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(54) **COFFEE CUP LID**

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(57) **ABSTRACT**

(21) Appl. No.: **12/259,238**

(22) Filed: **Oct. 27, 2008**

**Related U.S. Application Data**

(63) Continuation-in-part of application No. 12/130,971, filed on May 30, 2008.

A lid for a cup for reducing or preventing spills. The lid includes a top wall for covering the cup and a rim for securing the lid to the cup and providing a seal around the lip of the cup. A spout in the lid enables drinking without removal of the lid. Generally, the spout is raised above the top wall of the lid, and includes at least one sunken portion with a hole in a side of the sunken portion such that a beverage in the cup can enter the sunken portion through the hole.

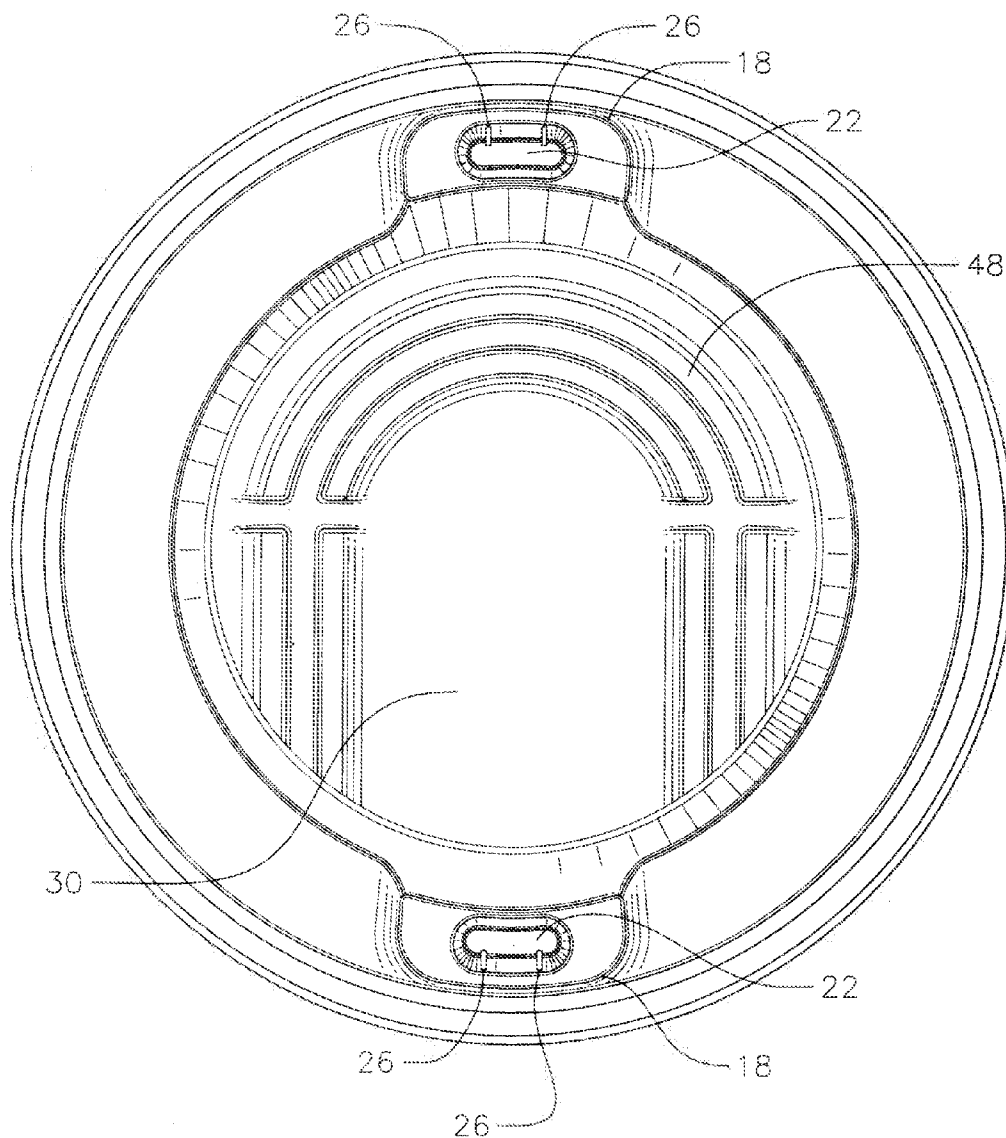


FIG. 1

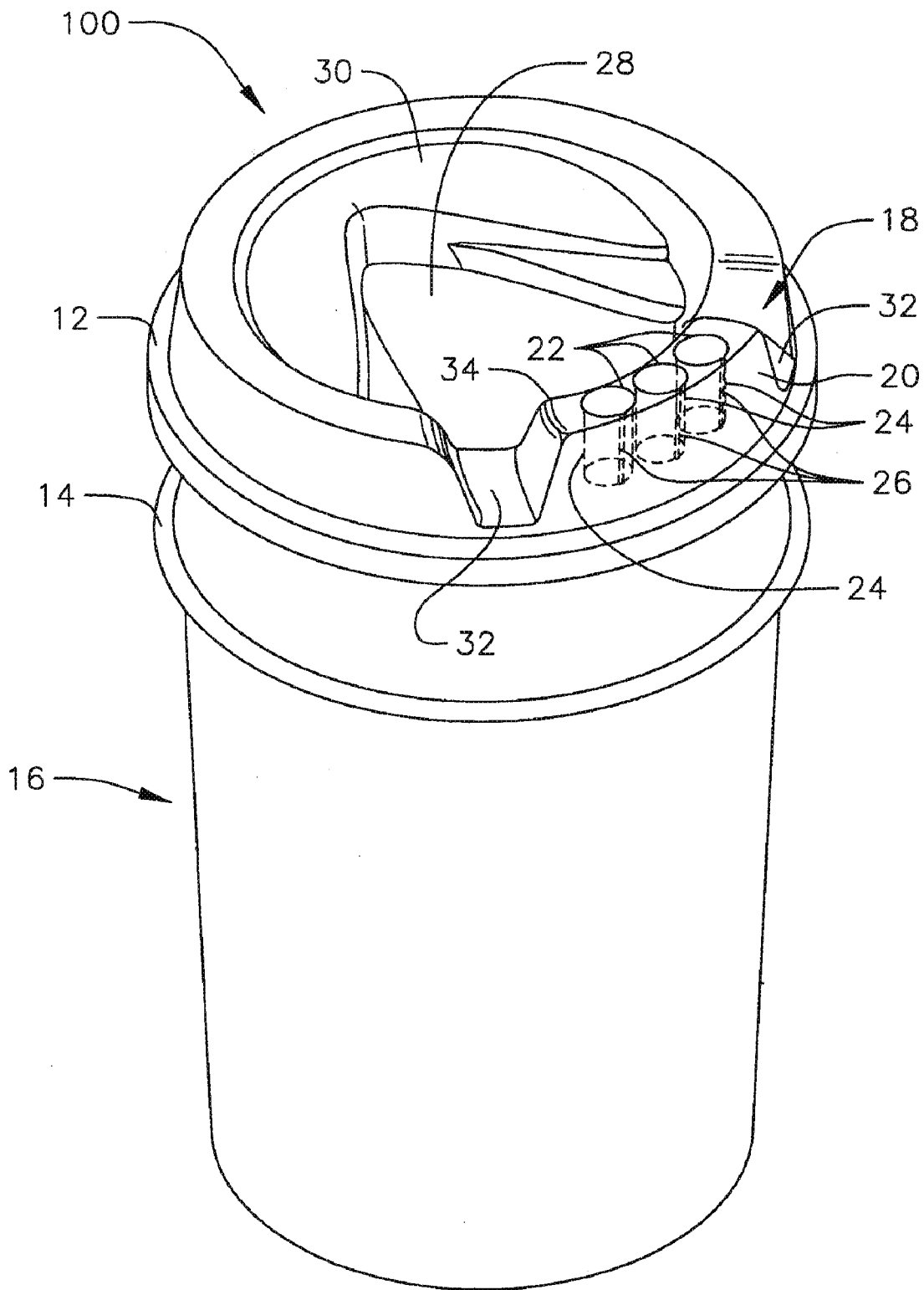


FIG. 2

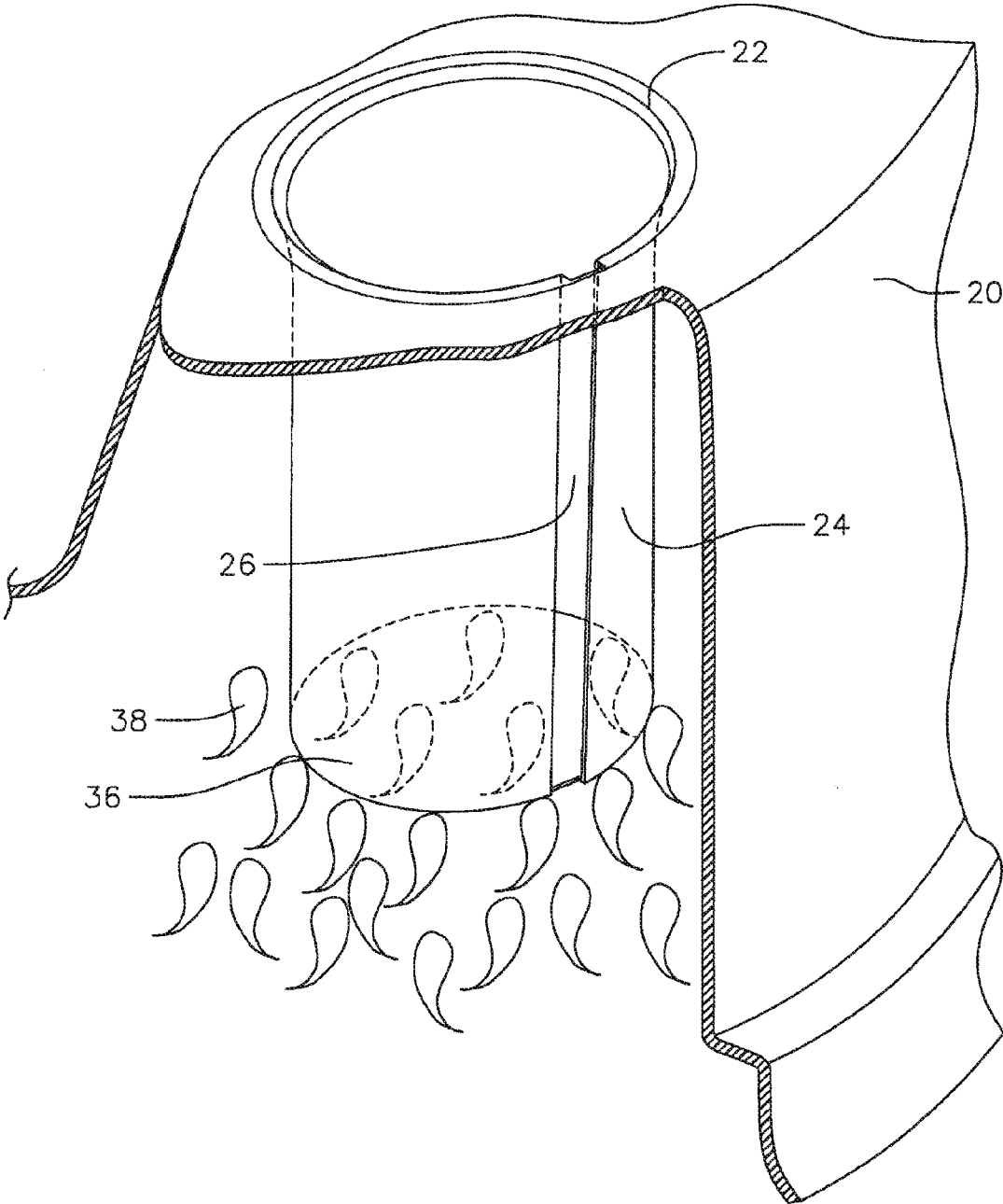


FIG. 3A

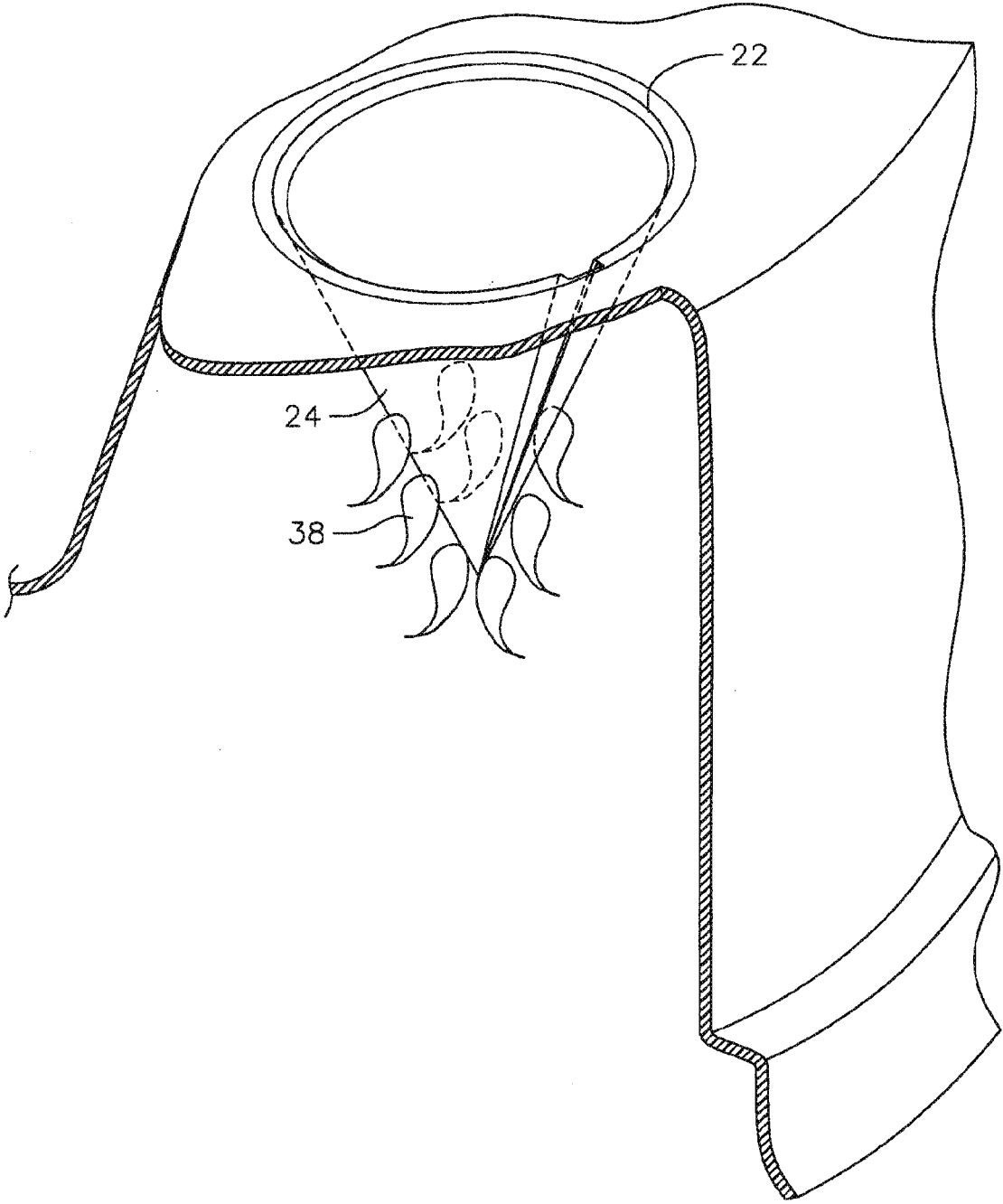
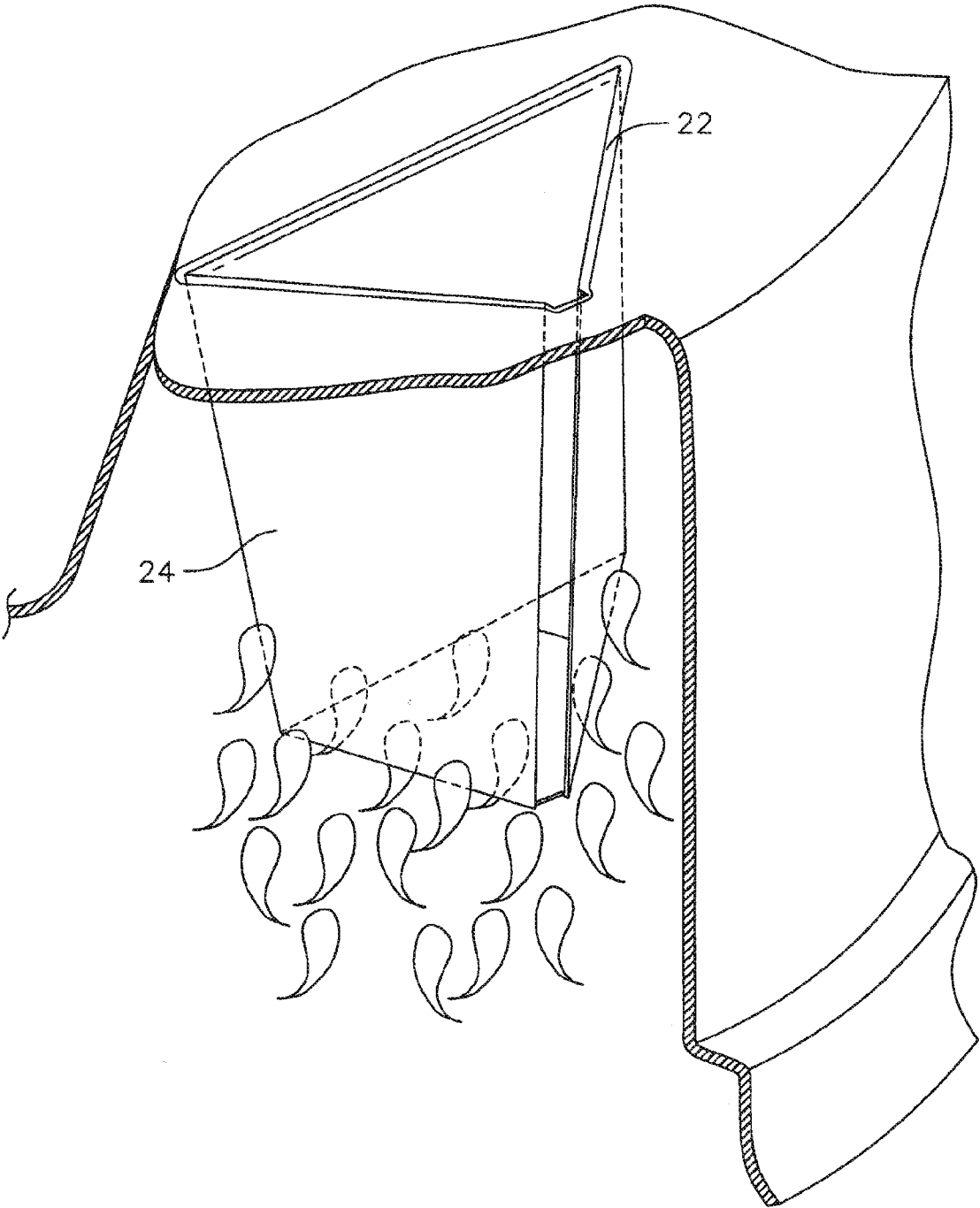


