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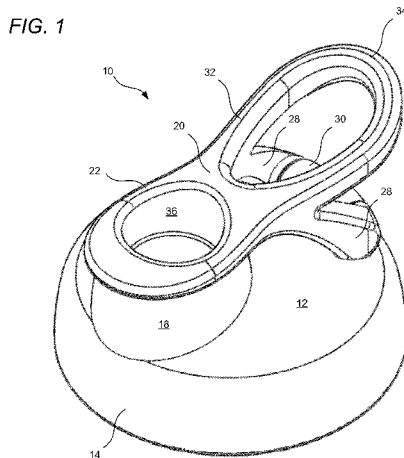
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(54) Title: BOTTLE CLOSURE WITH INTEGRATED FLIP TOP HANDLE



(57) Abstract: Closures having an integrated flip top handle for use with liquid containers and for carrying the liquid containers include an end wall, a skirt wall depending from the end wall, an outlet opening associated with the end wall, and a pivot hinge mount for pivotally mounting a flip top to the closure. The closure also includes the flip top pivotally supported by the pivot hinge mount. The flip top includes a closing member that closes the outlet opening when the flip top is in a first position, a pivot support member extending from the closing member to the pivot hinge mount and pivotally attached to the pivot hinge mount, and a carrying member extending from the closing member on a same side of the closing member as the pivot support member with a distal end that extends at least as far as the pivot hinge mount.



## BOTTLE CLOSURE WITH INTEGRATED FLIP TOP HANDLE

### 1. Field of the Invention

The present invention relates to closures incorporating an integrated handle,  
5 and more particularly to closures with integrated handles for liquid containers such as bottles.

### 2. Background and Related Art

Various types of bottles or containers have been developed in the past that include a closure to provide selective dispensing of liquid from the container.

10 Typically, the closure is removably attached to the neck of the container so a user can remove the closure to add liquid, powders, ice or other products into the container. The closure is then screwed or snapped onto the neck of the container to provide a generally watertight and leak-proof seal.

When a user desires to drink liquid from the container, the closure may be  
15 removed by unscrewing the closure to provide access into the reservoir of the container. The user drinks from an opening formed by the neck of the container and then replaces the closure onto the container to re-seal the container. In some instances, such as for outdoor activities (biking or hiking being examples), it is oftentimes desirable to have a closure provided with an outlet for faster access than  
20 that obtained by completely removing the closure, such as a push/pull spout or a flip top.

Users can carry containers or bottles by grasping the container itself or by grasping the container or bottle from the top, often around the closure. This can be cumbersome, especially if the user also needs to carry other items at the same time. It  
25 can also be uncomfortable due to cooling/heating of the container or bottle due to the temperature of the contained contents. When contents of the container or bottle are cold and the container or bottle is used in a humid environment, condensation on the outside of the container may make the container wet and slippery to hold.

As a result, manufacturers have started making containers or bottles with  
30 integrated handles. Such handles allow users to carry the container/bottle with as little as one finger, which is easier and more convenient, especially when carrying other items. Such handles minimize heat or cold transfer to the user from the container's contents, and minimize the concerns caused by condensation. Integrated handles also permit attachment of the container or bottle to other items such as bags,  
35 belts, and the like using hooks, ties, carabiners, etc. for convenient, hands-free

transportation. However, obtaining access to a bottle or other container while its integrated handle is attached to another item can be cumbersome.

Flip top closures are convenient and provide one way to easily and quickly access container/bottle contents; however, because the cap snaps over a spout opening and is secured by tension/friction, the flip top closure is not as secure as a screw-type closure. Flip top closures are typically opened by pressing on a front of the flip top in an upward motion until the upward pressure is sufficient to overcome the friction/tension holding the flip top closure sealed against the spout. Because flip top closures open and release through upward pressure, manufacturers have not attached handles to the flip tops for fear that carrying the container/bottle by the handle would create upward pressure on the flip top and cause the flip top to open at an unwanted time. Therefore, to date, integrated handles have been attached directly to the containers/bottles themselves and/or to non-flip top closures and portions thereof such as to screw lids.

#### BRIEF SUMMARY OF THE INVENTION

A bottle/container closure with an integrated flip top handle is described.

Implementation of the invention provides a lid with a spout opening that is closed by a flip top with an integrated handle. The flip top is attached to the lid by a pivot mount hinge located adjacent the spout on the top of the lid. The flip top includes an axis pivotally attached to the lid at the pivot mount hinge, which allows the flip top to pivot from a closed and sealed position to an open position that allows access to the contents of the container. The flip top includes a handle generally to one side of the flip top axis, and a spout closure to the opposite side of the flip top axis. The spout closure forms a seal with the spout (such as along the inside of the spout) and, when closed, is held in place by tension/friction between the spout closure and the spout.

The handle (or other carrying member) is formed of a loop or other shape extending to a side of the flip top axis away from the spout closure. The handle may also extend upwardly above the flip top axis when the flip top is closed. The handle or other carrying member is therefore attached to or formed in the flip top in such a way that a downward pressure is transferred to the spout closure when upward (carrying) pressure is applied to the handle or other carrying member. This leveraged handle flip top design enables the bottle or other container to be carried by the handle or other carrying member of the flip top without risk of the spout closure opening unexpectedly. Upward (carrying) pressure exerted on the handle or other carrying

member does not cause opening of the flip top. Instead, either no net force is translated to the spout closure, or a downward (closing) force is translated to the spout closure by locating the handle/carrying member/carrying point of the flip top above to behind the flip top axis (as viewed when the flip top is closed).

5           Thus, implementation of the invention provides a closure having an integrated flip top handle for use with a liquid container and for carrying the liquid container. The closure includes an end wall, a skirt wall depending from the end wall, an outlet opening associated with the end wall, and a pivot hinge mount for pivotally mounting a flip top to the closure. The closure also includes the flip top, which is pivotally  
10 supported by the pivot hinge mount, the flip top being movable between a first position in which the outlet opening is covered by the flip top and a second position in which the outlet opening is exposed. The flip top includes a closing member configured to close the outlet opening when the flip top is moved to the first position, a pivot support member extending from the closing member to the pivot hinge mount  
15 and pivotally attached to the pivot hinge mount, and a carrying member extending from the closing member on a same side of the closing member as the pivot support member. The carrying member has a distal end that, when the flip top is in the first position, extends outward from the closing member at least as far as the pivot hinge mount, whereby an upward force applied to the distal end when the flip top is in the  
20 first position does not cause an upward opening force to be applied to the closing member.

          Further implementation of the invention provides a closure having an integrated flip top handle for use with a liquid container and for carrying the liquid container. The closure includes an end wall, a skirt wall depending from the end wall,  
25 an outlet opening associated with the end wall, and a pivot hinge mount for pivotally mounting a flip top to the closure. The flip top is pivotally supported by the pivot hinge mount and is movable between a first position in which the outlet opening is covered by the flip top and a second position in which the outlet opening is exposed. The flip top includes a carrying member for carrying the liquid container, whereby the  
30 liquid container may be carried by the carrying member when the liquid container is full of liquid.

          The closure is configured to be removably secured to a neck of a liquid container such as a bottle and to provide an essentially liquid-tight and leak-proof seal with the container neck. The outlet opening permits access to the liquid contents, and  
35 the flip top reversibly seals the outlet opening to keep the liquid contents in the

container and prevent spillage. The flip top also includes a carrying portion whereby the liquid container may be carried by a user holding only the flip top, and no other portion of the closure or the container.

#### BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

5 The features of the present invention will become more fully apparent from the following description and appended claims, taken in conjunction with the accompanying drawings. Understanding that these drawings depict only typical embodiments of the invention and are, therefore, not to be considered limiting of its scope, the invention will be described and explained with additional specificity and  
10 detail through the use of the accompanying drawings in which:

Figure 1 shows a perspective view of an embodiment of a bottle closure with a flip top in a closed position;

Figure 2 shows a right-side view thereof;

Figure 3 shows a front view thereof;

15 Figure 4 shows a left-side view thereof;

Figure 5 shows a back view thereof;

Figure 6 shows a top view thereof;

Figure 7 shows a bottom view thereof;

20 Figure 8 shows a perspective view of the embodiment of Figure 1 with the flip top in an open position;

Figure 9 shows a right-side view thereof;

Figure 10 shows a perspective view of an alternate embodiment of a bottle closure with a flip top in a closed position;

Figure 11 shows a right-side view thereof;

25 Figure 12 shows a left-side view thereof;

Figure 13 shows a back view thereof;

Figure 14 shows a top view thereof;

Figure 15 shows a perspective view of the embodiment of Figure 10 with the flip top in an open position;

30 Figure 16 shows a left-side view thereof;

Figure 17 shows a back view thereof;

Figure 18 shows a top view thereof; and

Figure 19 shows an exploded perspective view of the embodiment of Figure

10.

## DETAILED DESCRIPTION OF THE INVENTION

A description of embodiments of the present invention will now be given with reference to the Figures. It is expected that the present invention may take many other forms and shapes, hence the following disclosure is intended to be illustrative and not limiting, and the scope of the invention should be determined by reference to the appended claims.

Embodiments of the invention provide a lid with a spout opening that is closed by a flip top with an integrated handle. The flip top is attached to the lid by a pivot mount hinge located adjacent the spout on the top of the lid. The flip top includes an axis pivotally attached to the lid at the pivot mount hinge, which allows the flip top to pivot from a closed and sealed position to an open position that allows access to the contents of the container. The flip top includes a handle generally to one side of the flip top axis, and a spout closure to the opposite side of the flip top axis. The spout closure forms a seal with the spout (such as along the inside of the spout) and, when closed, is held in place by tension/friction between the spout closure and the spout.

The handle (or other carrying member) is formed of a loop or other shape extending to a side of the flip top axis away from the spout closure. The handle may also extend upwardly above the flip top axis when the flip top is closed. The handle or other carrying member is therefore attached to or formed in the flip top in such a way that a downward pressure is transferred to the spout closure when upward (carrying) pressure is applied to the handle or other carrying member. This leveraged handle flip top design enables the bottle or other container to be carried by the handle or other carrying member of the flip top without risk of the spout closure opening unexpectedly. Upward (carrying) pressure exerted on the handle or other carrying member does not cause opening of the flip top. Instead, either no net force is translated to the spout closure, or a downward (closing) force is translated to the spout closure by locating the handle/carrying member/carrying point of the flip top above to behind the flip top axis (as viewed when the flip top is closed).

Embodiments of the invention provide a closure having an integrated flip top handle for use with a liquid container and for carrying the liquid container. The closure includes an end wall, a skirt wall depending from the end wall, an outlet opening associated with the end wall, and a pivot hinge mount for pivotally mounting a flip top to the closure. The closure also includes the flip top, which is pivotally supported by the pivot hinge mount, the flip top being movable between a first position in which the outlet opening is covered by the flip top and a second position in

which the outlet opening is exposed. The flip top includes a closing member configured to close the outlet opening when the flip top is moved to the first position, a pivot support member extending from the closing member to the pivot hinge mount and pivotally attached to the pivot hinge mount, and a carrying member extending  
5 from the closing member on a same side of the closing member as the pivot support member. The carrying member has a distal end that, when the flip top is in the first position, extends outward from the closing member at least as far as the pivot hinge mount, whereby an upward force applied to the distal end when the flip top is in the first position does not cause an upward opening force to be applied to the closing  
10 member.

Further embodiments of the invention include a closure having an integrated flip top handle for use with a liquid container and for carrying the liquid container. The closure includes an end wall, a skirt wall depending from the end wall, an outlet opening associated with the end wall, and a pivot hinge mount for pivotally mounting  
15 a flip top to the closure. The flip top is pivotally supported by the pivot hinge mount and is movable between a first position in which the outlet opening is covered by the flip top and a second position in which the outlet opening is exposed. The flip top includes a carrying member for carrying the liquid container, whereby the liquid container may be carried by the carrying member when the liquid container is full of  
20 liquid.

The various embodiments of the closure are configured to be removably secured to a neck of a liquid container such as a bottle and to provide an essentially liquid-tight and leak-proof seal with the container neck. The outlet opening permits access to the liquid contents, and the flip top reversibly seals the outlet opening to  
25 keep the liquid contents in the container and prevent spillage. The flip top also includes a carrying portion whereby the liquid container may be carried by a user holding only the flip top, and no other portion of the closure or the container.

