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(54) **LID ASSEMBLIES FOR HOT BEVERAGE DRINKING VESSELS AND HOT BEVERAGE DRINKING VESSELS INCLUDING THE SAME**

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(52) **U.S. Cl.**

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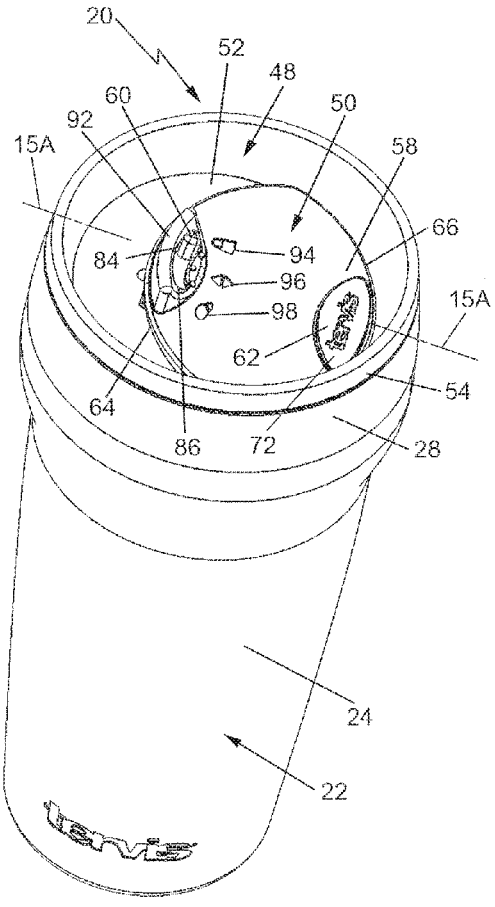
(57) **ABSTRACT**

A drinking vessel with a lid assembly for holding a hot beverage is disclosed. The drinking vessel has an annular rim at its top edge to which the lid assembly is releasably secured. The lid assembly includes a lid, a slider and a sealing member. The sealing member is coupled to the slider. The lid includes a top wall having a port configured for communication with the interior of the vessel. The slider is configured to be slid into any one of three states, e.g., a closed state, an opened state, and a removal state. In the closed state the slider is connected to the top wall and the sealing member seals the port. In the opened state, the slider is connected to the top wall but the sealing member exposes the port. In the removal state the slider is disconnected from the top wall so that it can be removed from the lid assembly.



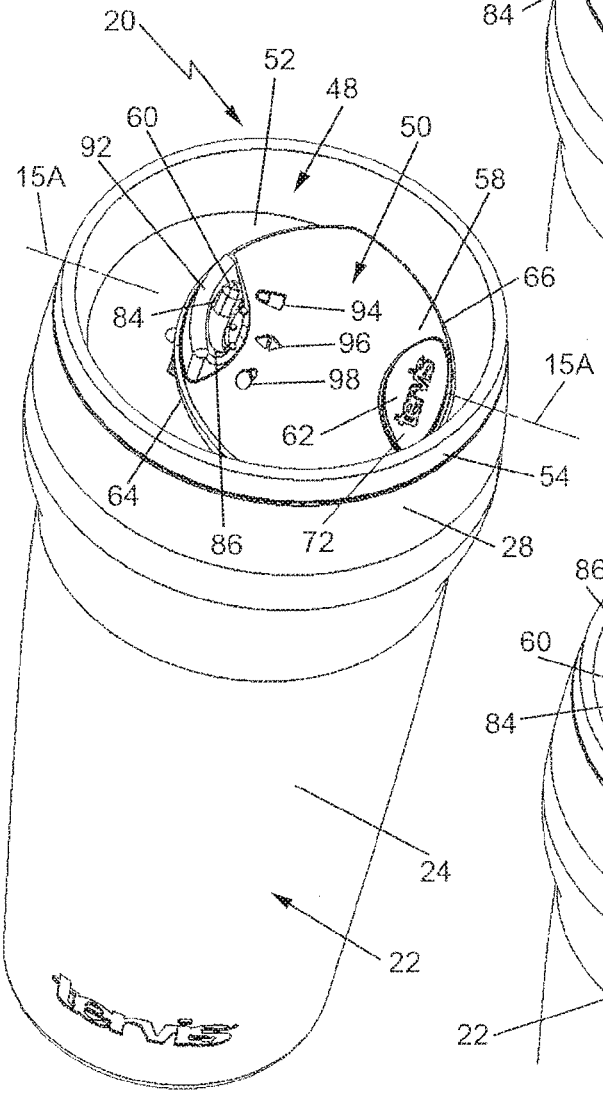


Fig. 1

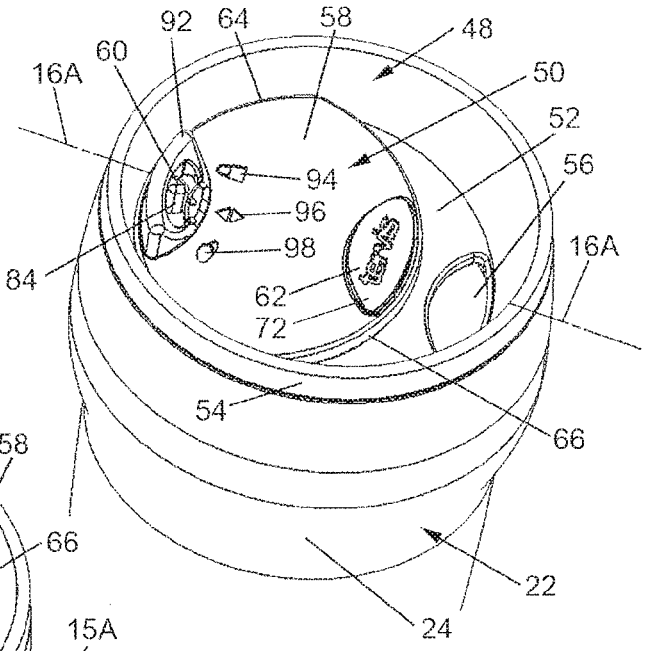


Fig. 2

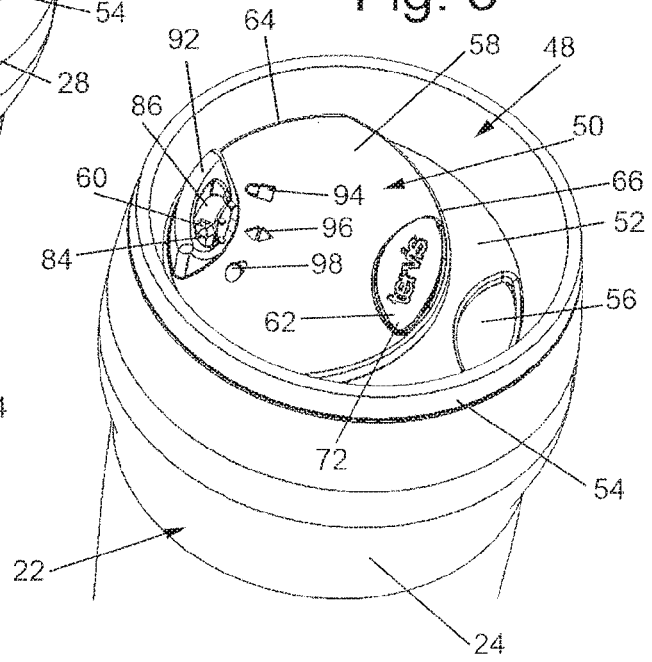
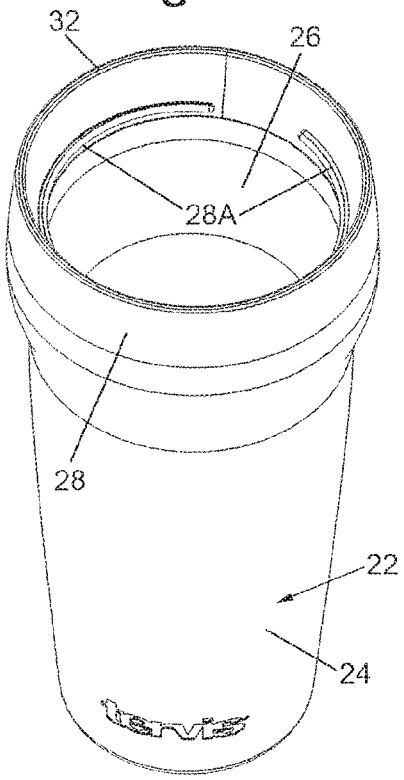


