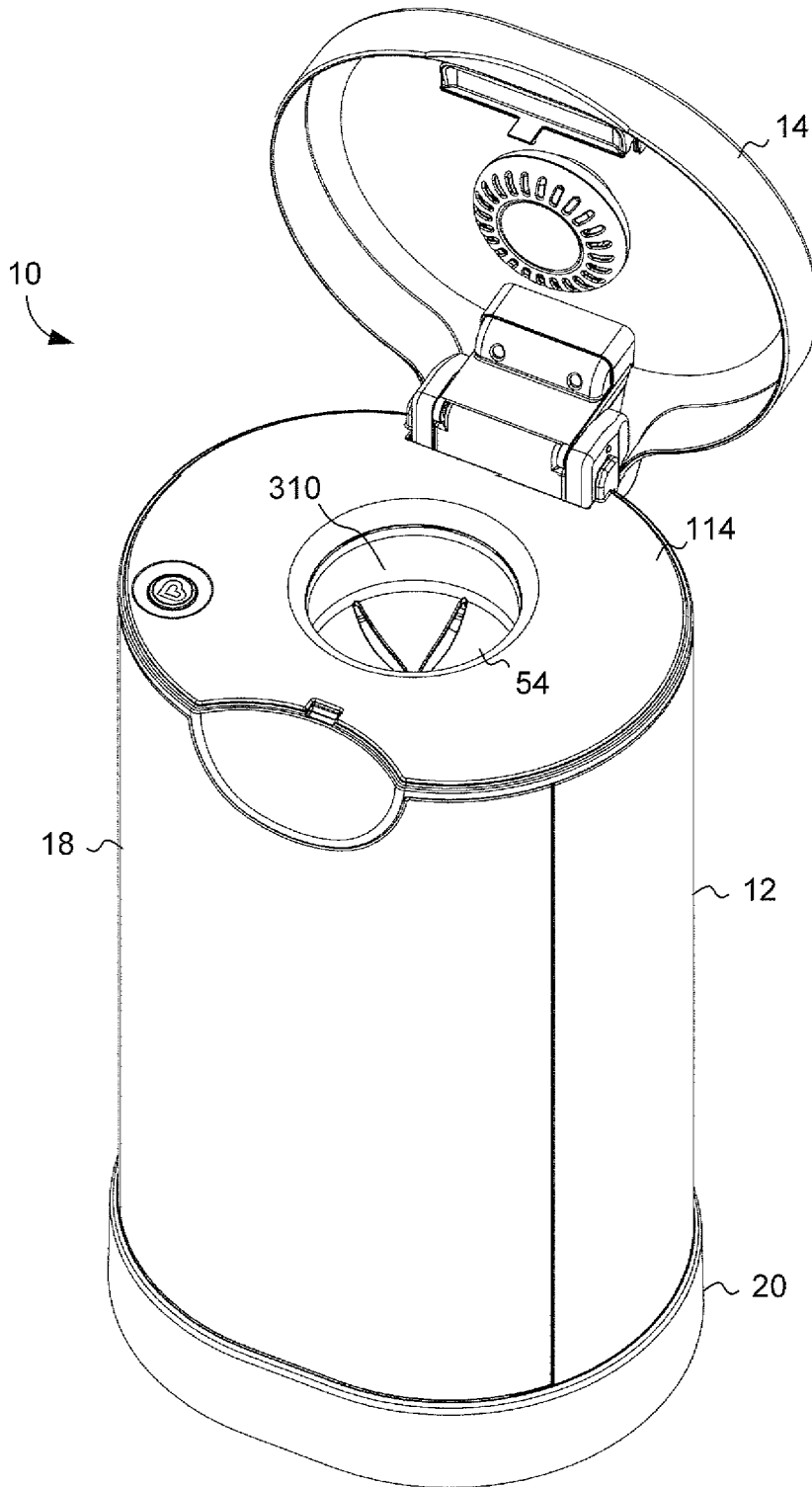


FIG. 21

23/40

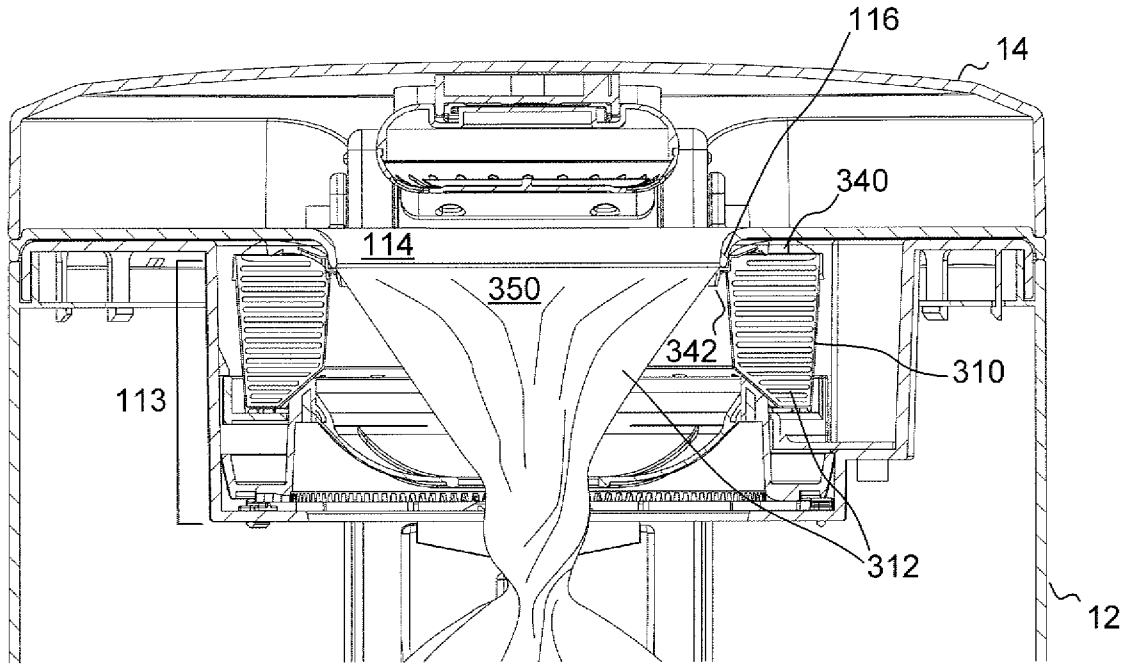
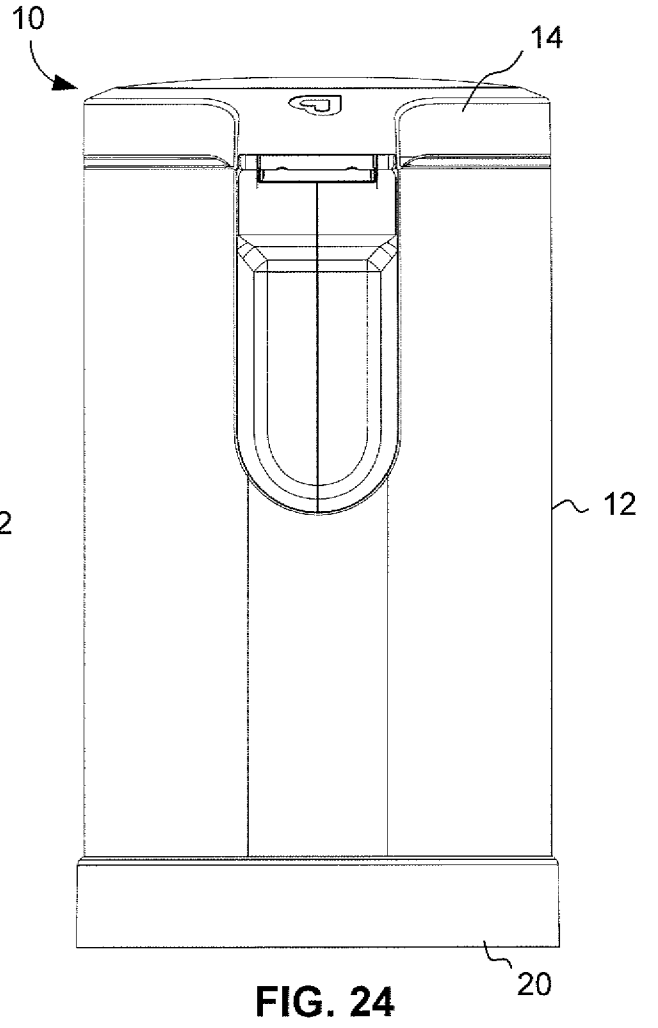
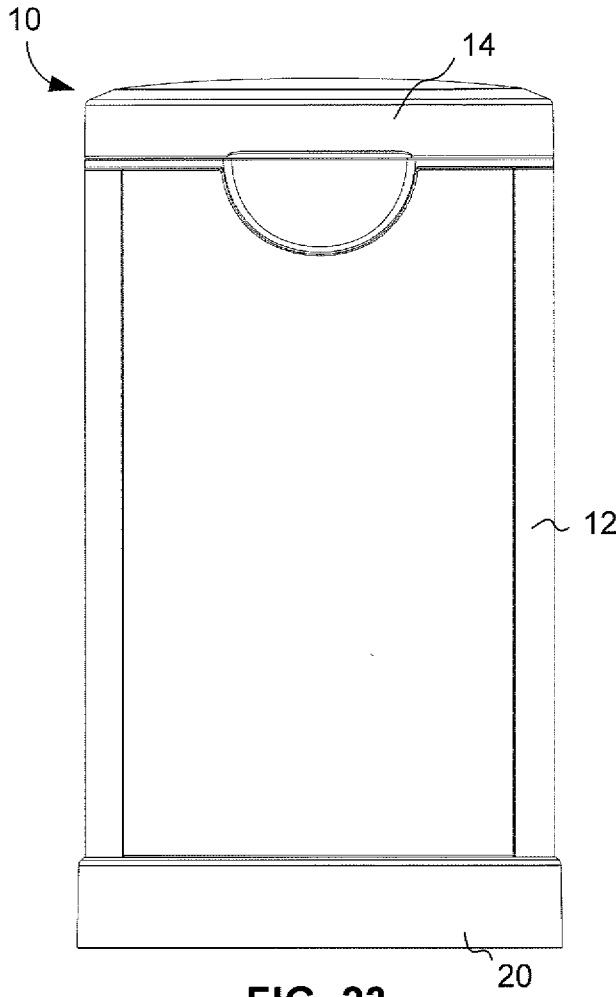


