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(54) CONTAINERS WITH VENTING SYSTEMS FOR SOAP AND SANITIZER DISPENSERS

(57) Exemplary containers and refill units for holding soap or sanitizer are disclosed herein. An exemplary container for holding soap or sanitizer includes a body having a neck located on a first end of the body. The container includes a base located on a second end of the body. A stem extends outward from at least a portion of the base. A grip member extends about the stem. The stem is configured such that applying a rotational force to the grip member causes at least one of the stem, the grip member and the at least a portion of the inner surface to rupture. The rupture creates a vent opening to the atmosphere.

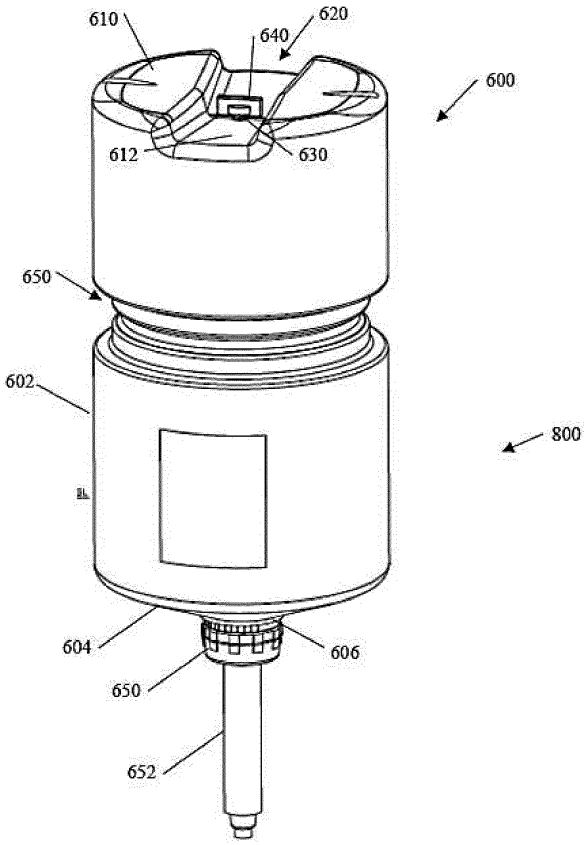

FIG. 8

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Description

BACKGROUND OF THE INVENTION

[0001] Soap and Sanitizer containers made out of High-Density Polyethylene ("HDPE") are known in the art. The soap and sanitizer containers are often connected to a pump and used in a dispenser. As liquid is pumped out of the container, vacuum pressure is created inside the container. The vacuum pressure causes the container to collapse, however, even with partial collapsing, not all of the liquid can be pumped out of the container. In addition, partially collapsed containers are not aesthetically pleasing. These issues have been overcome by venting the container so that atmospheric air can enter the container as liquid is pumped out which prevents vacuum pressure from building up in the container. One method of venting the container, is to use a dispenser that has a spike or hollow needle extending into the area that will receive the container. When the container is placed in the dispenser, the container is pressed into the spike or hollow needle creating an opening in the container. While this is an inexpensive method to vent the container, the spike or hollow needle is exposed to dirt, dust, contents of a prior container and the like. As a result, the spike or hollow needle may contaminate the contents of newly inserted container. Another method of venting the container is to add a vent valve to the container. While the vent valve is effective, it increases both raw material costs and labor costs. Another method may include forming a neck in the container and placing a cap on the neck until the container is installed in the dispenser. This solution also increases raw material costs and labor costs for making the container. In addition, this method results in a large opening that is subject to allowing contaminants into the container. Accordingly, there is a need for a container venting solution that does not increase labor and/or manufacturing costs or introduce contaminants into the interior of the container and does not require use of a tool.

SUMMARY OF THE INVENTION

[0002] Exemplary containers and refill units for holding soap or sanitizer are disclosed herein. An exemplary container for holding soap or sanitizer includes a body having a neck located on a first end of the body. The container includes a base located on a second end of the body. A stem extends outward from at least a portion of the base. A grip member extends about the stem. The stem is configured such that applying a rotational force to the grip member causes at least one of the stem, the grip member and the at least a portion of the base to rupture. The rupture creates a vent opening to the atmosphere. The grip member may be separated from the container or may remain connected to the container. In some instances, the base has an outer surface and an inner surface and the stem extends from the inner surface.

[0003] An exemplary refill unit for a soap or sanitizer dispenser includes a container. The container has a shipping orientation and a dispensing orientation. The container includes a neck. The neck is located on a top side of the container when the container is in the shipping orientation and is located on a bottom side of the container in the dispensing orientation. The container also includes a base. The base is located on a the bottom side of the container in the shipping orientation. The base includes a first surface and a second surface. The first surface is configured to support the container when the container is in the shipping orientation. The second surface is located above the first surface in the shipping orientation. A stem extends downward from the second surface. A grip member is located about the stem. The grip member has a lower surface. The first surface extends below the lower surface in the shipping orientation. The stem is configured to rupture and/or break away from the second surface when a rotational force is applied to the grip member to create a vent opening in the container. The refill unit further includes a pump connected to the neck.

[0004] Another exemplary refill unit for a soap or sanitizer dispenser includes a container. The container has an elongated body. A neck is located on a first end of the elongated body. A base is located on a second side of the body. The base has an outer surface and an inner surface. A stem extends outward from the inner surface. At least a portion of the stem is hollow. A grip member extends outward from the stem. Rotational force applied to the grip member causes a vent opening to be formed in the container. The refill unit further includes a pump secured to the neck.

[0005] Any of the above containers or refill units wherein the stem is configured to break away from the inner surface and create an opening through the inner surface.

[0006] Any of the above containers or refill units wherein a surface area of the outer surface of the base is greater than a surface area of the inner surface.

[0007] Any of the above containers or refill units wherein the surface area of the outer surface of the base is greater than twice the surface area of the inner surface.

[0008] Any of the above containers or refill units wherein the refill unit has a shipping position and a dispensing position and wherein in the shipping position, the base is located at a bottom of the container and the pump is located at the top of the container and in the dispensing position, the base is located at the top of the container and the neck is located at the bottom of the container.

[0009] Any of the above containers or refill units wherein a substantial portion of the outer surface of the base is a planer surface.

[0010] Any of the above containers or refill units wherein the inner surface of the base has a length that extends across an entire width of the body.

[0011] Any of the above containers or refill units wherein the inner surface has a width, wherein the width is less than 1/3 of the length.

[0012] Any of the above containers or refill units where-

in the inner surface has a width, and wherein the width is greater than a width of the grip member.

[0013] Any of the above containers or refill units wherein at least a portion of the stem is hollow and a wall of the hollow portion of the stem is less than 1.20 mm in thickness.

[0014] Any of the above containers or refill units wherein the wall of the hollow portion of the stem is less than 1.0 mm in thickness.

