US 20120031902A1

(19) United States

(12) Patent Application Publication

(10) Pub. No.: US 2012/0031902 A1

(43) Pub. Date: Feb. 9, 2012

Gilbert

(54) BEVERAGE CONTAINER CLOSURE

(76) Inventor: **Tyler Sean Gilbert**, Bellevue, WA (US)

(21) Appl. No.: **12/851,707**

(22) Filed: **Aug. 6, 2010**

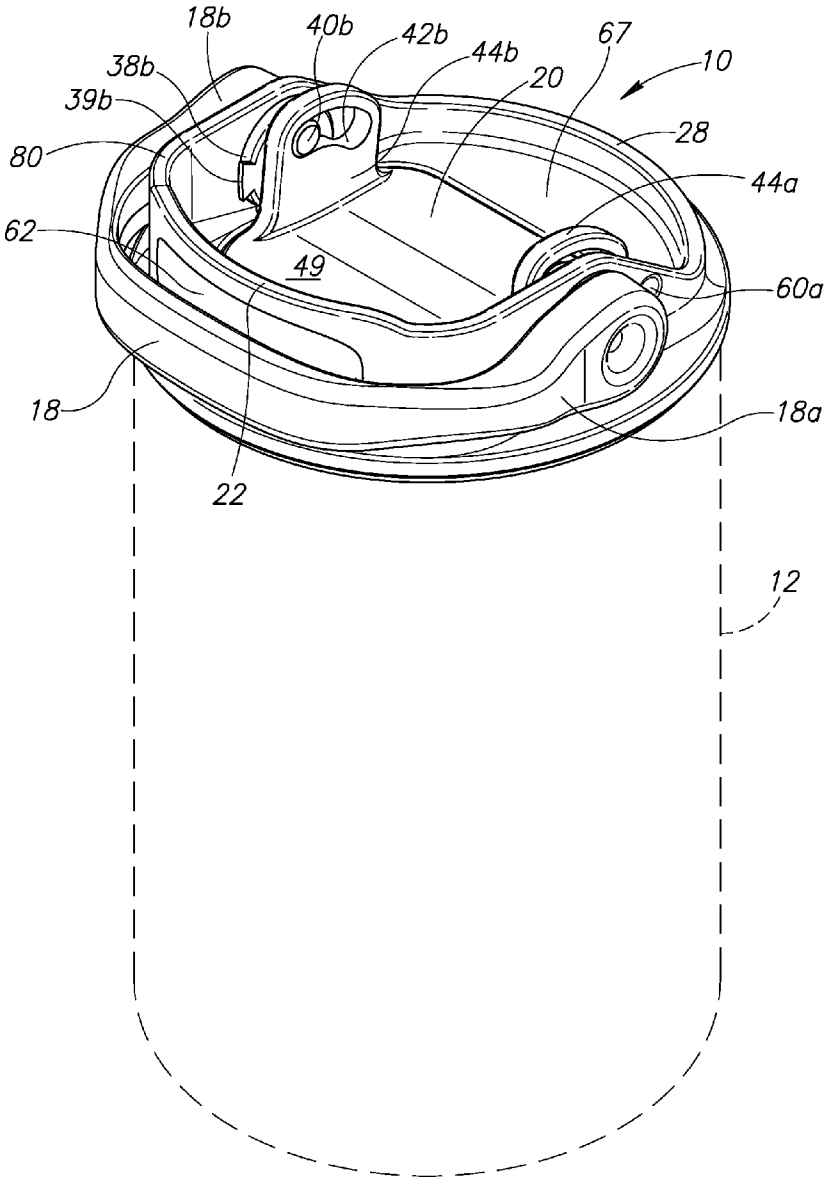
Publication Classification

(51) **Int. Cl.**
B65D 25/28 (2006.01)

(52) **U.S. Cl.** **220/212.5**

(57) **ABSTRACT**

A beverage container closure or lid that is adapted for closing an open end of a beverage container. The lid is selectively couplable to the beverage container and includes a selectively openable cover that when closed, creates a fluid-tight seal between the beverage container and the environment. The cover is pivotably connected to the lid. The lid also includes a rotatable handle that may be pivoted by a user from a first position to a second position. When pivoted, the handle is operative to cause the cover to pivotably rotate about a pivot point between an open position wherein a user may access a liquid contained in the beverage container and a closed position wherein the liquid is sealed within the beverage container. Thus, a user may simply rotate the handle of the lid to selectively open and close the cover.