FIG. 3B



*FIG. 3C*

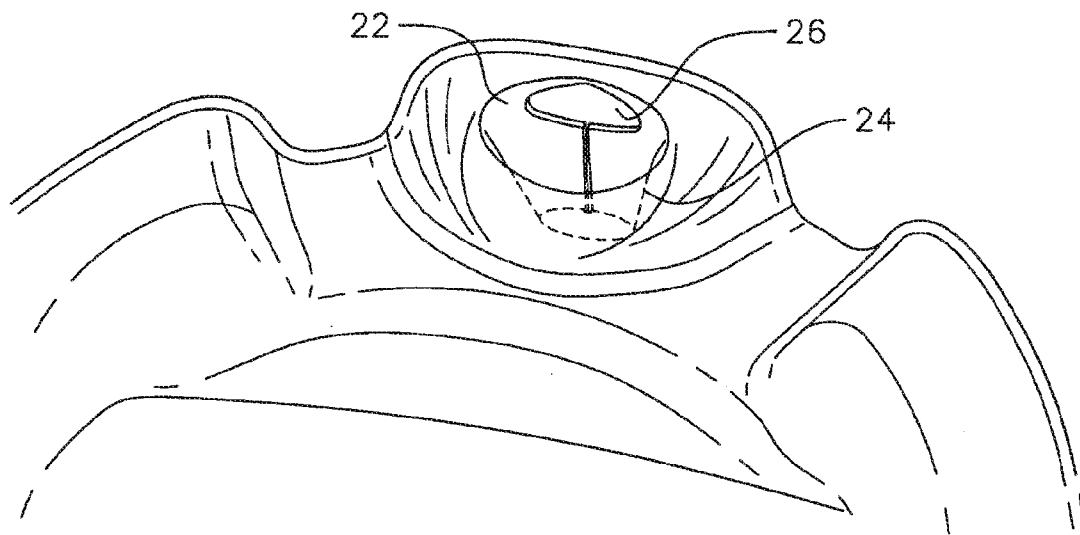
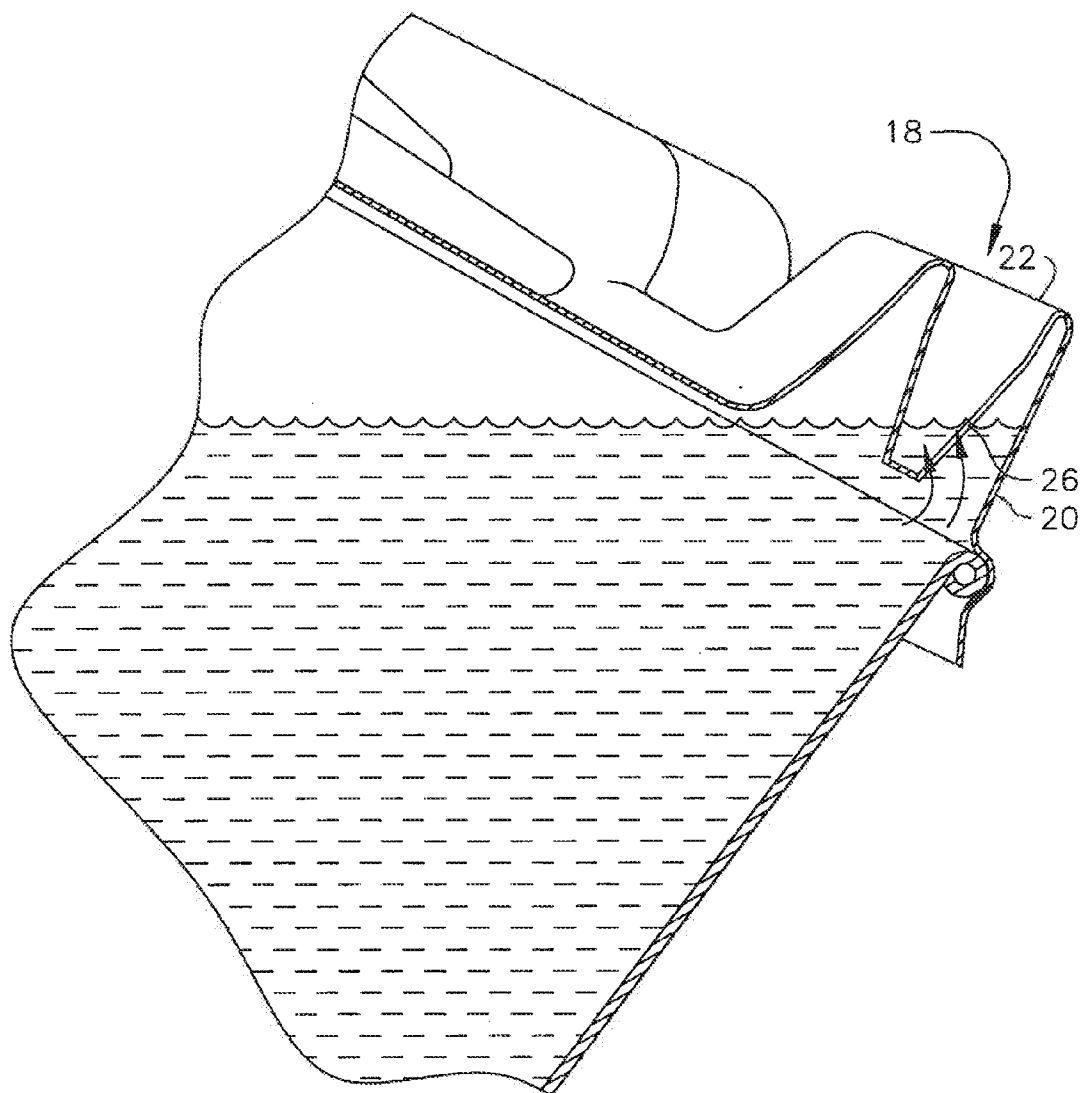
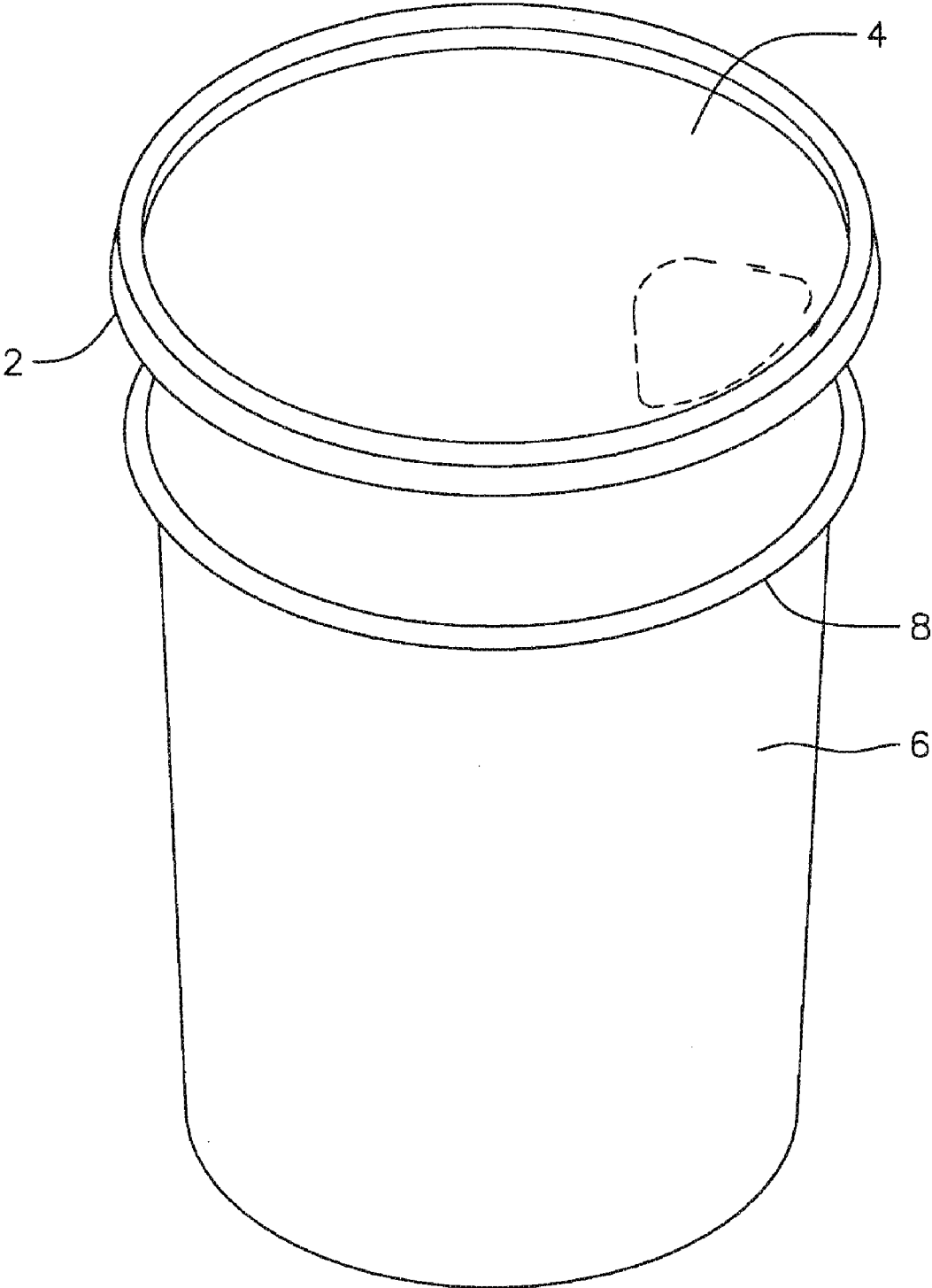