Fig. 3

Fig. 4



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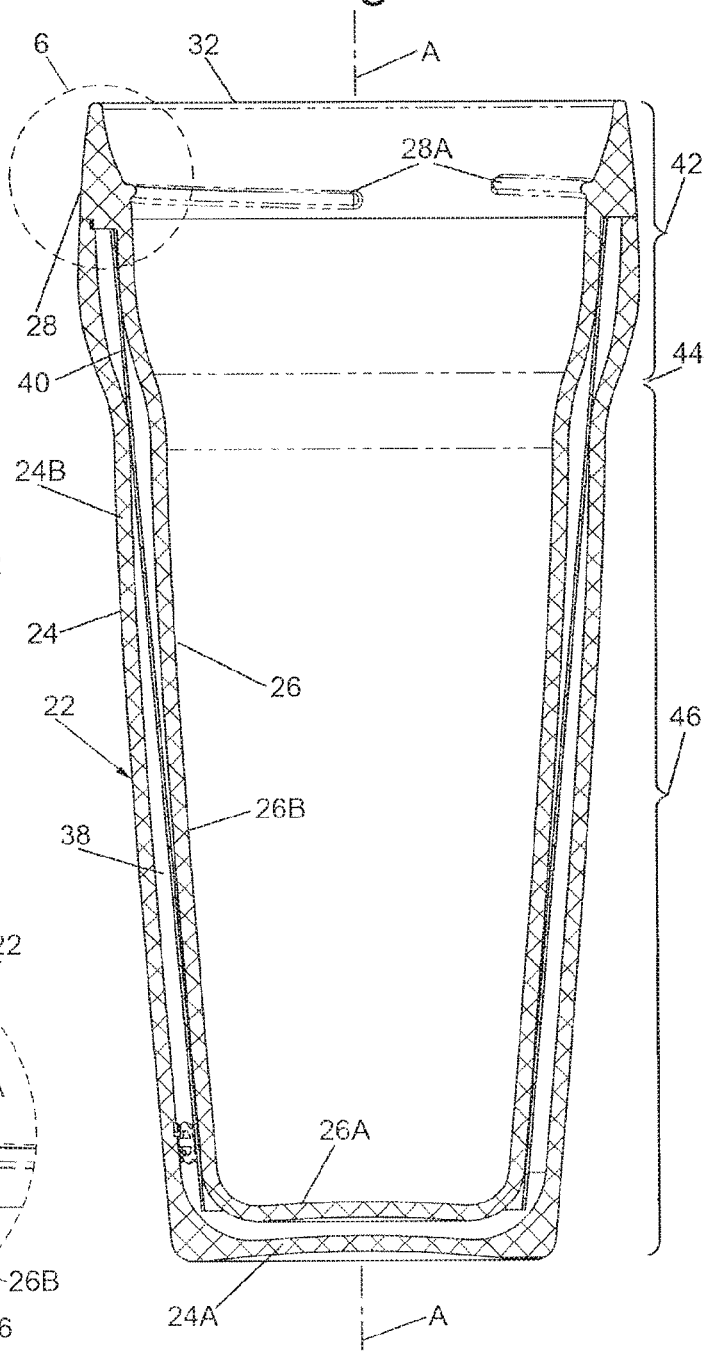

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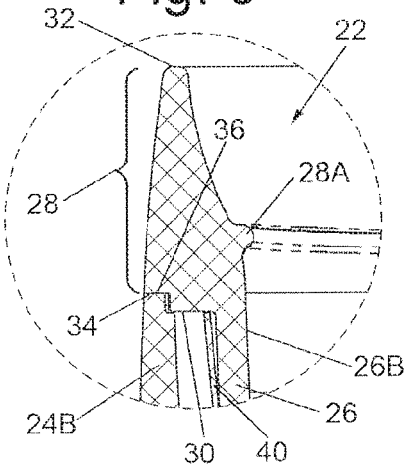

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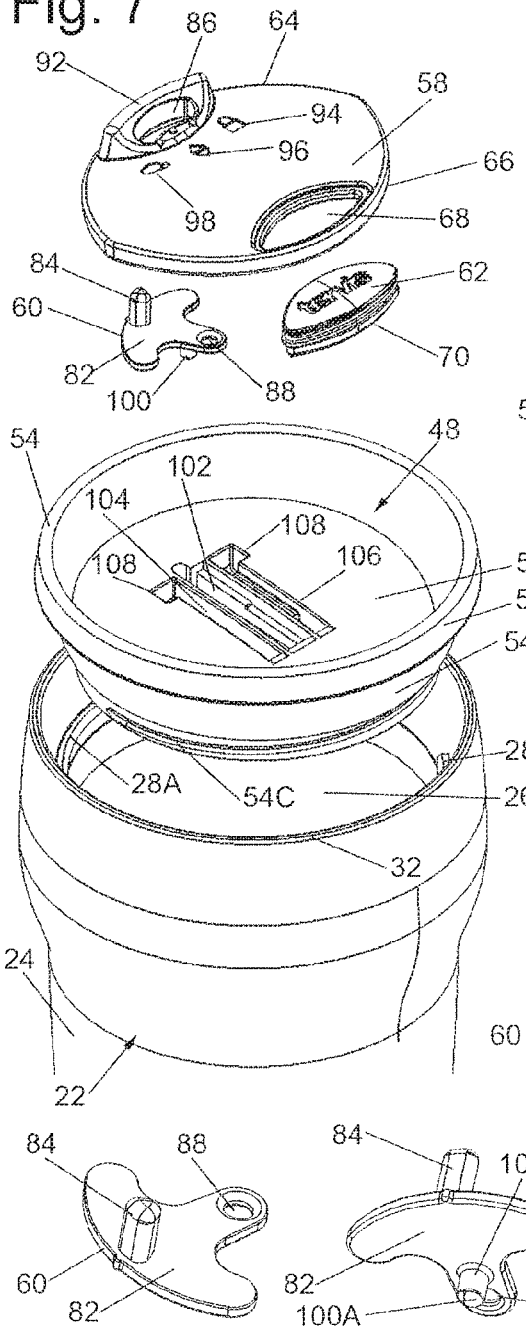

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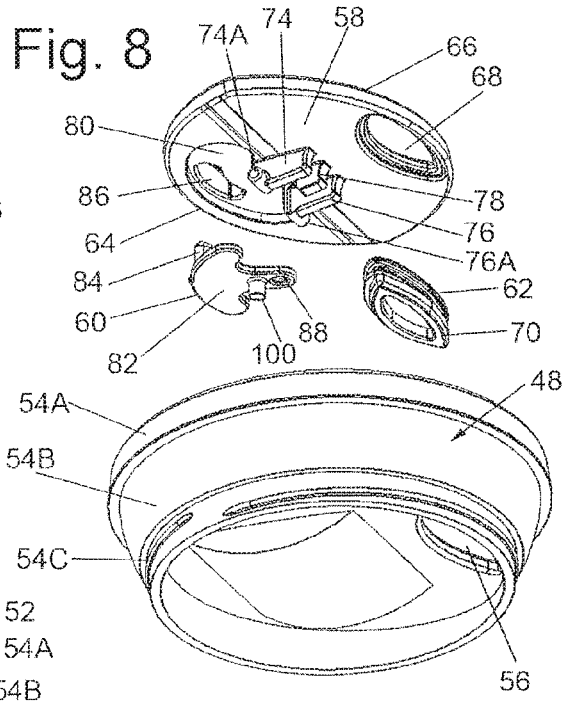

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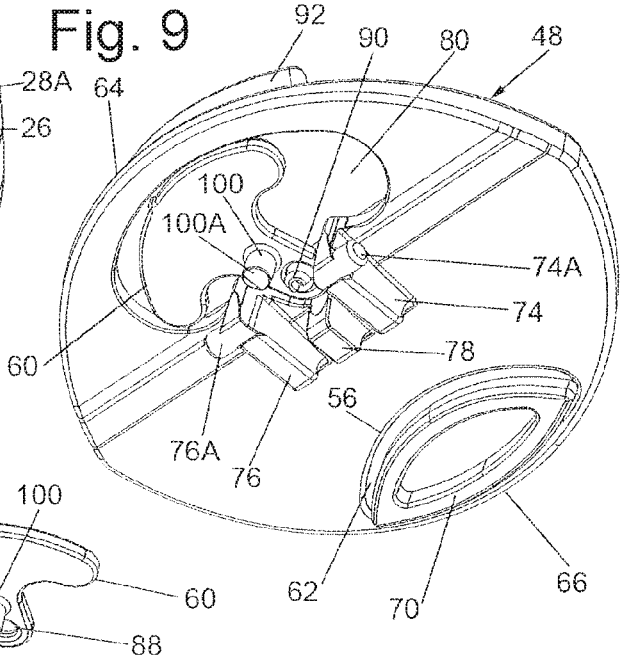