[0015] Any of the above containers or refill units wherein the wall of the hollow portion of the stem is between 0.8 and 1.0 mm in thickness.

[0016] Any of the above containers or refill units wherein the wall of the hollow portion of the stem is between 0.8 and 0.9 mm in thickness.

[0017] Any of the above containers further including a space between the grip member and the at least a portion of the base.

[0018] Exemplary methodologies for venting a soap or sanitizer refill unit are also disclosed. An exemplary methodology of venting a soap or sanitizer refill includes providing a refill unit that includes a soap or sanitizer container and a pump. The soap or sanitizer container includes a neck located on a first side and a base located on a second side that is opposite the first side. The pump is connected to the neck and a stem extends outward from at least a portion of the base. A grip member extends outward from the stem. The methodology further includes installing the refill unit into a dispenser, wherein the neck and pump are located below the base. The exemplary methodology further includes griping the grip member and twisting the grip member thereby creating a hole in the base of the container.

BRIEF DESCRIPTION OF DRAWINGS

[0019] To further clarify various aspects of the present disclosure, a more particular description of inventive concepts will be made by reference to various aspects of the appended drawings. It is appreciated that these drawings depict only typical embodiments of the present disclosure and are therefore not to be considered limiting of the scope of the disclosure. Moreover, while the figures can be drawn to scale for some embodiments, the figures are not necessarily drawn to scale. Features and advantages of the present disclosure will be described and explained with additional specificity and detail through the use of the accompanying drawings in which:

Figure 1 is a side elevational view of an exemplary container for holding soap or sanitizer shown in a shipping orientation;

Figure 1A is an enlarged partial cross-section of a portion of a base of a container, an exemplary stem and grip member;

Figure 2 is bottom view of the exemplary container of Figure 1;

Figure 3 is a side elevational view of the exemplary container of Figure 1 shown in a dispensing orientation with the grip member removed creating a vent;

Figure 3A is an enlarged side view of a grip member and stem with a rupture in the stem;

Figure 4 is a plan view of the exemplary container of Figure 3;

Figure 5 is a simplified schematic diagram of the exemplary container of Figure 1 in a dispensing orientation and installed in a dispenser;

Figure 6 is a side view of another exemplary container for holding soap or sanitizer shown in a shipping orientation;

Figure 7 is bottom view of the exemplary container of Figure 6;

Figure 8 is a prospective view of the exemplary container of Figure 6 shown in a dispensing orientation;

Figure 9 is a prospective view of the exemplary container of Figure 8 with the grip member removed creating a vent opening;

Figure 10 is a plan view of the exemplary container of Figure 9 showing the vent opening;

Figure 11 is a side view of another exemplary container for holding soap or sanitizer shown in a shipping orientation;

Figure 12 is bottom view of the exemplary container of Figure 11; and

Figure 13 is an exemplary methodology for loading a soap or sanitizer dispenser and venting a refill container.

DETAILED DESCRIPTION OF THE INVENTION

[0020] The following description refers to the accompanying drawings, which illustrate specific aspects of the present disclosure.

[0021] As described herein, when one or more components are described as being connected, joined, affixed, coupled, attached, or otherwise interconnected, such interconnection may be direct as between the components or may be indirect such as through the use of one or more intermediary components. Also as described herein, reference to a "member," "component," or "portion" shall not be limited to a single structural member, component, or element but can include an assembly of components, members, or elements. Also as described herein, the terms "substantially" and "about" are defined as at least close to (and includes) a given value or state (preferably within 10% of, more preferably within 1% of, and most preferably within 0.1% of).

[0022] Values identified in the detailed description may be exemplary and may be different as needed for a particular dispenser and/or refill design. Accordingly, the inventive concepts disclosed and claimed herein are not limited to the particular values or ranges of values used to describe the embodiments disclosed herein.

[0023] Shipping orientation as used herein is the orientation that the container is typically in during the filling process, the shipping process, and/or the storage proc-

ess. In the shipping orientation, the container neck is located at the top of the container.

[0024] Dispensing orientation as used herein is the orientation that the container is typically in when the container is installed in a dispenser. In the dispensing orientation, the neck is located at the bottom of the container.

[0025] Figure 1 is a side view of an exemplary container 100 for holding soap or sanitizer. shown in a shipping orientation. Container 100 may be made of, for example, High Density Polyethylene (HDPE). Container 100 may be made using a blow molding process.

[0026] The container 100 includes a body 102. Body 102 is shown as a cylindrical body, however other elongated body shapes may be used, such as, for example, shapes that have a substantially rectangular or substantial square cross-section, a substantially oval cross-section, or the like. In the shipping orientation, body 102 has an upper surface 104. Located in upper surface 104 is a neck 106. Neck 106 includes threads 107. Neck 106 is configured to receive a pump closure (not shown) to connect a pump (not shown) to the container 100. In some instances, a cap (not shown) may be connected to neck 106 for shipping the container 100. A user then may reuse a pump (not shown) and connect that pump to the container to form a refill unit. In some instances, a cap (not shown) is connected to the neck 106 and a pump (not shown) is shipped along with the container 100 so that a user can remove the cap and connect the pump to the container to form a refill unit. Other methods of connecting a pump (not shown) or cap (not shown) to the container 100 may be employed, such as, for example, a friction-fit connection, a snap-fit connection, an adhesive based connection (for the pump), a welded connection (for the pump) and the like.

[0027] Container 100 has a base 108. Base 108 has a first surface 110 and a second surface 112. In the shipping orientation, first surface 110 (which may be referred to herein as the bottom surface, or the outer surface) is configured to support container 100 upright as show in Figure 1.

[0028] Second surface 112 (which may be referred to as an inner surface of base 108) is located above first surface 110 (or inward of outer surface 110). Extending downward, or outward from second surface 112 is a stem 130. Stem 130 may be at least partially hollow. A grip member 140 is formed about stem 130. The stem 130 and grip member 140 may be referred to as a "butterfly." Grip member 140 optionally includes a pair of wings 142. Wings 142 extend outward from stem 130. The outward extending wings 142 act as levers to increase the leverage for applying a rotational force to, for example, twisting, grip member 140.

[0029] A cavity 120 is created between first surface 110 and second surface 112. The cavity 120 has a width W and extends across the bottom of container 100. The cavity 120 may have the same width W all the way across the container 100. The width W of cavity 120 may taper inward as the cavity 120 extends toward a center of the container 100. The width W (at the location of grip member 140) is sized slightly large than grip member 140 and is configured so that a person can hold grip member 140 between her forefinger and thumb and twist grip member 140.

[0030] As described in more detail below, twisting grip member 140 causes the stem 130 to rupture and/or break away from the inner surface 112 of the base 108. When stem 130 ruptures and/or breaks away from inner surface 112, a venting opening is formed in the container 100.

[0031] In some instances, the stem 130 is configured to rupture creating a vent opening 300 (Figure 3A) and remain connected to the container 100. When stem 130 ruptures and remains connected to the container 106, the risk of external contamination being introduced to the soap or sanitizer is minimized as the hole or opening remains largely protected by the stem 130 and grip member 140.