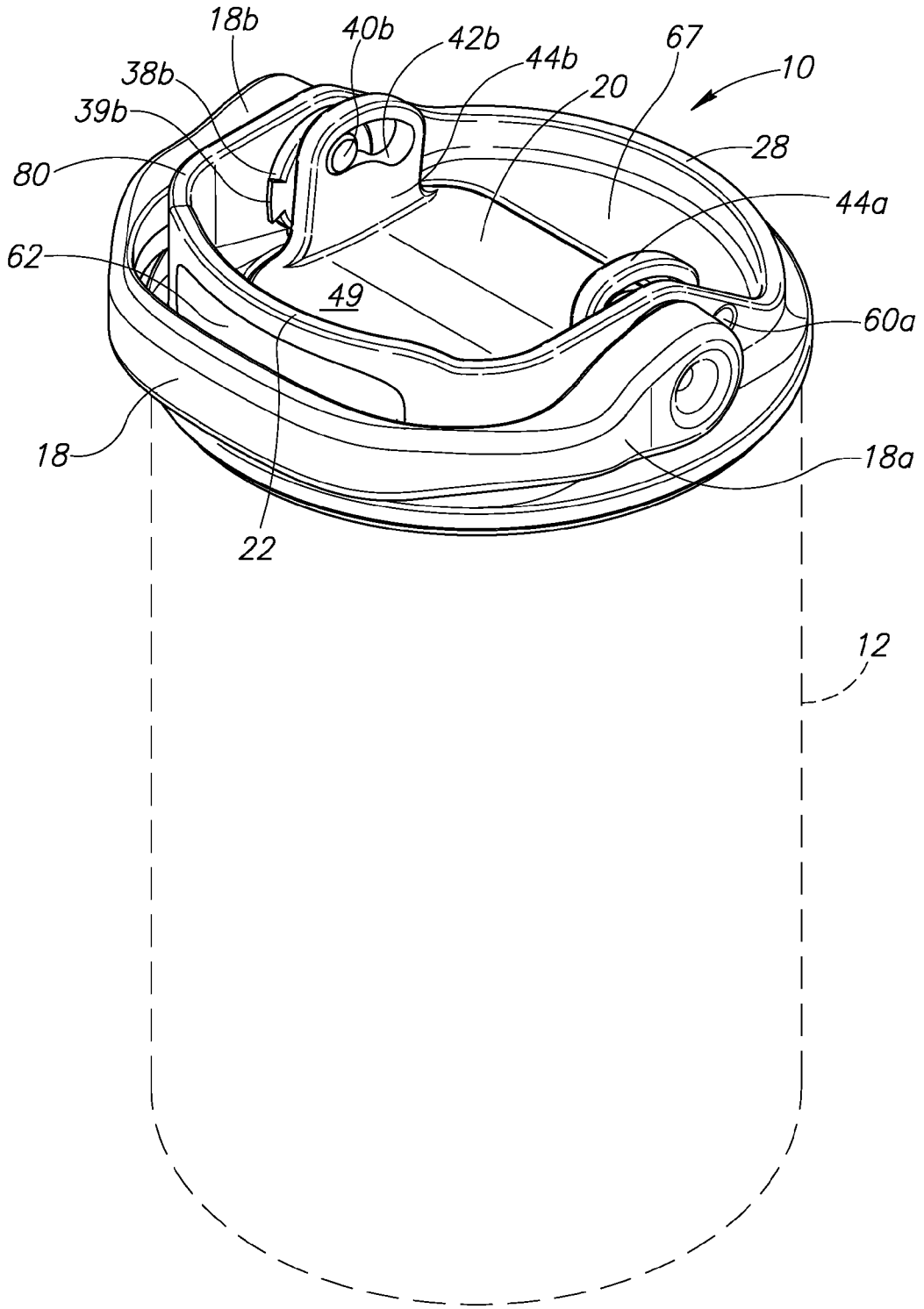


FIG.1

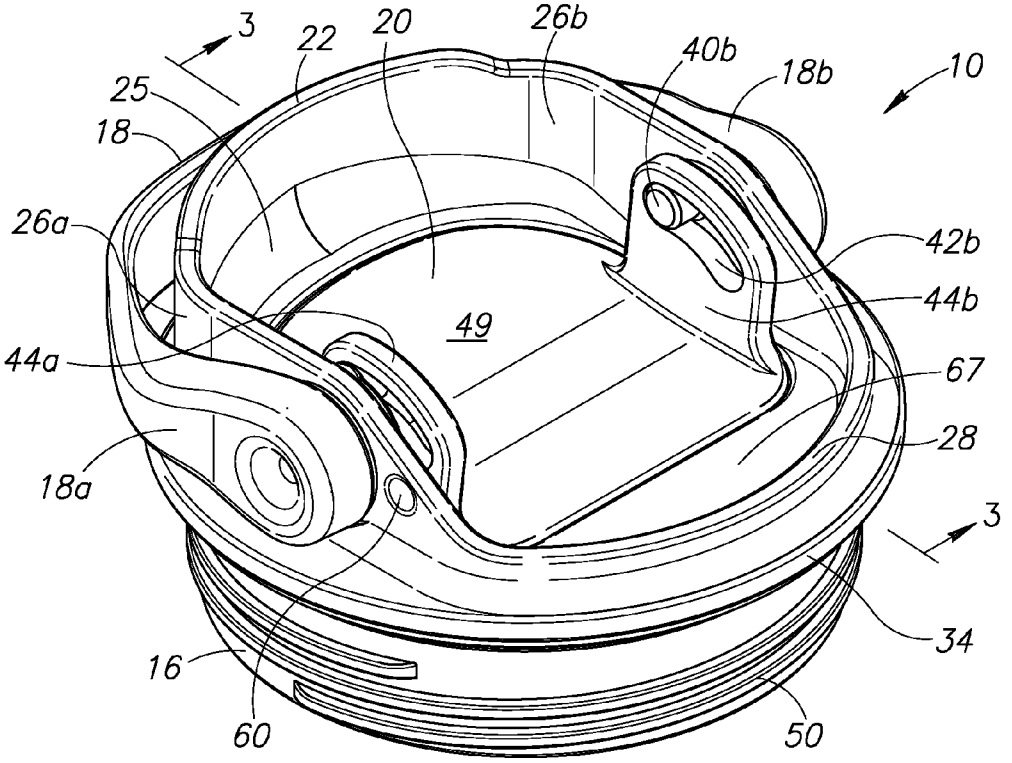

3
22
20
26b
40b
18b
10
25
18
26a
42b
44b
49
44a
67
28
18a
3
34
16
60
50

FIG.2

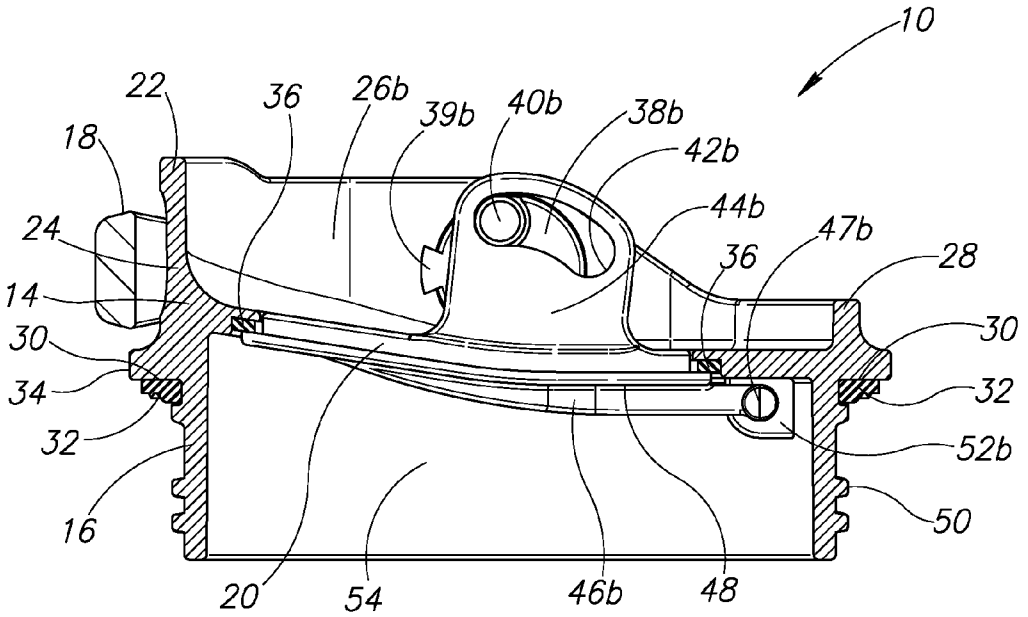

10
22
36
26b
39b
40b
38b
42b
18
44b
47b
24
36
28
14
30
30
34
32
32
52b
16
50
20
54
46b
48