Figure 1 shows a perspective view of one embodiment of a closure 10 for use with a liquid container. The closure 10 includes an end wall 12 and a skirt wall 14  
30 depending from the end wall 12. The end wall 12 and the skirt wall 14 serve to close a liquid container (not shown), such as a bottle, and the skirt wall 14 may include any means for securing the closure 10 to the liquid container, such as threads, a ridge for a press or snap fit, or any similar structure, as known in the art. The closure 10 includes an outlet opening 16 (e.g. a spout) associated with the end wall 12. The outlet  
35 opening 16 provides access to the contents of the liquid container without requiring

removal of the entire closure 10 from the liquid container. In the embodiment illustrated in the Figures, the outlet opening 16 terminates a spout 18 extending from the end wall 12.

5 The outlet opening 16 is reversibly sealable by a flip top 20, which is shown in a first position in Figures 1-7 and in a second position in Figures 8-9. When the flip top 20 is in the first position, the flip top 20 covers the outlet opening 16. When the flip top 20 is in the second position, the outlet opening 16 is exposed, allowing access to the contents of the liquid container through the outlet opening 16.

10 The flip top 20 includes a closing member 22 or spout closure configured to seal with or otherwise close the outlet opening 16 when the flip top 20 is moved to the first position. To facilitate sealing of the outlet opening 16, the outlet opening 16 may include an outlet opening ridge 24, and the closing member 22 may include a complementary closing member ridge 26, as best seen in Figures 8 and 9. The closing member ridge 26 is configured to engage the outlet opening ridge 24 and assist in  
15 sealing the outlet opening 16, and the outlet opening ridge 24 and the closing member ridge 26 may be shaped to facilitate sealing of the outlet opening while simultaneously securing the flip top 20 in the first (closed) position. As may be appreciated, a wide variety of mechanisms (including mechanisms not specifically illustrated) may be used to ensure sealing of the closing member 22 with the outlet  
20 opening 16, including a variety of ridges, a close frictional fit, a flexible sealing material disposed on one of the closing member 22, the outlet opening 16, or the spout 18, and the like.

The illustrated flip top 20 also includes a pivot support member 28 extending from the closing member 22 to a pivot hinge mount 30 associated with the end wall  
25 12 near the skirt wall 14. The pivot hinge mount 30 and the pivot support member 28 allow the flip top 20 to be pivotally mounted to a body portion of the closure 10 at a flip top axis around which the flip top 20 rotates. The body portion of the closure may be formed of the end wall 10, the skirt wall 12, the spout 18 (if any), and the pivot hinge mount 30. The body portion may be manufactured in substantially one  
30 piece by a variety of methods known in the art, such as those used with forming pieces of plastic. The flip top 20 may also be manufactured in substantially one piece using such methods.

The flip top 20 may be pivotally mounted to the body portion while the flip top 20 is still hot from the forming process. When the flip top 20 is made of or  
35 includes a plastic in the pivot support member 28, the plastic is often somewhat more-



easily deformable shortly after the forming process. Taking advantage of this plasticity, the pivot support member 28 may be more-easily flexed to allow a projecting tab portion (not shown) of the pivot support member 28 to enter a hole (not shown) in the pivot hinge mount 30 of the body portion. (Alternatively, a projecting  
5 tab portion of the pivot hinge mount 30 of the body portion may enter a hole in the pivot support member 28.) Once the flip top 20 cools and the plastic is less deformable, it becomes more difficult to inadvertently remove the projecting tab portion from the hole of the pivot hinge mount 30 (although it may be possible to purposefully remove the projecting tab portion from the hole if it is desired to do so).  
10 Thus, the flip top 20 may be securely mounted to the body portion. Additional features may be incorporated to further prevent inadvertent removal of the flip top 20 during carrying, as will be discussed in more detail below.

As shown in the Figures, the flip top 20 includes two pivot support members 28, each being configured to pivotally engage opposite sides of the pivot hinge mount  
15 30 (and, in some embodiments, thus having projecting tab portions projecting toward each other). When the flip top 20 is in the first (closed) position, the pivot support members 28 extend horizontally and downward from the closing member 22 to the pivot hinge mount 30, allowing the closing member 22 to engage the outlet opening  
16 of the spout 18.

20 The flip top 20 also includes a carrying member 32 or other handle. The carrying member 32 extends from the closing member 22 on a same side of the closing member 22 as the pivot support member 28. The carrying member 32 has a distal end 34 located distal the closing member 22. When the flip top 20 is in the first position (e.g. closed), the distal end 34 extends outward from the closing member at  
25 least as far as the pivot hinge mount 30, whereby an upward force applied to the distal end 34 when the flip top 20 is in the first position does not cause an upward opening force to be applied to the closing member 22. An upward force applied to the carrying member 32 at some locations may cause a minimal upward force to be applied to the closing member 22, but such force is not strong enough to be an  
30 opening force that would cause the flip top to move out of the first position where the outlet opening 16 is sealed closed, and the carrying member 32 may be designed to minimize the possibility of upward forces applied at such locations of the carrying member 32. Therefore, the liquid container may be carried by the carrying member, even when the liquid container is filled with liquid, without worrying about the liquid  
35 container inadvertently opening.

In the embodiment illustrated in the Figures, the distal end 34 (when the flip top 20 is in the first position) protrudes outward from the closing member 22 substantially past the pivot hinge mount 30, whereby an upward force applied to the distal end is actually translated into a downward force on the closing member 22.

5 This is due to the pivotal mounting of the flip top 20 at the pivot hinge mount 30, which translates pivoting leverage applied to the carrying member 32 to the closing member 22. Thus, the carrying member 32 is generally to one side of the flip top axis and the closing member 22 is to the opposite side of the flip top axis. In such embodiments, this translation of a carrying force applied to a portion of the carrying  
10 member 32 into what amounts to a closing force at the closing member 22 further ensures that the flip top 20 will not inadvertently flip open when the liquid container is being carried.

As shown in the Figures, the carrying member 32 may form a carrying loop or handle that may be configured to receive a user's finger or fingers inserted therein. In  
15 the embodiment illustrated in the Figures, the carrying loop is configured to receive a user's finger inserted through the carrying loop in a generally-vertical orientation (i.e. the carrying loop, when the flip top 20 is in the first position, is roughly horizontal). However, other embodiments are envisioned where the carrying loop may be rotated to other orientations other than the orientation shown, so that when the flip top 20 is  
20 in the first position, the carrying loop is configured or oriented to receive a user's finger or fingers in a generally-horizontal orientation or in an orientation rotated between generally vertical and generally horizontal. As the carrying loop/carrying member 32 is designed to permit carrying of the liquid container, the carrying member 32/carrying loop and any other components of the flip top 20 are designed to  
25 be sufficiently strong to support carrying of the liquid container when the liquid container is full of liquid.

As may be most clearly seen in Figure 9, when the flip top 20 is in the second position, the distal end 34 may be located proximate a lower end of the skirt wall 14. As may be seen, when the flip top 20 is in this second position, the flip top 20 is well  
30 away from the spout 18 and the outlet opening 16. This facilitates easy access to the contents of the liquid container, as the flip top 20 does not obstruct access to the spout 18 and the outlet opening 16.

As may be seen in the Figures, the closing member 22 may include a generally-tubular closure wall 36. The closing member 22 may also include a plug  
35 seal 38 supported by the closure wall 36. The plug seal 38 may be configured to seal

with and close the outlet opening 16 of the spout 18 when the flip top 20 is moved to the first position. Therefore, one of the closure wall 36 and the plug seal 38 may include the closing member ridge 26.

Figures 10-19 illustrate another embodiment of the closure 10. The embodiment shown in Figures 10-19 includes similar features as the embodiment shown in Figures 1-9. This embodiment includes elements such as the pivot support member 28 and the carrying member 32 that are disposed at slightly different angles and/or have different curvatures than the similar elements of the embodiment shown in Figures 1-9, illustrating one way in which such elements may be varied while still achieving the functionality and advantages described herein. Other modifications not specifically illustrated in the Figures are embraced as falling within the scope of the claimed invention as set forth in the following claims.

Figures 15, 16, and 19 illustrate an additional feature that is incorporated in some embodiments to secure the flip top 20 to the pivot hinge mount 30 so as to prevent the flip top 20 from disengaging when the bottle is carried by the carrying member 32 of the flip top 20. As may be seen in the exploded view of Figure 19, the pivot support members 28 terminate in projecting tabs 40 configured to engage with pivot hinge holes 42 disposed in the pivot hinge mount 30. The projecting tabs 40 engage in the pivot hinge holes 42 and permit the flip top 20 to pivot around the pivot axis of the connection. When pressure is applied to the flip top 20 in such a direction as to tend to separate the flip top 20 from the rest of the closure, it tends to cause the pivot support members 28 to spread and allow one or both of the projecting tabs 40 to begin to exit the pivot hinge holes 42. If one or both projecting tabs 40 completely leave the pivot hinge holes 42, the flip top 20 separates from the remainder of the closure.

As such separation is undesirable, and as significant forces may be encountered when the bottle is full and is being carried by the flip top 20, this embodiment incorporates features designed to prevent the projecting tabs 40 from exiting the pivot hinge holes 40. Specifically, each of the pivot support members 28 are provided with a locking slot 44 configured to engage with a corresponding lock tab 46 disposed on the end wall 12 adjacent the pivot hinge holes 42. When the flip top 20 is in its second, open position as shown in Figures 15 and 16, the locking slots 44 do not engage the corresponding lock tabs 46, and the flip top 20 can be removed from the pivot hinge mount 30 by spreading the pivot support members 28, thus assuming the exploded configuration shown in Figure 19.

Generally, the bottle will not be carried by the flip top 20 when the flip top 20 is in the open position. Instead, the flip top 20 is first closed as shown in Figures 12 and 13, whereby the locking slots 44 is rotated to engage the lock tabs 46. The engagement between the lock tabs 46 and the locking slots 44 prevents the pivot support members 28 from being spread. Thus, when the bottle is carried by the carrying member 32, the flip top 20 is better secured from unwanted separation from the remainder of the closure 10.

The present invention may be embodied in other specific forms without departing from its spirit or essential characteristics. The described embodiments are to be considered in all respects only as illustrative and not restrictive. The scope of the invention is, therefore, indicated by the appended claims, rather than by the foregoing description. All changes which come within the meaning and range of equivalency of the claims are to be embraced within their scope.

#### CLAIMS

What is claimed and desired to be secured is:

1. A closure having an integrated flip top handle for use with a liquid container and for carrying the liquid container, comprising:

an end wall;

a skirt wall depending from the end wall;

5 an outlet opening associated with the end wall;

a pivot hinge mount for pivotally mounting a flip top to the closure; and

a flip top pivotally supported by the pivot hinge mount, the flip top being movable between a first position in which the outlet opening is covered by the flip top and a second position in which the outlet opening is exposed, the flip top comprising:

10 a closing member configured to close the outlet opening when the flip top is moved to the first position;

a pivot support member extending from the closing member to the pivot hinge mount and pivotally attached to the pivot hinge mount; and

15 a carrying member extending from the closing member on a same side of the closing member as the pivot support member, the carrying member comprising a distal end that, when the flip top is in the first position, extends outward from the closing member at least as far as the pivot hinge mount, whereby an upward force applied to the distal end when the flip top is in the first position does not cause an upward opening force to be applied to the closing member.

20

2. A closure as recited in claim 1, wherein the carrying member comprises a carrying loop that comprises the distal end.

3. A closure as recited in claim 2, wherein the carrying loop is configured to receive at least one of:

25 a user's finger inserted through the carrying loop in a generally-vertical orientation;

a user's finger inserted through the carrying loop in a generally-horizontal orientation; and

30 a user's finger inserted through the carrying loop in an orientation rotated between generally vertical and generally horizontal.

4. A closure as recited in claim 2, wherein the distal end protrudes outward from the closing member substantially past the pivot hinge mount, whereby an upward force applied to the distal end is translated into a downward force on the closing member.