FIG. 22

24/40



25/40

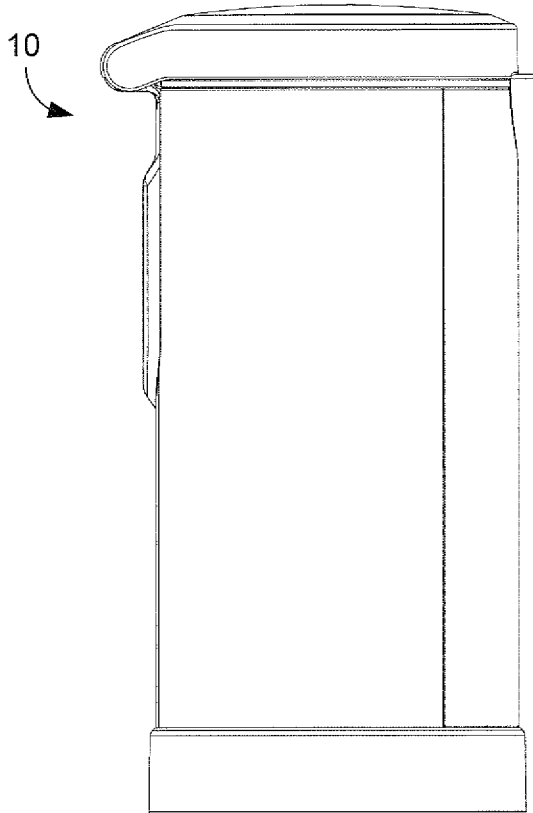


FIG. 25

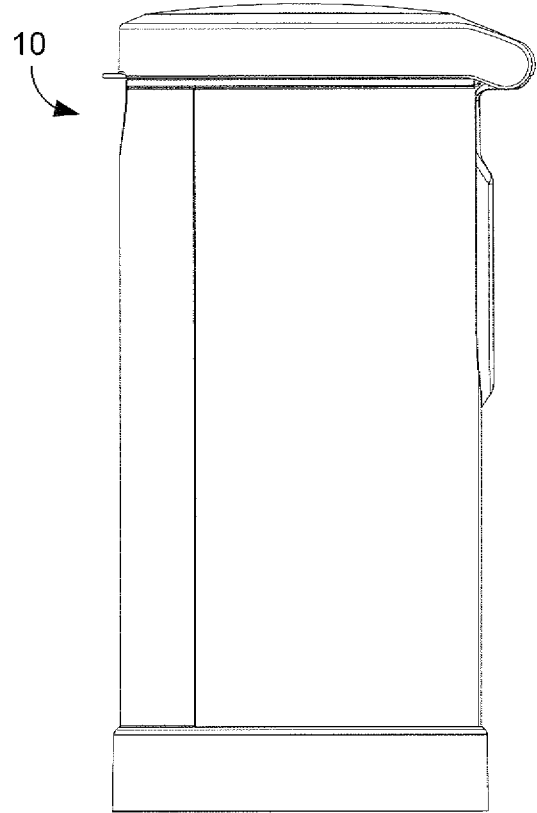


FIG. 26

26/40

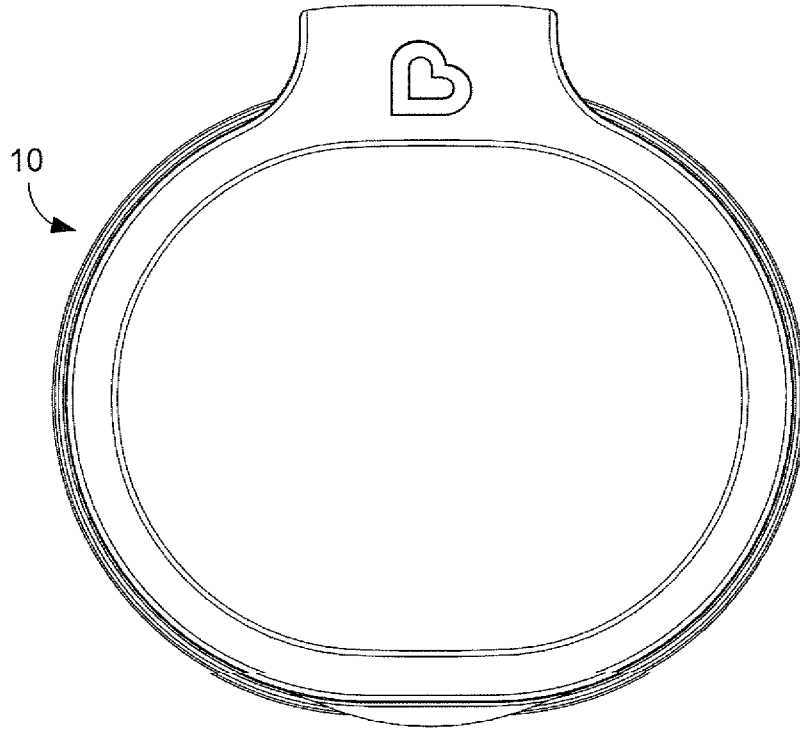


FIG. 27

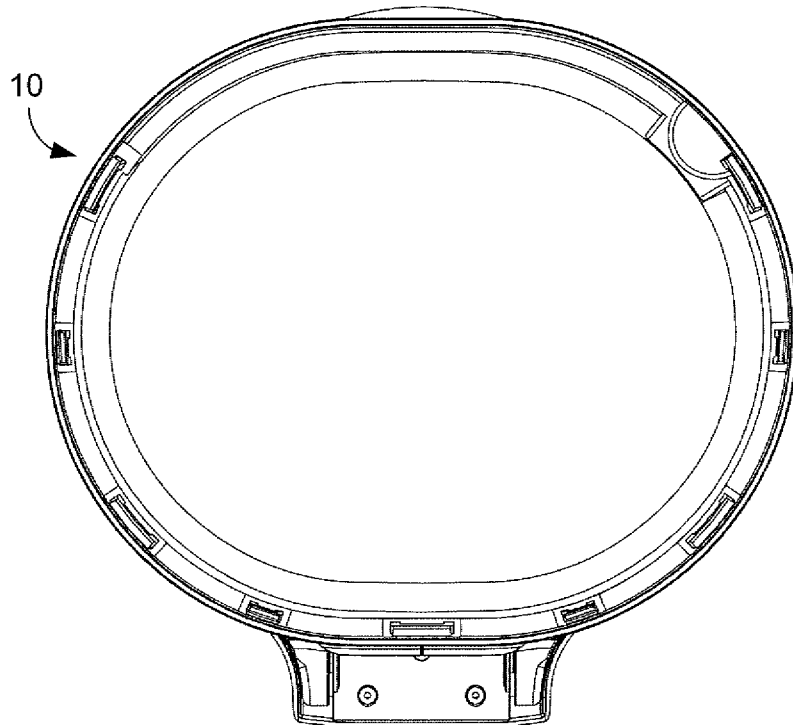