Fig. 10A

Fig. 10B

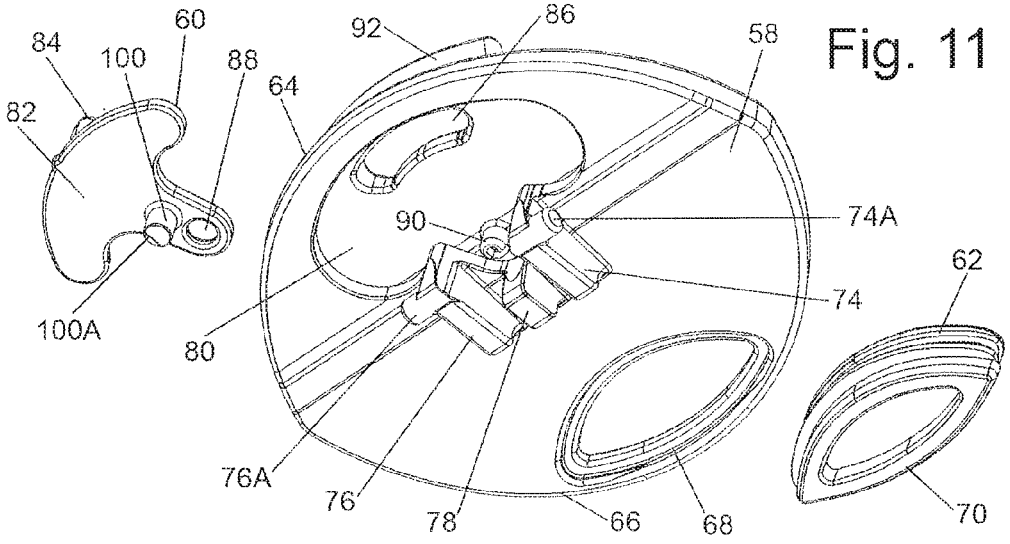
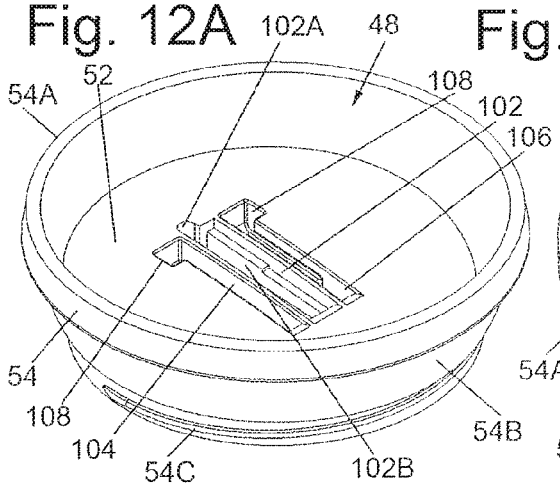


Fig. 11

Fig. 12A



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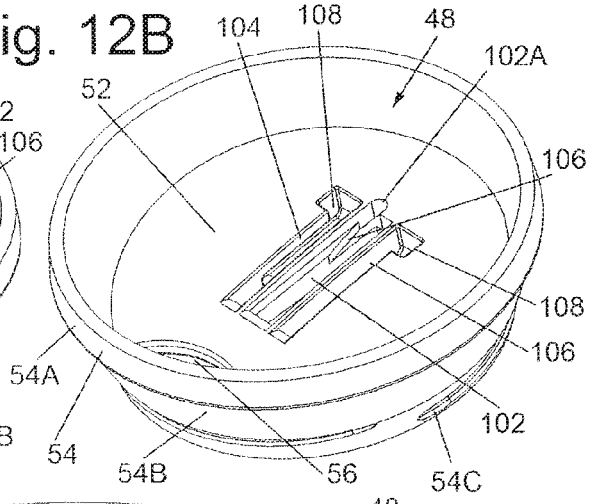

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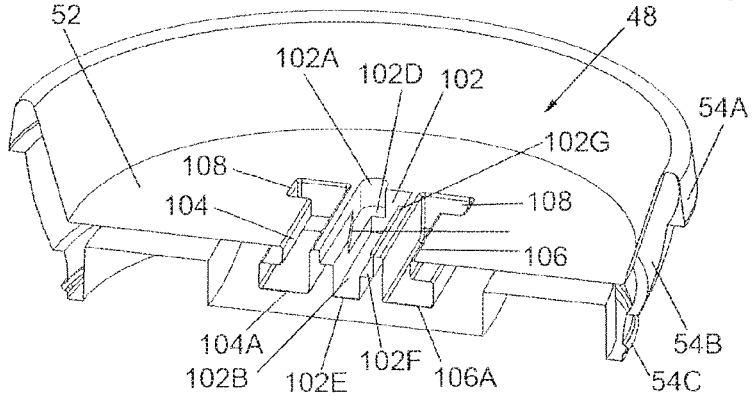

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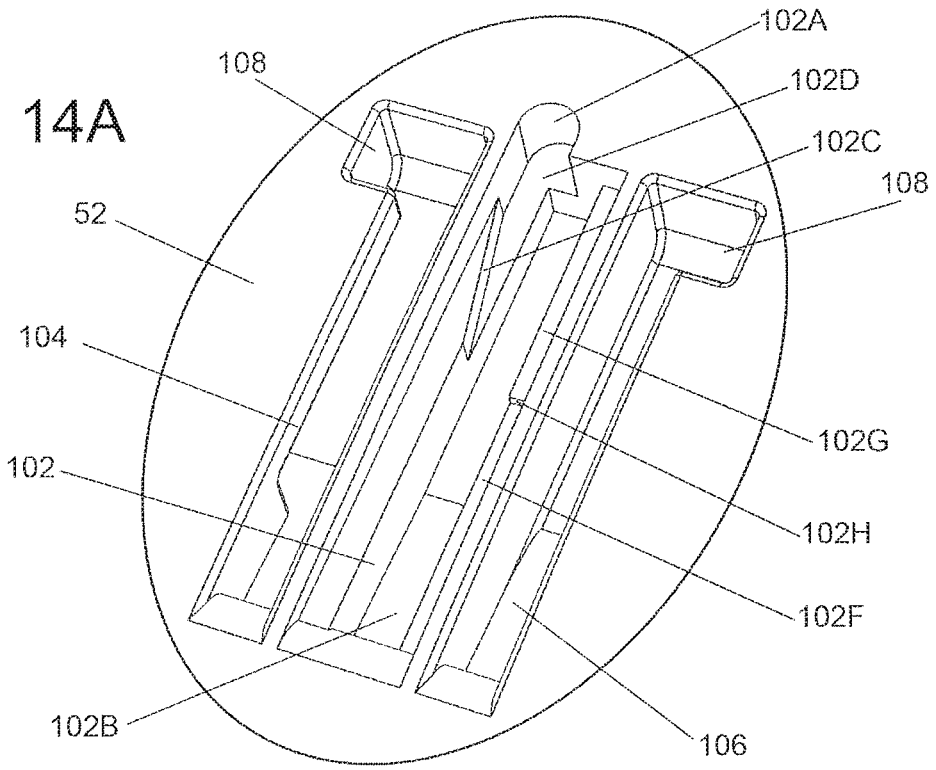

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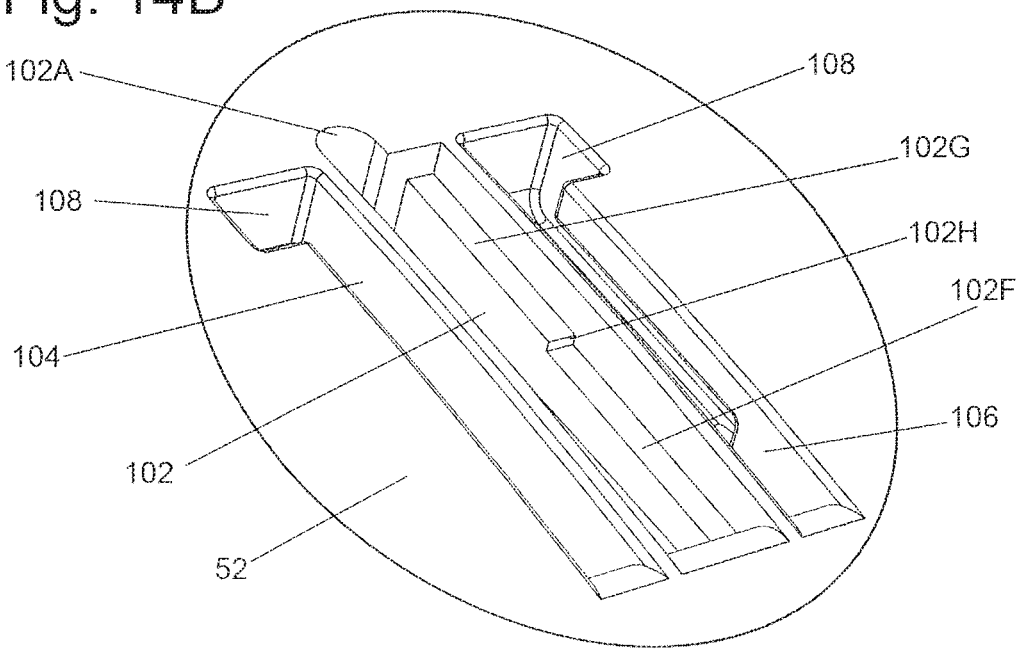