5. A closure as recited in claim 4, wherein the closure comprises a spout extending from the end wall and terminating in the outlet opening, the spout defining a flow path through the end wall to the outlet opening.
6. A closure as recited in claim 5, wherein the closing member comprises:  
5 a generally tubular closure wall; and  
a plug seal supported by the closure wall, the plug seal being configured to seal with and close the outlet opening of the spout when the flip top is moved to the first position.
7. A closure as recited in claim 2, wherein the flip top comprises two pivot  
10 support members, each being configured to pivotally engage opposite sides of the pivot hinge mount.
8. A closure as recited in claim 7, wherein when the flip top is in the first position, the pivot support members extend horizontally and downward from the closing member to the pivot hinge mount.
- 15 9. A closure as recited in claim 1, wherein:  
the end wall comprises a pair of lock tabs disposed on either side of the pivot hinge mount; and  
each pivot support member comprises a locking slot configured to selectively engage one of the lock tabs;  
20 wherein the locking slots engage the lock tabs when the flip top is in the first position and do not engage the lock tabs when the flip top is in the second position.
10. A closure as recited in claim 2, wherein the flip top is formed as a unitary piece of material.
11. A closure as recited in claim 1, wherein, when the flip top is in the second  
25 position, the distal end is located proximate a lower end of the skirt wall.
12. A closure as recited in claim 1, wherein the distal end protrudes outward from the closing member substantially past the pivot hinge mount, whereby an upward force applied to the distal end is translated into a downward force on the closing member.
- 30 13. A closure having an integrated flip top handle for use with a liquid container and for carrying the liquid container, comprising:  
an end wall;  
a skirt wall depending from the end wall;  
an outlet opening associated with the end wall;  
35 a pivot hinge mount for pivotally mounting a flip top to the closure; and

a flip top pivotally supported by the pivot hinge mount, the flip top being movable between a first position in which the outlet opening is covered by the flip top and a second position in which the outlet opening is exposed, the flip top comprising:

- 5 a closing member configured to close the outlet opening when the flip top is moved to the first position;
- a pivot support member extending from the closing member to the pivot hinge mount and pivotally attached to the pivot hinge mount; and
- a carrying loop extending from the closing member on a same side of the closing member as the pivot support member, the carrying loop comprising
- 10 a distal end that, when the flip top is in the first position, extends outward from the closing member substantially past the pivot hinge mount, whereby an upward force applied to the distal end when the flip top is in the first position causes a downward force to be applied to the closing member.

14. A closure as recited in claim 13, wherein the upward force applied to the distal end is translated into the downward force on the closing member by the pivoting leverage of the pivotal connection between the end wall and the flip top at the pivot hinge mount.

15. A closure as recited in claim 13, wherein the flip top comprises two pivot support members, each being configured to pivotally engage opposite sides of the

20 pivot hinge mount.

16. A closure as recited in claim 15, wherein when the flip top is in the first position, the pivot support members extend horizontally and downward from the closing member to the pivot hinge mount.

17. A closure as recited in claim 13, wherein the carrying loop of the flip top is

25 sufficiently strong to support carrying of the liquid container by the carrying loop when the liquid container is full of liquid.

18. A closure having an integrated flip top handle for use with a liquid container and for carrying the liquid container, comprising:

- an end wall;
- 30 a skirt wall depending from the end wall;
- an outlet opening associated with the end wall;
- a pivot hinge mount for pivotally mounting a flip top to the closure; and
- a flip top pivotally supported by the pivot hinge mount, the flip top being movable between a first position in which the outlet opening is covered by the flip top
- 35 and a second position in which the outlet opening is exposed, the flip top comprising a

carrying member for carrying the liquid container, whereby the liquid container may be carried by the carrying member when the liquid container is full of liquid.

19. A closure as recited in claim 18, wherein the flip top comprises:

5 a closing member configured to close the outlet opening when the flip top is moved to the first position;

a pivot support member extending from the closing member to the pivot hinge mount and pivotally attached to the pivot hinge mount; and

10 the carrying member, which extends from the closing member on a same side of the closing member as the pivot support member, the carrying member comprising a distal end that, when the flip top is in the first position, extends outward from the closing member substantially past the pivot hinge mount, whereby an upward force applied to the distal end when the flip top is in the first position causes a downward force to be applied to the closing member.

20. A closure as recited in claim 18, wherein the carrying member does not encompass a pivot axis defining pivotal motion of the flip top with respect to the closure at the pivot hinge mount.

21. A closure as recited in claim 18, wherein the flip top is formed as a unitary piece of material.

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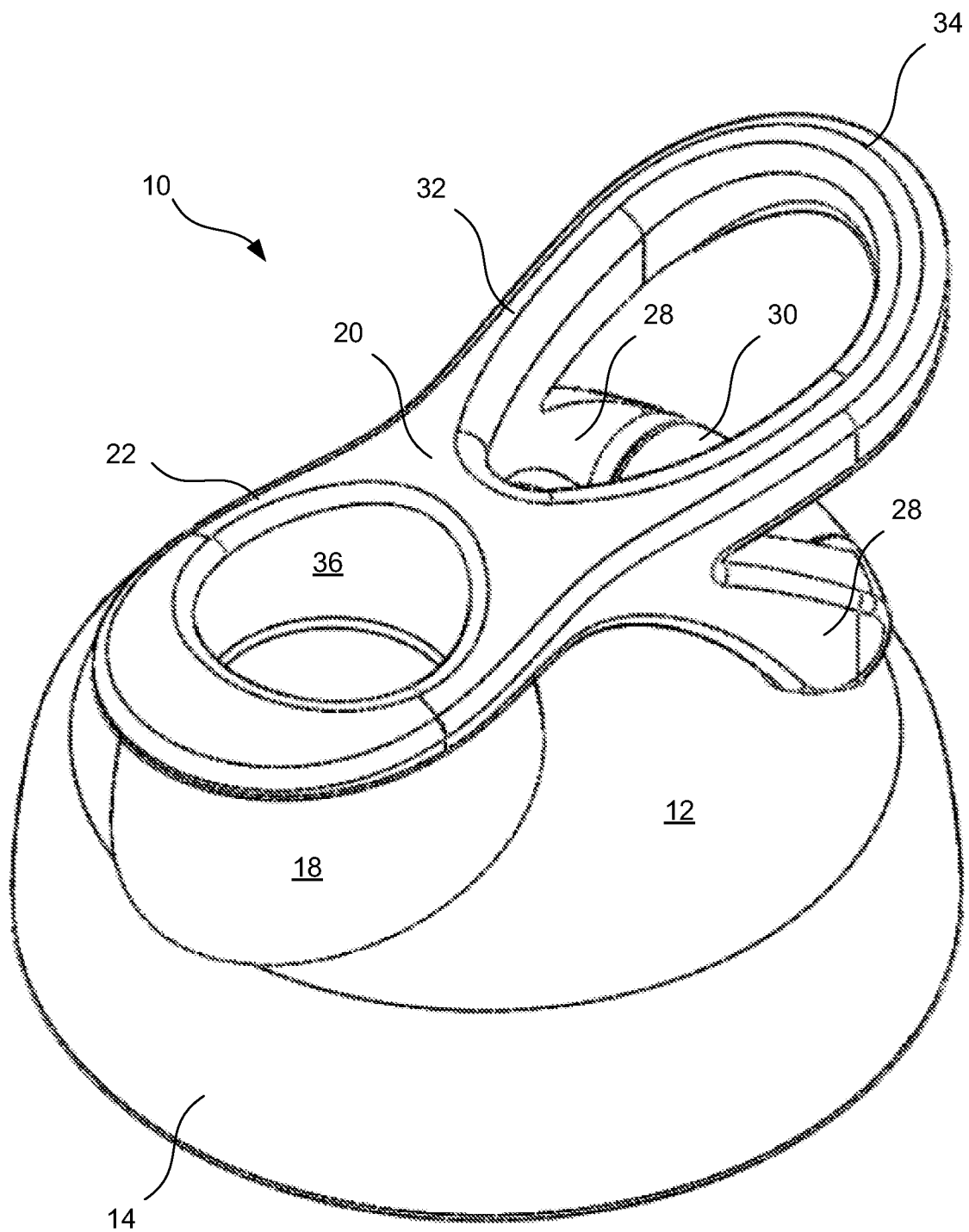


FIG. 1

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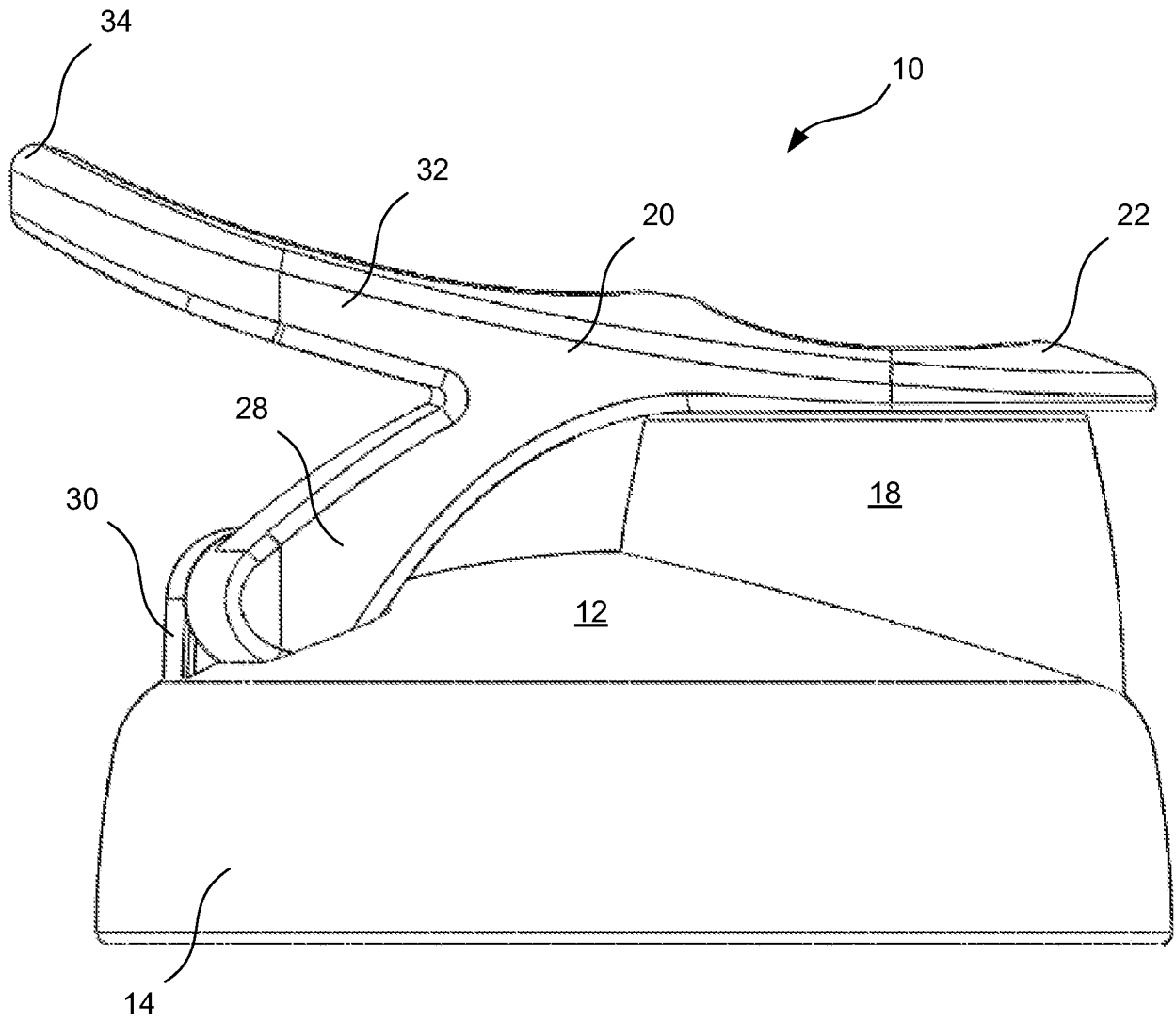