FIG. 28

27/40

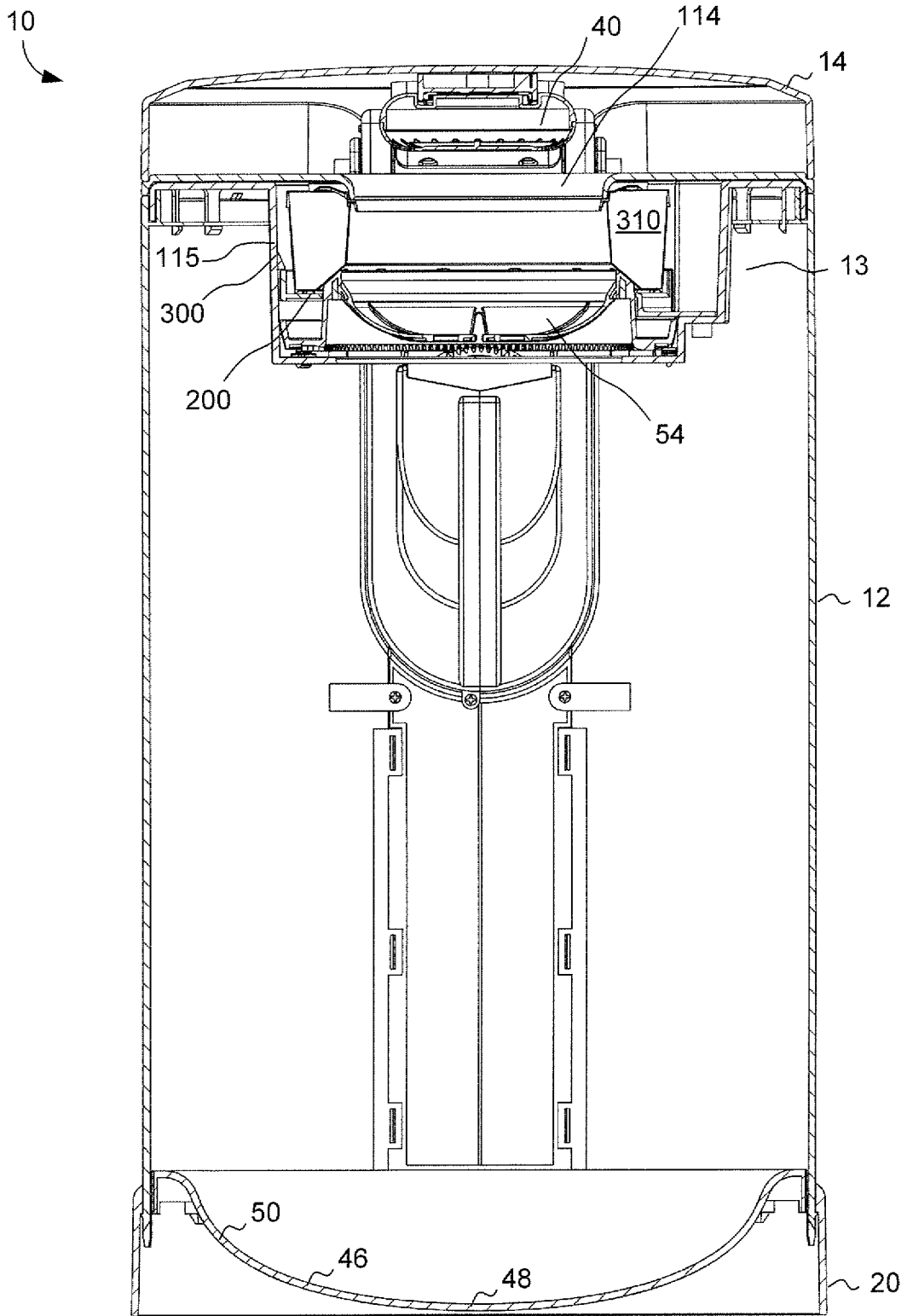


FIG. 29

28/40

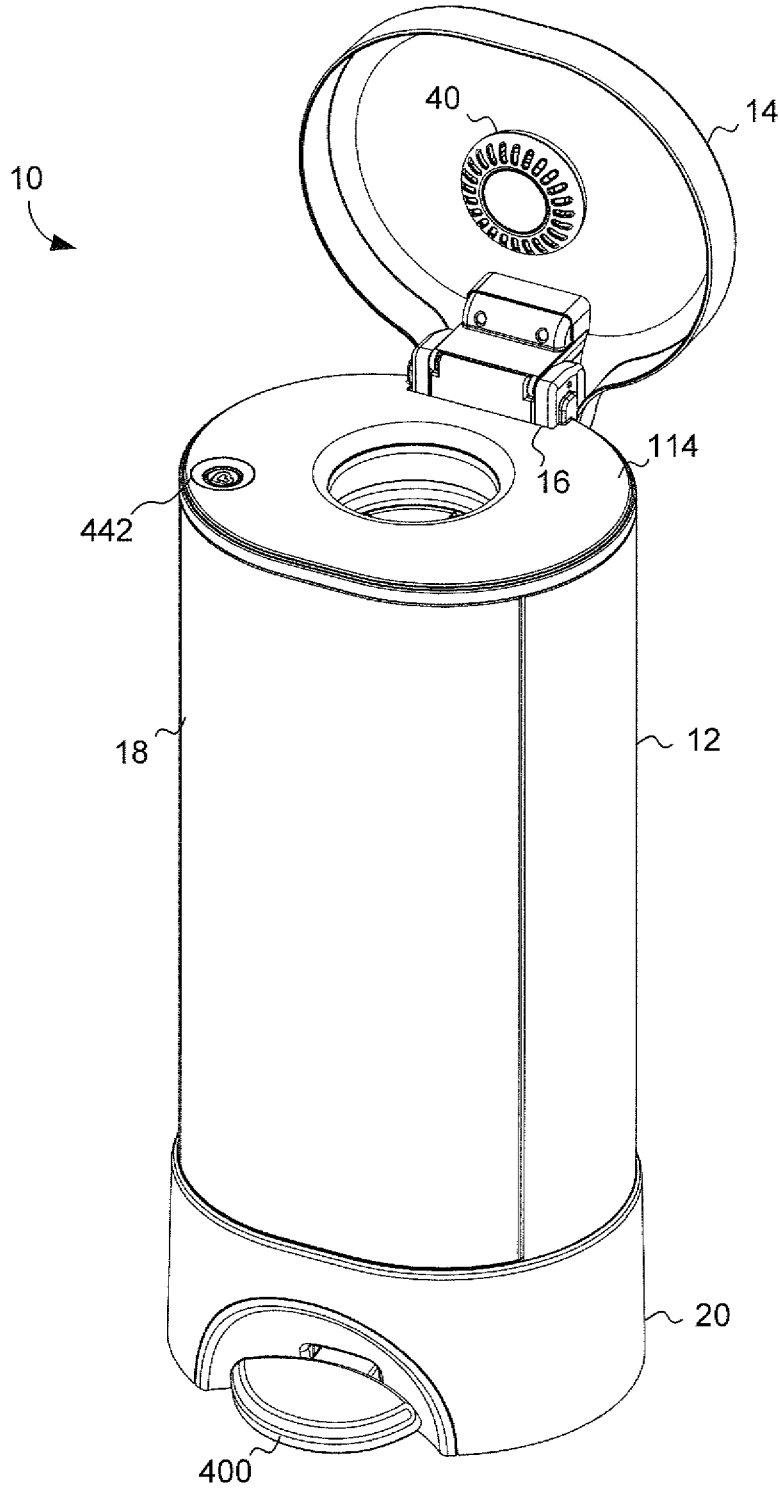


FIG. 30

29/40

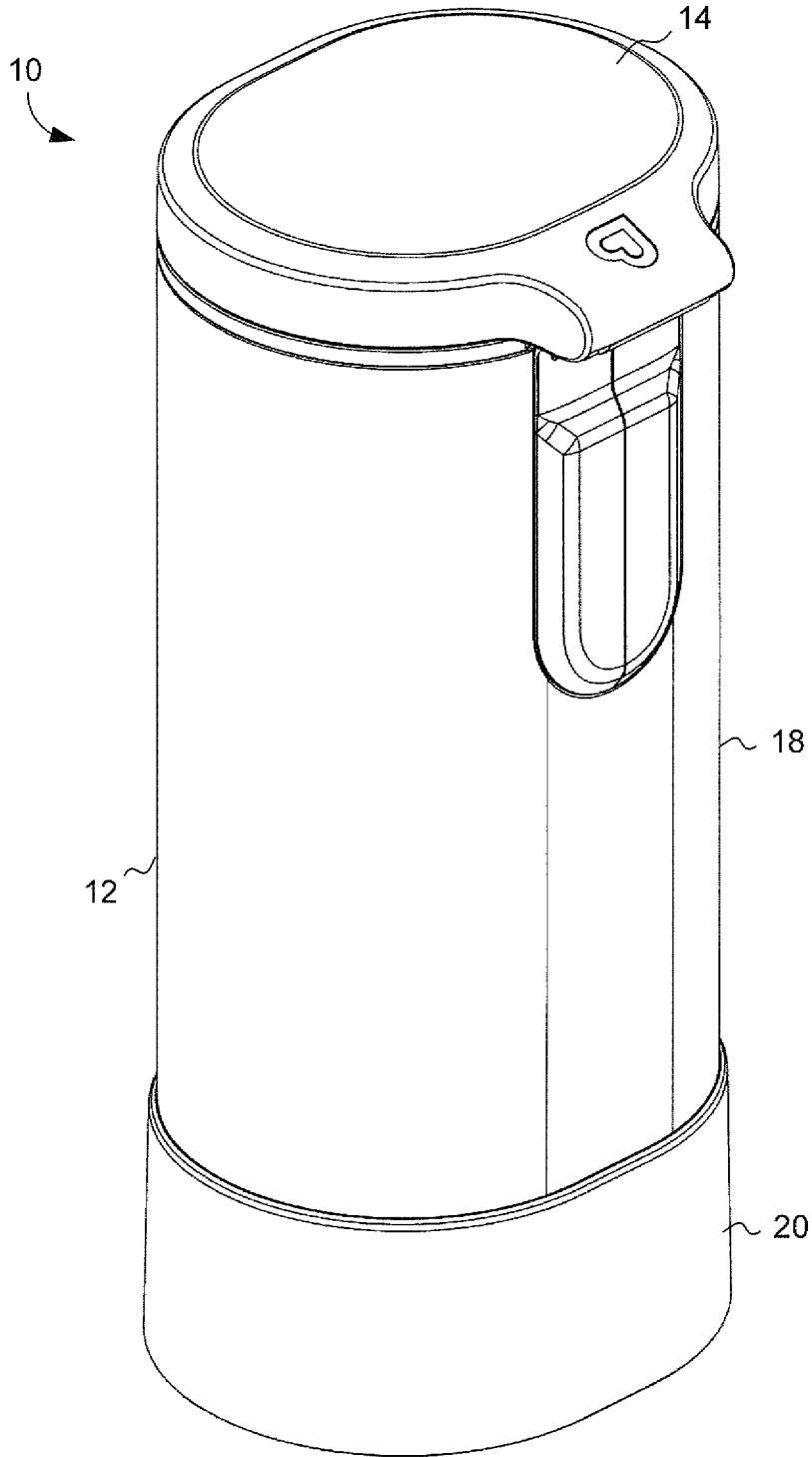


FIG. 31

30/40