[0032] In some instances, rotating the grip member 140 between 10 degrees and 180 degrees causes the stem 130 to rupture and remain connected to container 100. In some instances, rotating the grip member 140 between 20 degrees and 170 degrees causes the stem 130 to rupture and remain connected to container 100. In some instances, rotating the grip member 140 between 30 degrees and 160 degrees causes the stem 130 to rupture and remain connected to container 100. In some instances, rotating the grip member 140 between 40 degrees and 140 degrees causes the stem 130 to rupture and remain connected to container 100. In some instances, rotating the grip member 140 between 50 degrees and 130 degrees causes the stem 130 to rupture and remain connected to container 100. In some instances, rotating the grip member 140 between 60 degrees and 120 degrees causes the stem 130 to rupture and remain connected to container 100. In some instances, rotating the grip member 140 between 70 degrees and 110 degrees causes the stem 130 to rupture and remain connected to container 100. In some instances, rotating the grip member 140 between 80 degrees and 100 degrees causes the stem 130 to rupture and remain connected to container 100.

[0033] Figure 2 is bottom view of the exemplary container 100 for holding soap or sanitize. Figure 2 illustrates the cavity 120 extending across the width of container 100. The surface area of first surface 110 is greater than the surface area of second surface 112. In addition, the first surface 110 extends around a majority of the circumference of container 100, while inner surface 112 extends around a minority of the circumference of the container 100. In some instances, the first surface extends around greater than 60% of the circumference of container 100. In some instances, the first surface extends around greater than 70% of the circumference of container 100. In some instances, the first surface extends around greater than 80% of the circumference of container 100.

[0034] Figure 1A is an enlarged partial cross-section of another exemplary stem 130A and grip member 140A

that may be used in accordance with the present disclosure. Stem 130A is at least partially hollow. This may be accomplished by having an opening and cavity in the mold (not shown) that is large enough that a hollow portion 192 is formed in stem 130A and optionally a hollow portion 194 is formed in grip member 140A during the blow molding process.

[0035] In addition, optionally, stem 130A includes a tapered portion 190. Tapered portion 190 extends into and/or through the inner surface 112A of the container. The tapered portion 190 may facilitate a cleaner break when separating grip member 140A from the container and/or facilitate creation of a rupture in the stem or between the stem and inner surface 112A.

[0036] Stem 130/130A has a wall thickness. In some instances, the wall thickness is less then 1.2 millimeters (mm). In some instances, wall thickness is less than 1.0 mm. In some instances, wall thickness is between 0.6 mm and 1.1 mm. In some instances, wall thickness is between 0.7mm and 1.0 mm. In some instances, wall thickness is between 0.75 mm and 1.0 mm. In some instances, wall thickness is between 0.8 mm and 1.0 mm. In some instances, wall thickness is between 0.8 mm and 0.9 mm.

[0037] The outer surface 141 of grip member 140 is located a distance H above the outer surface 110 of base 108. Distance H should be large enough to prevent grip member 140 from contacting a surface (not shown) when container 102 is in the shipping orientation and is being moved, filled, and/or shipped. In some instances, distance H is greater than 2 mm. In some instances, distance H is greater than 3mm. In some instances, distance H is greater than 4 mm. In some instances, distance H is greater than 5 mm. In some instances, distance H is greater than 6 mm.

[0038] Stems 130, 130A and grip members 140, 140A are configured such that rotation of grip members 140,140A causes the stem, and/or the upper surface 112 to rupture and/or break away from container 100. When the stem 130, 130A and/or upper surface 112/112A ruptures or breaks away from container 100, an opening or vent 300/200 is created. Figures 3 and 4 illustrate stem 130 broken off from container 100 and vent opening 200 in the upper surface 112. As described above, stem 130, 130A may be configured to rupture and remain connected to container 100. Figure 3A illustrates the stem 130A having a rupture 300 creating a vent opening. The opening or vent 200/300 allows air to flow into container 100 when liquid soap or sanitizer is pumped out of container 100, which is described in more detail with respect to Figure 5. Again, although the opening or vent 200 is shown in the upper surface 112, the opening or vent 200 may be a rupture 300 in the stem 130/130A or in the upper surface 112.

[0039] Figure 5 is a simplified schematic diagram of a dispenser system 500. Dispenser 501 includes a housing 502. A retainer 504 extends outward from housing 502. Retainer 504 holds container 100 securely in place. Dispenser 501 includes an actuator 510. Container 100 has a pump 522 secured to its neck 106 by a closure 520. Downward pressure on actuator 510 causes pump 522 to compress and dispense a dose of fluid. Removing the downward pressure causes actuator 510 to move upward. Upward movement of actuator 550 may be accomplished by a spring or by the resilient nature of pump 522.

[0040] Container 100 and pump 522 may be referred to as a refill unit 550. A refill unit 550 is often shipped to consumers for installation into dispensers. Optionally, container 100 may be sealed with a cap (not shown) and a user has a pump that may be connected to the container to form the refill unit. The refill unit 550 is filled with a liquid soap or sanitizer and a pump 522 is secured to the neck 106. The pump 522 seals the container 100 from the outside atmosphere. After installation of the refill unit 550 into dispenser 501, a user applies a rotational force to grip member 140 to create an opening 200 or rupture 300 to form a vent in container 100. Accordingly, as liquid is pumped out of container 100, atmospheric air can enter container 100 through the vent to prevent vacuum pressure from building up in the container.

[0041] Figure 6 is a side view of another exemplary container 600 for holding soap or sanitizer shown in a shipping orientation. Figure 7 is bottom view of the exemplary container 600.

[0042] Container 600 includes a first surface 604. In the shipping orientation, the neck 606 of the container is located at the top of container 600.

[0043] Container 600 has a body 602. In this instance, body 602 is cylindrical. Body 602 may have other cross-sectional shapes, such as substantially rectangular, substantially oval, substantially square and the like. Body 602 includes a recessed portion 650. Recessed portion 650 is configured to receive a retention collar to hold container 600 in a dispenser (not shown). Container 600 includes a grip member 640 and stem 630. Stem 630 is at least partially hollow. Stem 630 includes a wall proximate the inner surface 612 of the base 608. The cylindrical has a thickness, such as those describe above with respect to stem 130A. A portion of grip member 640 may also be hollow. Grip member 640 has an outer surface 641 (in the shipping orientation). Outer surface 641 is located above first surface 610 in the shipping orientation. The height of outer surface 641 with respect to first surface 610 may be the same as described above with respect to the other grip members.

[0044] Figure 8 is a prospective view of a refill unit 800. The refill unit 800 includes container 600 and a pump 652. Pump 652 is secured to the neck 606 of the container 600 by a closure 650. Container 600 is shown in a dispensing orientation.