FIG. 4



*FIG. 5*  
PRIOR ART





*FIG. 6*  
PRIOR ART

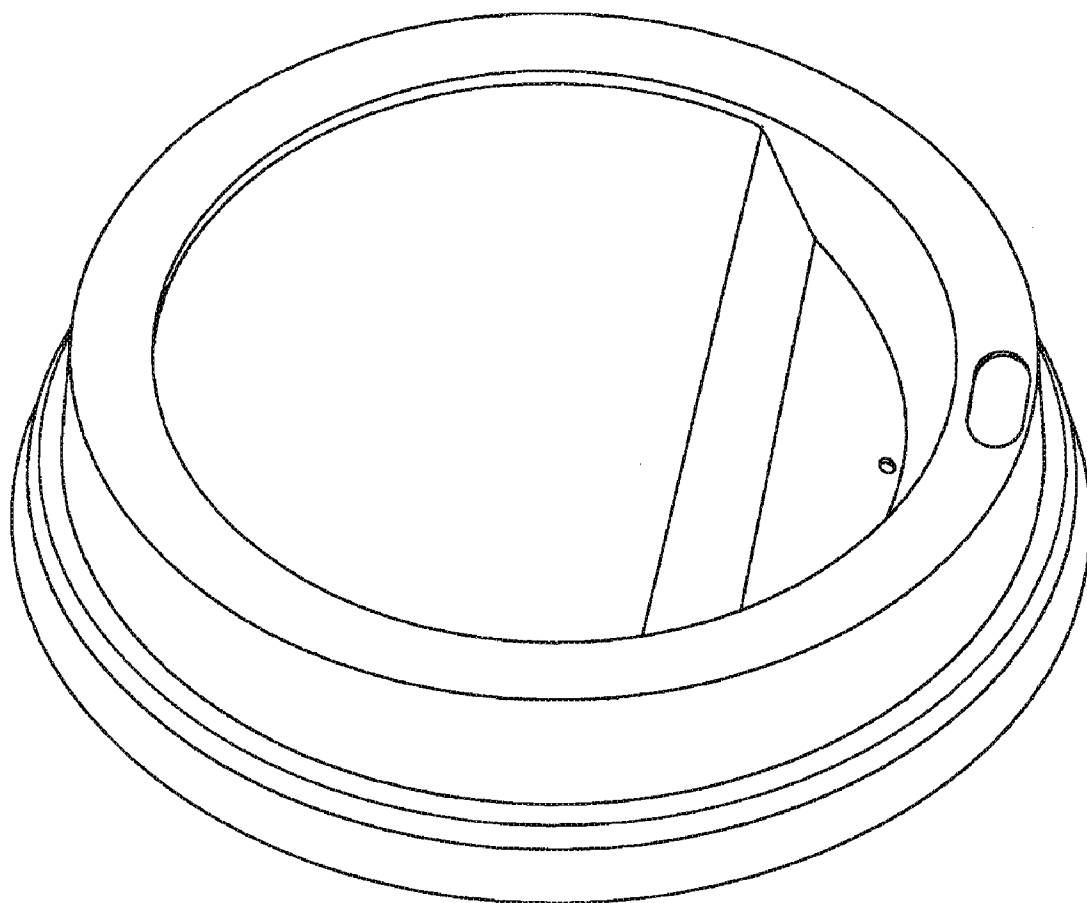


FIG. 7A

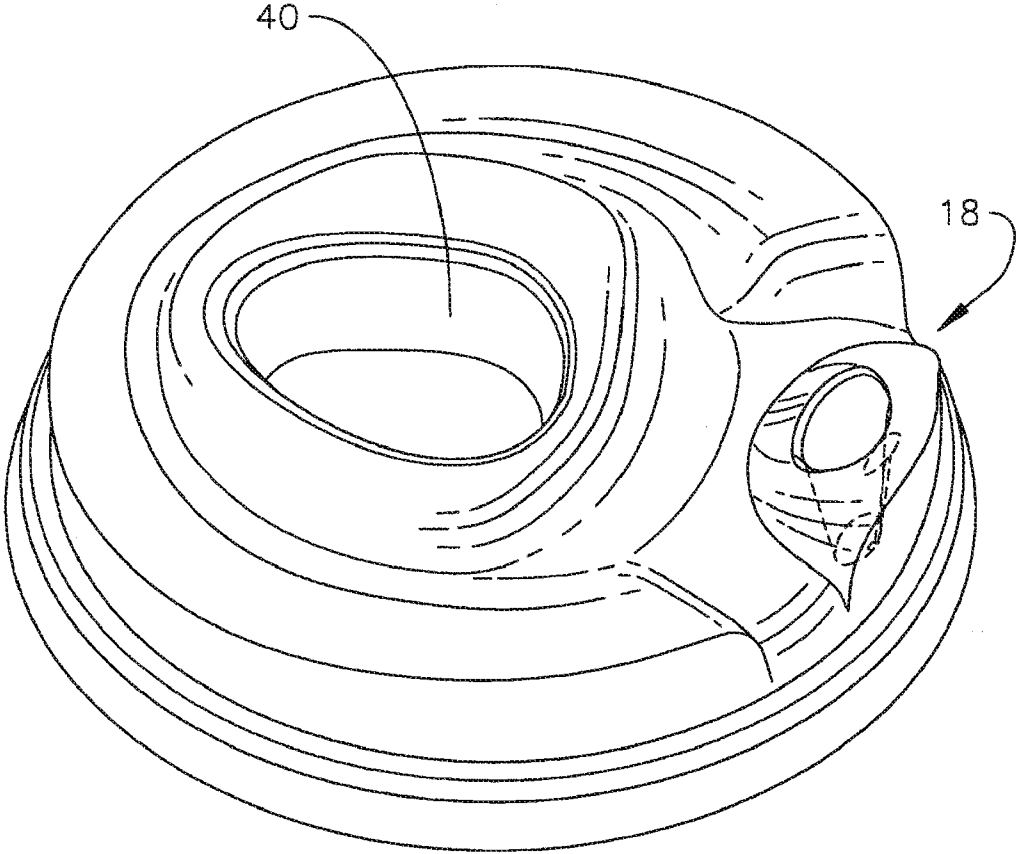