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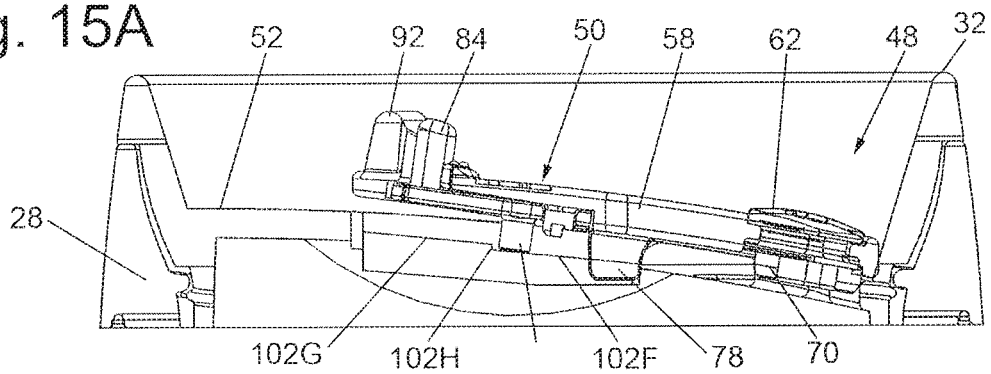

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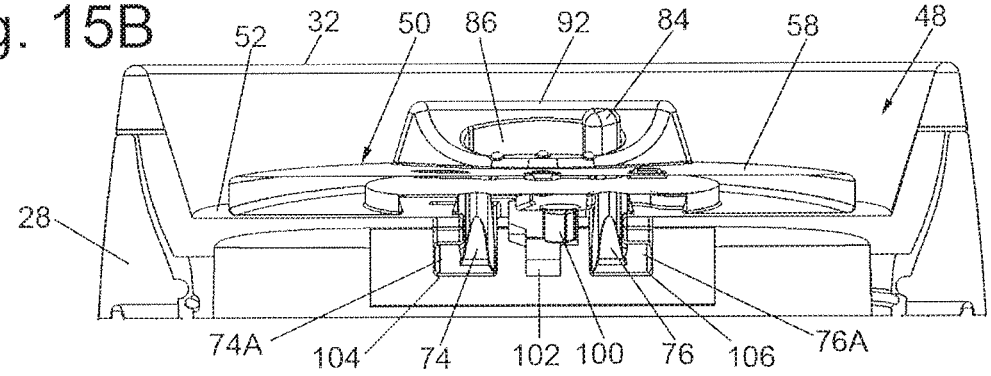

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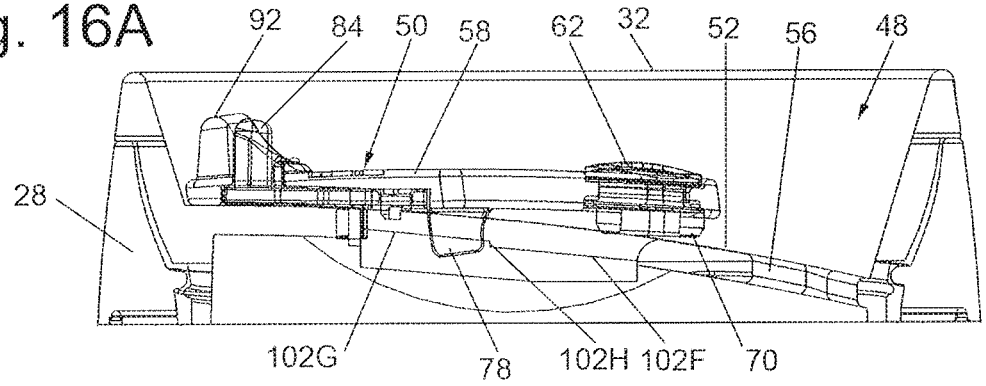

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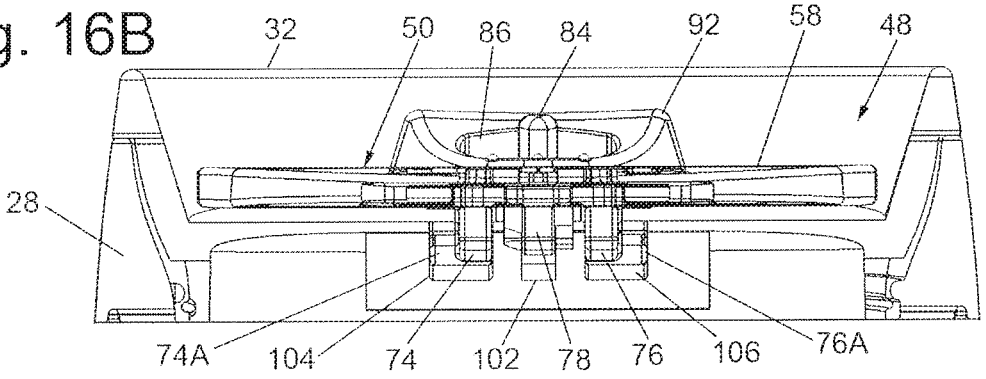

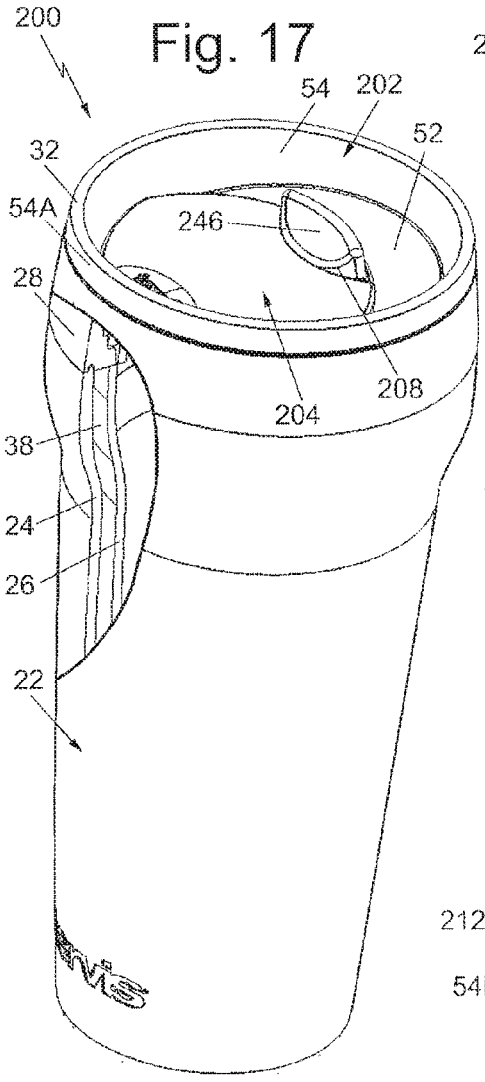

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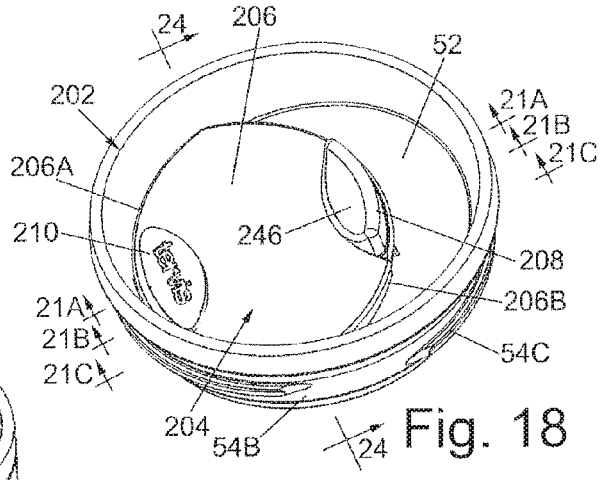

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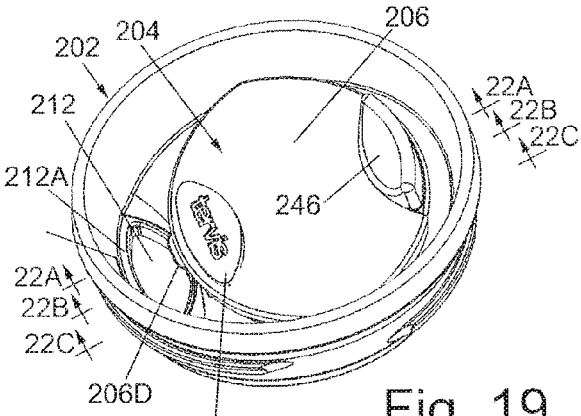