FIG. 2

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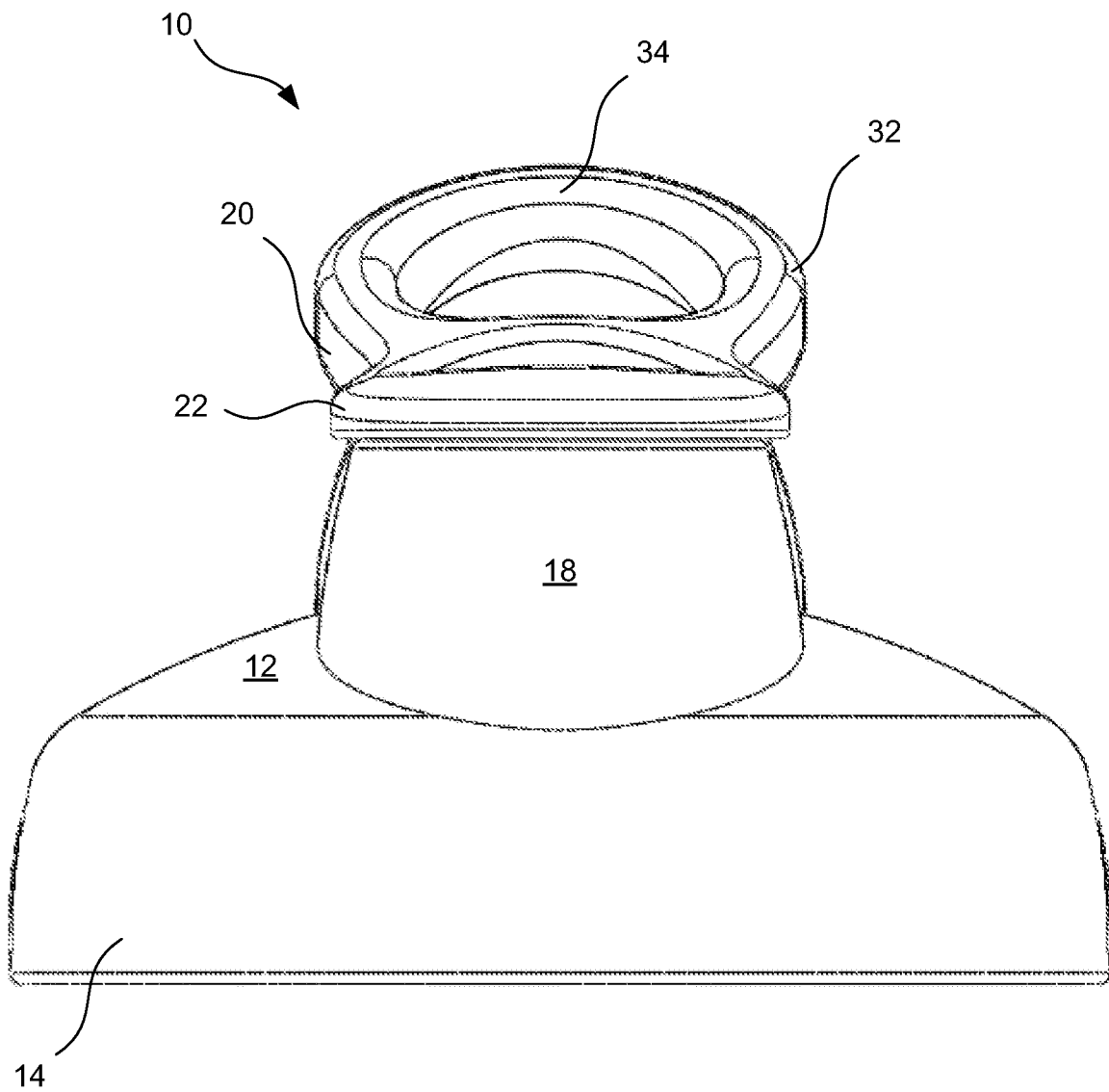


FIG. 3

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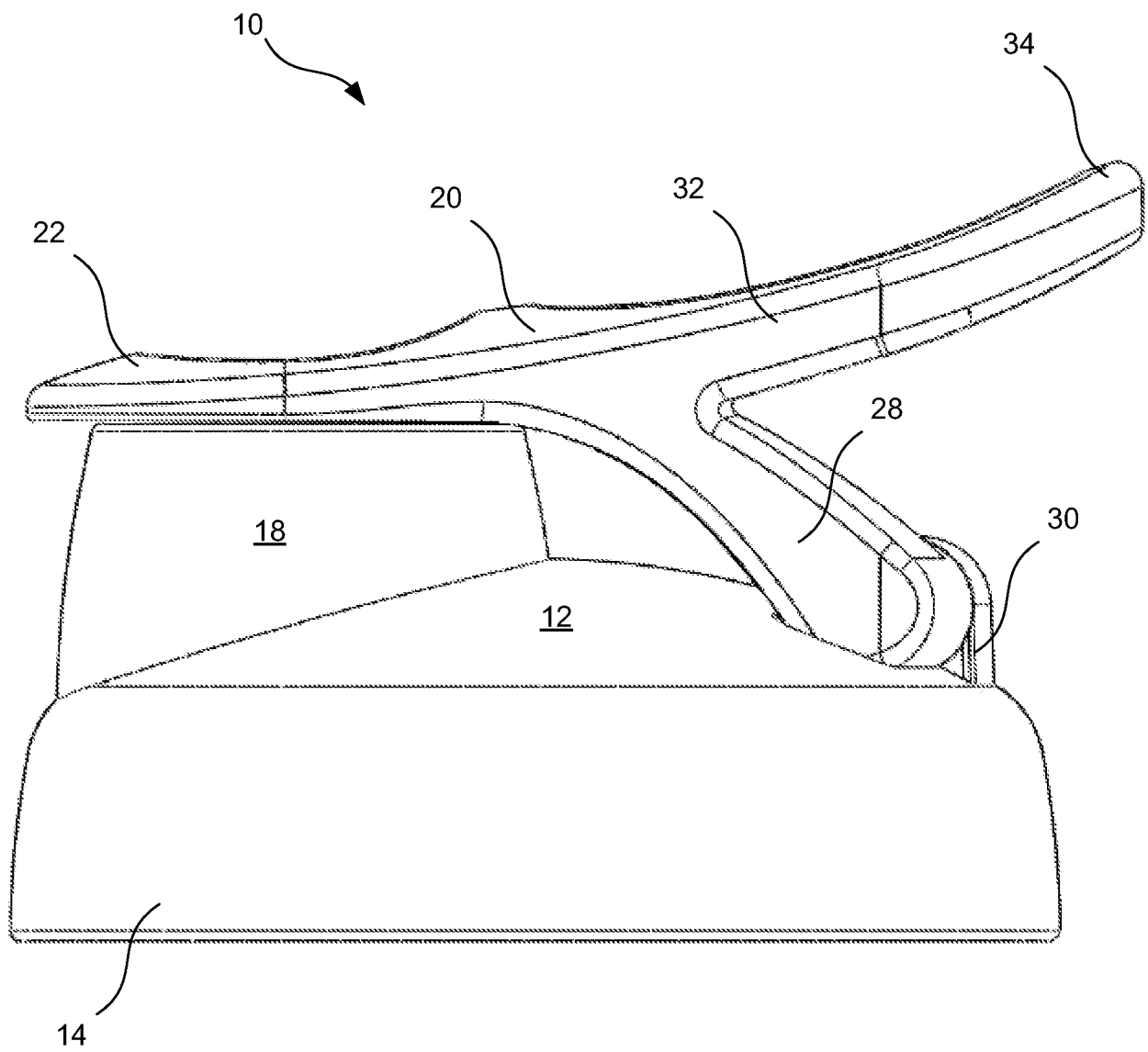


FIG. 4

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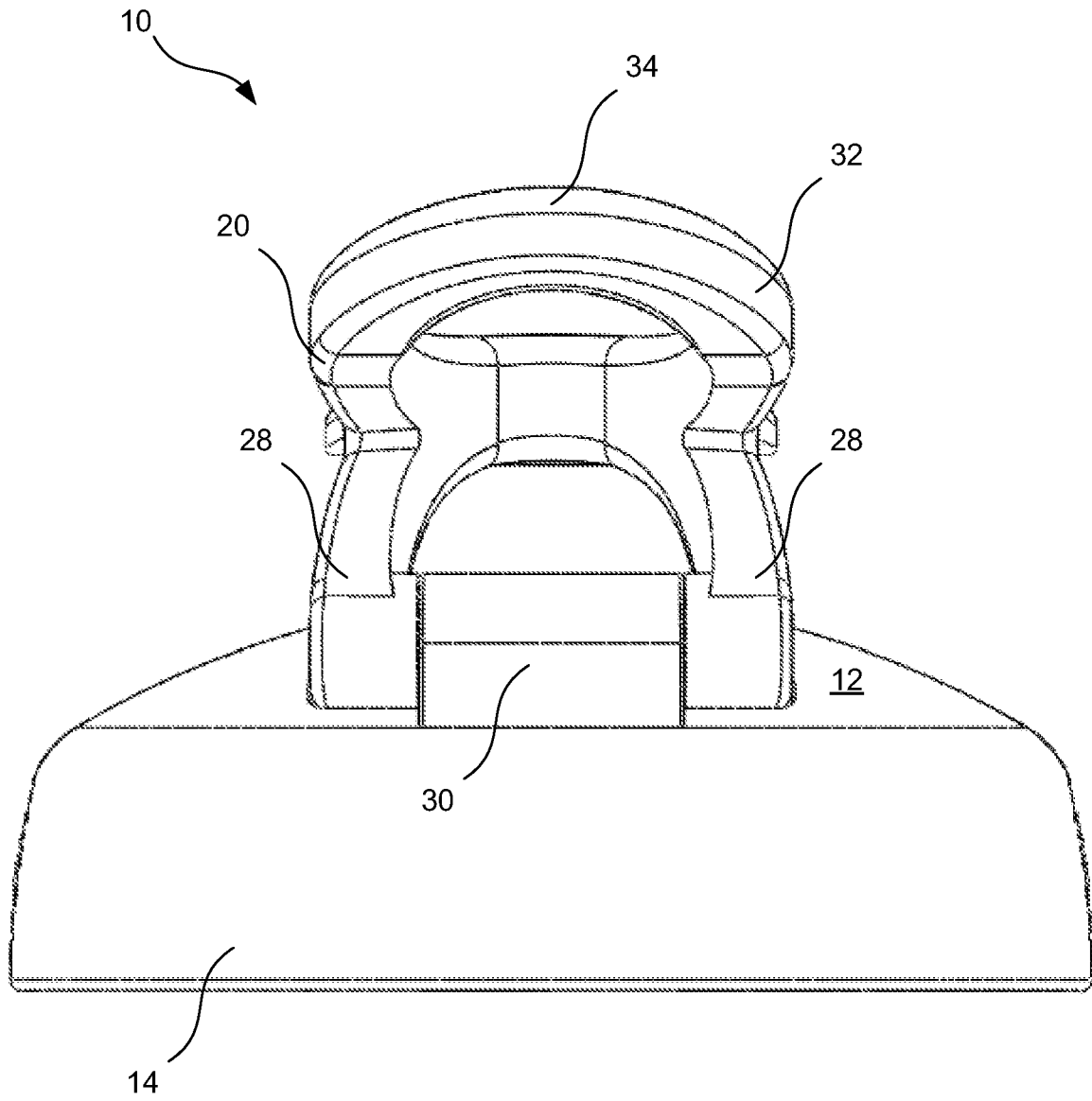


FIG. 5

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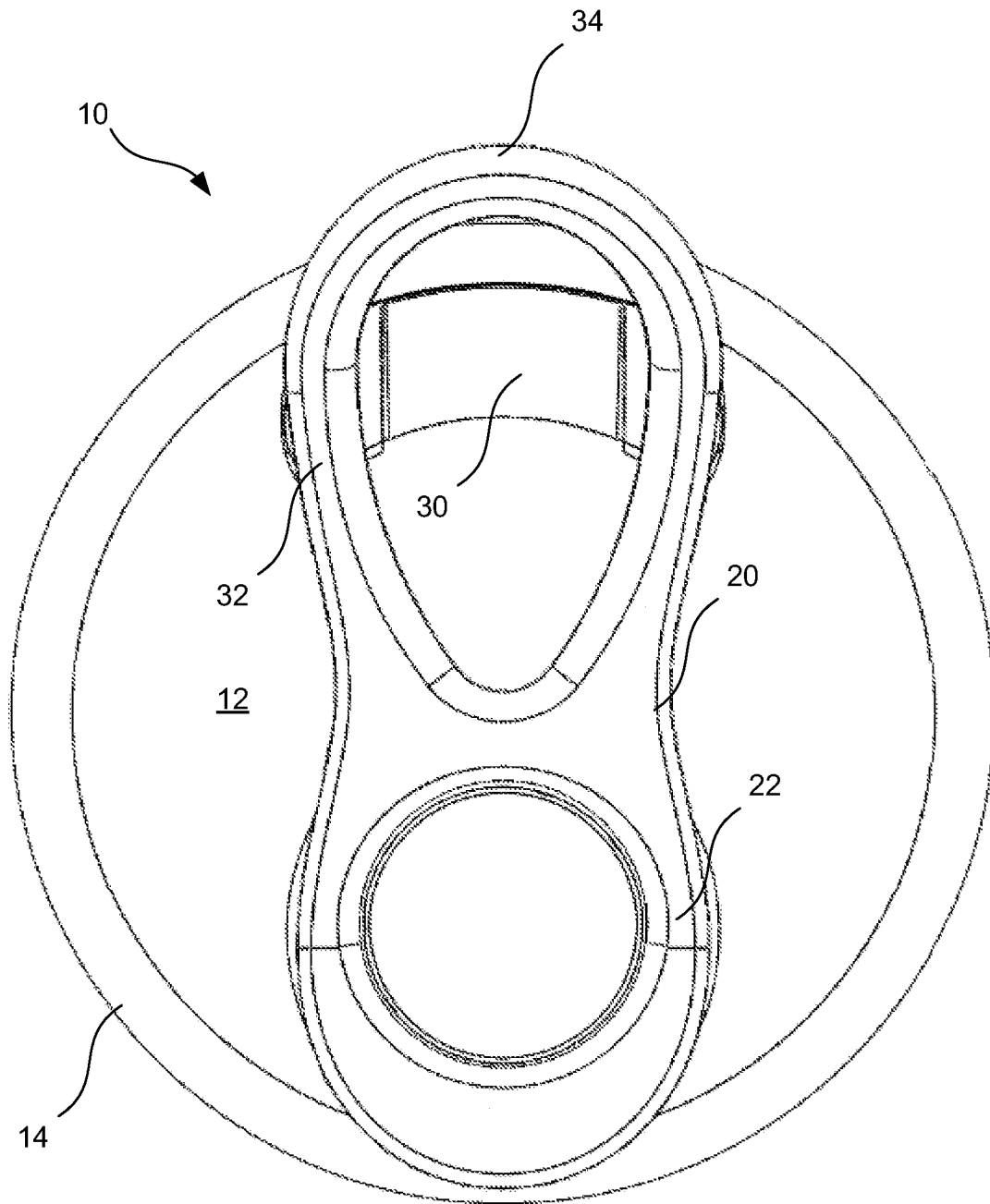