[0045] Figure 9 is a prospective view of the refill unit 800 in the dispensing orientation with vent opening 900. Vent opening 900 is created by twisting grip member 640 so that stem 630 breaks off and creates an opening that allows air to flow into container 600. As described above, grip member 640 may rupture creating a vent and remain

connected to the container 600. Grip member 640 may also break away from container 600 to form a vent hole. Figure 10 is a plan view of the exemplary container 600 for holding soap or sanitizer in the dispensing position with vent opening 900.

[0046] Figure 11 is a side view of another exemplary container 1100 for holding soap or sanitizer shown in a shipping orientation. Container 1100 includes a first surface 1104. A neck 1106 extends outward (or upward) from first surface 1104. Container 1100 includes body 1102. In this instance body 1102 is substantially rectangular. Container 1100 includes a grip member 1140 and stem 1130 which extend from inner surface 1112 of base 1108. The grip member 1140 and stem 1130 are similar to the grip members and stems described above. Base 1108 also includes an outer surface 1110. Figure 12 is bottom view of the exemplary container 1100 for holding soap or sanitizer. Container 1100 is filled with soap or sanitizer through neck 1106. A pump (not shown) is secured to the neck 1106 to form a refill unit (not shown). The refill unit is then inverted so that the neck 1106 is below the container body 1102 and the refill unit is installed in a dispenser (not shown). After the refill unit is installed in the dispenser, a user twists grip member 1140. The rotational force causes a rupture, e.g. rupture 300 in the stem, and/or causes grip member 130 and/or stem 1130 to break away from container 1100 creating a vent opening, e.g. vent opening 200. Grip member 1140 may be removed from container 1100, or retained on container 1100.

[0047] Figure 13 is an exemplary methodology 1300 for loading a dispenser and venting a soap or sanitizer container. The exemplary methodology begins at block 1302. At block 1304 a refill unit or container is obtained. A refill unit includes a container of soap or sanitizer and a pump. The refill unit may be shipped as an assembled unit. Optionally, a container having a cap secured to its neck may be shipped to the installer. In such instances, the installer removes the cap and installs a pump. The pump may be shipped separately form the container, or a pump from a prior refill unit may be reused. The container includes a grip member and a stem. The user installs the refill unit in a dispenser at block 1306. At block 1308, the user twists the grip member to create a vent opening. The vent opening may be created by a rupture in the stem, grip member, or container, and/or may be created in the container by removing the grip member/stem. The methodology ends at block 1310.

[0048] The methodology may include providing instructions for the amount of rotation to be applied to the grip member. In some instances, the instructions may be to rotate the grip member 140 between 10 degrees and 180 degrees causes the stem 130 to rupture and remain connected to container 100. In some instances, the instructions may be to rotate the grip member 140 between 20 degrees and 170 degrees causes the stem 130 to rupture and remain connected to container 100. In some instances, the instructions may be to rotate the grip member 140 between 30 degrees and 160 degrees causes the stem 130 to rupture and remain connected to container 100. In some instances, the instructions may be to rotate the grip member 140 between 40 degrees and 140 degrees causes the stem 130 to rupture and remain connected to container 100. In some instances, the instructions may be to rotate the grip member 140 between 50 degrees and 130 degrees causes the stem 130 to rupture and remain connected to container 100. In some instances, the instructions may be to rotate the grip member 140 between 60 degrees and 120 degrees causes the stem 130 to rupture and remain connected to container 100. In some instances, the instructions may be to rotate the grip member 140 between 70 degrees and 110 degrees causes the stem 130 to rupture and remain connected to container 100. In some instances, the instructions may be to rotate the grip member 140 between 80 degrees and 100 degrees causes the stem 130 to rupture and remain connected to container 100. Optionally, the instructions may be to rotate the grip member until it breaks away from the container.

[0049] While various inventive aspects, concepts and features of the inventions may be described and illustrated herein as embodied in combination in the exemplary embodiments, these various aspects, concepts and features may be used in many alternative embodiments, either individually or in various combinations and sub-combinations thereof. It is not the intention of the applicant to restrict or in any way limit the scope of the appended claims to such detail. Unless expressly excluded herein, all such combinations and sub-combinations are intended to be within the scope of the present inventions. Still further, while various alternative embodiments as to the various aspects, concepts and features of the inventions -- such as alternative materials, structures, configurations, methods, circuits, devices and components, software, hardware, control logic, alternatives as to form, fit and function, and so on -- may be described herein, such descriptions are not intended to be a complete or exhaustive list of available alternative embodiments, whether presently known or later developed. Those skilled in the art may readily adopt one or more of the inventive aspects, concepts or features into additional embodiments and uses within the scope of the present inventions even if such embodiments are not expressly disclosed herein. Additionally, even though some features, concepts or aspects of the inventions may be described herein as being a preferred arrangement or method, such description is not intended to suggest that such feature is required or necessary unless expressly so stated. Still further, exemplary or representative values and ranges may be included to assist in understanding the present disclosure; however, such values and ranges are not to be construed in a limiting sense and are intended to be critical values or ranges only if so expressly stated. Moreover, while various aspects, features and concepts may be expressly identified herein as being inventive or forming part of an invention, such identification is not intended to be exclu-

sive, but rather there may be inventive aspects, concepts and features that are fully described herein without being expressly identified as such or as part of a specific invention. Descriptions of exemplary methods or processes are not limited to inclusion of all steps as being required in all cases, nor is the order in which the steps are presented to be construed as required or necessary unless expressly so stated.

Claims

1. A container for holding soap or sanitizer comprising:

a body;
a neck located on a first end of the body;
a base located on a second end of the body;
the base having an outer surface and an inner surface;
a stem extending outward from the inner surface;
a grip member extending about the stem;
wherein the stem is configured such that applying a rotational force to the grip member causes at least one of the stem, the grip member and the at least a portion of the inner surface to rupture;
wherein the rupture creates a vent opening to the atmosphere.

2. The container of claim 1 wherein at least a portion of the stem is hollow.

3. The container of claim 2 wherein a wall of the hollow portion of the stem is less than 1.20 mm in thickness.

4. The container of claim 2 wherein a wall of the hollow portion of the stem is between 0.8 and 1.0 mm in thickness.

5. The container of claim 2 wherein the stem comprises a tapered portion proximate the inner surface.

6. The container of claim 1 wherein the grip member comprises a pair of wings extending outward from the stem.

7. The container of claim 2 wherein the outer surface extends further outward then the grip member.

8. The container of claim 1 further comprising a pump connected to the neck.

9. The container of claim 1 wherein at least a portion of the stem is tapered.

10. The container of claim 1 wherein the inner surface extends across a width of the container.

11. The container of claim 1 wherein the inner surface extends across the width of the container divides the outer surface in two.