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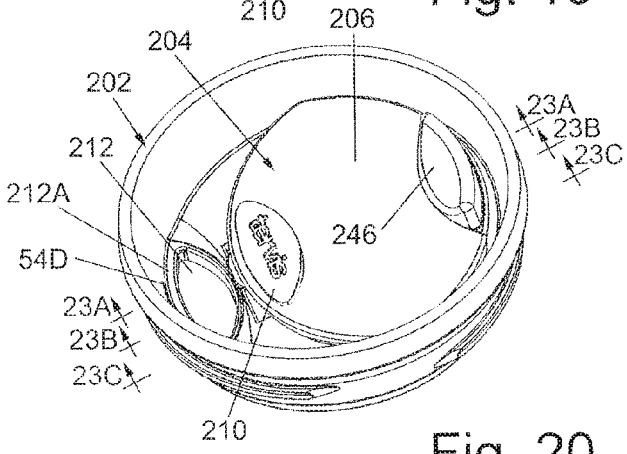
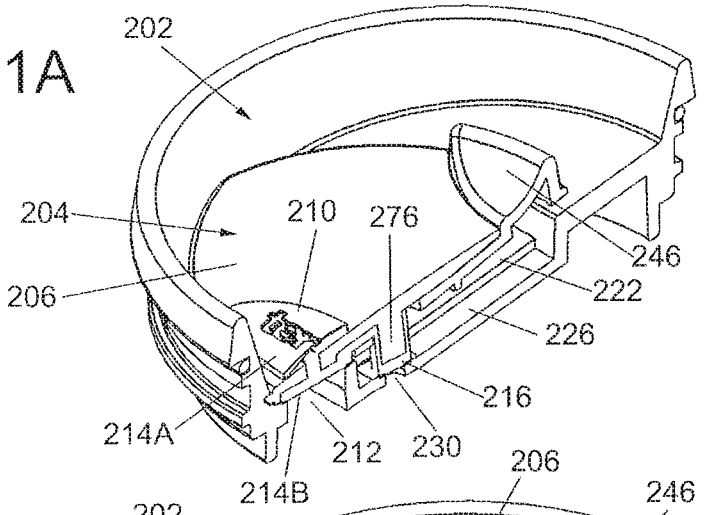


Fig. 20

Fig. 21A



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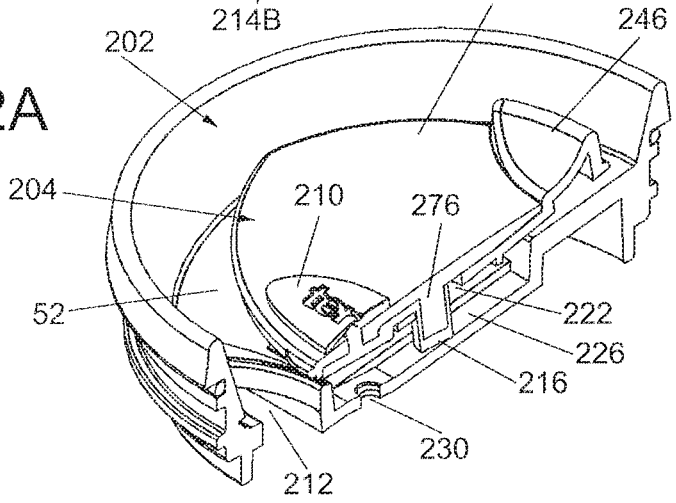

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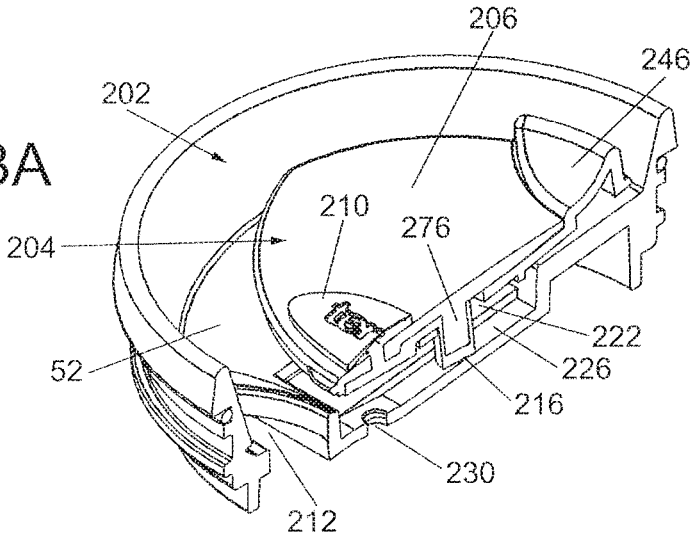

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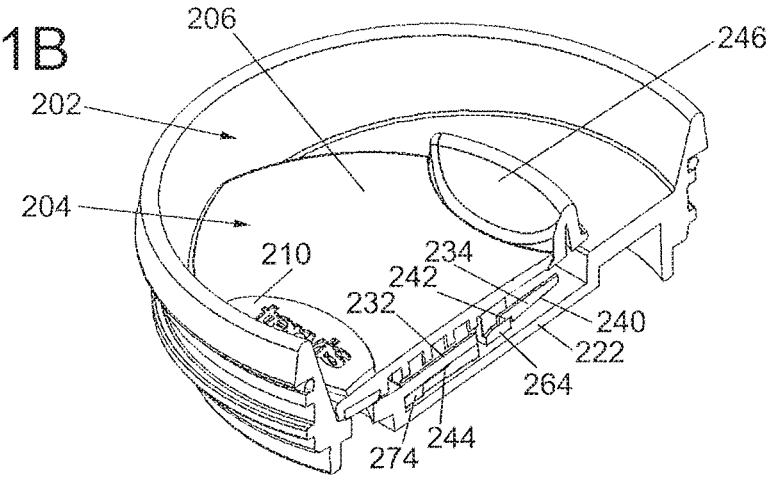

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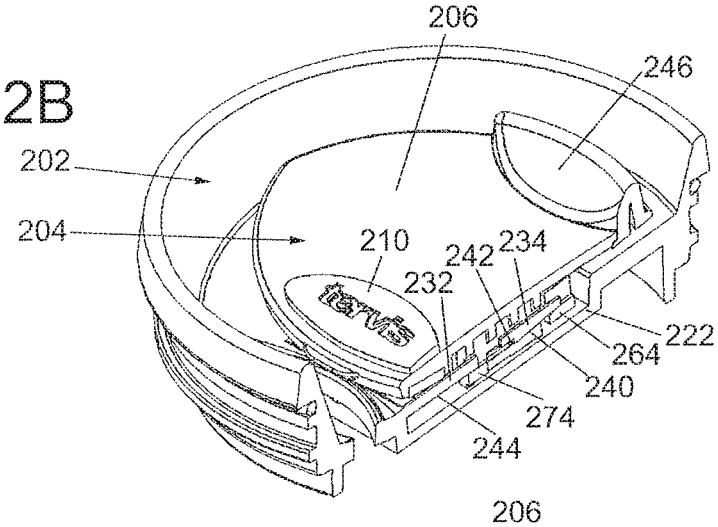

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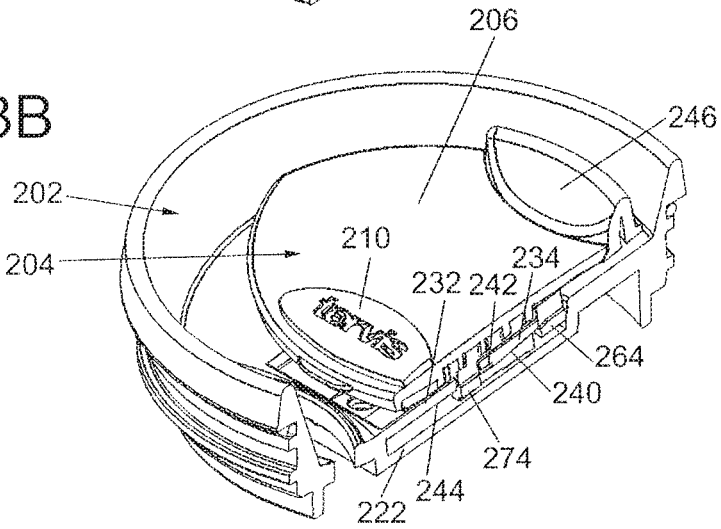

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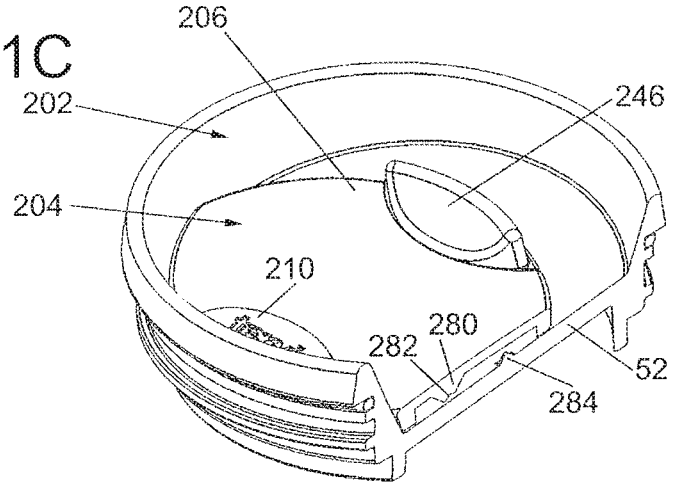
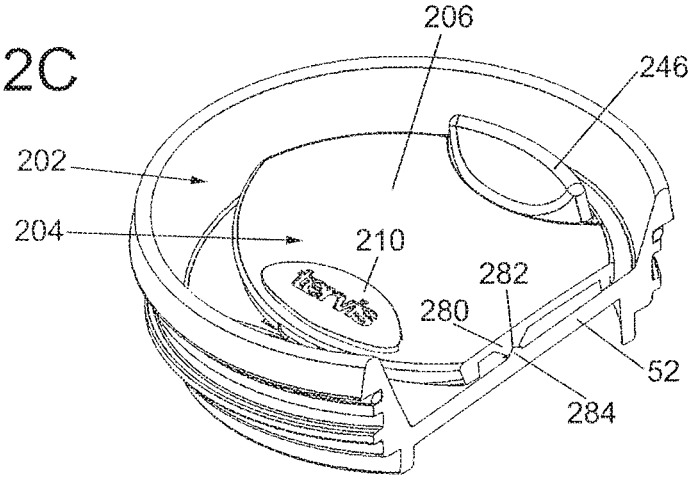