FIG. 6

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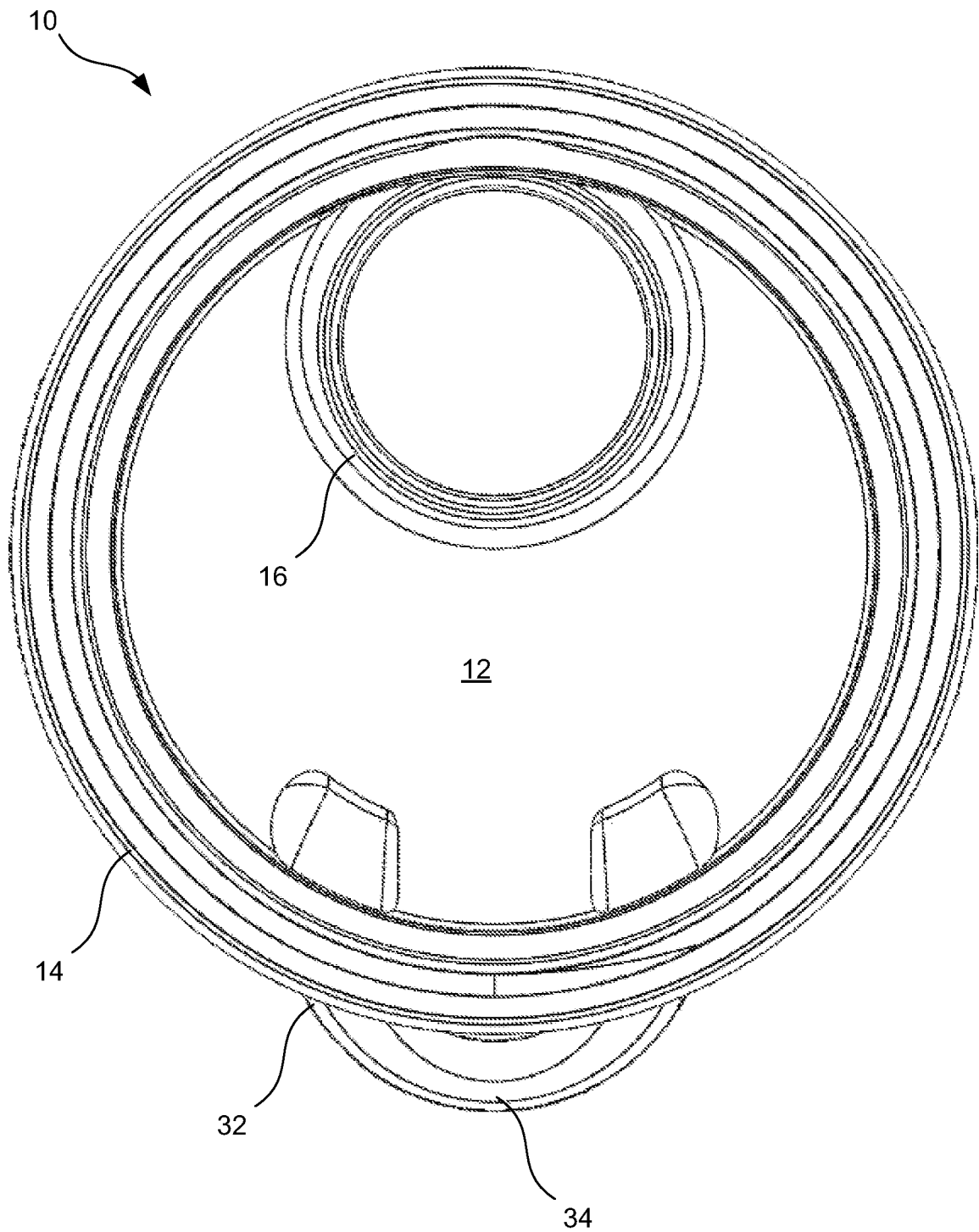


FIG. 7

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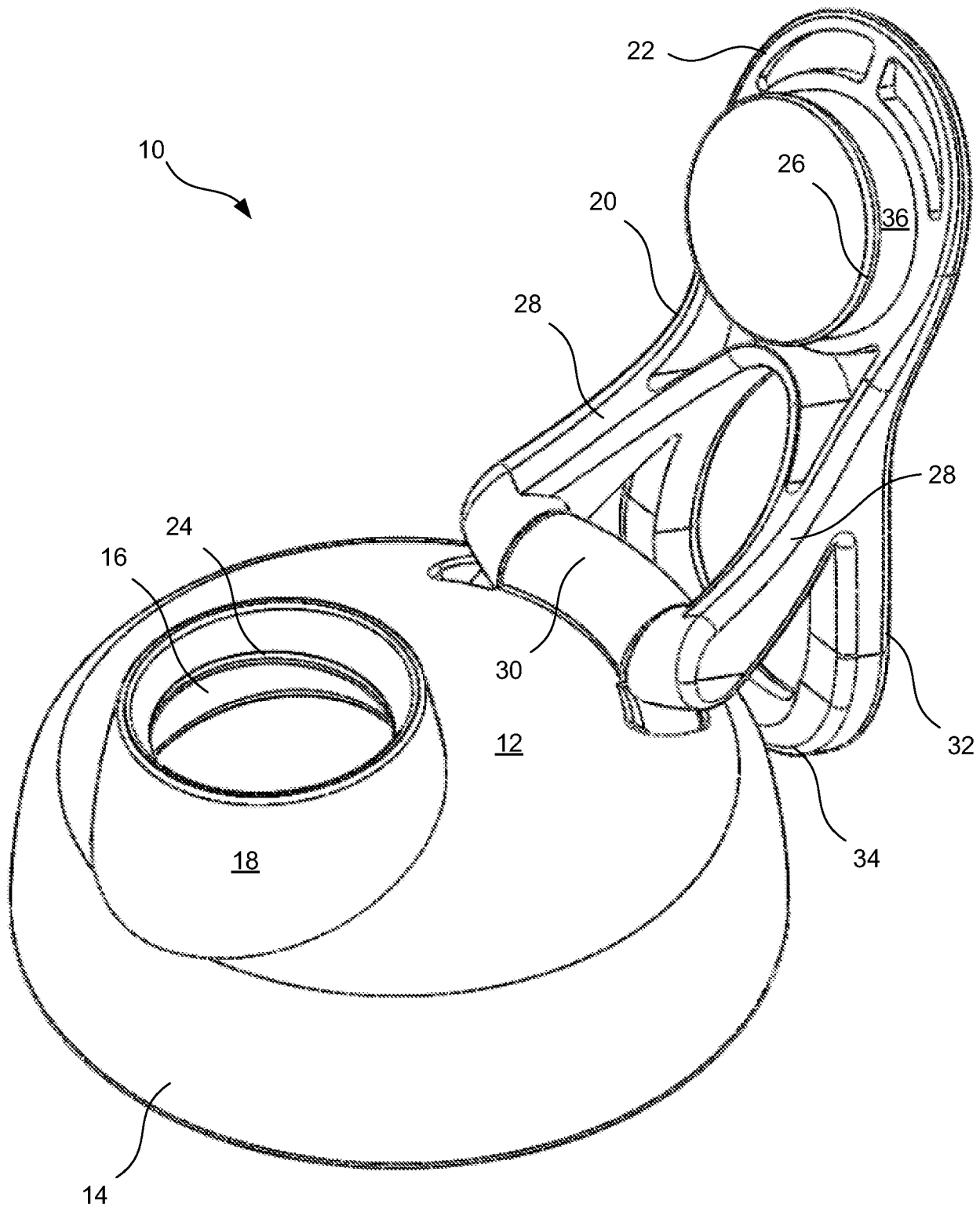


FIG. 8



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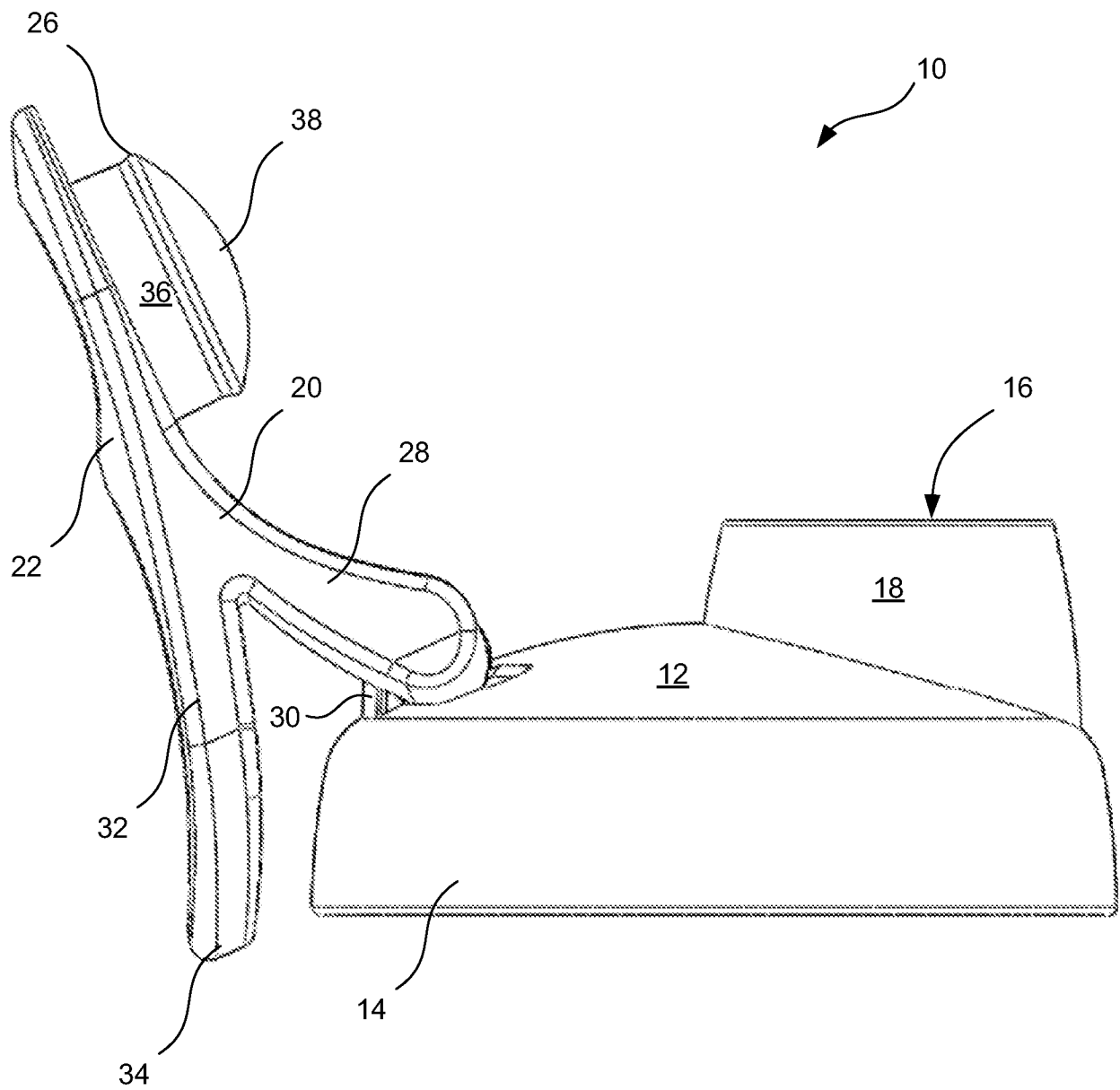