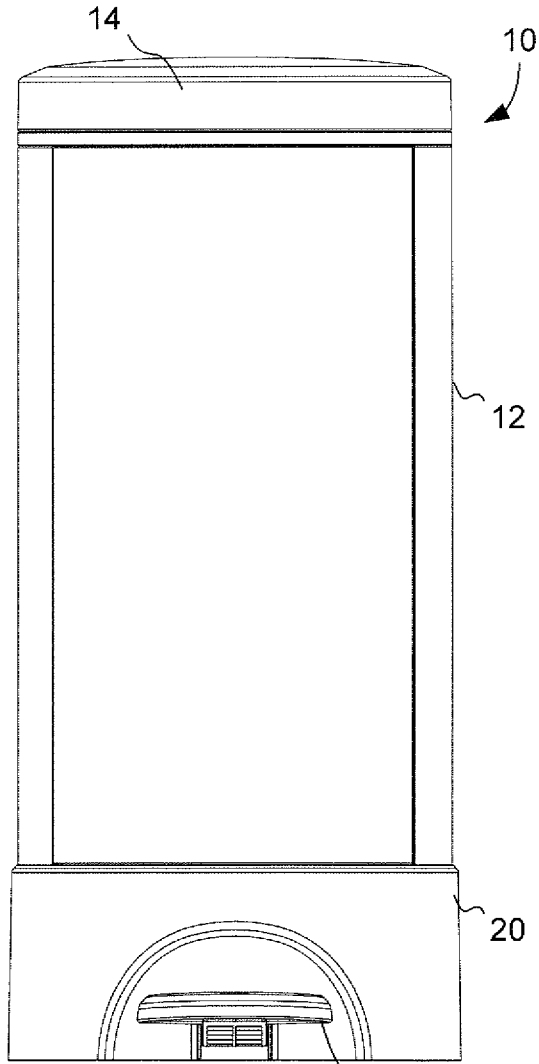


FIG. 32 400

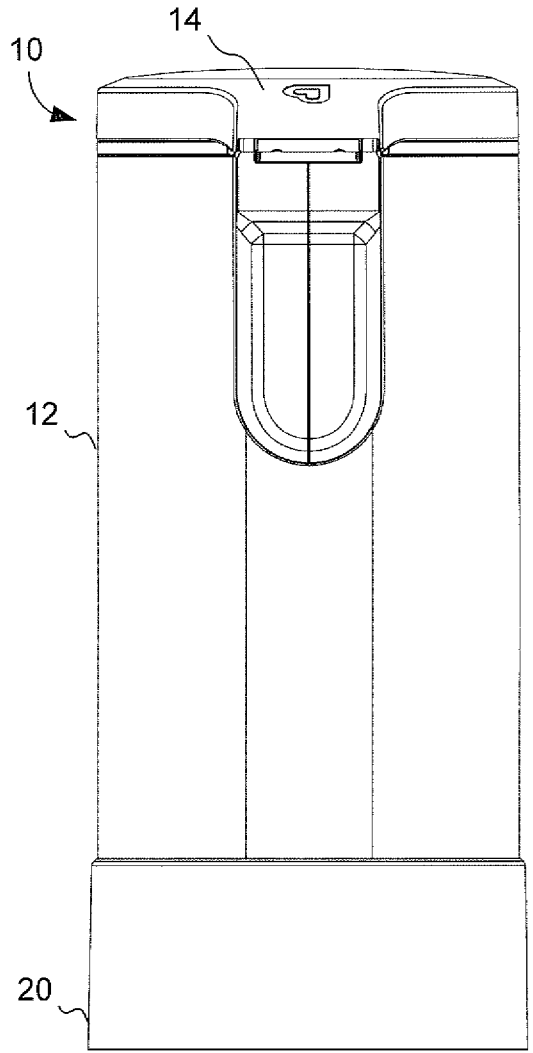


FIG. 33

31/40

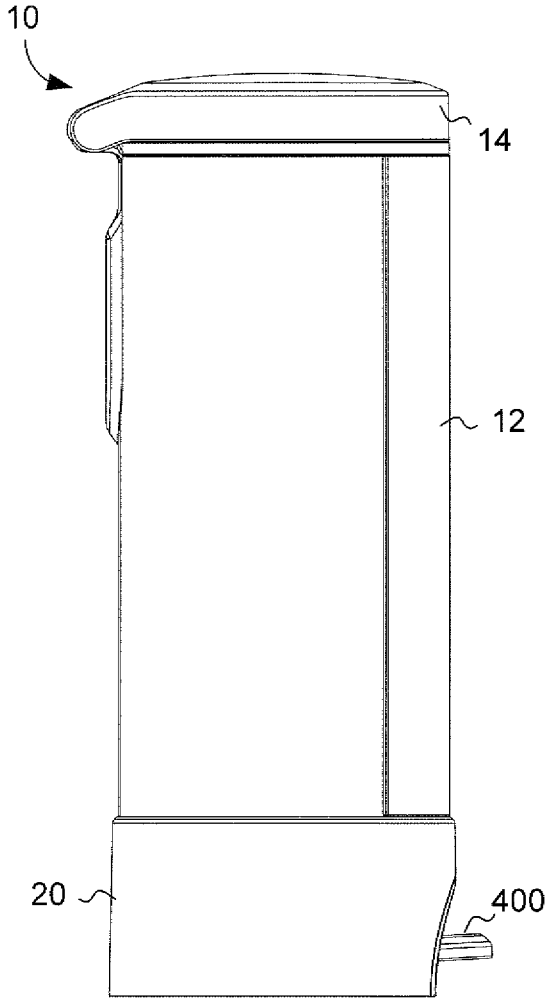


FIG. 34

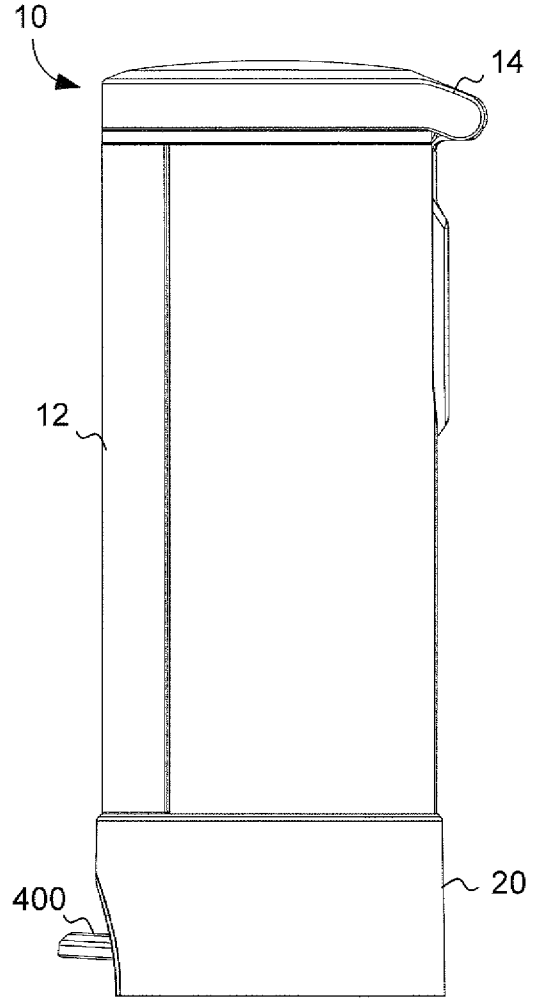


FIG. 35

32/40