12. A method of venting a soap or sanitizer refill unit comprising:

providing a refill unit comprising a soap or sanitizer container and a pump;
the soap or sanitizer container comprising:

a neck located on a first side;
wherein the pump is connected to the neck;
a base located on a second side that is opposite the first side;
a stem extending outward from at least a portion of the base;
a grip member extending outward from the stem;

installing the refill unit into a dispenser, wherein the neck and pump are located below the base; and
griping the grip member and twisting the grip member thereby creating a hole in the base of the container.

13. The method of claim 12 further comprising instructions to twist the grip member less than one full turn.

14. The method of claim 12 further comprising instructions to twist the grip member more than one full turn.

15. The method of claim 12 wherein providing the refill unit comprises removing a cap from the neck of the container and installing a pump.

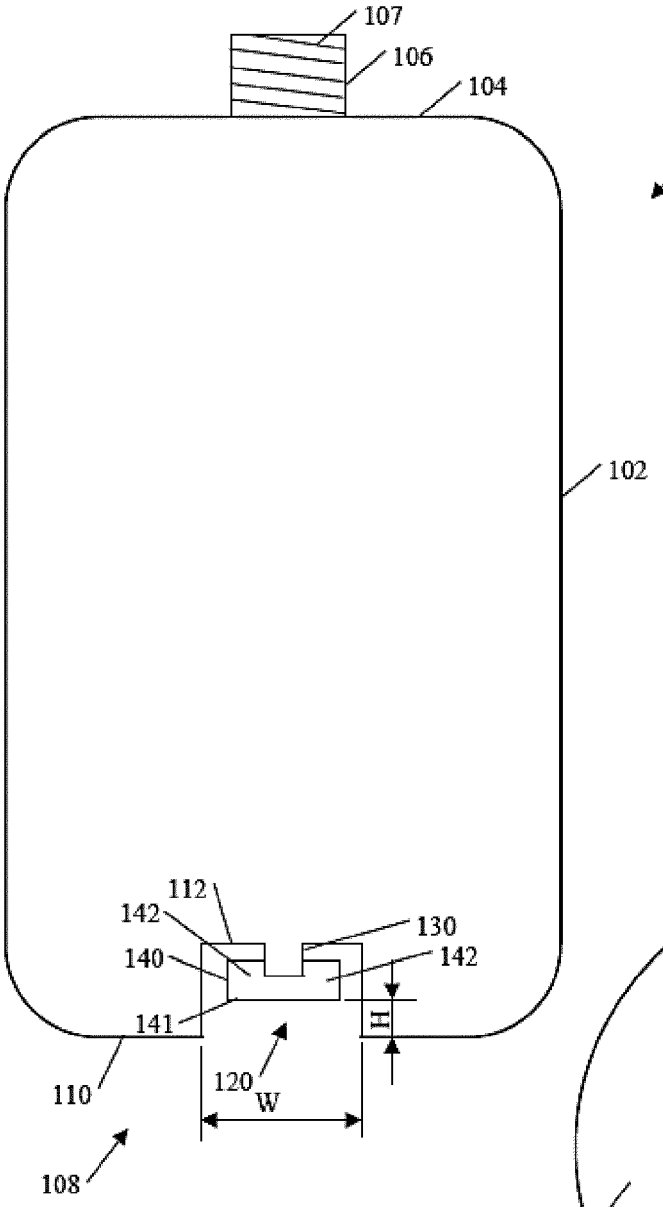

FIG. 1

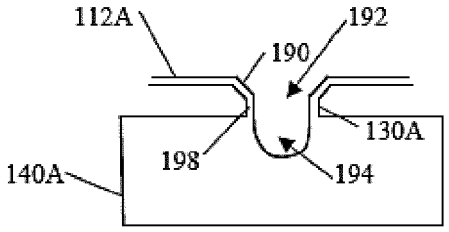

FIG. 1A

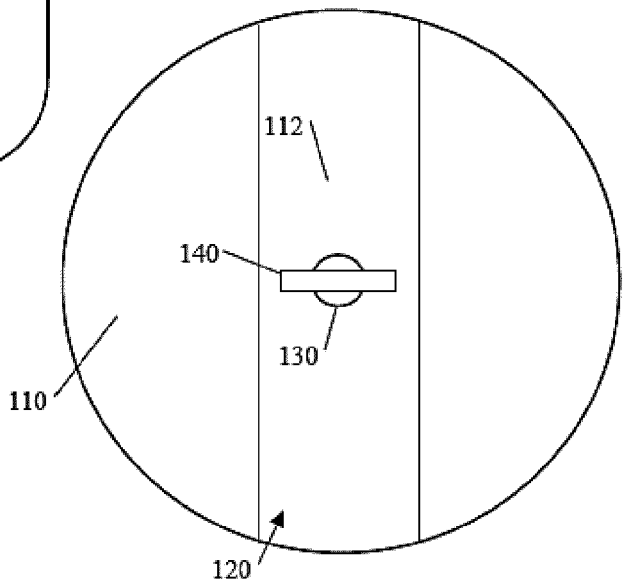