Fig. 22C



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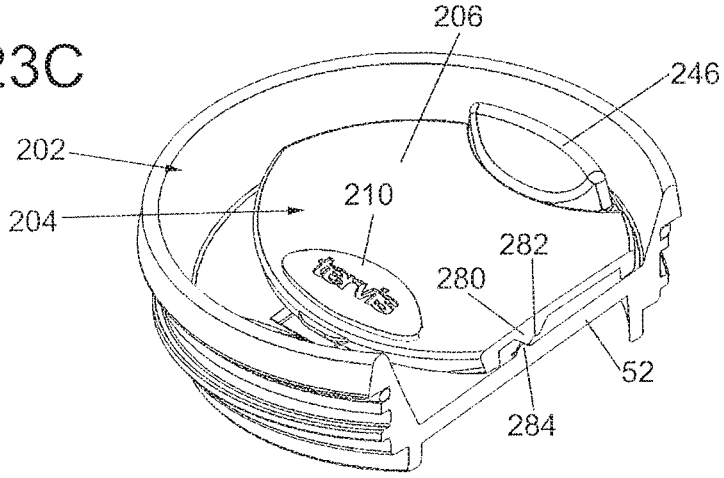

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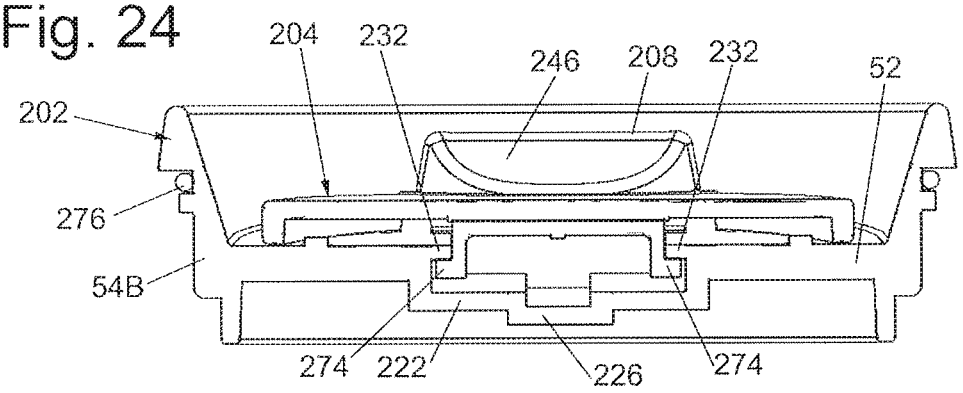
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Fig. 25

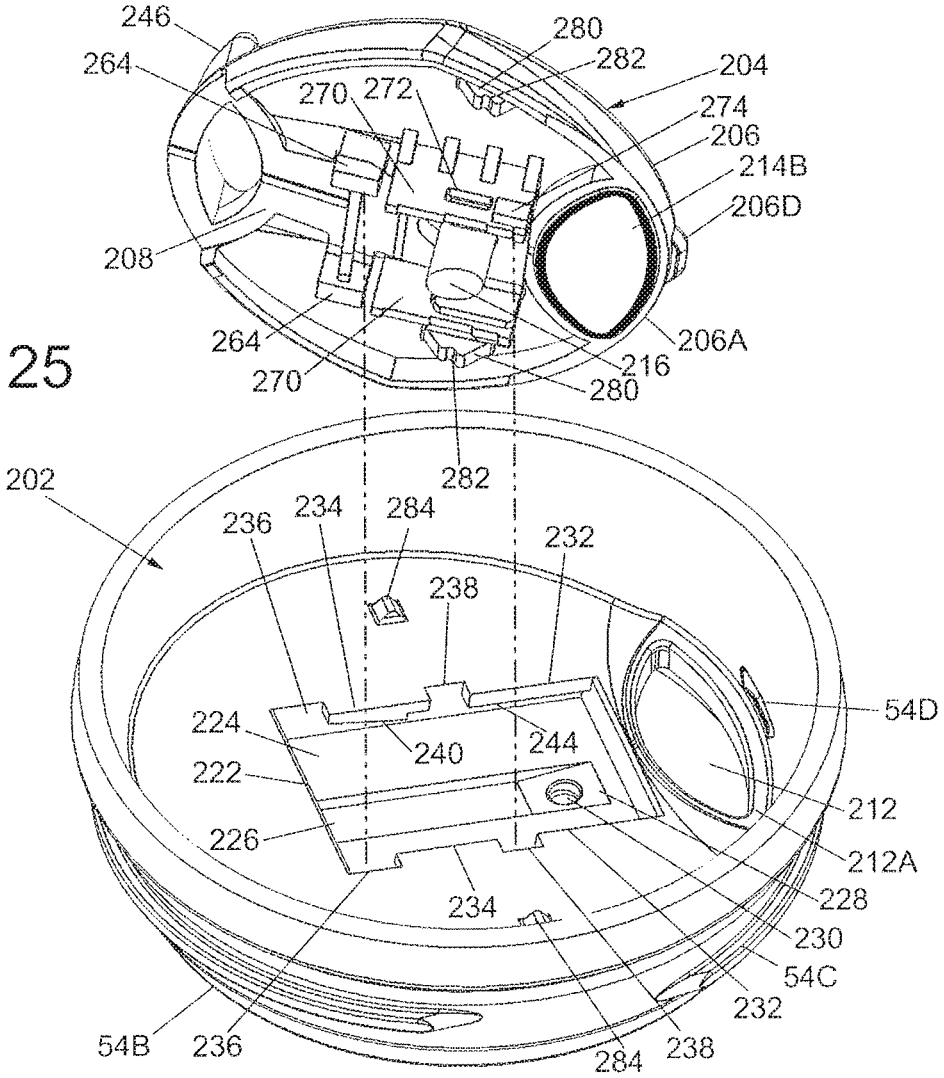
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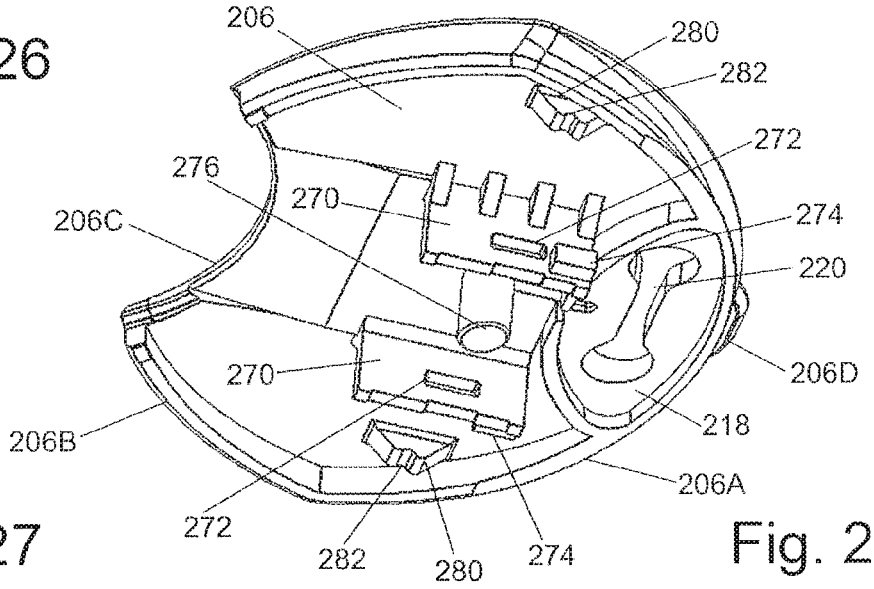
Fig. 26



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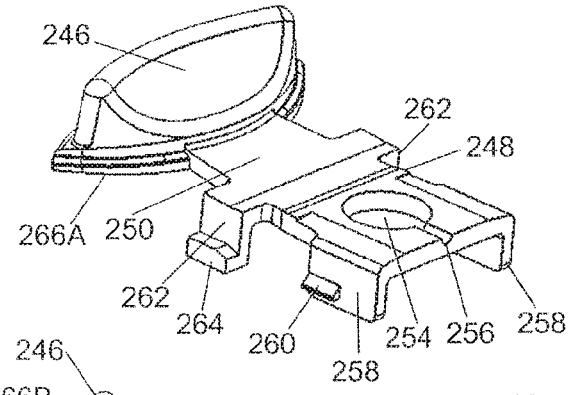