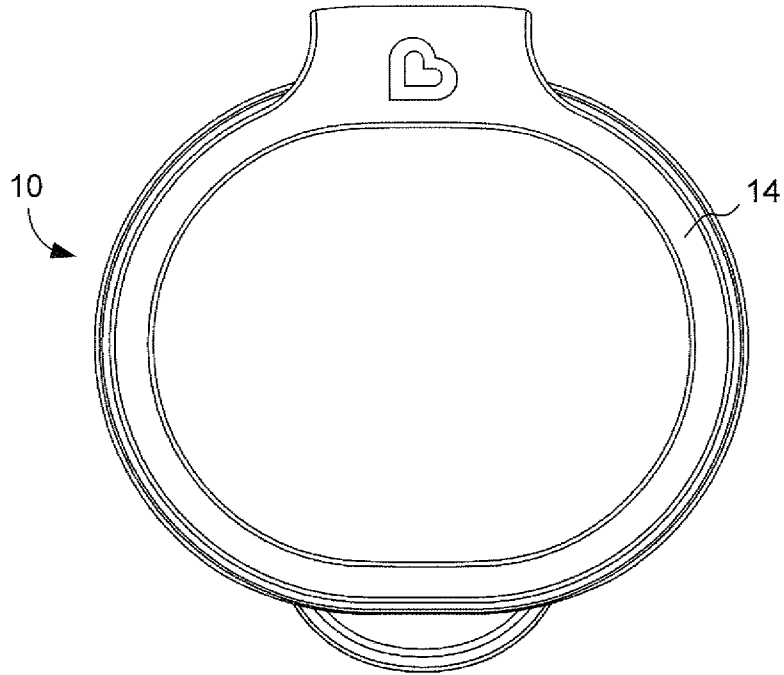


FIG. 36

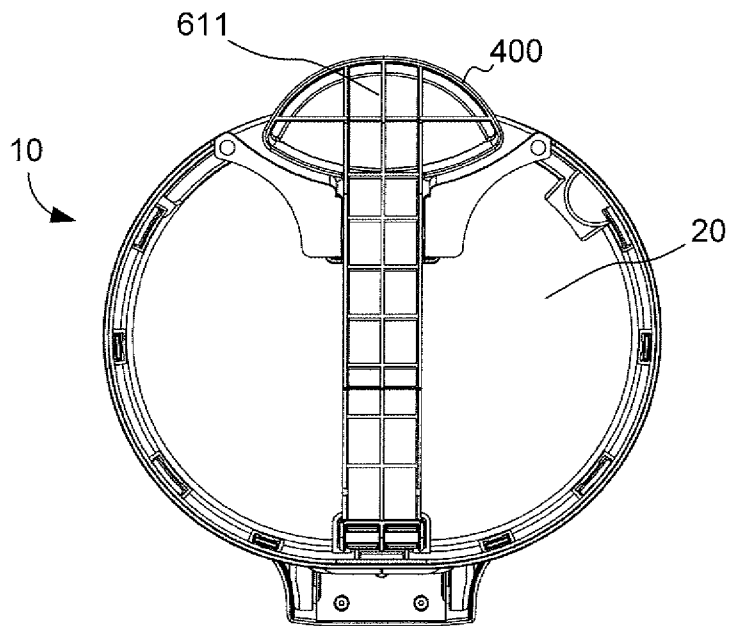


FIG. 37

33/40

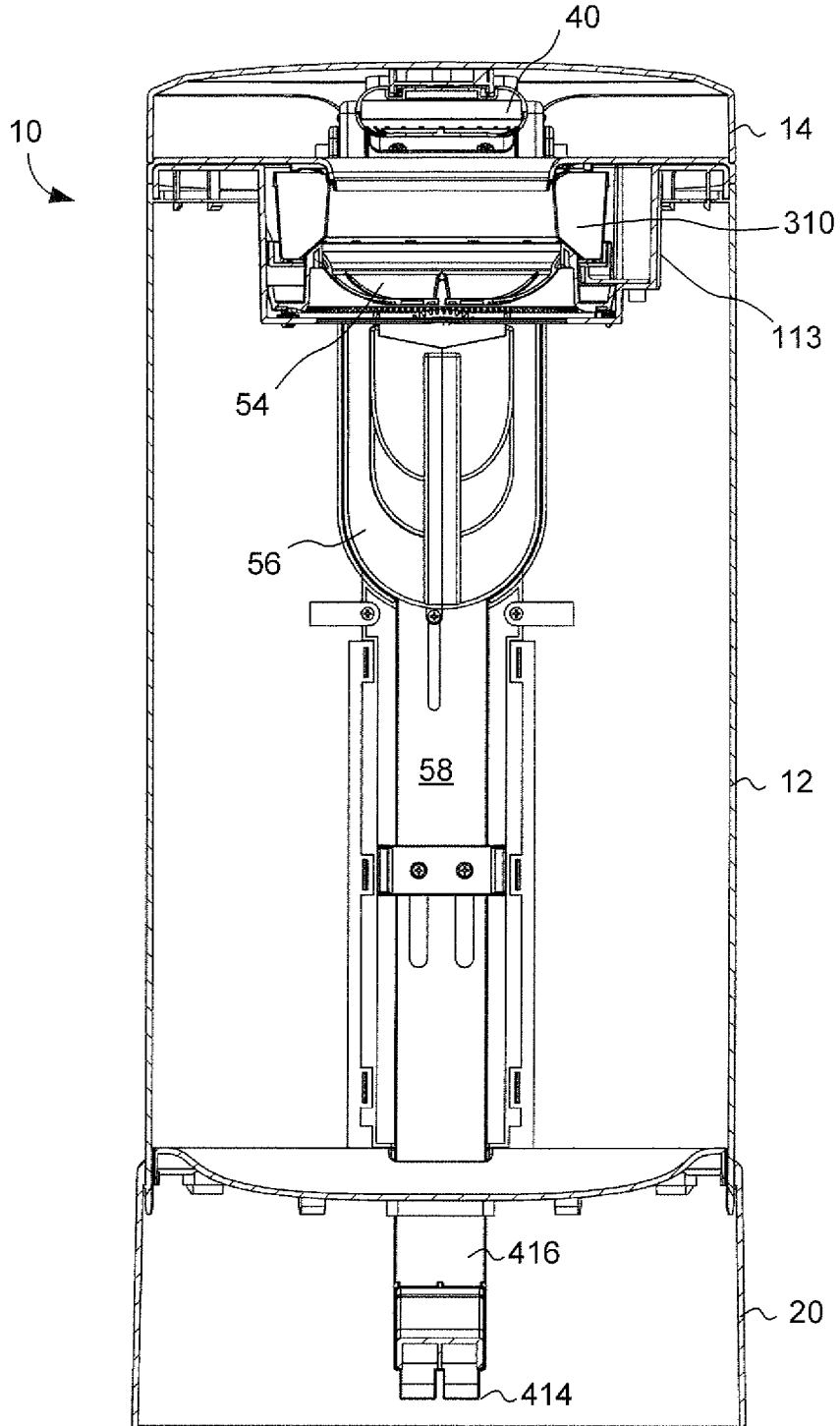


FIG. 38

34/40

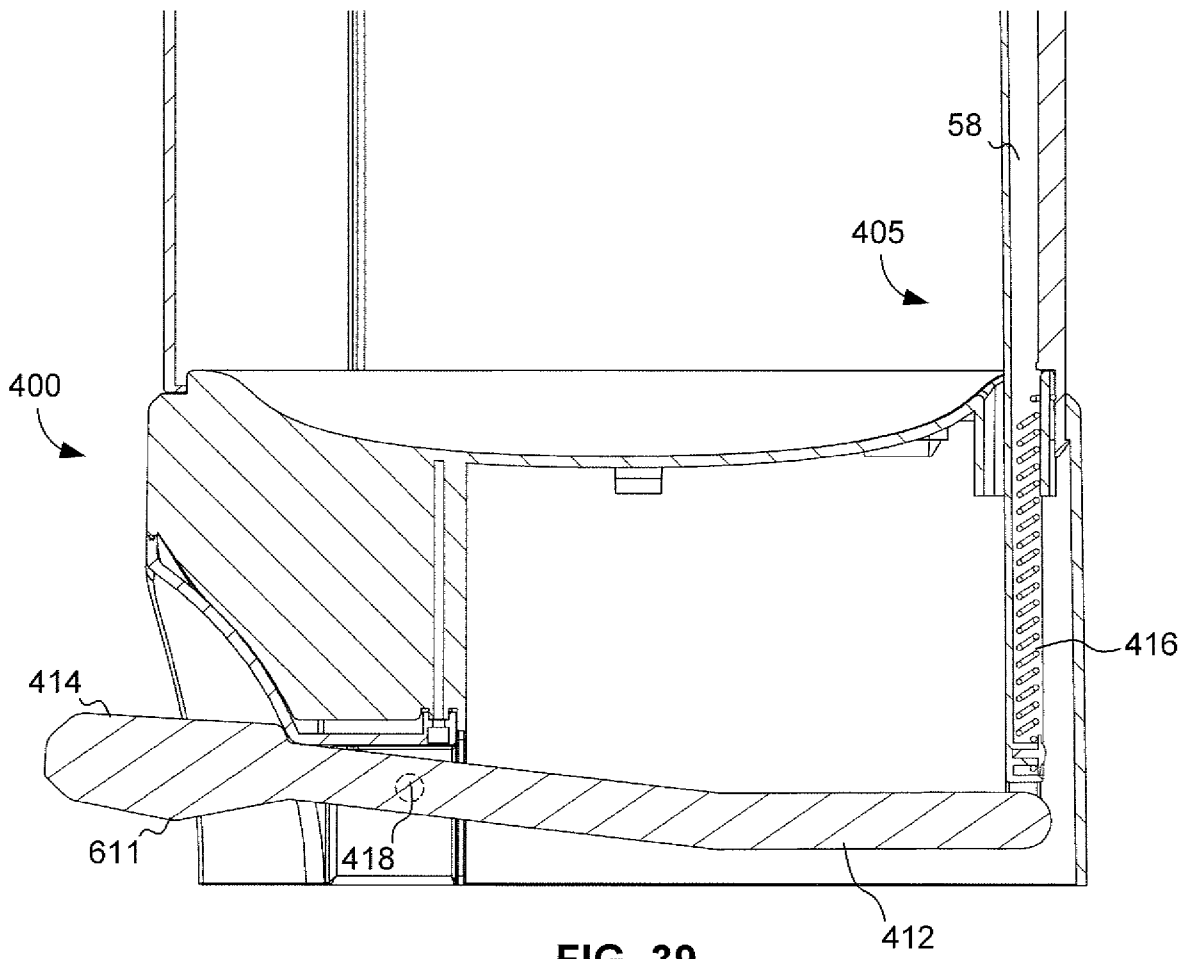