FIG. 9

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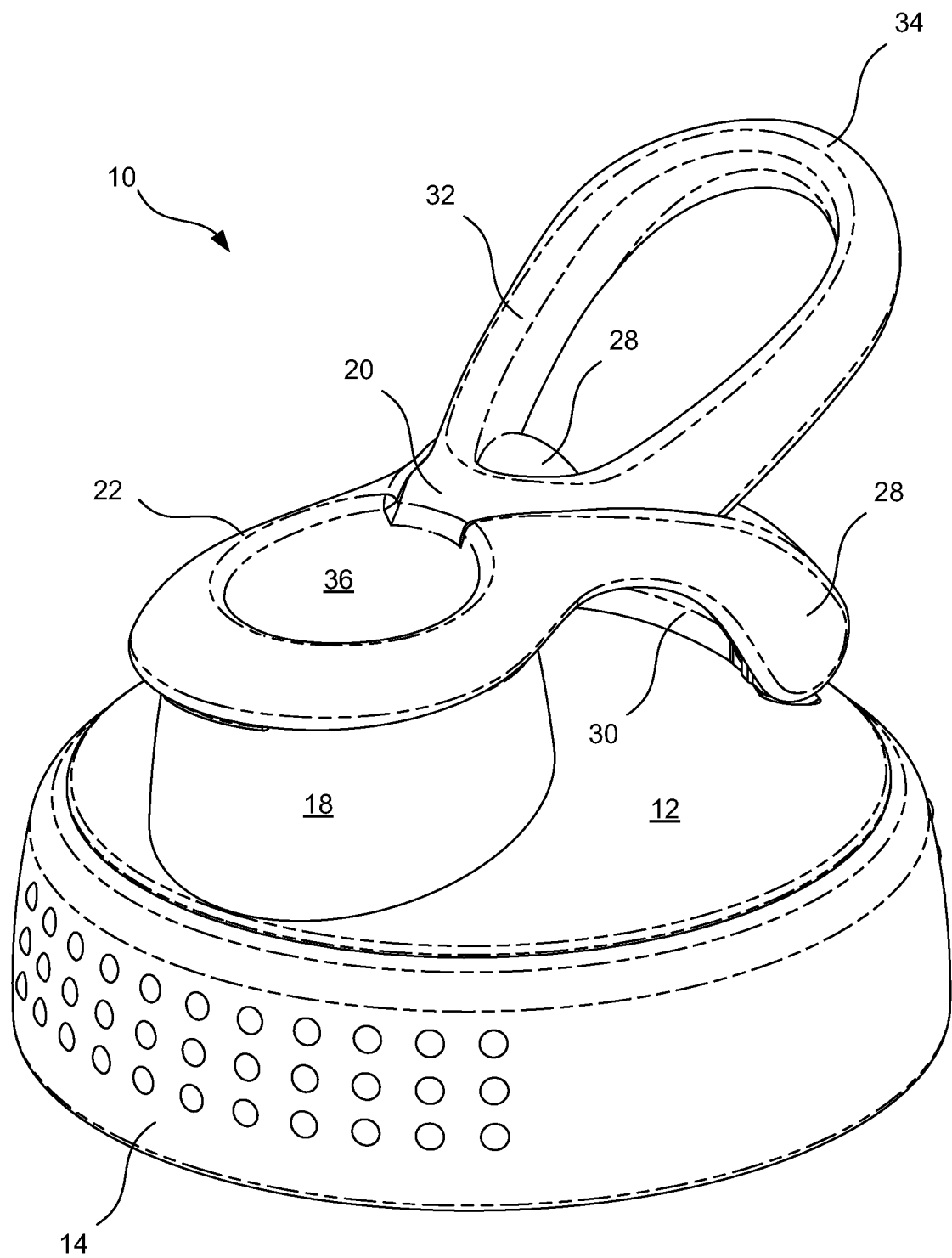


FIG. 10

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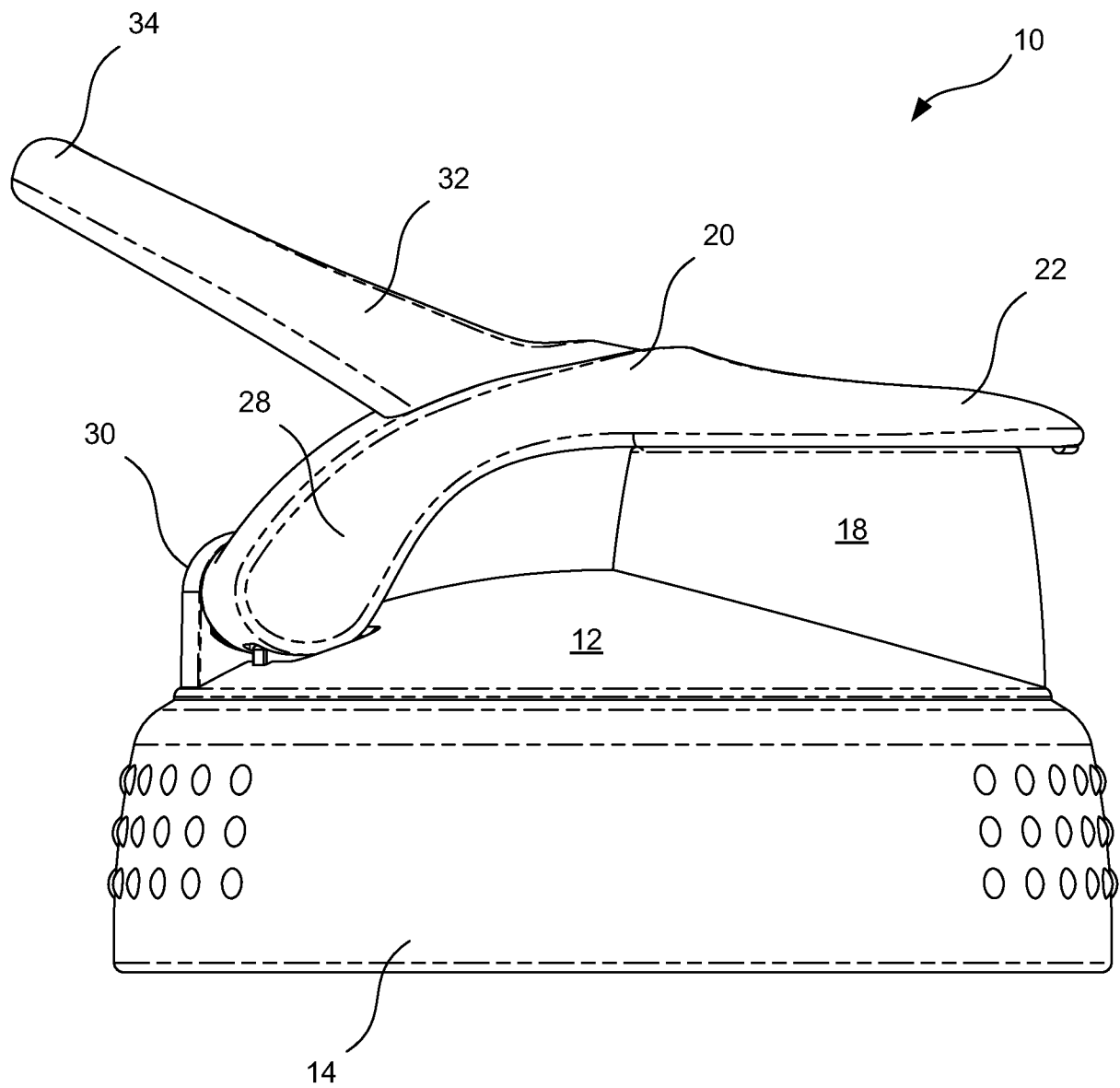


FIG. 11

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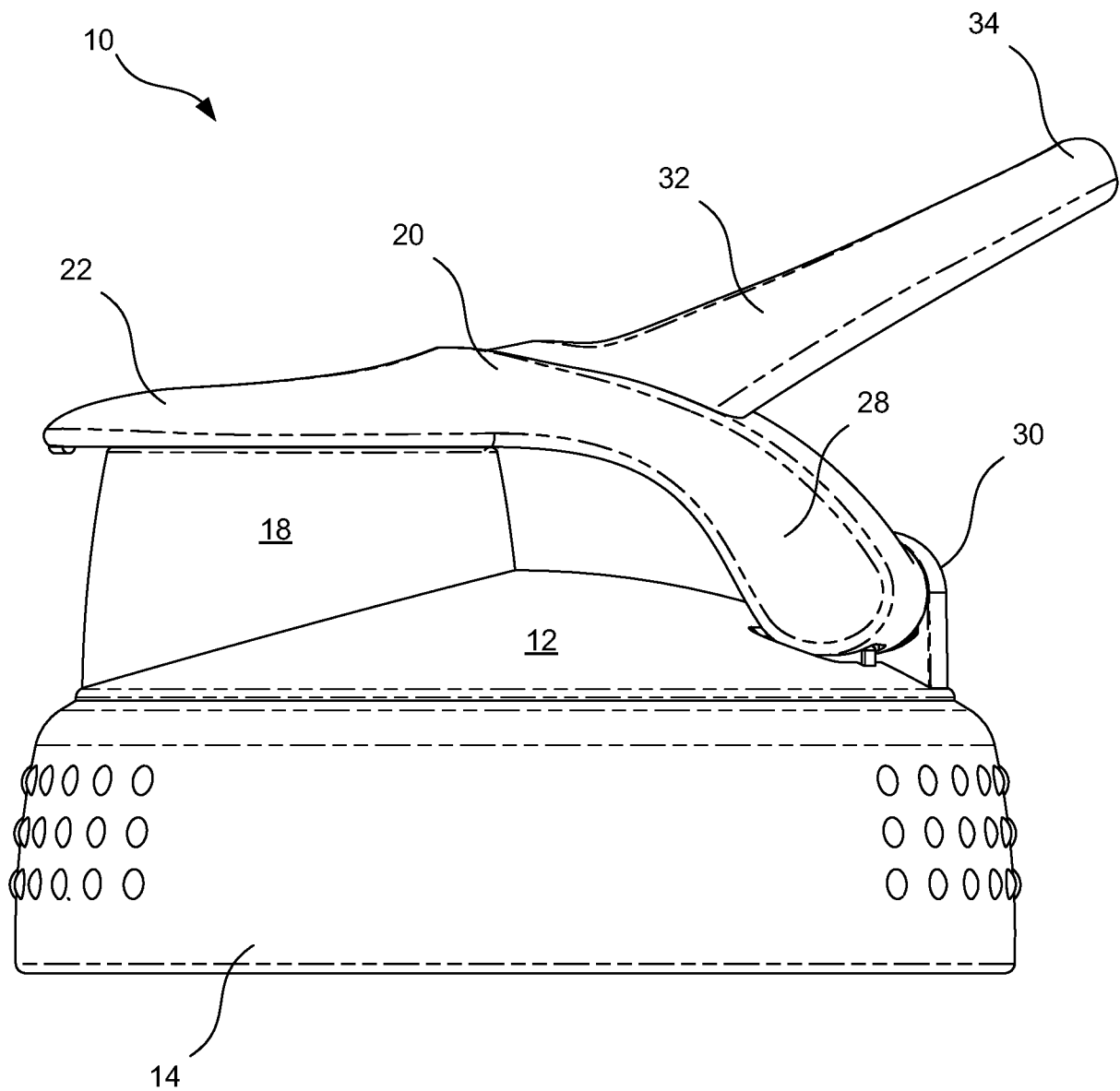