FIG.3

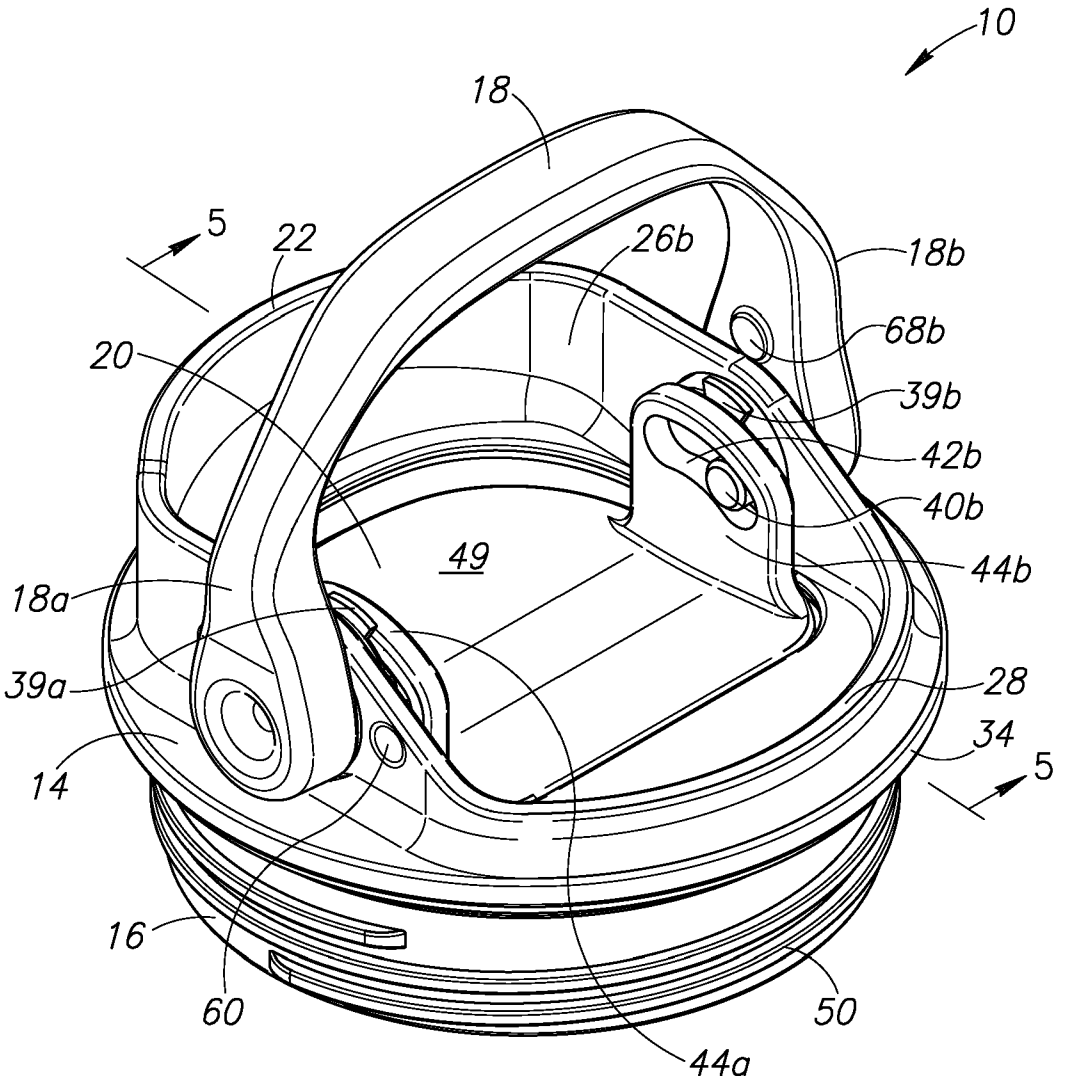

10
18
5
22
26b
18b
20
68b
39b
42b
40b
49
44b
18a
39a
28
34
5
14
16
60
50
44a

FIG.4

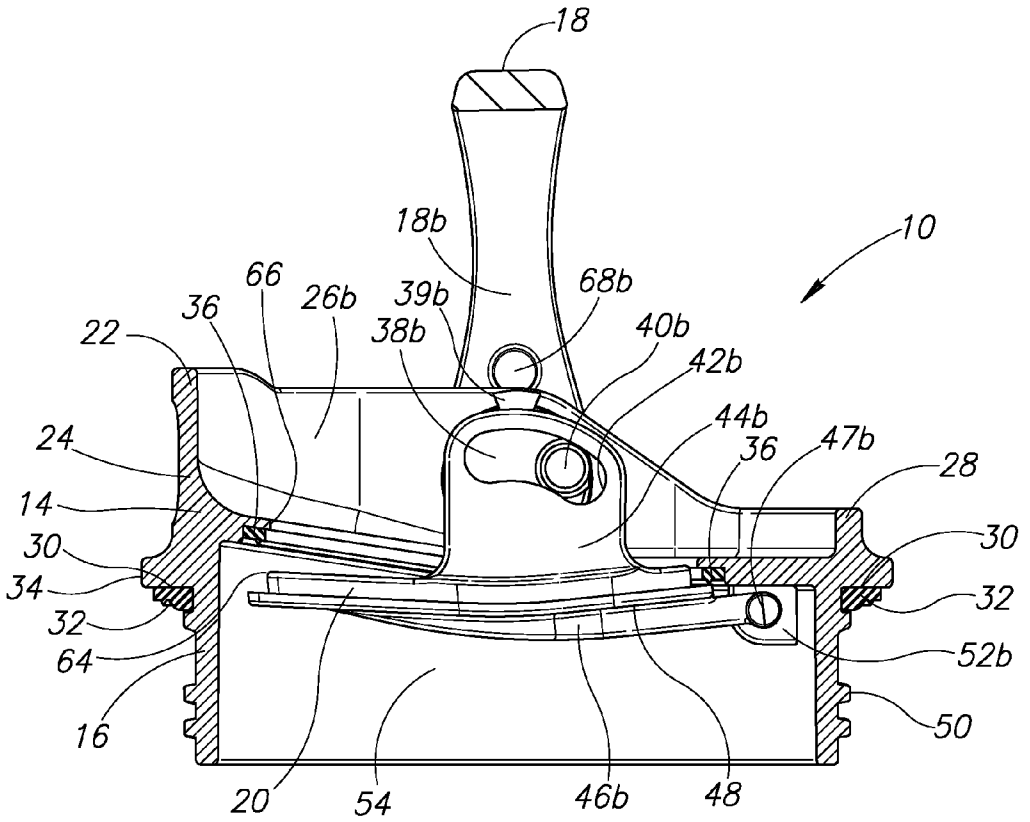

18
18b
10
66
26b
39b
68b
36
38b
40b
22
42b
44b
24
36
47b
28
14
30
30
34
32
32
64
52b
16
50
20
54
46b
48