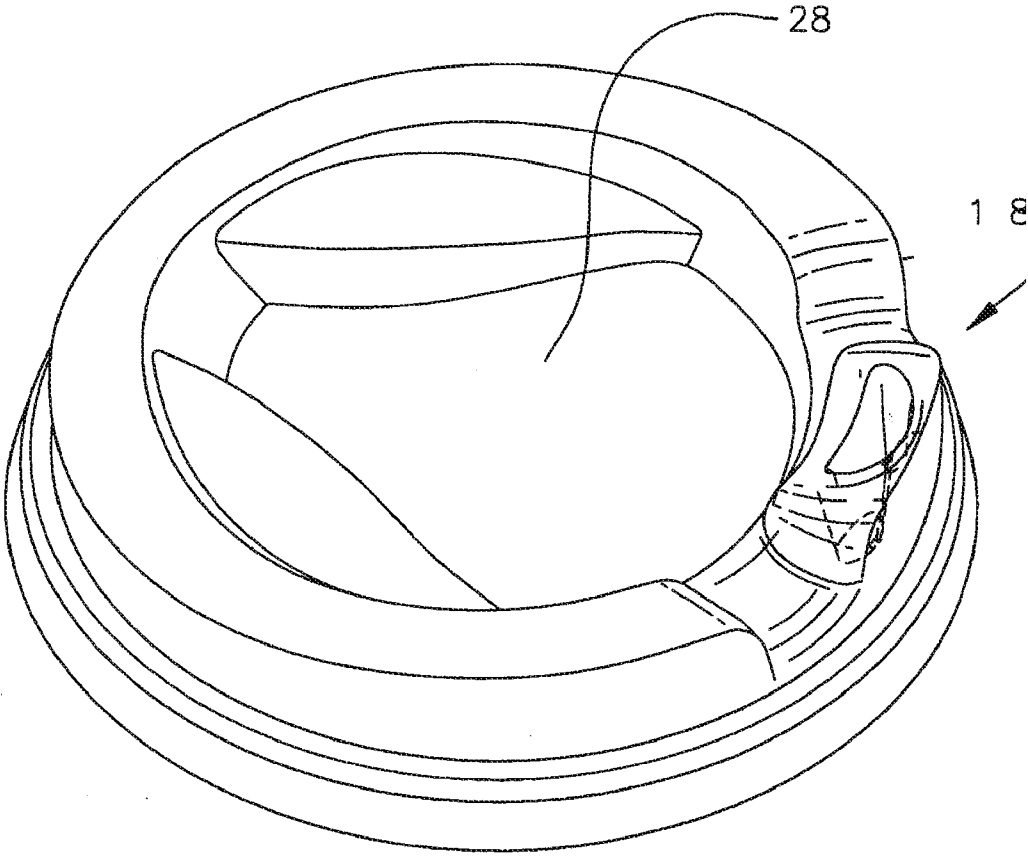


FIG. 7B



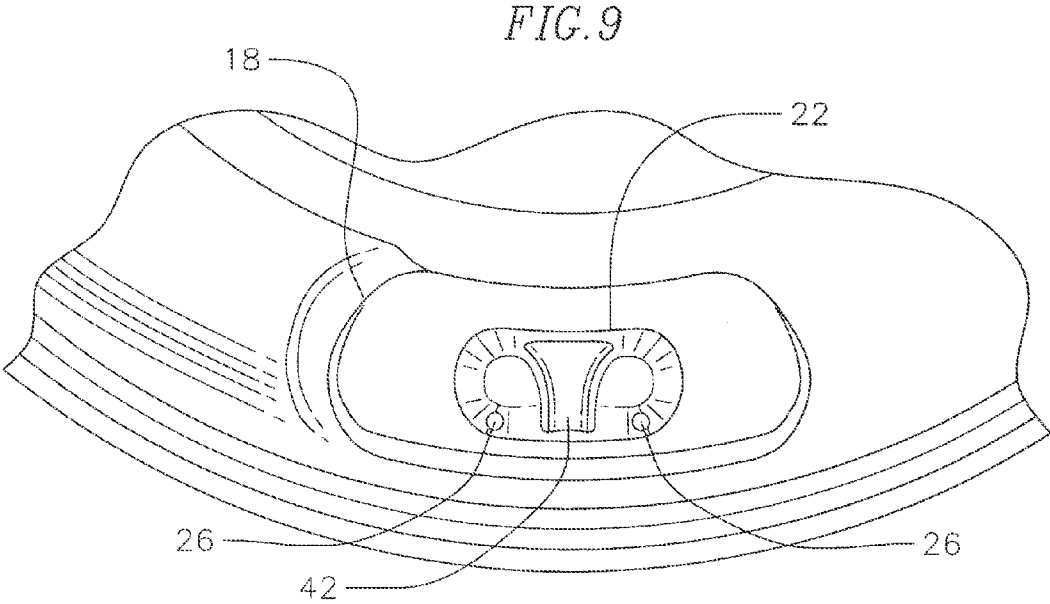
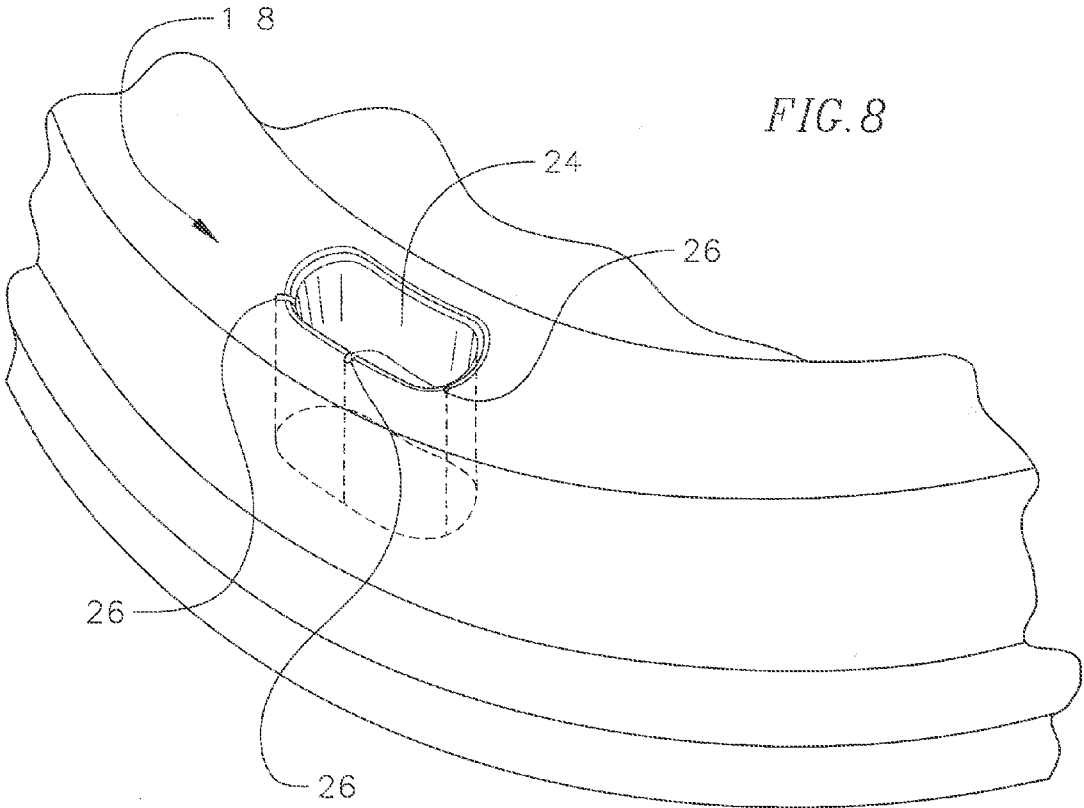