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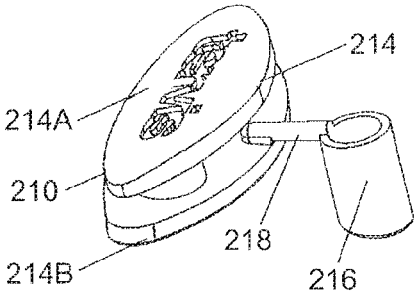

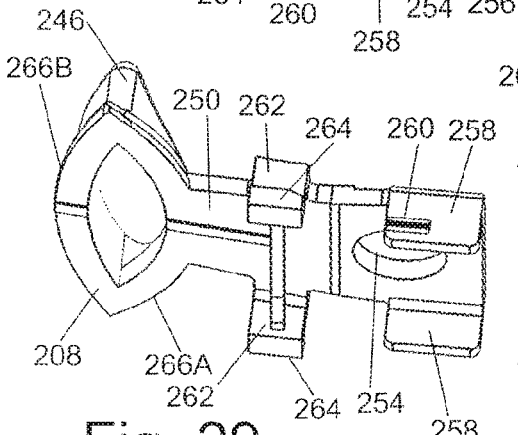

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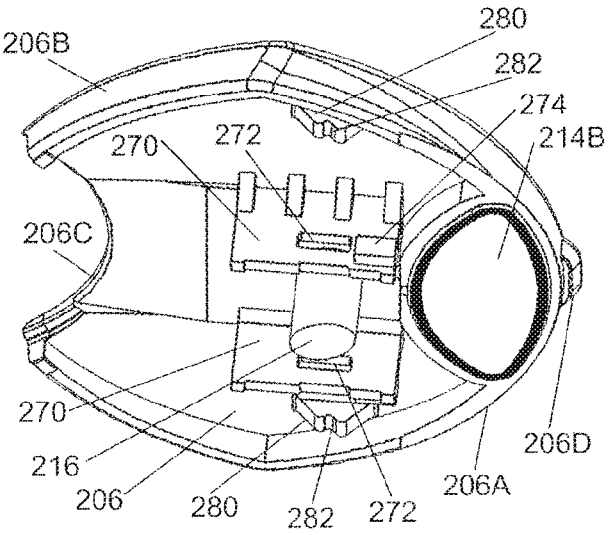

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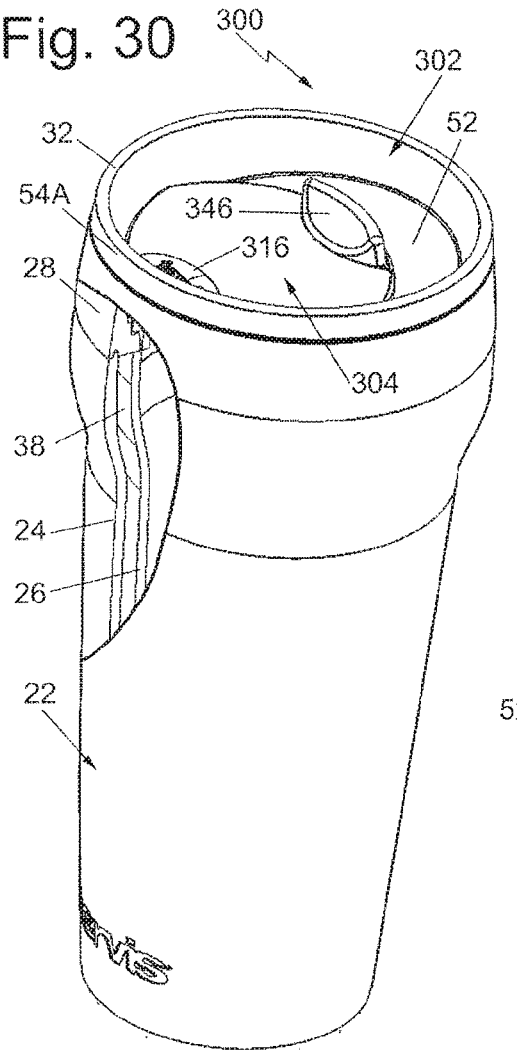

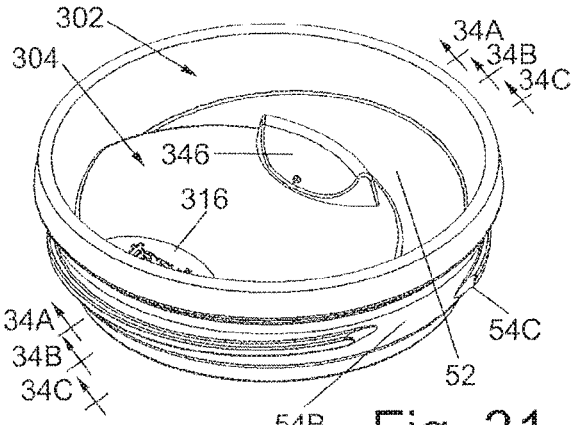

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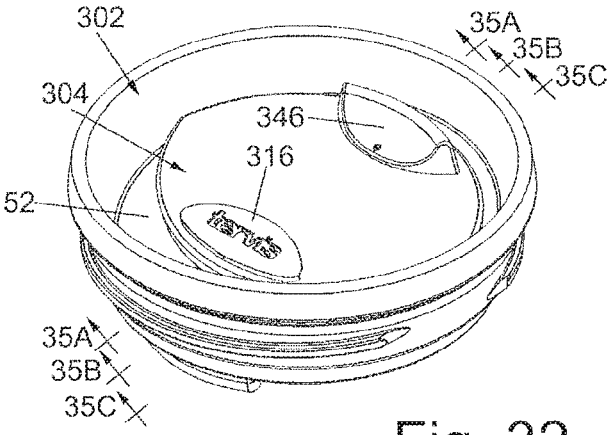

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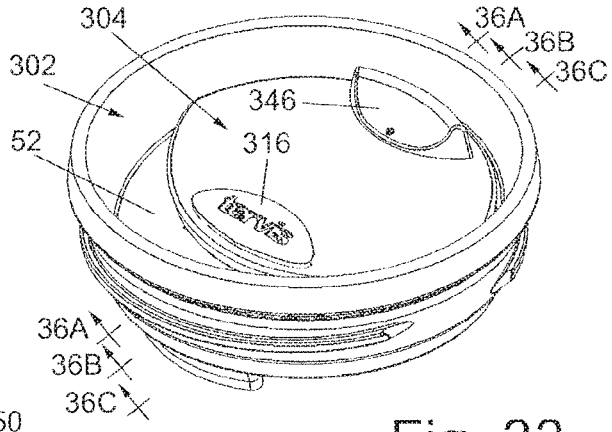


Fig. 33

Fig. 37

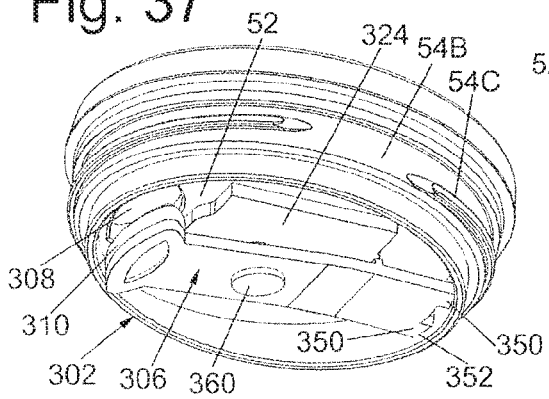
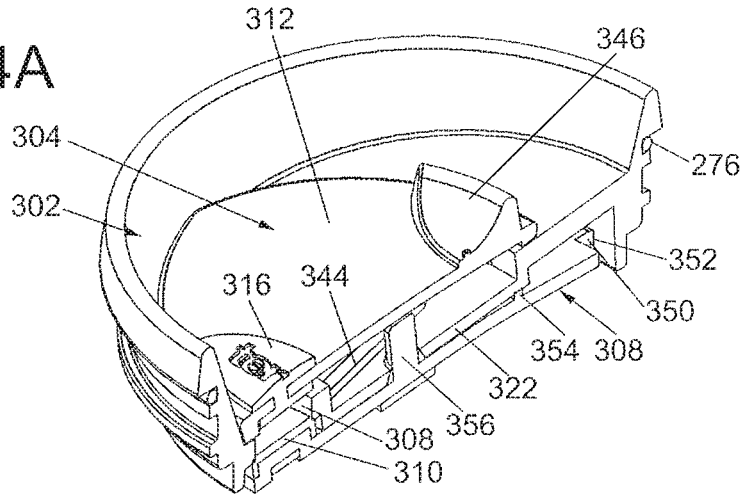