FIG.5

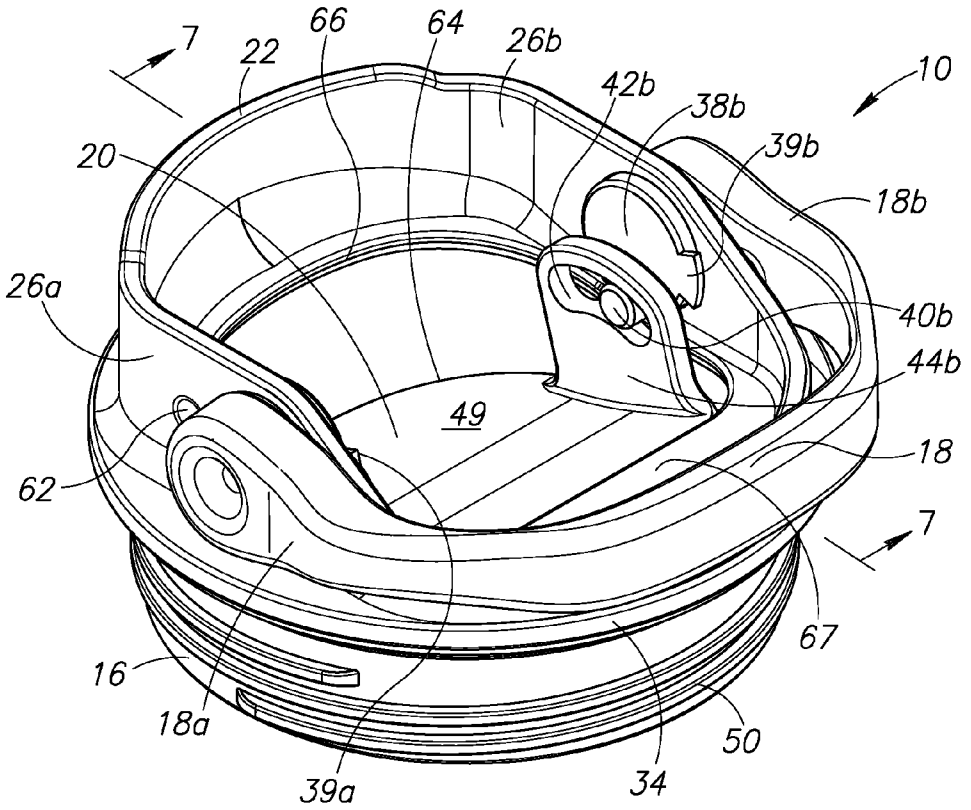

7
22
66
64
26b
10
42b
38b
39b
20
18b
26a
40b
44b
49
18
62
7
67
16
18a
50
39a
34

FIG.6

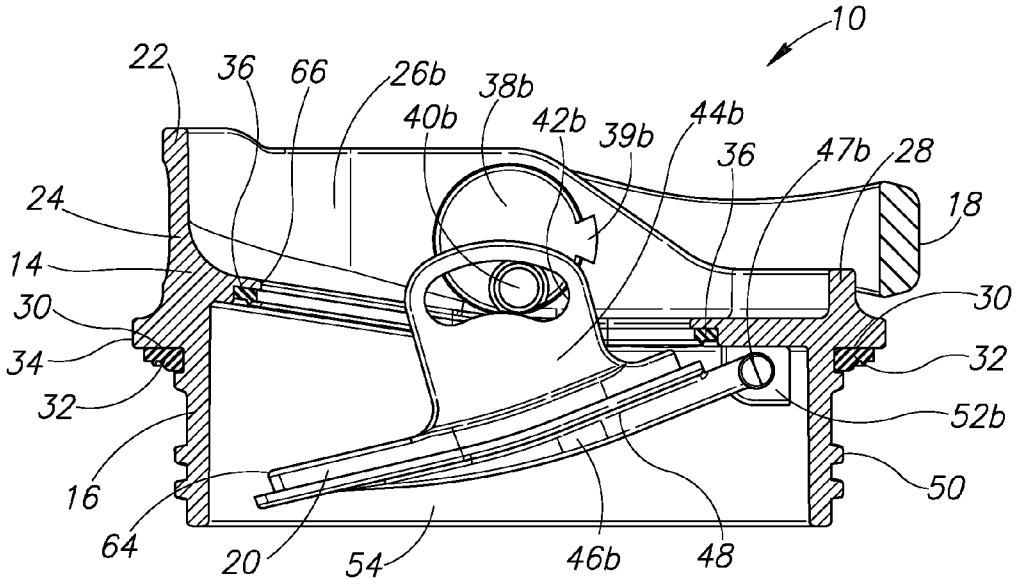

10
22
36
66
26b
38b
40b
42b
39b
44b
36
47b
28
24
18
14
30
30
34
32
32
52b
16
50
64
20
54
46b
48