FIG. 10

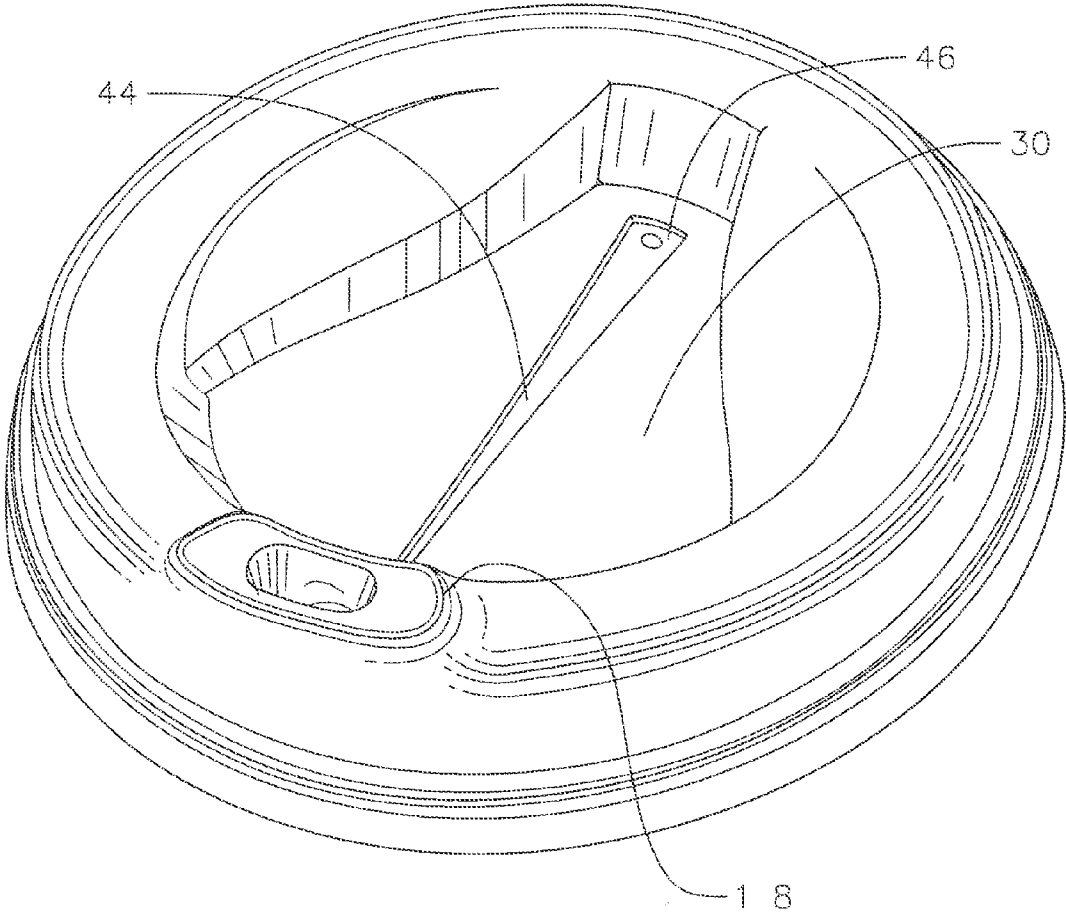
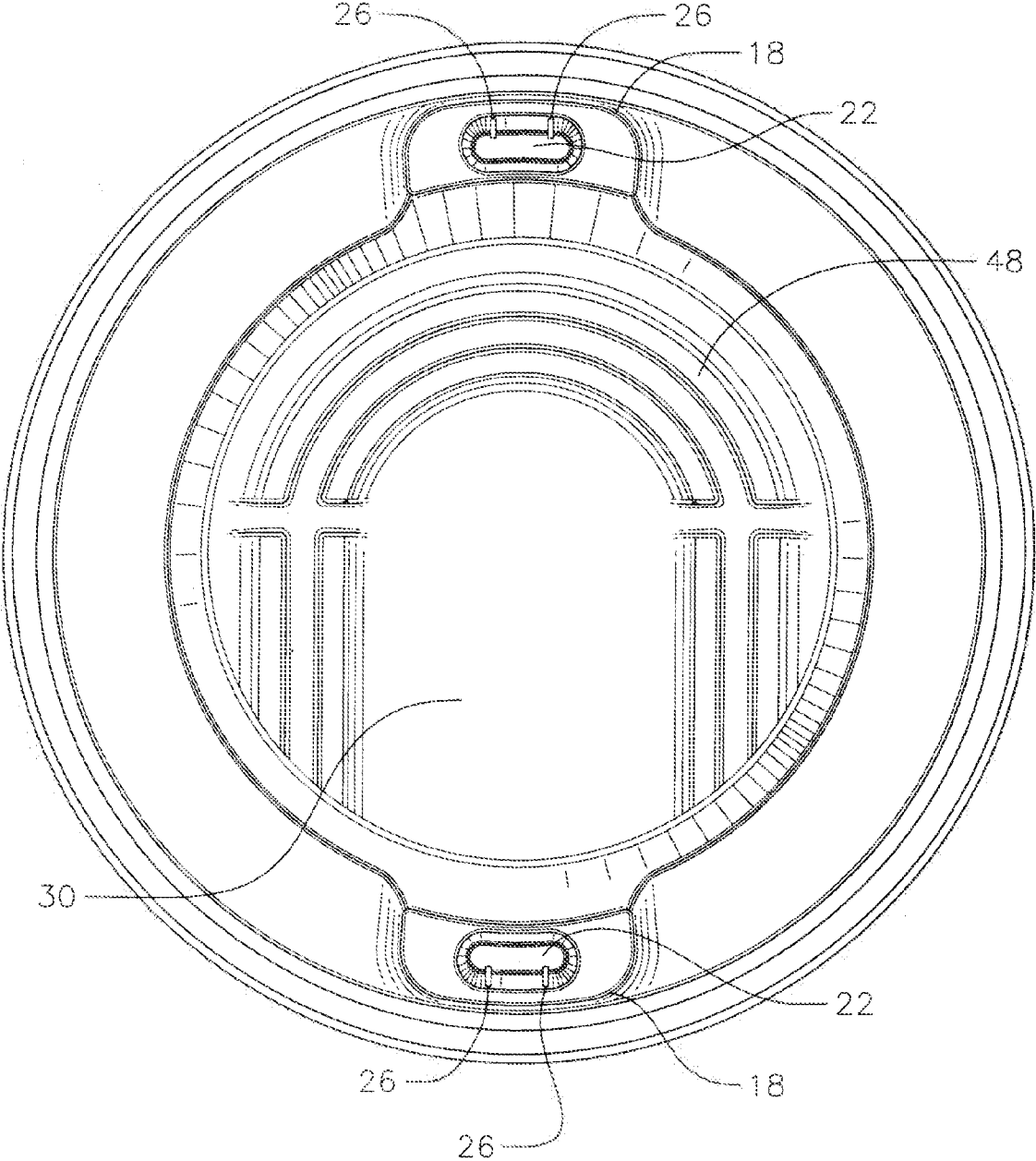


FIG. 11



**COFFEE CUP LID**

**CROSS-REFERENCE TO RELATED APPLICATION(S)**

**[0001]** This application is a continuation-in-part claiming priority to and the benefit of copending nonprovisional patent application Ser. No. 12/130,971, titled "Coffee Cup Lid," filed in the United States Patent and Trademark Office on May 30, 2008, the entire content of which is incorporated herein by reference.

**BACKGROUND OF THE INVENTION**

**[0002]** (1) Field of the Invention

**[0003]** This invention relates generally to lids for use with cups capable of reducing spills, and more particularly, inexpensive lids capable of reducing spills and allowing increased tilting angles during drinking, with improved comfort for a user.