FIG. 2

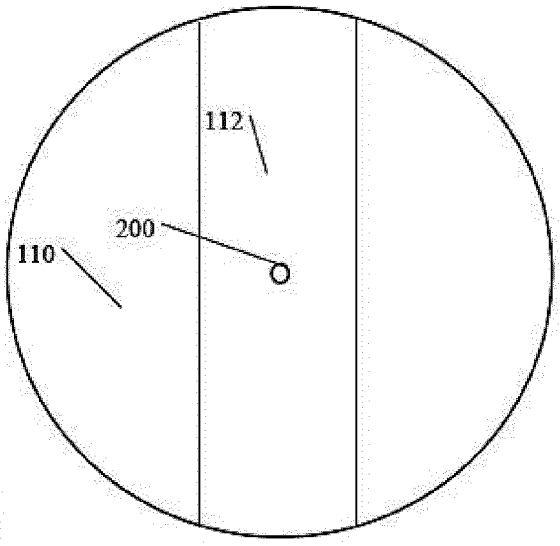

FIG. 4

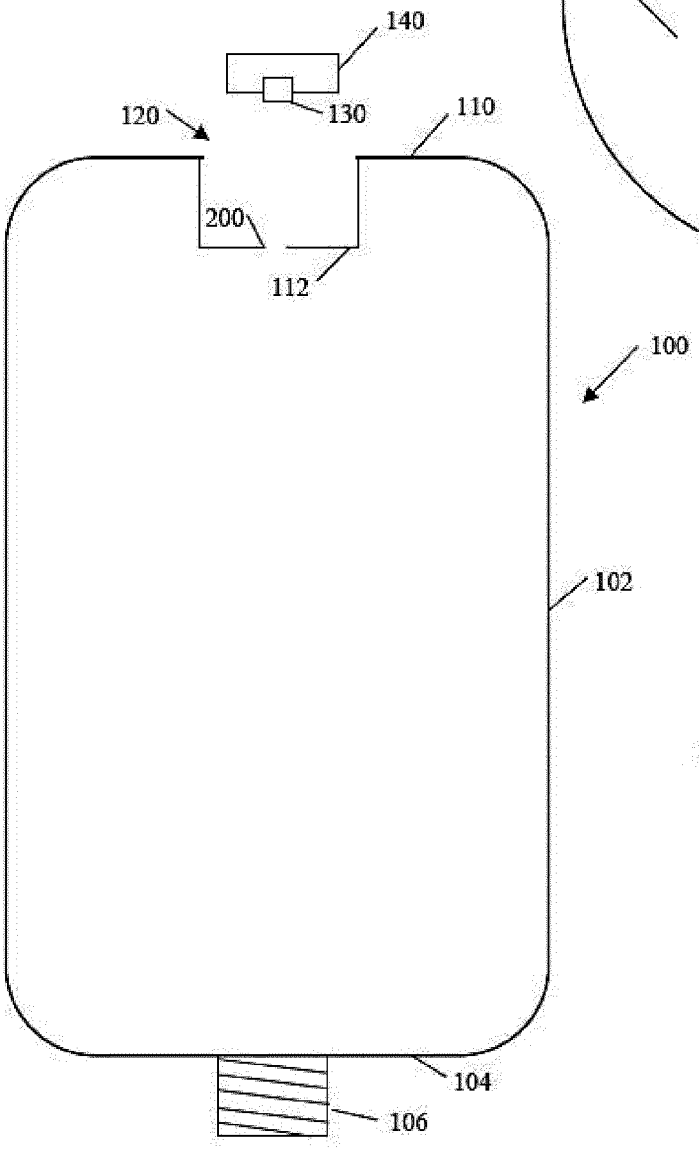

FIG. 3

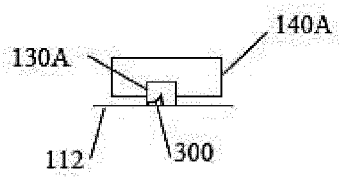

FIG. 3A

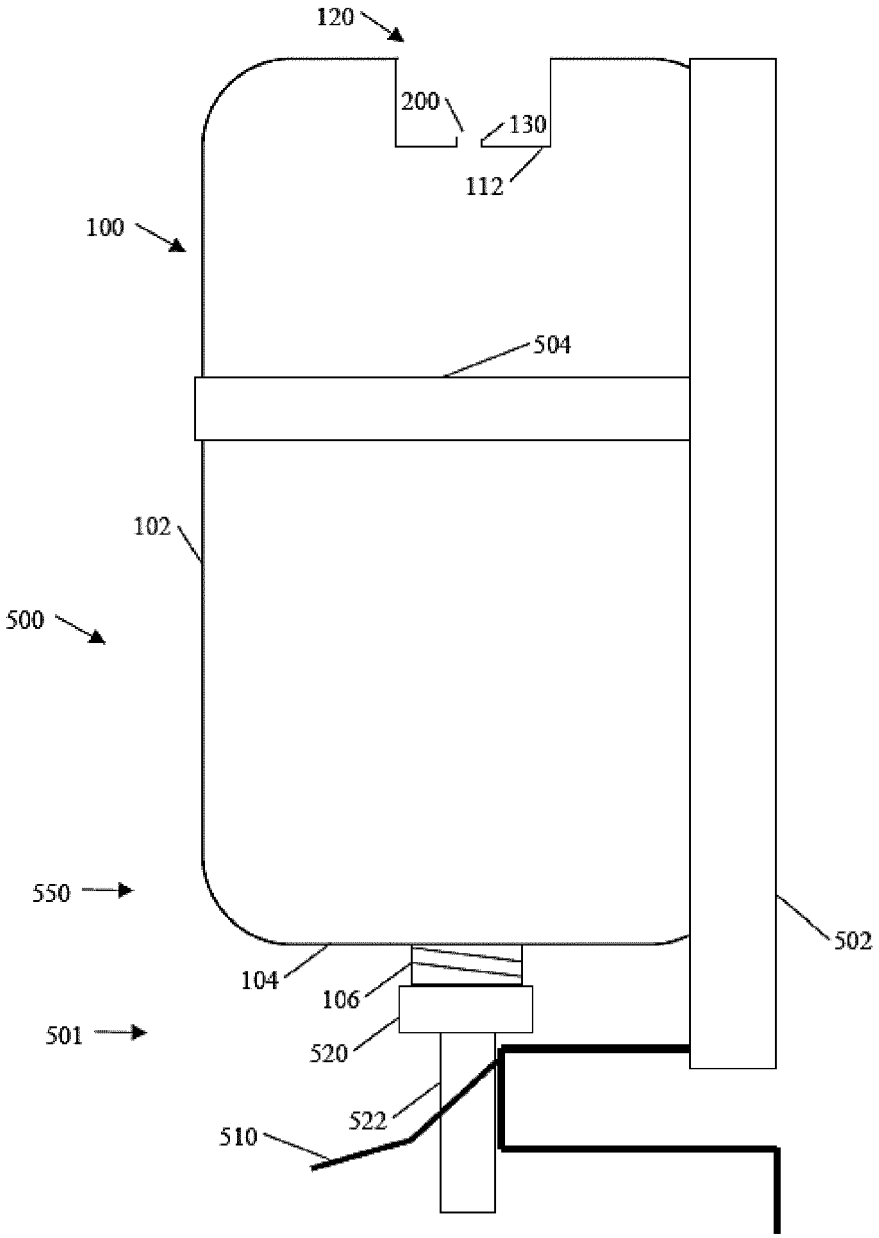

FIG. 5

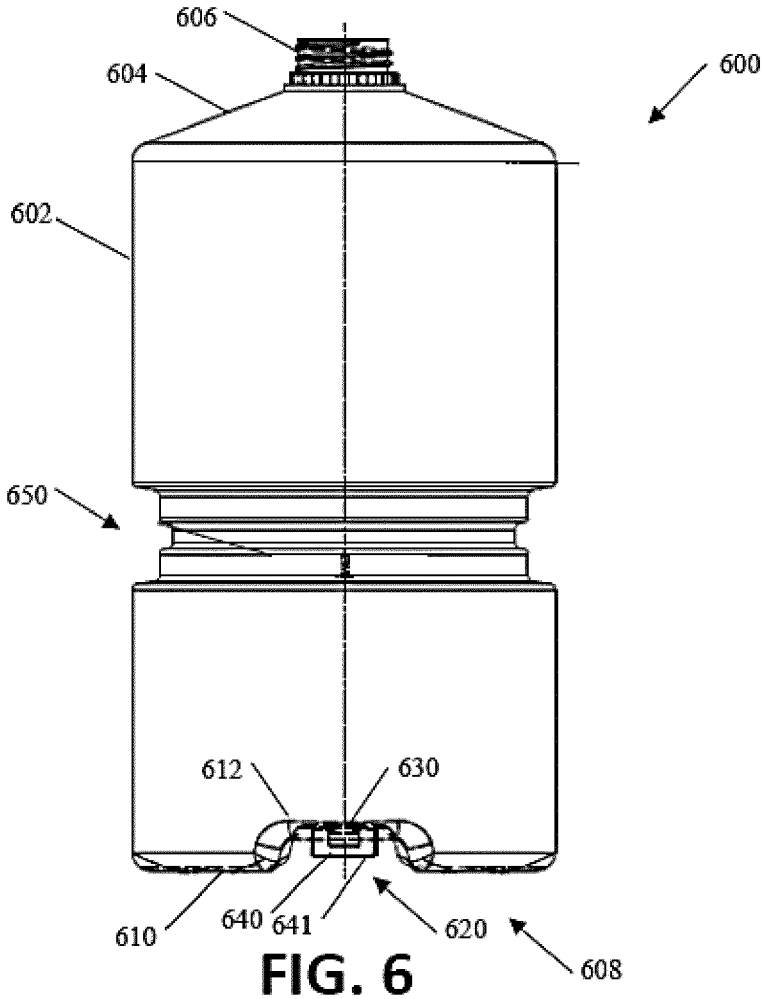

FIG. 6

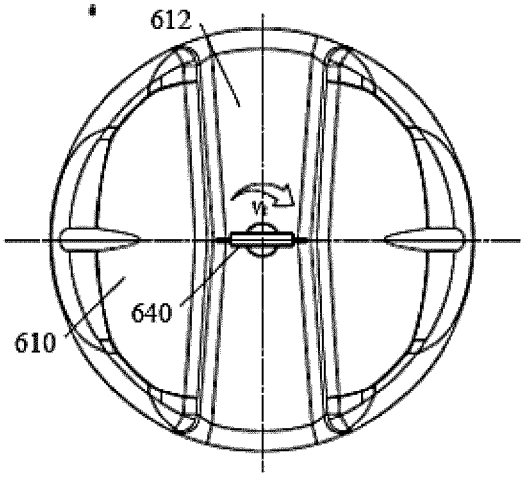

FIG. 7

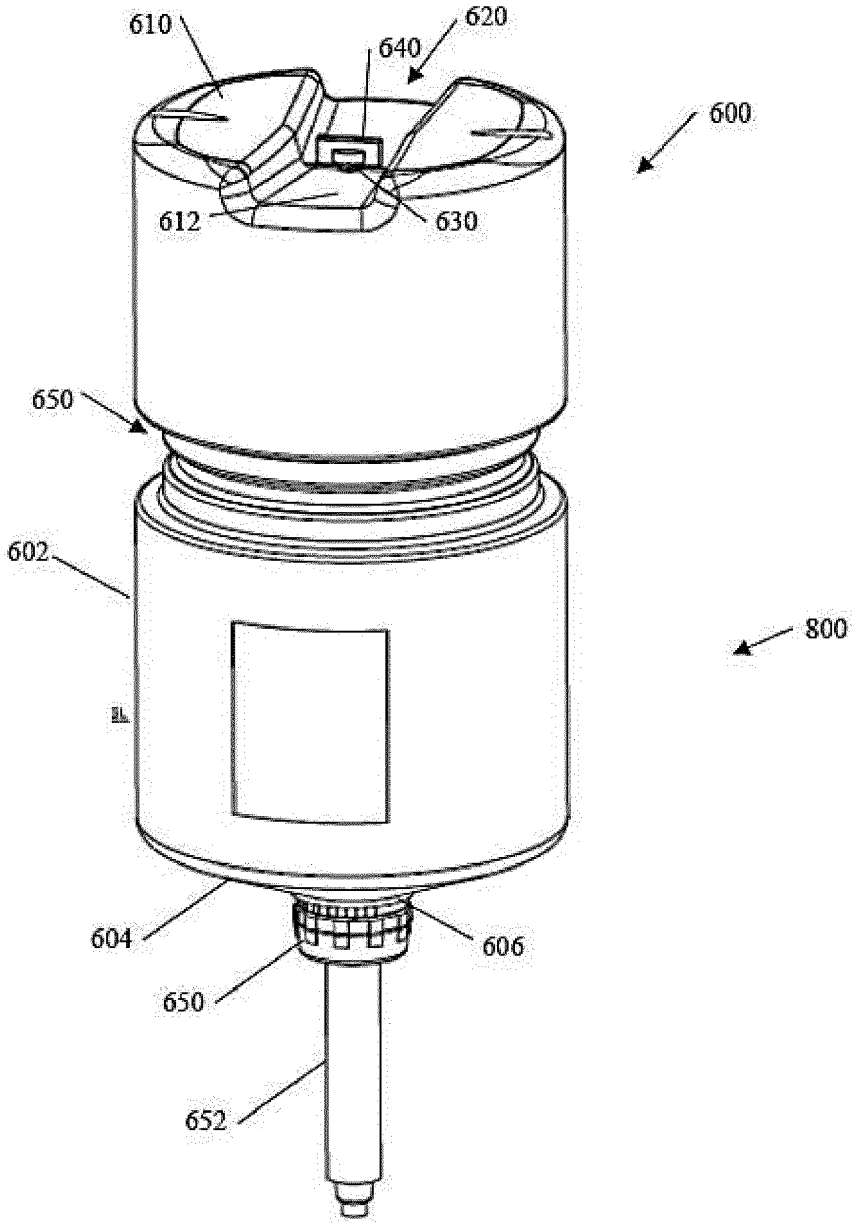

FIG. 8

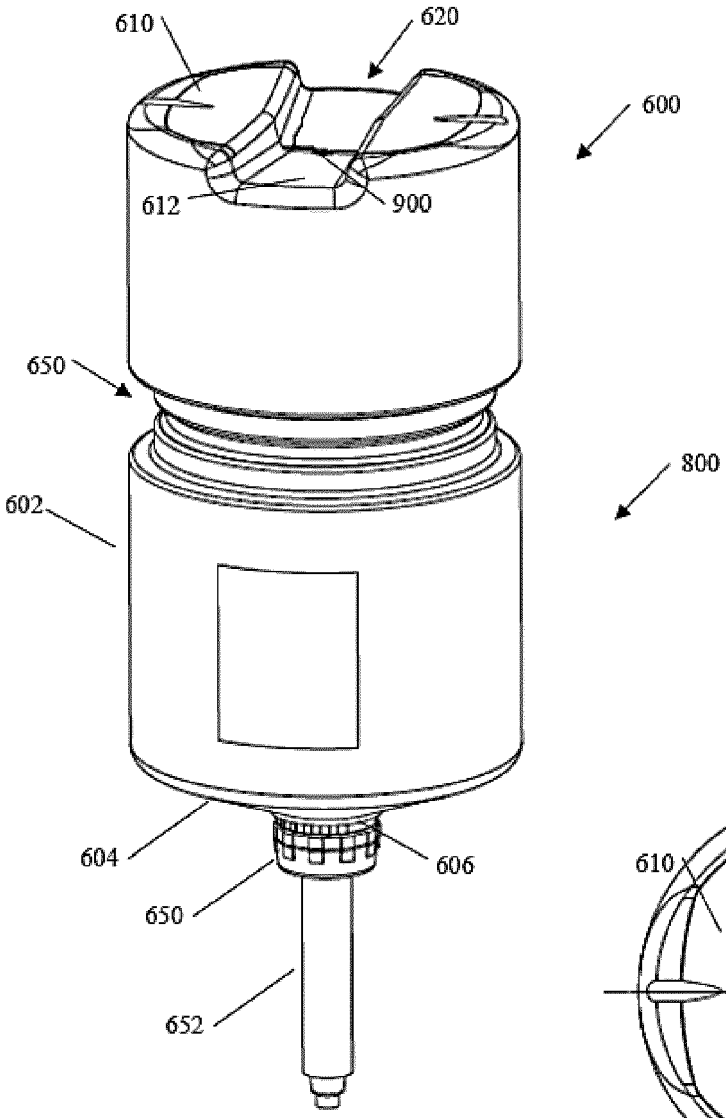

FIG. 9

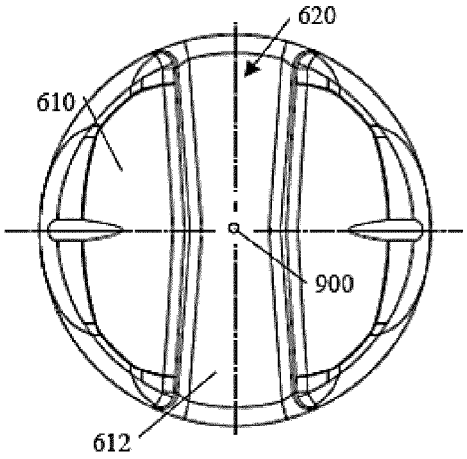

FIG.10

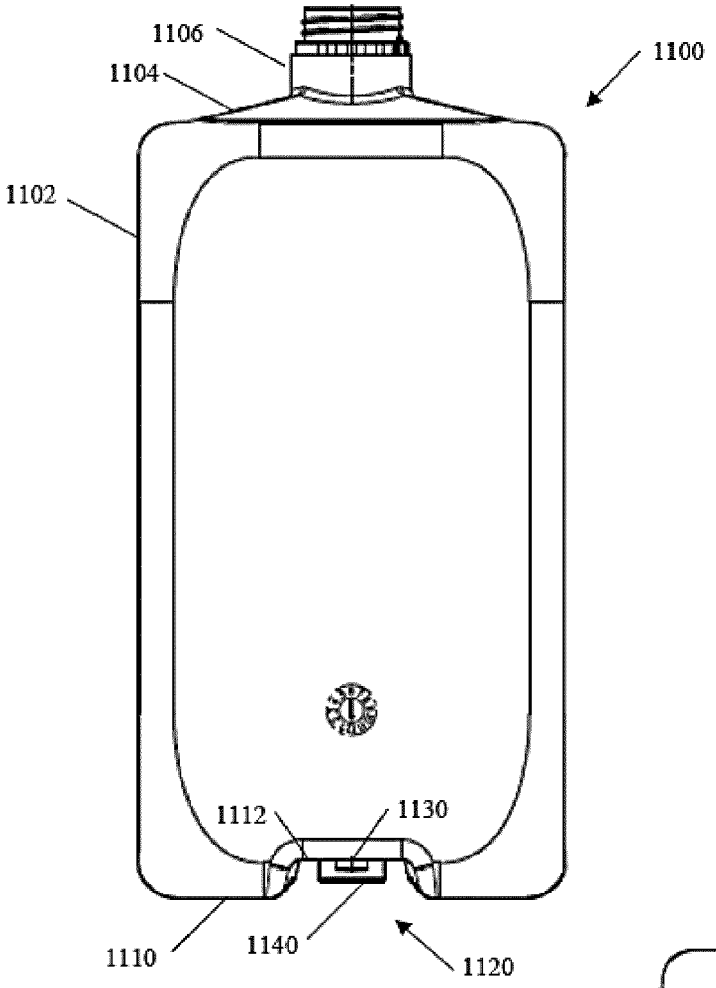
1106
1104
1100
1102
1112
1130
1110
1140
1120

FIG. 11