FIG.7

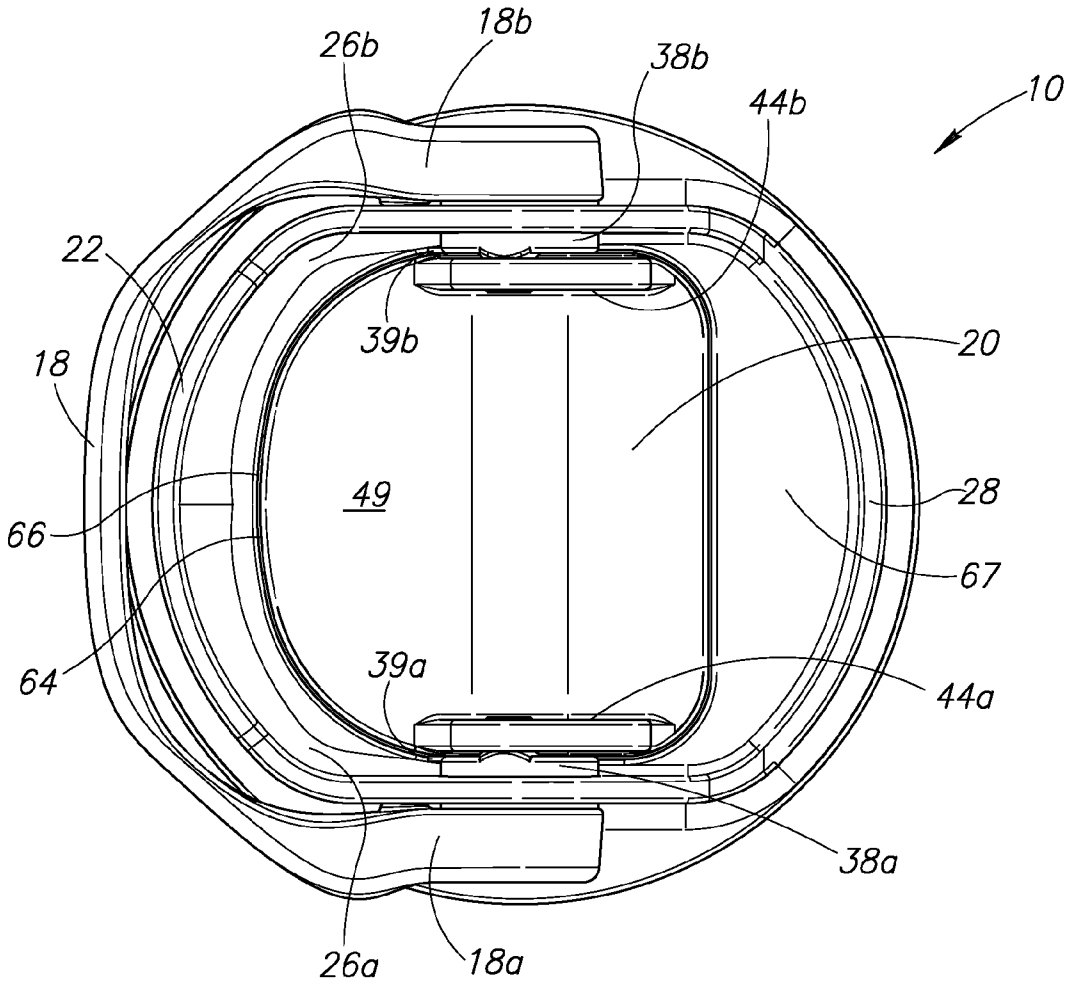


FIG.8

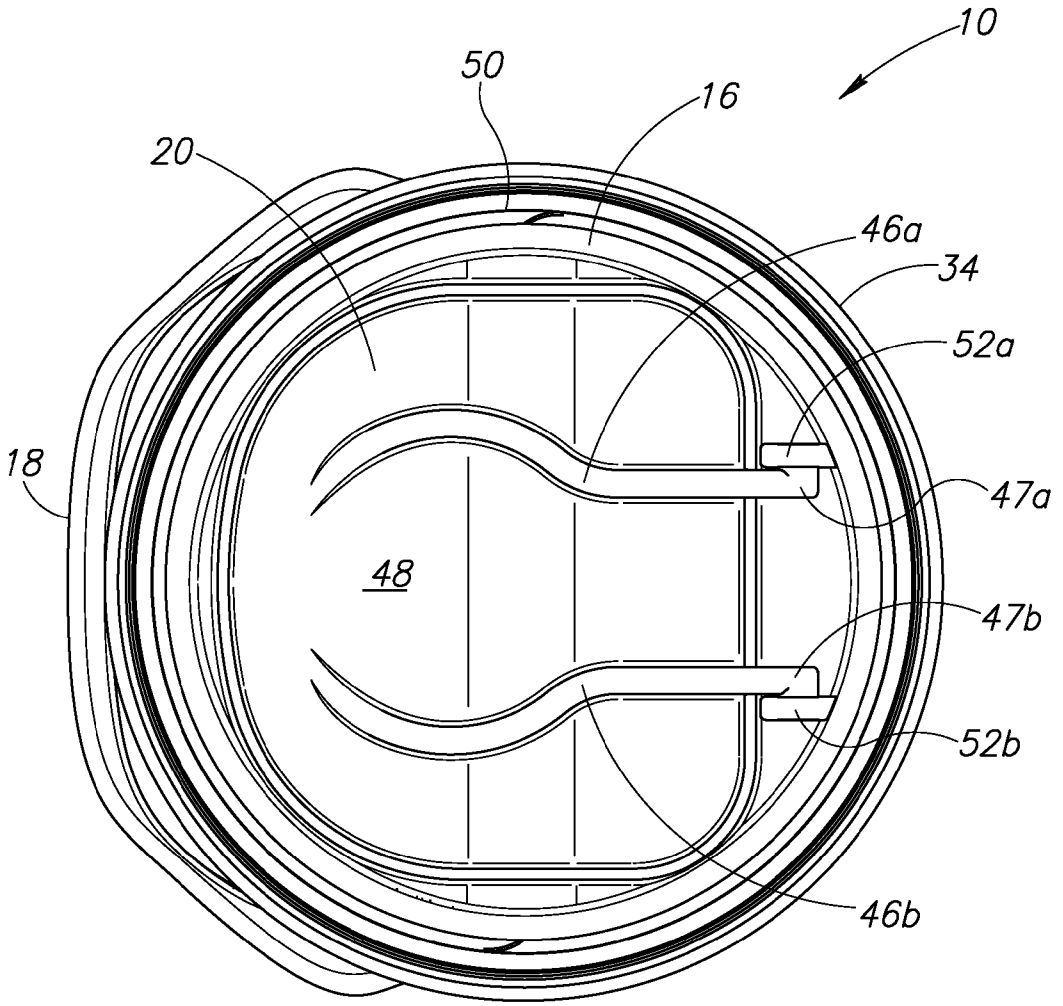


FIG.9

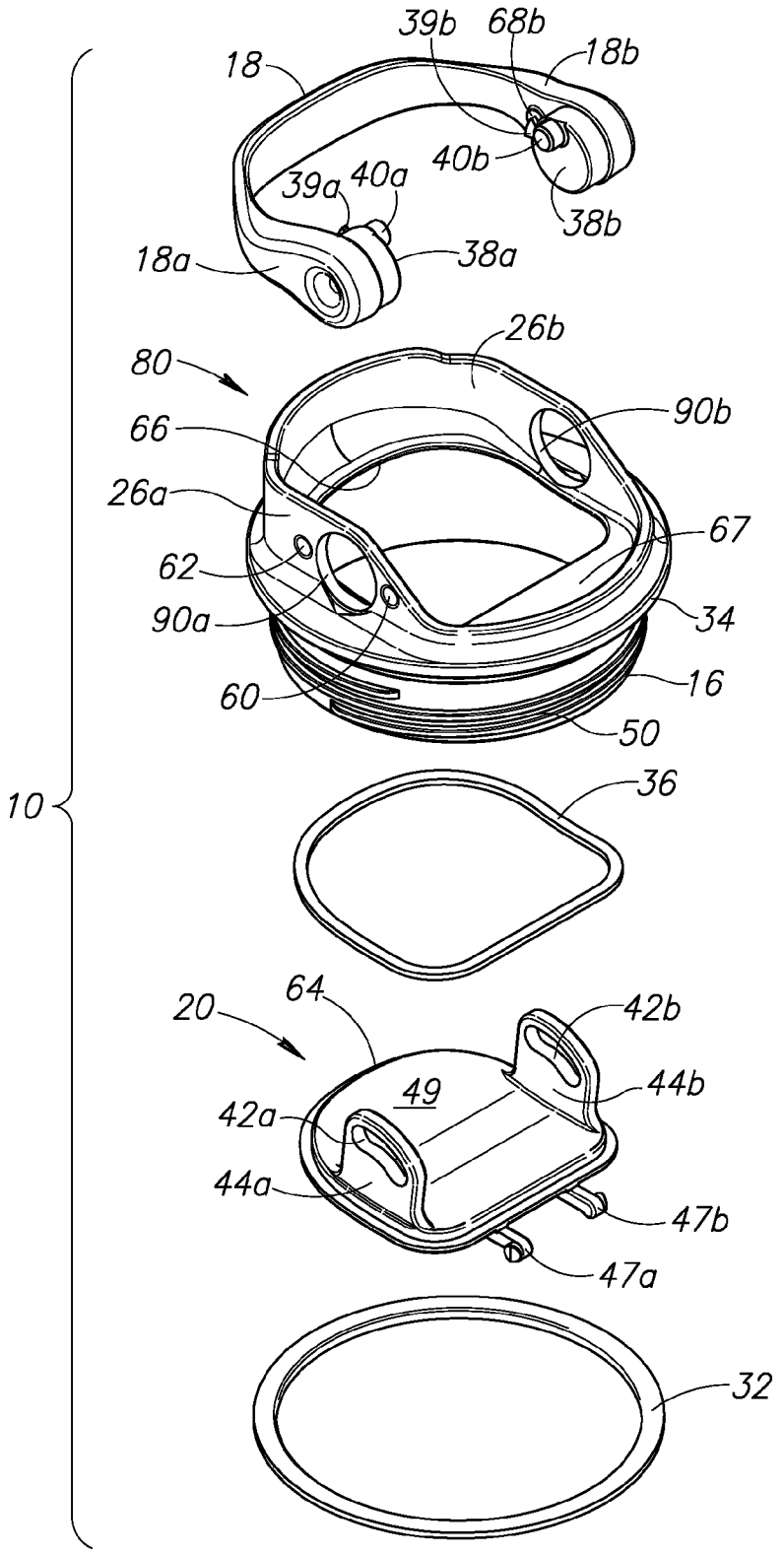

39b
68b
18b
18
40b
39a
40a
38b
18a
38a
26b
80
90b
66
26a
67
62
34
90a
16
60
50
10
36
64
20
42b
49
44b
42a
44a
47b
47a
32

FIG.10

BEVERAGE CONTAINER CLOSURE

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention is directed generally to lids for liquid storage vessels such as for beverage or food containers and more particularly to lids with movable components.

[0003] 2. Description of the Related Art

[0004] Prior art lids are typically of one of three types. The first type is a solid unitary lid that does not include openings or apertures through which the contents of a liquid storage vessel may exit the vessel. To drink from the vessel, a user must remove the lid. The second type, which may also be of a unitary construction, includes one or more unobstructed apertures through which the liquid may exit the vessel. In the second type, the apertures are always open. If the vessel is inadvertently tipped or dropped, the contents of the vessel may spill. The third type of lid includes one or more apertures through which the liquid may exit the vessel and a means for selectively opening and closing the apertures. When using the third type of lid, the user may selectively open the apertures to remove the contents from the vessel and selectively close the apertures to maintain the contents inside the vessel. Further, by closing the apertures, the lid may help insulate the contents from the environment outside the vessel.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S)

[0005] FIG. **1** is a perspective view of a lid constructed in accordance with the present invention depicted above a beverage or food container.

[0006] FIG. **2** is a perspective view of the lid of FIG. **1** with its cover arranged in a closed position.

[0007] FIG. **3** is a cross-sectional view of the lid of FIG. **1** taken substantially through line **3-3** of FIG. **2** with the cover arranged in the closed position.

[0008] FIG. **4** is a perspective view of the lid of FIG. **1** with the cover arranged in a partially open position.

[0009] FIG. **5** is a cross-sectional view of the lid of FIG. **1** taken substantially through line **5-5** of FIG. **4** with the cover arranged in the partially open position.

[0010] FIG. **6** is a perspective view of the lid of FIG. **1** with the cover arranged in a fully open position.

[0011] FIG. **7** is a cross-sectional view of the lid of FIG. **1** taken substantially through line **7-7** of FIG. **6** with the cover arranged in the fully open position.

[0012] FIG. **8** is a top view of the lid of FIG. **1** with the cover arranged in the closed position.

[0013] FIG. **9** is a bottom view of the lid of FIG. **1** with the cover arranged in a closed position.

[0014] FIG. **10** is an exploded perspective view of the lid of FIG. **1**.

DETAILED DESCRIPTION OF THE INVENTION