**[0004]** (2) Description of Related Art

**[0005]** In general, a lid is a movable top or cover for closing an opening in a hollow container. In other cases, such as for pens, lids themselves might be hollow and the objects they cover might fit inside the lids. Lids can be separate parts, removable from the container, or they may be connected to the container with a hinge. When used in connection with a cup for a beverage, a lid improves the portability of the beverage by reducing or preventing spills.

**[0006]** A portable beverage cup including a lid for reducing or preventing spills has two primary modes of operation. First, and importantly, the lid should reduce spills during carrying or transport. Second, for the convenience of the user, drinking the beverage should be possible without removing the lid, and spills should be reduced or prevented during drinking. Additional concerns include the cost of manufacturing and shipping.

**[0007]** The most basic form of a lid for a cup includes a rim 2 and a top wall 4, as shown in FIG. 5. During the first mode of operation, or transport, the rim 2 should secure the lid to a cup 6, providing a seal around the entire lip 8 of the cup. Thus, when the beverage inside the cup sloshes or splashes as a result of rapid motion, shaking, or vibration of the cup, the beverage generally will impact the top wall 4, ideally returning to the cup without leaking out of the seal between the rim 2 and the lip 8.

**[0008]** To provide for the second mode of operation, a lid should include a spout 10 to allow consumption of the beverage without removing the lid. FIG. 6 illustrates an embodiment of a lid including a spout 10 as disclosed in U.S. Pat. No. 4,589,569, titled "Lid for Drinking Cup" and assigned to the Solo Cup Company. The '569 patent discloses a lid that includes a spout 10, and has a recessed portion in its top wall where a user places his or her upper lip during drinking. The spout disclosed therein is simply a hole or a slot, and thus, when the beverage sloshes about during transport, it clearly may suffer from a noticeable degree of spills out of the spout 10.

**[0009]** Further attempts to reduce spills in a lid for a cup can be found in U.S. Pat. No. 6,220,476 (Waller) and in U.S. Pat. App. No. 2005/0072787 (Morris et al.). However, each of these references suffers from one or more of the following disadvantages: increased cost, limited stackability, and inadequate prevention of spills.

**[0010]** Many lids are made by vacuum forming, a process well-known to those skilled in the art. In vacuum forming, a single sheet of plastic is heated, and placed onto a surface mold. The sheet of plastic is then formed into the shape of the lid by applying a vacuum between the mold and the sheet of plastic. Alternatively, injection molding is used for plastic items such as lids, also well-known in the art. To reduce cost, an end product is completed with a single piece. However, many spill-resistant lids known in the prior art, such as that disclosed in U.S. Pat. No. 6,702,145 (Malcolm), utilize multiple pieces, thus increasing the expense.

**[0011]** Further, close stacking of many lids is generally desired for distribution, storage, and dispensing of the lids. However, in several spill-resistant lids in the prior art, such as that disclosed in U.S. Pat. App. No. 2005/0087539 (Waller), portions that reduce spills may obstruct such close stacking.

**[0012]** For at least the foregoing reasons, there is a need for a lid that can inexpensively reduce spills while still allowing efficient stacking.

**SUMMARY**

**[0013]** To address these and other issues, a lid having features of an exemplary embodiment of the present invention includes a top wall for covering a cup, and a rim for securing the lid to the lip of the cup. The rim further provides a seal around the lip of the cup. A spout on the lid enables drinking from the cup without removing the lid. The spout includes a front surface extending upward relative to the rim for receiving a bottom lip of a person drinking from the cup. At least one opening at a top portion of the spout is where the beverage exits the cup. A flange extends downward from the at least one opening, and includes a hole in its side for allowing the beverage to flow from inside the cup, through the hole, into the flange and out the opening. The flange may have a generally cylindrical shape, or it may have a generally tapered shape. Various embodiments may have a flange with other shapes.

**[0014]** The top wall may further include a recessed portion for receiving a top lip of the person drinking from the cup. A second recessed portion on the top wall can accommodate the nose of the person drinking from the cup when the person tips the cup. Two more recessed portions on either side of the spout may receive the sides of the person's mouth, to further improve the user's comfort and to further reduce spills. The lid may be manufactured out of a thermoplastic material using a vacuum forming process or an injection molding process. The general shape of the lid allows formation such that efficient and compact stacking of a plurality of lids is possible.

**BRIEF DESCRIPTION OF THE DRAWINGS**

**[0015]** The accompanying drawings, together with the specification, illustrate exemplary embodiments of the present invention, and, together with the description, serve to explain the principles of the present invention.

**[0016]** FIG. 1 is an illustration of a lid according to an exemplary embodiment of the present invention;

**[0017]** FIG. 2 is a detail view showing a spout and a flange according to an exemplary embodiment of the present invention;

**[0018]** FIG. 3A-3C are detail views showing a spout and a flange according to alternate embodiments;

[0019] FIG. 4 is a detail view showing the operation of a spout according to an exemplary embodiment of the present invention;

[0020] FIG. 5-6 are illustrations of lids from the prior art;

[0021] FIG. 7A-7B are illustrations of alternate embodiments of the present invention;

[0022] FIG. 8 is a detail view showing a spout having a plurality of slots in a spout opening according to an exemplary embodiment of the present invention;

[0023] FIG. 9 is a detail view showing a spout having a partition separating a slot into two regions according to an exemplary embodiment of the present invention;

[0024] FIG. 10 is an illustration of a lid having a trench and a drain hole according to an exemplary embodiment of the present invention; and

[0025] FIG. 11 is an illustration of a lid having two spouts according to an exemplary embodiment of the present invention.

#### DETAILED DESCRIPTION

[0026] In the following detailed description, only certain exemplary embodiments of the present invention are shown and described, by way of illustration. As those skilled in the art would recognize, the invention may be embodied in many different forms and should not be construed as being limited to the embodiments set forth herein. Like reference numerals designate like elements throughout the specification.

[0027] A lid 100 according to a first exemplary embodiment of the present invention is illustrated in FIG. 1. The lid 100 includes a rim 12 for securing the lid to a lip 14 around a top edge of a cup 16, and providing a seal to reduce or prevent spills. A spout 18 allows consumption of a beverage without removing the lid 100. The spout 18 has a side wall 20 and one or more openings 22 where the beverage exits the combination of lid 100 and cup 16 to allow a user to drink. Each of the openings 22 includes a flange 24 or extending portion that extends downward from the opening 22, with a slot or a hole 26 in the side of the flange that lets the beverage into the opening 22 when the combination of the lid 100 and cup 16 is tipped for drinking.

[0028] According to this first embodiment, the lid 100 further includes a recessed portion 28 in the top wall 30, to accommodate a user's nose, which might otherwise contact the top wall 30 when the combination of the lid 100 and cup 16 was tipped at a large angle. Further, the spout 18 is shaped to generally conform to a user's mouth, including recessed portions 32 and an inside wall 34 for the user's upper lip.

[0029] In combination with the rim 12, the spout 18 of the lid 100 according to the first exemplary embodiment is adapted to allow consumption of the beverage substantially as well as a simple hole would, but to reduce spills of the beverage out of the spout during transport. That is, the spout includes three openings 22 where the beverage exits the cup, but the openings generally do not provide a direct vertical path from the surface of the beverage outside the cup. In alternate embodiments, one, two, or essentially any number of openings could be used.

[0030] FIG. 2 is a detail view illustrating one of the openings in the first embodiment. The openings include a cylindrical shaped flange 24 that extends downward from the round openings 22. The bottom of the cylinders includes a generally flat surface 36, closing off the interior of the cylinder from the beverage in the cup. The top of the cylinders is

open at the openings 22. The cylinders further include a slot or a hole 26 in the side that faces the side wall 20 of the spout.

[0031] In the first embodiment, the bottom surface 36 at the bottom of the opening 22 reduces or prevents spills during transport by directly blocking the path of a splashing beverage 38 out of the cup. According to this embodiment, as a splashing beverage 38 moves toward the opening 22, it is deflected back toward the inside of the cup 16 by the bottom surface 36.

[0032] However, it is not necessary that the flange 24 extending downward from the opening 22 have a flat bottom surface 36. Other embodiments may include concave or convex surfaces. In yet other embodiments, the flange 24 may not be cylindrically shaped, but may taper from the opening 22 downward, ending in a point (as illustrated in FIG. 3A) or a curved bottom. FIG. 3B illustrates another exemplary embodiment with a triangularly shaped opening 22, including a flat bottom surface 36. FIG. 3C illustrates yet another embodiment with an oval shaped opening 22, a tapered flange 24 ending in a curved bottom, and a combination of a slot and a hole 24 for transfer of the beverage from the inside of the cup out the opening 22. It will be understood from these descriptions by one skilled in the art that the flange 24, the opening 22, and the hole 26 may take on essentially any shape, and the invention is not limited to any particular shape.