FIG. 12

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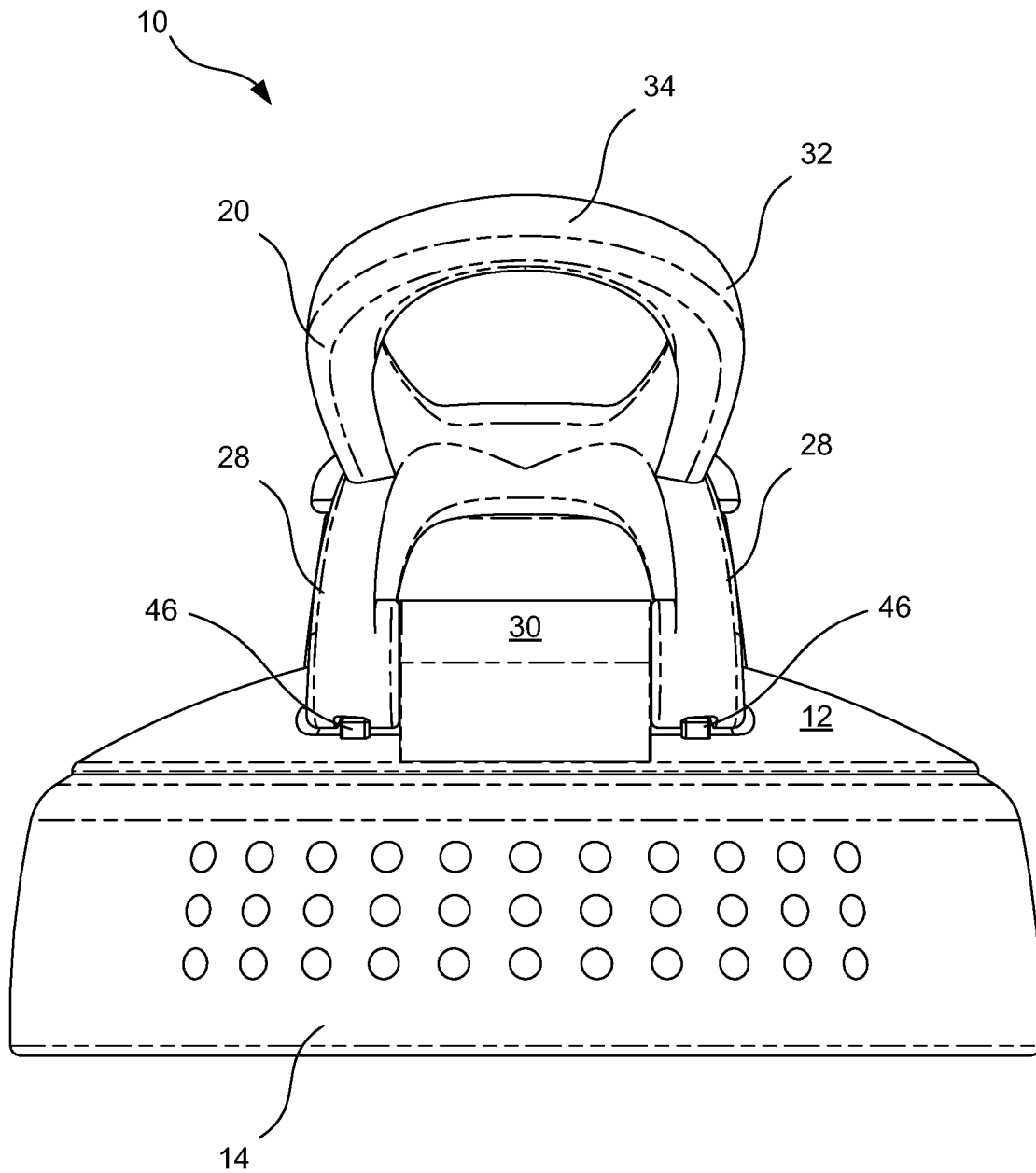


FIG. 13

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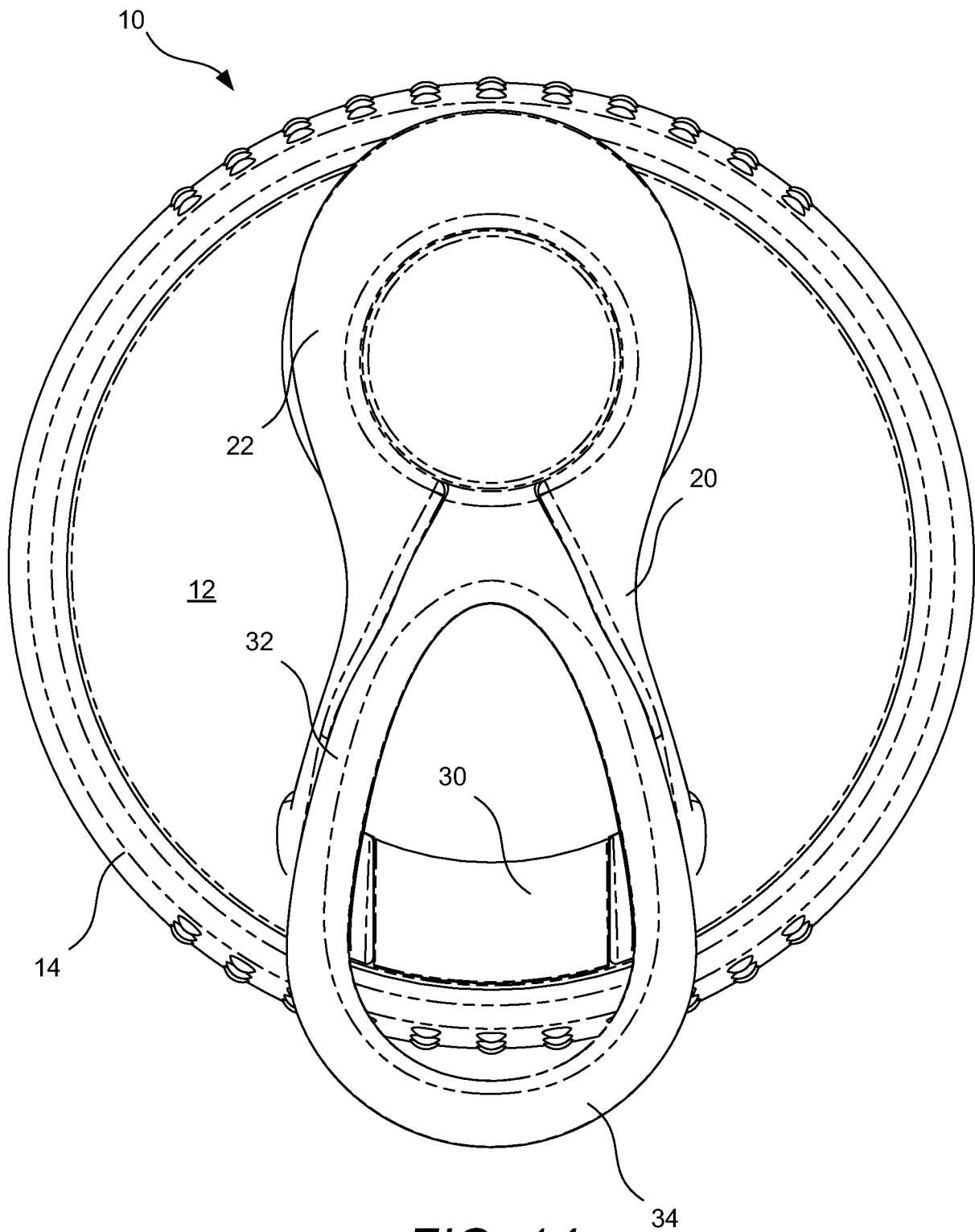


FIG. 14

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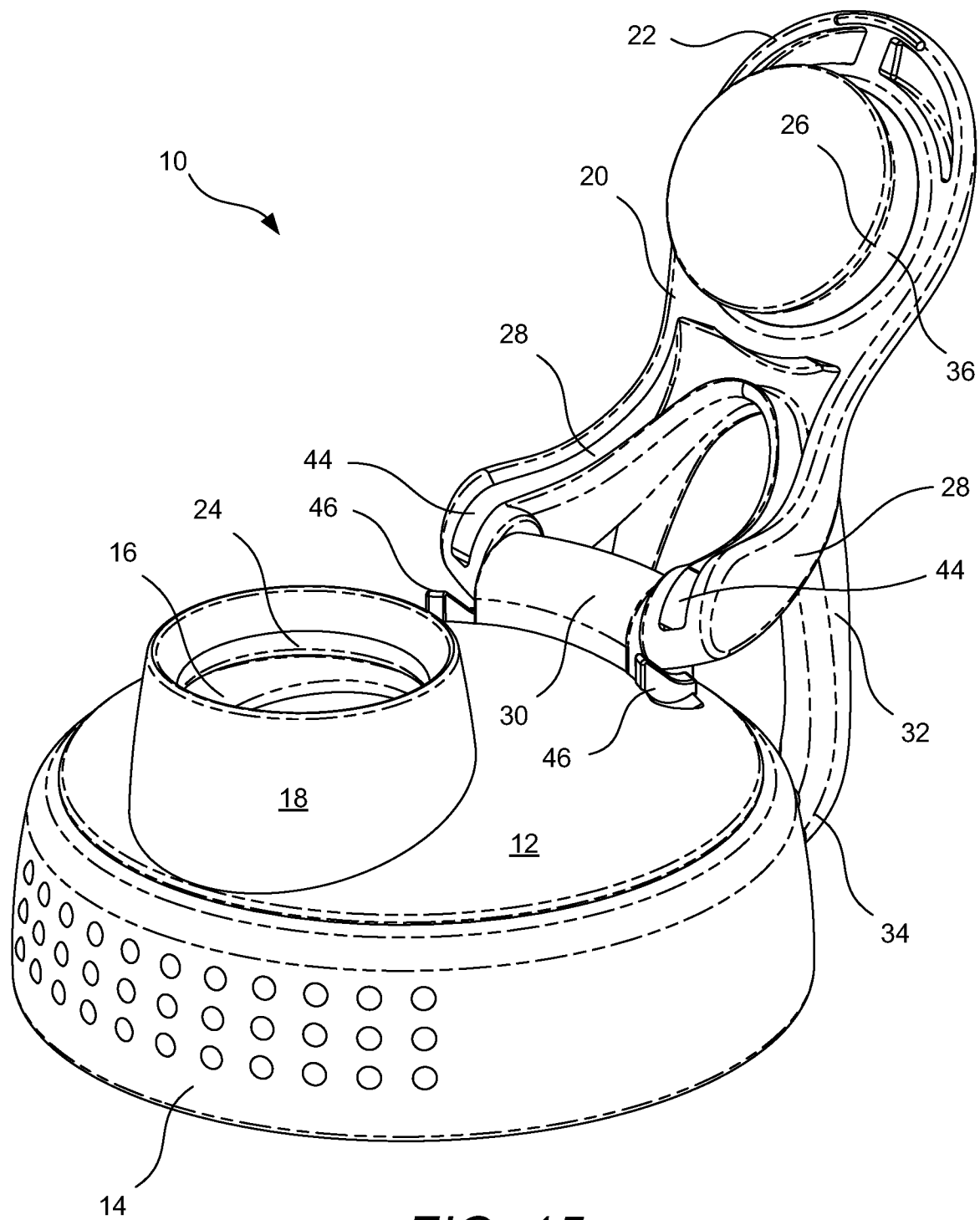


FIG. 15

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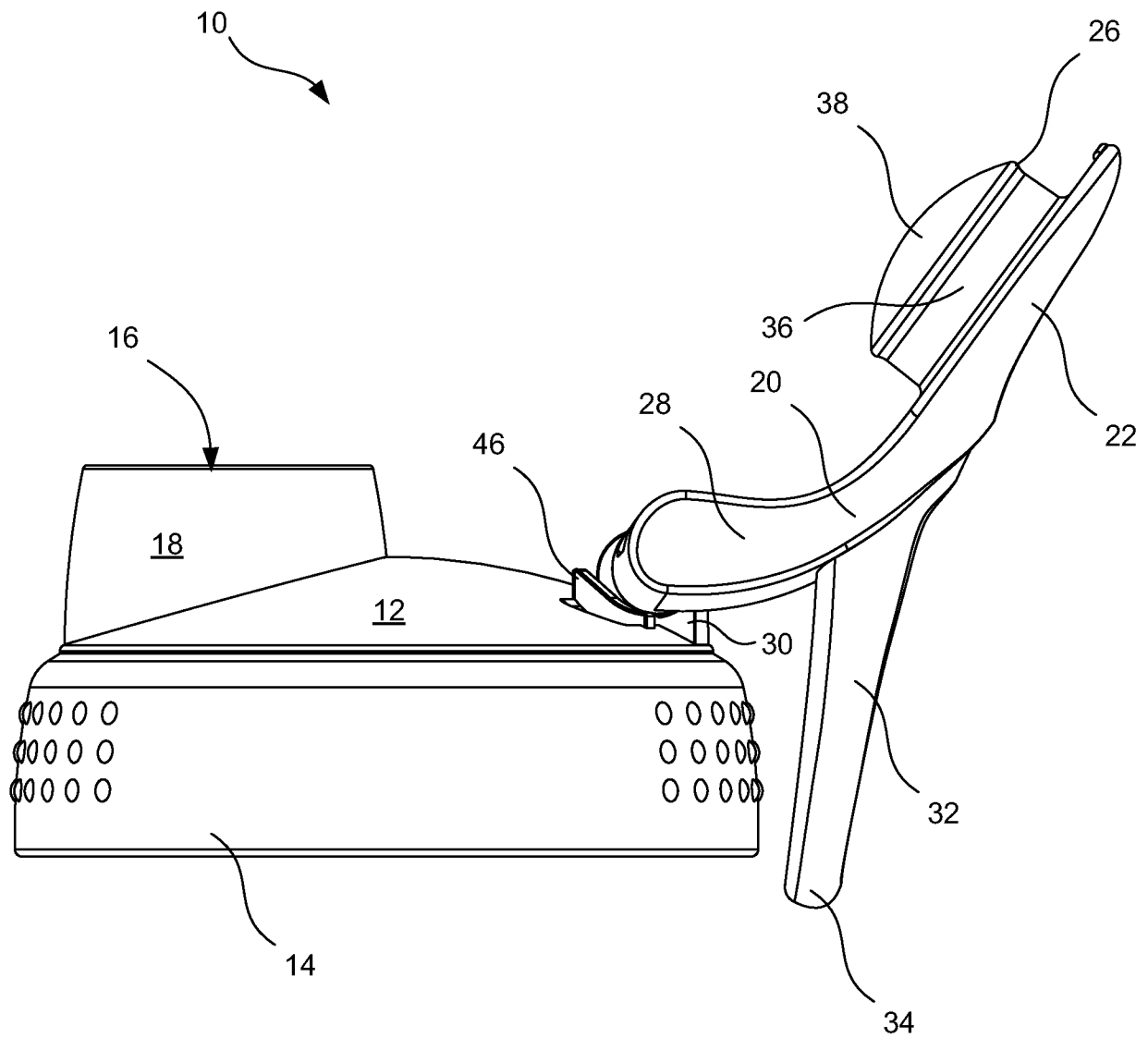