[0015] A beverage container closure or lid, in accordance with an embodiment of the present invention, is generally indicated at reference numeral **10** in FIG. **1**. The lid **10** has a substantially circular main body **80** that is adapted for closing an open end of a conventional beverage container **12**, shown in broken lines in FIG. **1**. The beverage container **12** may be any suitable type of container such as the tumbler type (that is, without a handle) for use in automotive beverage receptacles, or for transport in backpacks, book bags, and the like.

[0016] As shown in FIG. **10**, the lid **10** is selectively couplable to the beverage container **12** by any suitable means such as threads **50** disposed on an outer surface of a circumferential sidewall of a lower, downwardly depending portion **16**. The lid **10** also includes a flexible ring seal member **32** positioned adjacent the sidewall of the lower portion **16** and a bottom surface **30** of a circumferential flange **34** of the main body (See FIGS. **2** and **3**). The particular configuration for mating the lid **10** to the container **12** is a matter of choice for one of ordinary skill in the art. Thus, although threads **50** and the seal member **32** have been shown in this embodiment, those of ordinary skill in the art will appreciate that any other means for sealing the lid **10** with respect to the beverage container **12** may be substituted.

[0017] The main body **12** also includes a raised front sidewall portion **24** integrally connected to a raised left sidewall **26***a* and a raised right sidewall **26***b*. The front sidewall portion **24** includes a curved upper surface having a raised semicircular lip **22** configured for contact with a user's lips when the entire assembly is tipped toward the user. To further improve the usability of the lid **10**, the front sidewall **24** may also include a groove **62** configured to interface with the user's bottom lip when the user is drinking a beverage housed in the container **12**. As can be appreciated, an inner surface of the front sidewall **24** including the lip **22**, the left and right sidewall **26***a* and **26***b*, and a rear portion **28**, define a drinking basin **25** for the receipt of a beverage, such as coffee, from the beverage container **12**.

[0018] Fluid communication between the drinking basin **25** and the interior of the beverage container **12** is provided by way of a selectively openable cover **20**. As may best be viewed in the exploded view of FIG. **10**, the cover **20** includes left and right upwardly extending tabs or raised portions **44***a*, **44***b* each having arcuate slots **42***a*, **42***b*, respectively, disposed therein. The cover **20** also includes left and right pivot pins **47***a*, **47***b* for coupling with pin receiver portions **52***a*, **52***b* disposed on a lower surface of the main body **80** of the lid **10** (see FIG. **9**). Further, the cover **20** includes a top surface **49**, a bottom surface **48** generally opposite the top surface, and a peripheral edge **64** sized to engage with an opening **66** in a top portion **67** of the main body **80**.