[0033] Referring again to FIG. 2, the first embodiment illustrates a hole 26 in the side of the flange 24. The hole 26 may be cut into the side facing the side wall 20 of the spout 18, or in alternate embodiments, the hole can be located anywhere along a side of the flange 24. Further, any number of holes can be placed in any number of sides of the flange 24. As illustrated in FIG. 4, positioning a hole 26 toward the side wall 20 assists the beverage to exit the cup with less of a tipping angle than would be required with the hole on another side. Further, when the user stops drinking the beverage, having the hole on the side facing the side wall 20 also facilitates the return of any beverage left within the flange 24 back into the cup.

[0034] During drinking, as the user tips the cup, the beverage flows toward the spout 18. When the beverage enters the spout, it enters the hole 26 in the flange 24, and exits out the opening 22, allowing consumption of the beverage. The top wall 30 of the lid 100 may have an air vent hole 46 essentially anywhere on its surface to allow air to enter the cup to replace the volume of the beverage as it exits the cup during consumption.

[0035] To improve the comfort of the user while drinking the beverage, the lid can be shaped to accommodate the contours of the face. For example, as illustrated in FIG. 1, the spout might include recessed portions 32 on either side of the openings, and further, the top wall may be recessed to form an inside wall 34 for the user's upper lip. In this way, the general form of the spout 18 is raised above the seal, and might be characterized as being similar to a spout in a child's sippy-cup.

[0036] Further, the top wall 30 might include another recessed portion 28 to accommodate the user's nose when the cup is tipped. This recessed portion 28 would allow a greater tipping angle without needing to deflect one's head. The recessed portion 28 might extend from the inside wall 34 to a location where the user's nose might otherwise come into contact with the top wall 30. In another embodiment, as



illustrated in FIG. 7A, a recessed portion 40 might have a convex shape something like the general shape of the tip of a user's nose.

[0037] Various embodiments can be constructed using numerous kinds of plastics, such as thermoplastic, or a biodegradable material. The combination of lid and cup may be disposable, such that they are only intended for a single use. In this case, the lid can be made very thin and constructed of very inexpensive material. Otherwise, the lid may be intended for a repeated use, in which a more durable material may be used.

[0038] The lid may be formed using a process of vacuum forming, injection molding, or any other suitable process. Because processes for manufacturing goods such as lids for cups are well known in the art, a detailed description of these processes will be omitted. One skilled in the art will understand that various embodiments may be manufactured using other processes, and that the invention is generally not limited to any particular method of manufacture.

[0039] In various exemplary embodiments, the lids are shaped in such a way that a plurality of lids can be stacked on top of one another, in such a manner that the top of one lid substantially conforms to the shape of the bottom of a lid stacked on top of it. In this way, two stacked lids can occupy a much smaller volume than twice the volume occupied by a single lid. Therefore large quantities of lids can be shipped or stored using a smaller space, reducing shipping costs.

[0040] As described above, various embodiments of the invention can include a spout having a flange with any number of openings. For example, FIG. 8 illustrates an embodiment including a spout 18 having a flange 24 with three slots 26. In this way, spills are still reduced or prevented while a greater volume of liquid is allowed to pour from the spout 18 when drinking from the cup.

[0041] According to another embodiment as illustrated in FIG. 9, a partition 42 is provided in the sunken portion 22 of the spout 18. In the illustrated embodiment, one slot 26 is provided on each of opposite sides of the partition 42. In this way, the partition 42 functions to separate a stream of liquid from the spout 18 into two distinct streams, providing for a different sensation for a user of the lid during consumption of the beverage. Various embodiments including a partition are possible, including a plurality of partitions, and/or a plurality of slots on each side of the partition or partitions.

[0042] According to yet another embodiment as illustrated in FIG. 10, a trench 44 is provided in the top wall 30 of the lid. As discussed previously, an air vent hole 46 enables air to displace the volume of the beverage that exits the spout 18. In addition, the air vent hole can also act as a drain hole 46, enabling spills that remain on the top wall of the lid to drain back into the cup. The trench 44 improves the functionality of the drain hole 46 by guiding any spills toward the drain hole 46. In the illustrated embodiment, the trench 44 is an elongated depression or sunken portion extending from a region near the spout 18, across the top wall 30, to the opposite side of the top wall 30. Here, the lid is configured such that the trench 44 slopes downward toward the drain hole 46 when the cup is placed on a level surface, such that a liquid on the top surface of the lid will generally flow toward the drain hole 46. Clearly, various other embodiments are possible still within the scope of the invention, including various shapes or locations of the trench 44 and the drain hole 46.

[0043] Yet another embodiment of the invention, illustrated in FIG. 11, includes two spouts 18 on opposite sides of the lid.

According to this embodiment, two users can share the same cup without being required to drink out of the same spout 18. Each of the spouts 18 includes an opening or sunken portion 22 having a hole or slot 26 in a side wall or flange 24, reducing spills while still enabling essentially effortless consumption of the beverage without removing the lid. In some further embodiments, the lid includes an asymmetric marker or indicator 48 allowing the users of the cup to visually distinguish between the two spouts 18. Here, the marker 48 includes a U-shaped indentation in the top wall 30. This way, users are less likely to confuse the two spouts 18. In other embodiments, the asymmetric marking may not necessarily be on the top wall, but may be essentially anywhere on the lid, for example, differently shaped spouts 18, printed labels, varying color or texture, or essentially any other feature that allows users to visually distinguish between spouts 18.

[0044] While the present invention has been described in connection with certain exemplary embodiments, it is to be understood that the invention is not limited to the disclosed embodiments, but, on the contrary, is intended to cover various modifications and equivalent arrangements included within the spirit and scope of the appended claims, and equivalents thereof.

What is claimed is:

1. A lid for a cup, comprising:
  - a seal around a periphery of the lid for generally sealing the lid to the cup;
  - a top wall for covering the cup;
  - a spout comprising a raised portion raised above the seal;
  - a sunken portion on the raised portion; and
  - a plurality of holes or slots in a side of the sunken portion.
2. The lid of claim 1, further comprising a partition for dividing the sunken portion such that at least one hole or slot of the plurality of holes or slots is on each of opposite sides of the partition.
3. The lid of claim 1, further comprising:
  - a vent hole in the top wall; and
  - a second sunken portion in the top wall for guiding spills on the top wall toward the vent hole.
4. The lid of claim 3, further comprising an inclined trench in the second sunken portion, wherein the vent hole is in the inclined trench.
5. The lid of claim 1, further comprising a second spout comprising a second raised portion and a second sunken portion on the second raised portion, having at least one hole or slot in a side of the second sunken portion.
6. A lid for a cup, comprising:
  - a seal around a periphery of the lid for generally sealing the lid to the cup;
  - a top wall for covering the cup;
  - a plurality of spouts, each comprising a raised portion raised above the seal;
  - a sunken portion on each of the plurality of raised portions; and
  - at least one hole or slot in a side of the sunken portion of each of the plurality of raised portions.
7. The lid of claim 6, further comprising a directional marker on the top wall to enable a user to distinguish between the plurality of spouts.
8. The lid of claim 7, wherein the plurality of spouts comprises two spouts on opposite sides of the lid.

**9.** The lid of claim **6**, further comprising:  
a vent hole in the top wall; and  
a second sunken portion in the top wall for guiding spills on  
the top wall toward the vent hole.

**10.** The lid of claim **9**, further comprising an inclined  
trench in the second sunken portion, wherein the vent hole is  
in the inclined trench.

**11.** A lid for a cup, comprising:  
a seal around a periphery of the lid for generally sealing the  
lid to the cup;  
a top wall for covering the cup;  
a first spout comprising a raised portion raised above the  
seal;

a sunken portion on the raised portion;  
a hole or slot in a side of the sunken portion of the raised  
portion;  
a vent hole in the top wall; and  
a second sunken portion in the top wall for guiding spills on  
the top wall toward the vent hole.

**12.** The lid of claim **11**, further comprising a second spout  
on a side of the lid opposite to the first spout.

**13.** The lid of claim **9**, further comprising a marker on the  
top wall to enable a user to distinguish between the first spout  
and the second spout.

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