FIG. 16



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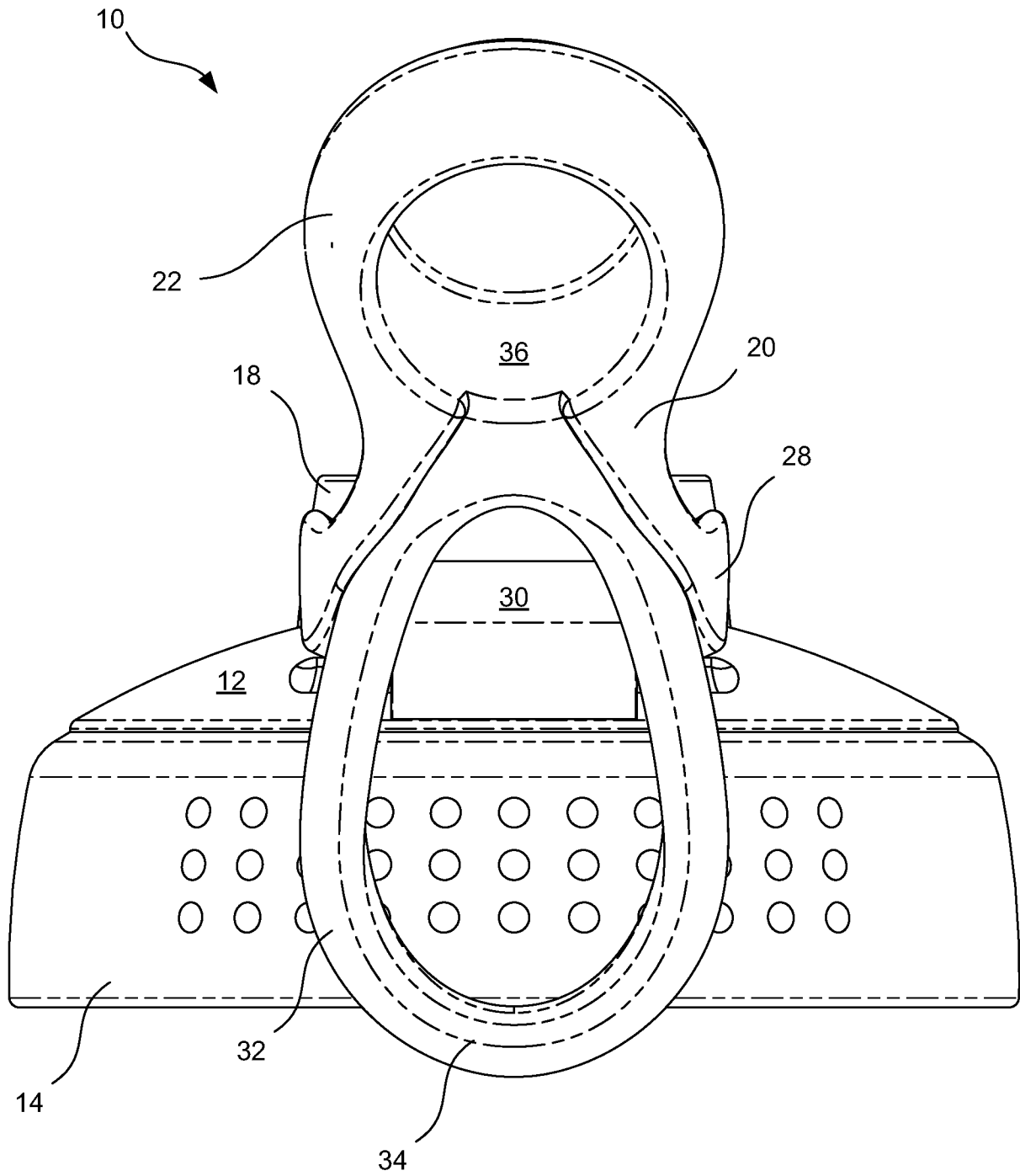


FIG. 17

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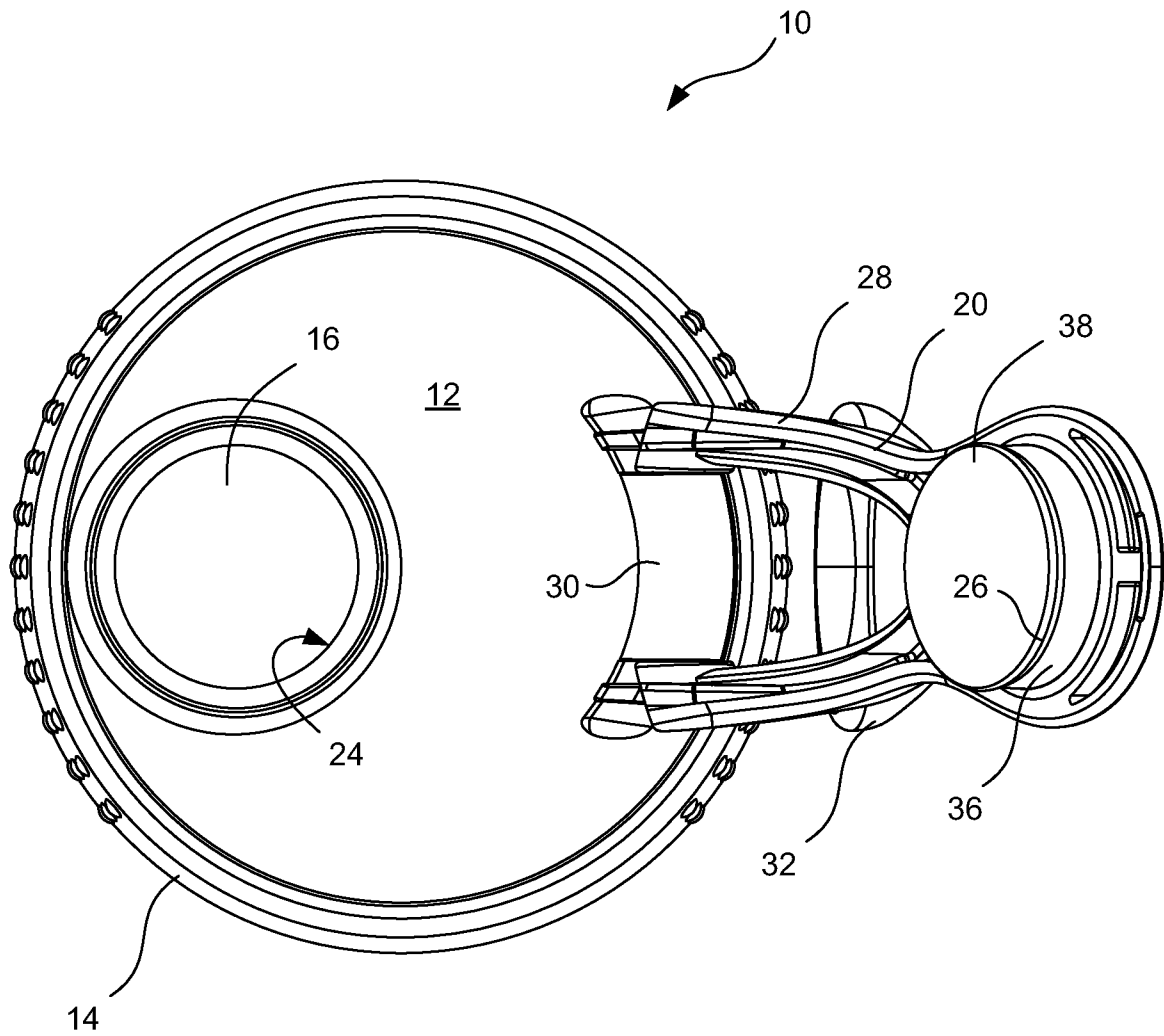


FIG. 18

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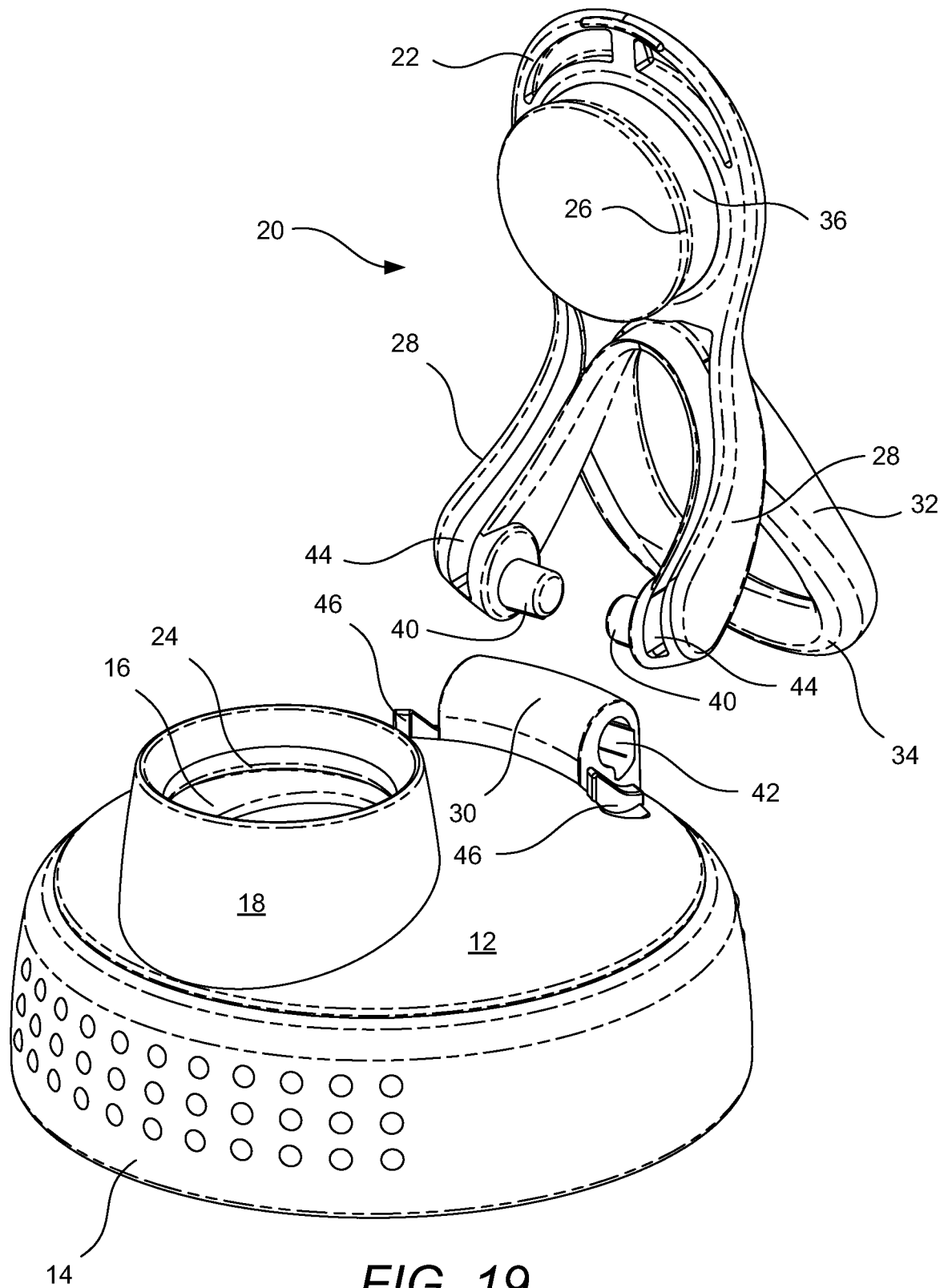


FIG. 19