[0019] As shown in FIGS. **2-7**, the cover **20** is pivotably attached to the main body **80** by engagement of the pivot pins **47***a*, **47***b* with the pin receiver portions **52***a*, **52***b* of the lid **10**. The pivot pins **47***a*, **47***b* are integrally connected to cover support members **46***a*, **46***b*, respectively, (see FIG. **9**) which are secured to the bottom surface **48** of the cover **20**.

[0020] In operation, the cover **20** is configured to pivot between a sealed or closed position, shown in FIGS. **2** and **3**, to a partially open position, shown in FIGS. **4** and **5**, and to a fully open position, shown in FIGS. **6** and **7**. As can be appreciated, this feature permits a user to transport the beverage container **12** without spilling its contents when the cover **20** is in the closed position, while allowing the user to access the contents of the container **12** when the cover **20** is in the open position.

[0021] To effect movement of the cover **20** between the closed position and the open position, a handle **18** is provided. As may best be seen in FIG. **10**, the handle **18** is symmetric and includes a left portion **18***a* and a right portion **18***b*. The left portion **18***a* and right portion **18***b* include respective cylindrical members **38***a*, **38***b* sized to fit in rotatable connec-

tion within respective apertures **90***a*, **90***b* disposed in the left and right sidewalls **26***a*, **26***b* of the main body **80** of the lid **10**. The handle **18** also includes inwardly projecting rods **40***a*, **40***b* configured for slidable engagement within the arcuate slots **42***a*, **42***b* disposed in the raised portions **44***a*, **44***b* of the cover **20**. As discussed below, the rods **40***a*, **40***b* act against the arcuate slots **42***a*, **42***b* to translate the pivotal motion of the handle **18** to pivotal motion of the cover **20**.

[0022] The respective cylindrical members **38***a*, **38***b* include respective tabs **39***a*, **39***b* that function as a stop to reduce the likelihood that the cylindrical members will pull free of the respective apertures **90***a*, **90***b* through which the cylindrical members extend and pivot. That is, the handle **18** is snap fitted into the respective apertures **90***a*, **90***b* and the tabs **39***a*, **39***b* tend to hold it there during use against a laterally outward force being applied to the left portion **18***a* or the right portion **18***b* of the handle **18**.

[0023] The operation of the lid **10** is now described with reference to FIGS. **2-7**. When the cover **20** is in the sealed or closed position, shown in FIGS. **2** and **3**, the handle **18** is disposed in a substantially horizontal position rotated forward to be near the forward front sidewall **24** of the lid **10**. In this configuration, the rods **40***a*, **40***b* engage the arcuate slots **42***a*, **42***b*, respectively, to lift upward and retain the cover **20** in the closed position. As a user rotates the handle **18** rearward toward a substantially vertical position, shown in FIGS. **4** and **5**, the rods **40***a*, **40***b* of the handle **18** slide along the arcuate slots **42***a*, **42***b*, respectively, thereby urging the cover **20** to pivot in a downward direction about the pivot pins **47***a*, **47***b* into the partially open position. Similarly, as the user continues to rotate the handle **18** rearward toward the rear portion **28** of the main body **80**, the rods **40***a*, **40***b* continue to act against the arcuate slots **42***a*, **42***b*, respectively, to further pivot and open the cover **20** to the fully open position shown in FIGS. **6** and **7**, wherein the user may drink from the container **12**. The handle **18** may then be rotated forward to move the cover **20** to the partially open position and then to the closed position. In this regard, a user may simply rotate the handle **18** to selectively open and close the cover **20** of the lid **10**.

[0024] To provide a fluid-tight seal when the cover **20** is in the closed position, the outer edge **64** of the cover **20** has substantially the same shape of the opening **66** in the main body **80** and is sized to be slightly larger than the opening **66**. Further, a cover seal **36** may be secured to lower surface of the main body **80** around the perimeter of the opening **66** to be between the main body and the cover and provide a fluid-tight seal therebetween when the cover **20** is in the closed position.

[0025] In order to removably secure the cover **20** in either the open or closed positions, the handle **18** includes locking protrusions or bumps **68***a*, **68***b* disposed on inner surfaces of the left portion **18***a* and right portion **18***b*, respectively, of the handle. Further, the left sidewall **26***a* and the right sidewall **26***b* each include a rear locking recess or dimple **60** on the outward side thereof rearward of the apertures **90***a* and **90***b*, and front locking dimple **62**. In operation, when a user rotates the handle **18** to the fully open position, the locking bumps **68***a*, **68***b* each become seated in the corresponding one of the rear locking dimples **60**. Similarly, when a user rotates the handle **18** to the fully closed position, the locking bumps **68***a*, **68***b* each become seated in the corresponding one of the front locking dimples **62**. As can be appreciated, the size and shapes of the locking dimples **60** and **62** and locking bumps **68***a*, **68***b* are configured such that the handle **18** is secured in either the open position or the closed position until a user desires to unseat the locking bumps from the locking dimples by rotating the handle **18** from one of these positions using a sufficient amount of rotational force.

[0026] The handle **18**, main body **80**, and cover **20** may be manufactured by an injection molding process utilizing, for example, a food grade thermoplastic material. Further, the cover seal **36** and the lid seal **32** may be manufactured from, for example, a food grade silicon rubber. It will be appreciated that other materials and processes may be used for these components without departing from the scope of the present invention.

[0027] The foregoing described embodiments depict different components contained within, or connected with, different other components. It is to be understood that such depicted architectures are merely exemplary, and that in fact many other architectures can be implemented which achieve the same functionality. In a conceptual sense, any arrangement of components to achieve the same functionality is effectively "associated" such that the desired functionality is achieved. Hence, any two components herein combined to achieve a particular functionality can be seen as "associated with" each other such that the desired functionality is achieved, irrespective of architectures or intermedial components. Likewise, any two components so associated can also be viewed as being "operably connected", or "operably coupled", to each other to achieve the desired functionality.

[0028] While particular embodiments of the present invention have been shown and described, it will be obvious to those skilled in the art that, based upon the teachings herein, changes and modifications may be made without departing from this invention and its broader aspects and, therefore, the appended claims are to encompass within their scope all such changes and modifications as are within the true spirit and scope of this invention. Furthermore, it is to be understood that the invention is solely defined by the appended claims. It will be understood by those within the art that, in general, terms used herein, and especially in the appended claims (e.g., bodies of the appended claims) are generally intended as "open" terms (e.g., the term "including" should be interpreted as "including but not limited to," the term "having" should be interpreted as "having at least," the term "includes" should be interpreted as "includes but is not limited to," etc.). It will be further understood by those within the art that if a specific number of an introduced claim recitation is intended, such an intent will be explicitly recited in the claim, and in the absence of such recitation no such intent is present. For example, as an aid to understanding, the following appended claims may contain usage of the introductory phrases "at least one" and "one or more" to introduce claim recitations. However, the use of such phrases should not be construed to imply that the introduction of a claim recitation by the indefinite articles "a" or "an" limits any particular claim containing such introduced claim recitation to inventions containing only one such recitation, even when the same claim includes the introductory phrases "one or more" or "at least one" and indefinite articles such as "a" or "an" (e.g., "a" and/or "an" should typically be interpreted to mean "at least one" or "one or more"); the same holds true for the use of definite articles used to introduce claim recitations. In addition, even if a specific number of an introduced claim recitation is explicitly recited, those skilled in the art will recognize that such recitation should typically be interpreted to mean at least the recited number (e.g., the bare recitation of "two recitations,"

without other modifiers, typically means at least two recitations, or two or more recitations).