FIG. 39

35/40

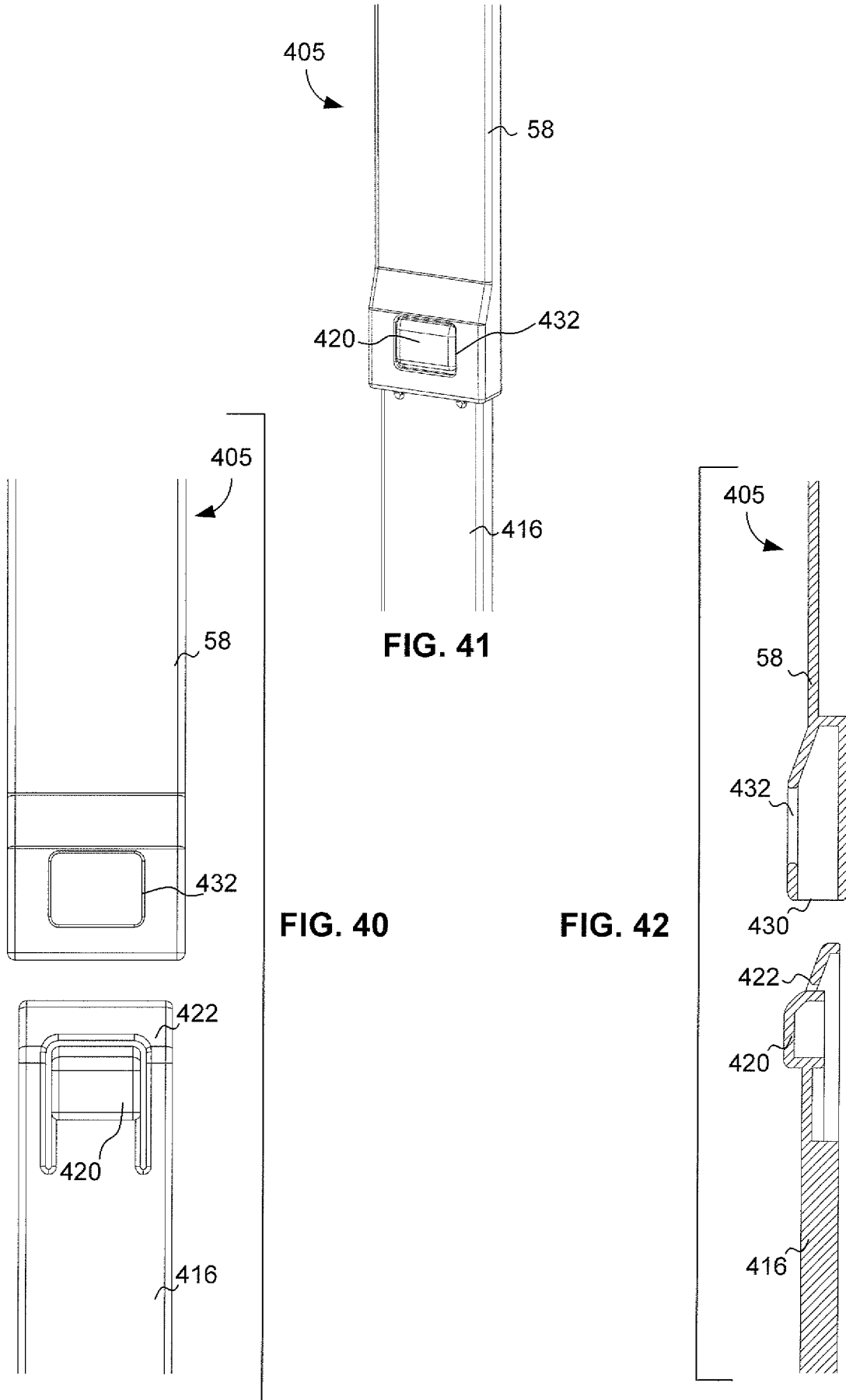


FIG. 41

FIG. 40

FIG. 42

36/40

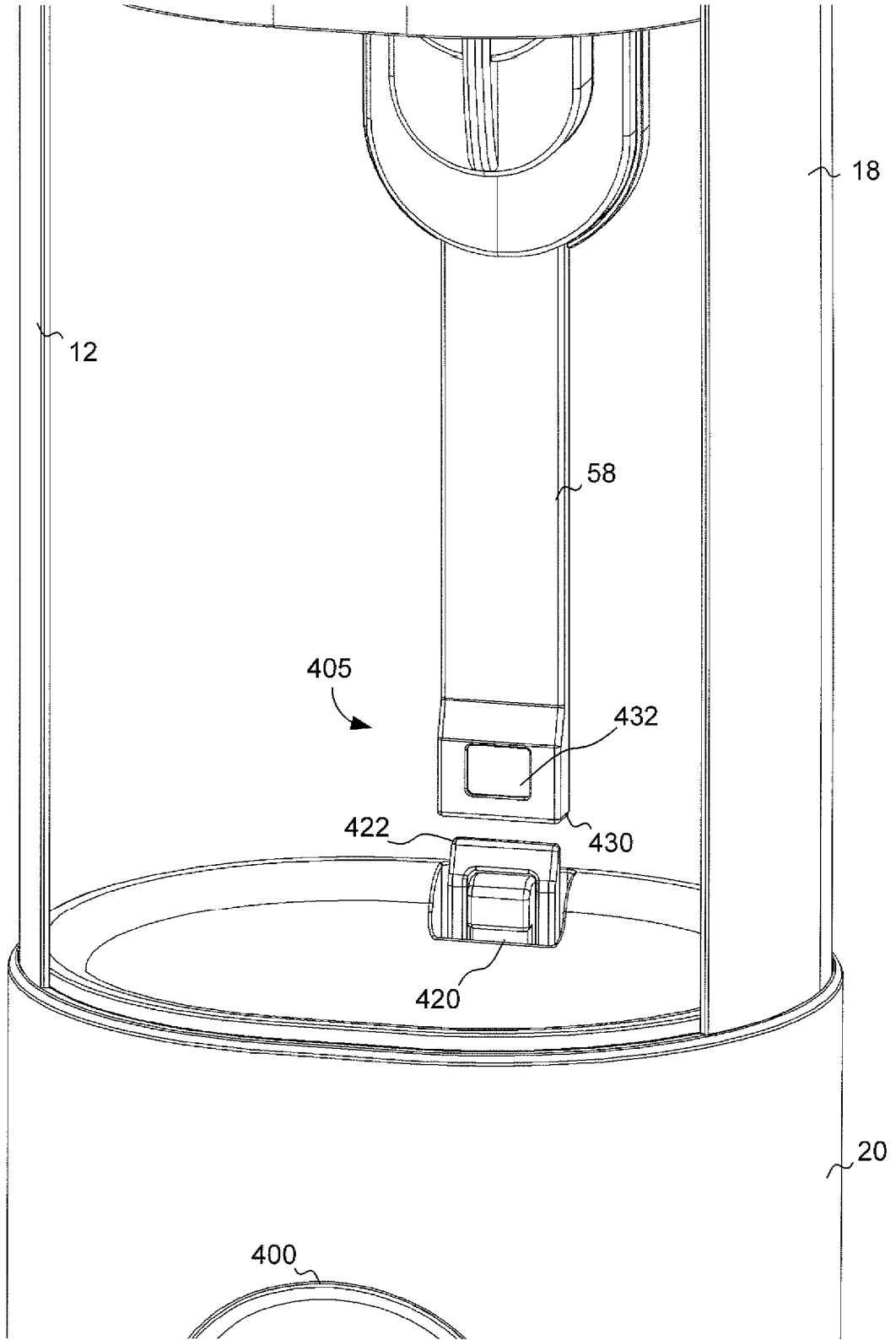


FIG. 43

37/40

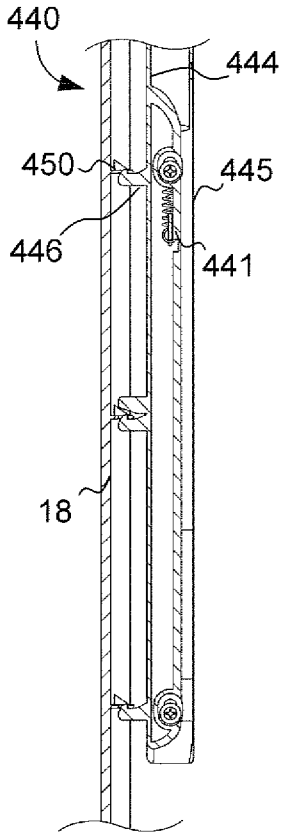


FIG. 44