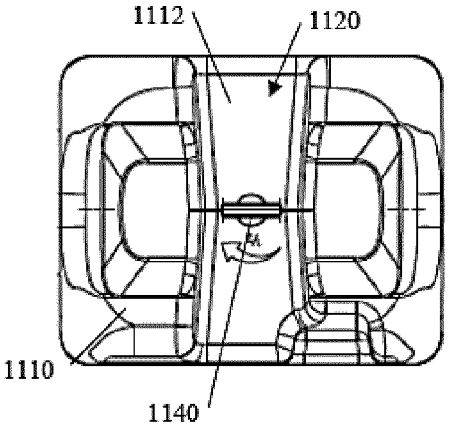
1112
1120
1110
1140

FIG. 12

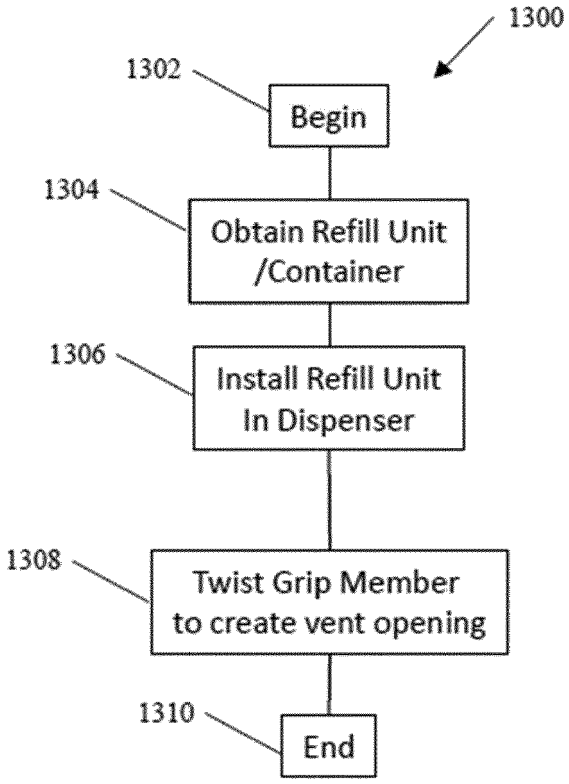
1300
1302
Begin
1304
Obtain Refill Unit /Container
1306
Install Refill Unit In Dispenser
1308
Twist Grip Member to create vent opening
1310
End

FIG.13

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EUROPEAN SEARCH REPORT

Application Number
EP 23 30 5460

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B65D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	18 September 2023	Jervelund, Niels

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