[0029] Accordingly, the invention is not limited except as by the appended claims.

The invention claimed is:

1. A lid for use with a drinking vessel containing a liquid, comprising:

a body selectively couplable to the drinking vessel, the main body including a top portion having an opening configured to permit fluid passage therethrough when the lid is coupled to the drinking vessel;

a cover pivotably coupled to the body, the cover operative to pivot between an open position wherein the cover is disposed in a downward-directed position and a closed position wherein the cover is engaged with the top portion to prevent the liquid from exiting the drinking vessel; and

a handle pivotably coupled to the main body and operatively coupled to the cover such that selective rotation of the handle causes pivotal rotation of the cover between the open position and the closed position.

2. The lid of claim **1**, wherein the body includes a lower portion configured for removable engagement with the drinking vessel.

3. The lid of claim **1**, further comprising:

a cover seal disposed around a perimeter of the opening of the body, wherein the cover seal is operative to provide a fluid-tight seal between the body and the cover when the cover is in the closed position.

4. The lid of claim **1**, wherein the body comprises a front sidewall connected to two laterally spaced sidewalls, and wherein the handle is pivotably coupled to each of the sidewalls.

5. The lid of claim **4**, wherein each of the laterally spaced sidewalls include an aperture, and wherein the handle includes two pivot members each configured for insertion through one of the apertures.

6. The lid of claim **1**, wherein the cover further comprises two laterally spaced raised portions, each of the laterally spaced raised portions including a slot sized to receive a portion of the handle, wherein when the handle is rotated by a user the portion of the handle slidably engages with the slot to move the cover between the open position and the closed position.

7. The lid of claim **1**, wherein the cover further comprises two laterally spaced raised portions, each of the laterally spaced raised portions including an arcuate slot, and wherein the handle includes laterally spaced members each sized to fit within one of the slots, wherein the members are operative to exert a force on the raised portions of the cover to move the cover between the open position and the closed position when the handle is rotated between a first position and a second position, respectively.

8. The lid of claim **1**, further comprising:

a locking mechanism configured to releasably secure the handle in at least one of a first position corresponding to a position wherein the cover is in the open position and a second position corresponding to a position wherein the cover is the closed position.

9. The lid of claim **8**, wherein the body comprises a front sidewall connected to two laterally spaced sidewalls, wherein the locking mechanism comprises:

a locking dimple disposed on at least one of the sidewalls; and

a locking protrusion disposed on the handle and configured to be seated within the locking dimple when the handle is in one of the first position and the second position.

10. A lid for use with a drinking vessel containing a liquid, comprising:

a body selectively couplable to the drinking vessel, the main body including a top portion having an opening configured to permit fluid passage therethrough when the lid is coupled to the drinking vessel;

a cover pivotably coupled to the body, the cover operative to pivot between an open position wherein the cover is disposed in a downward position spaced away from the opening and a closed position wherein the cover is engaged with the top portion to close the opening and prevent the liquid from exiting the drinking vessel; and

a handle pivotably coupled to the body;

means for translating pivotal movement of the handle to pivotal movement of the cover such that selective rotation of the handle causes pivotal rotation of the cover relative to the body between the open position and the closed position.

11. The lid of claim **10**, wherein the body includes a lower portion having coupling means configured for selective engagement with the drinking vessel.

12. The lid of claim **10**, further comprising:

means for sealing the opening when the cover is in the closed position to prevent the liquid stored in the drinking vessel from leaking therethrough.

13. The lid of claim **10**, wherein the main body comprises a front sidewall integrally connected to two laterally spaced sidewalls, and wherein the handle is pivotably coupled to the sidewalls.

14. The lid of claim **13**, wherein each of the laterally spaced sidewalls include an aperture, and wherein the handle includes two pivot members each configured for insertion through one of the apertures.

15. The lid of claim **10**, wherein the means for translating comprises:

two laterally spaced upwardly extending tabs disposed on the cover, each of the tabs including a slot; and

two protrusions disposed on the handle each configured to fit within one of the slots, wherein when the handle is rotated by a user the protrusions disposed on the handle slidably engage with the slots to move the cover between the open position and the closed position.

16. The lid of claim **10**, wherein the means for translating comprises:

two laterally spaced upwardly extending members disposed on the cover, each of the laterally spaced members including an arcuate slot; and

two laterally spaced protrusions disposed on the handle, each sized to fit within one of the slots, wherein the protrusions are operative to exert a force on the laterally spaced members of the cover to move the cover between the open position and the closed position when the handle is rotated between a first position and a second position, respectively.

17. The lid of claim **10**, further comprising:

locking means configured to releasably secure the handle in at least one of a first position corresponding to a position wherein the cover is in the open position and a second position corresponding to a position wherein the cover is the closed position.

18. The lid of claim **17**, wherein the body comprises a front sidewall integrally connected to two laterally spaced sidewalls, wherein the locking means comprises:

a locking dimple disposed on at least one of the sidewalls; and

a locking protrusion disposed on the handle and configured to be seated within the locking dimple when the handle is in one of the first position and the second position.

19. A drinking vessel and lid assembly, comprising:

a drinking vessel; and

a lid comprising:

a body selectively couplable to the drinking vessel, the body including a top portion having an opening configured to permit fluid passage therethrough when the lid is coupled to the drinking vessel;

a cover pivotably coupled to the body, the cover operative to pivot between an open position wherein the cover is disposed in a downward position spaced away from the opening and a closed position wherein the cover is engaged with the top portion to close the opening and prevent the liquid from exiting the drinking vessel through the opening; and

a handle pivotably coupled to the body and operatively coupled to the cover such that selective rotation of the handle causes pivotal rotation of the cover between the open position and the closed position.

20. The drinking vessel and lid assembly of claim **19**, wherein the cover further comprises two laterally upwardly extending member portions, each of the laterally spaced member portions including a slot sized to receive a portion of the handle, wherein when the handle is rotated by a user the portions of the handle slidably engages with the slots to move the cover between the open position and the closed position.

21. The drinking vessel and lid assembly of claim **19**, wherein the cover further comprises at least one upwardly extending member having a slot sized to slidably receive a portion of the handle spaced away from the location the handle is pivotably coupled to the body, wherein when the handle is rotated by a user the portion of the handle positioned in the slot moves the cover between the open position and the closed position.

* * * * *