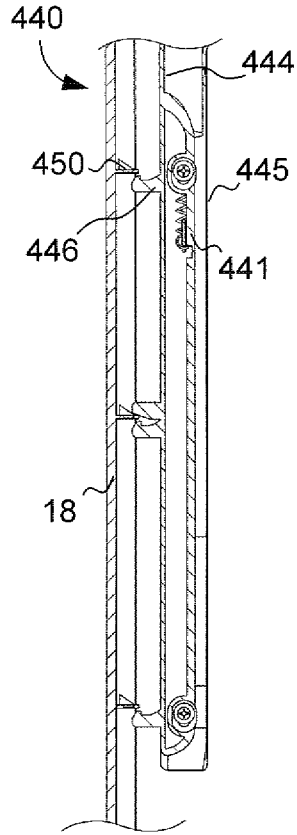


FIG. 45

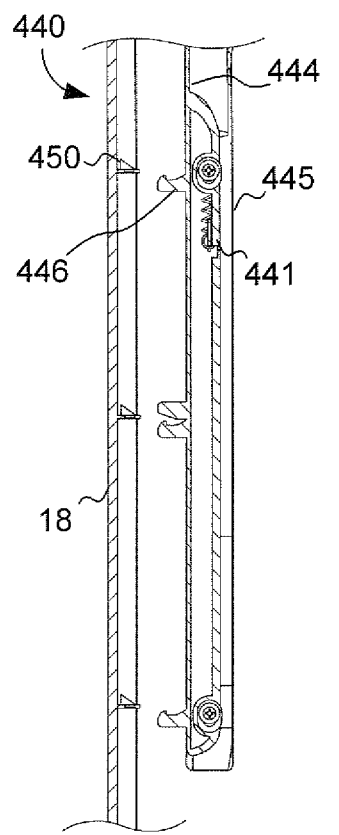


FIG. 46

38/40

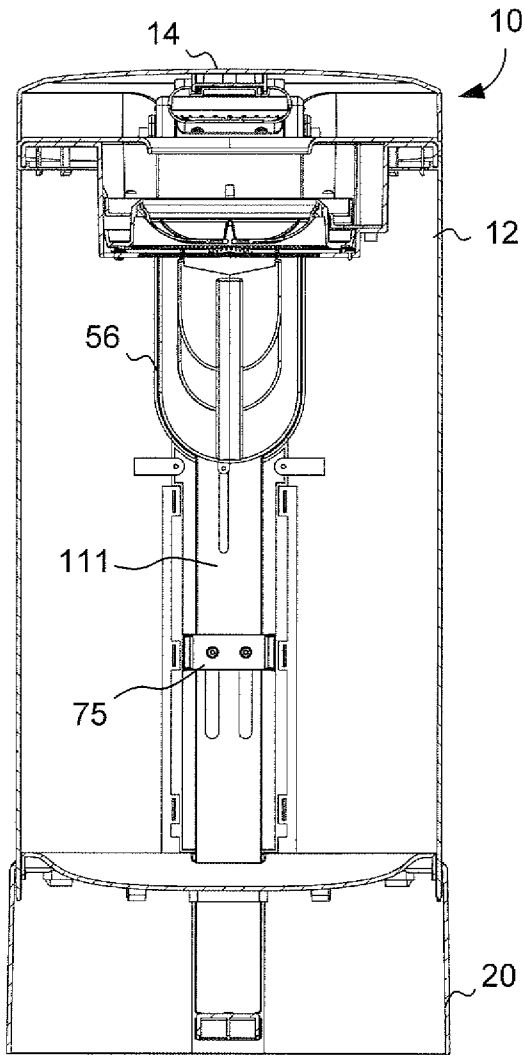


FIG. 47

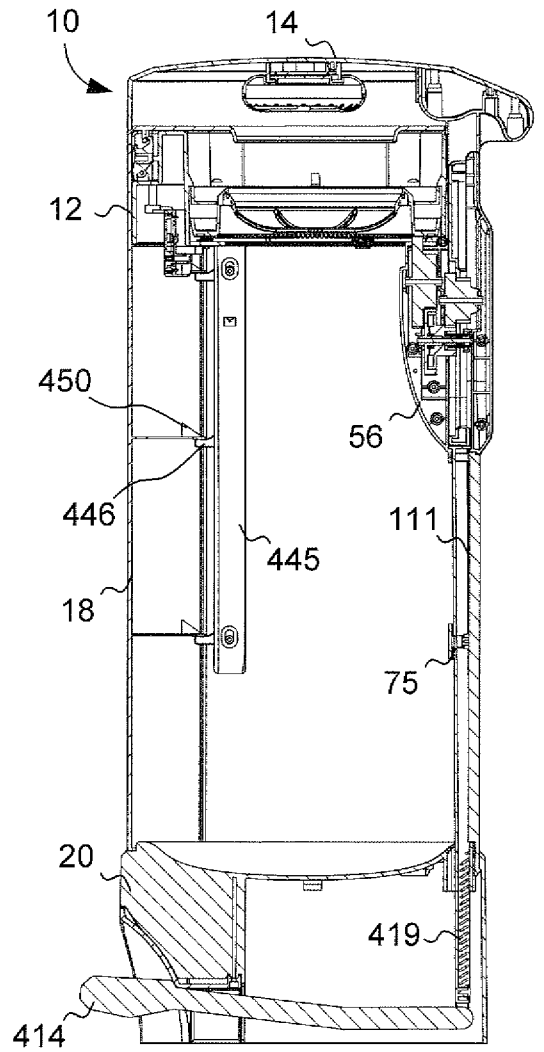


FIG. 48

39/40

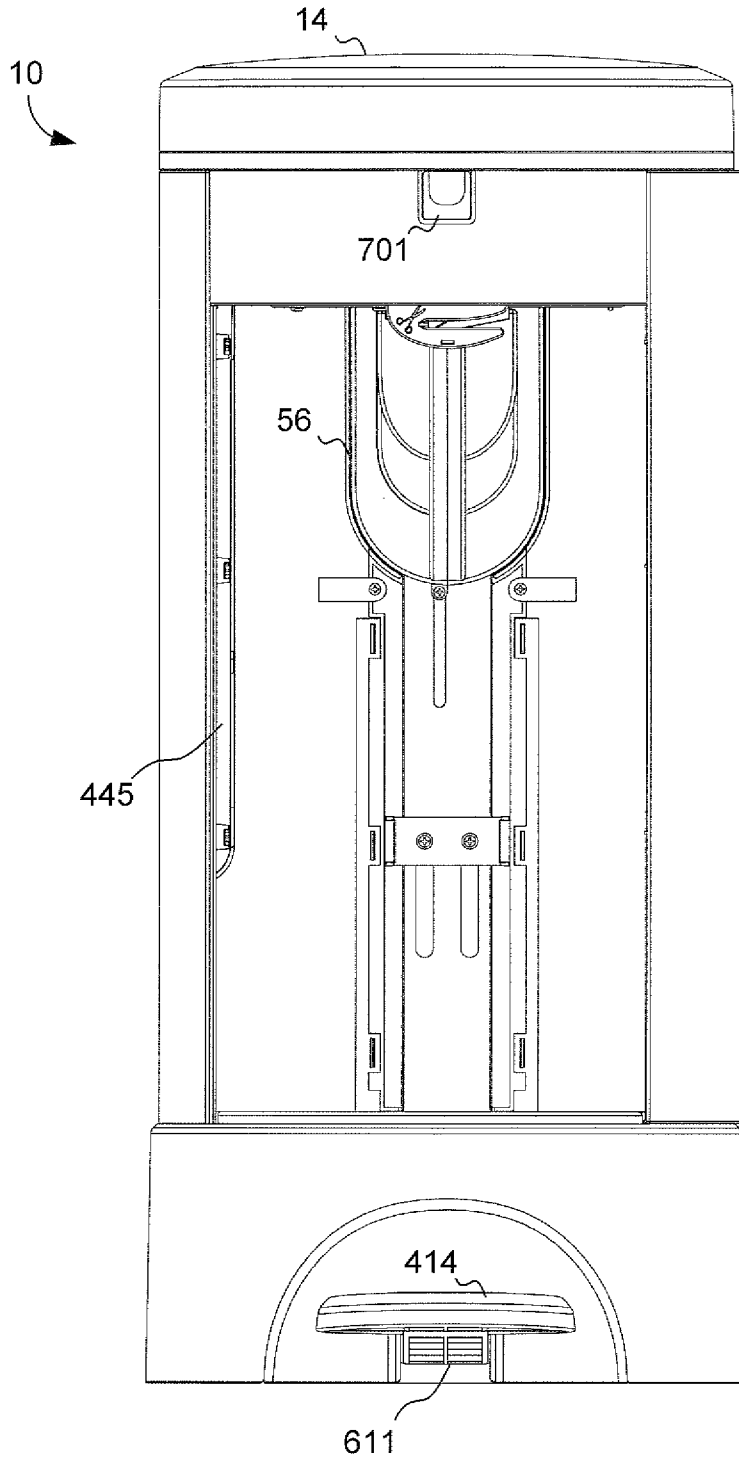


FIG. 49

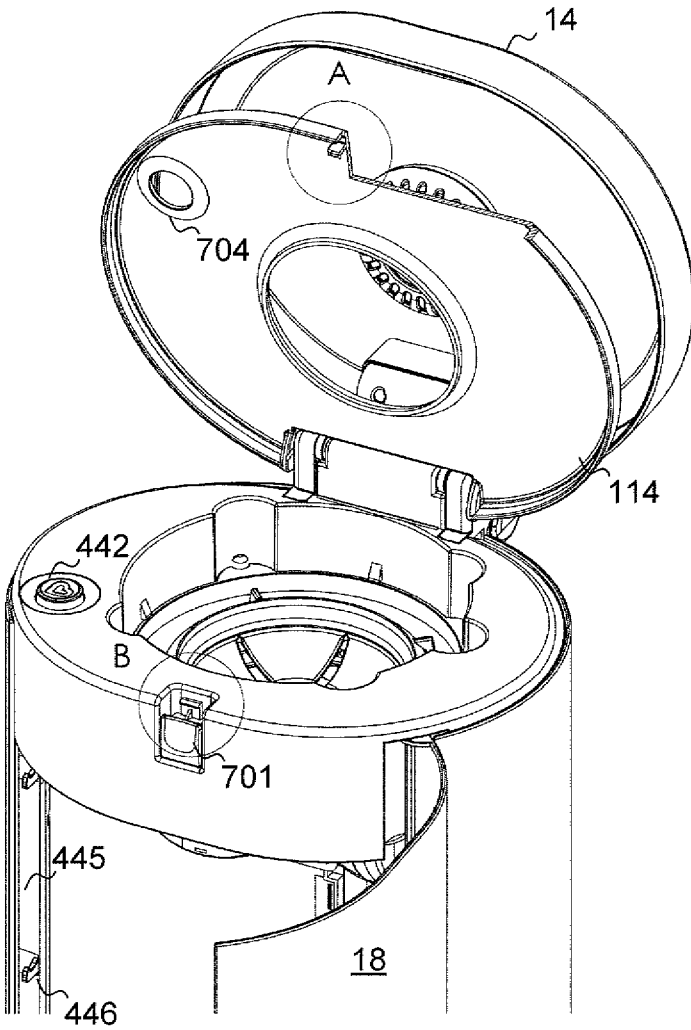


FIG. 50

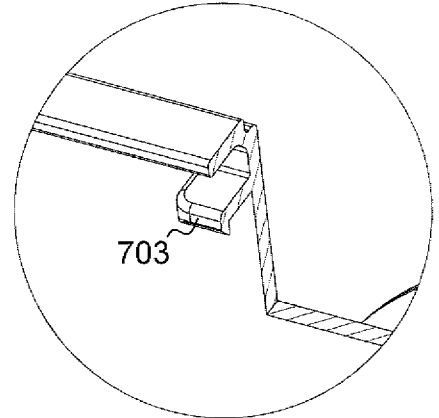


FIG. 51 DETAIL A

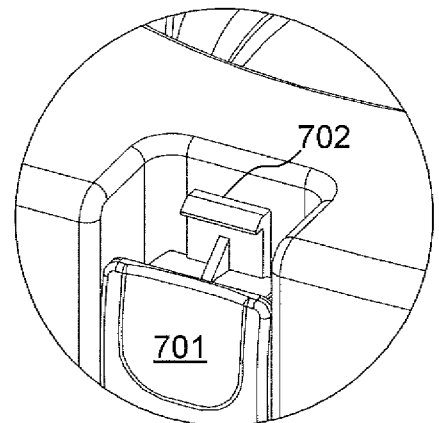


FIG. 52 DETAIL B