Fig. 34A



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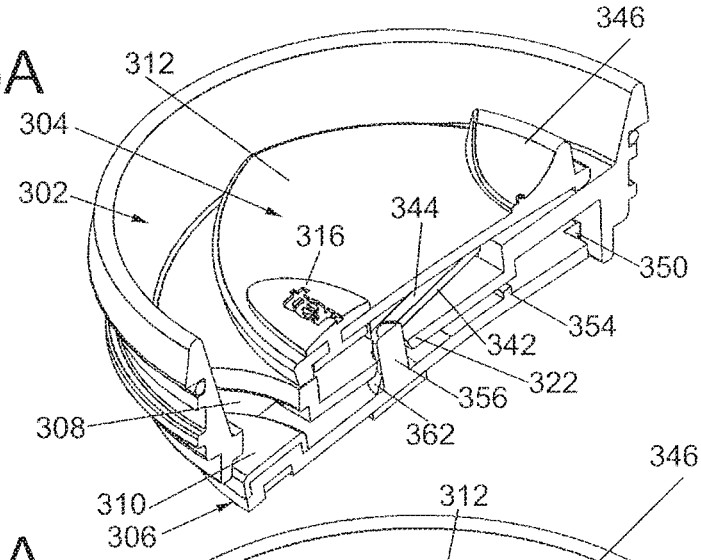

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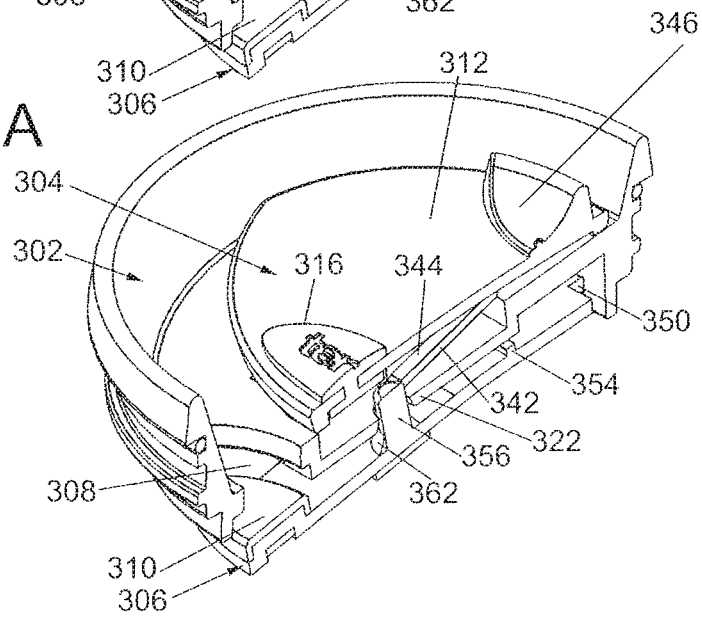

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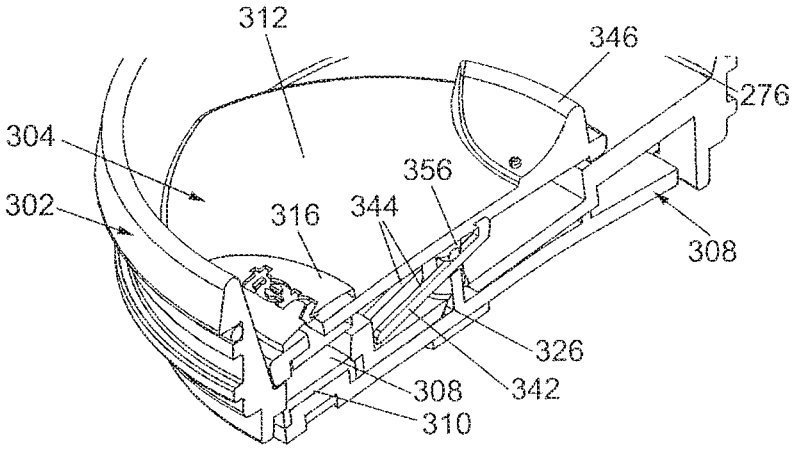

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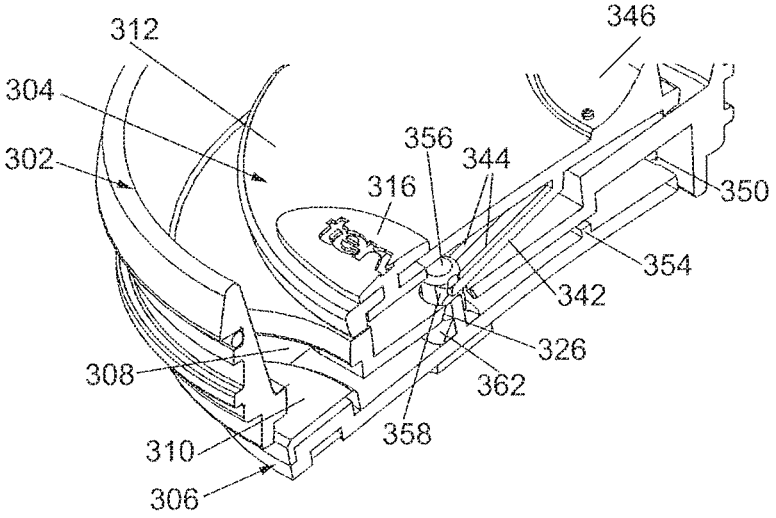


Fig. 36B

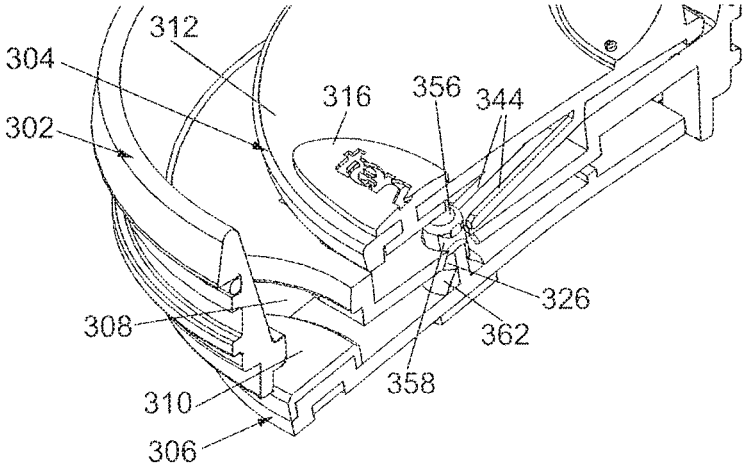
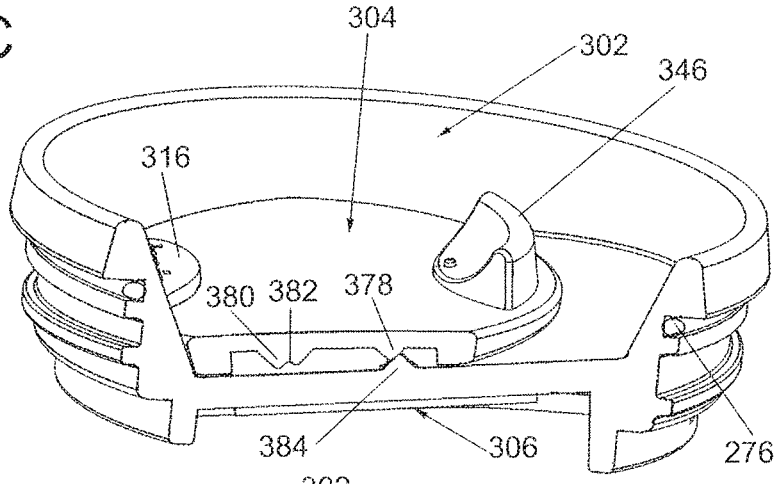


Fig. 34C



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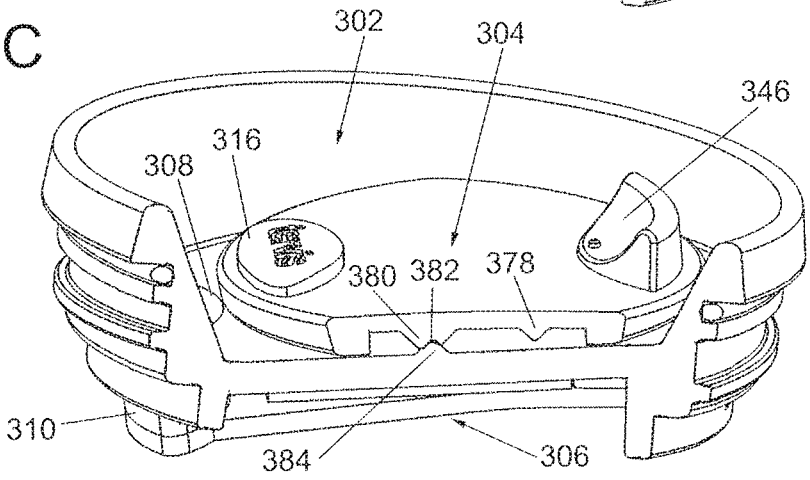

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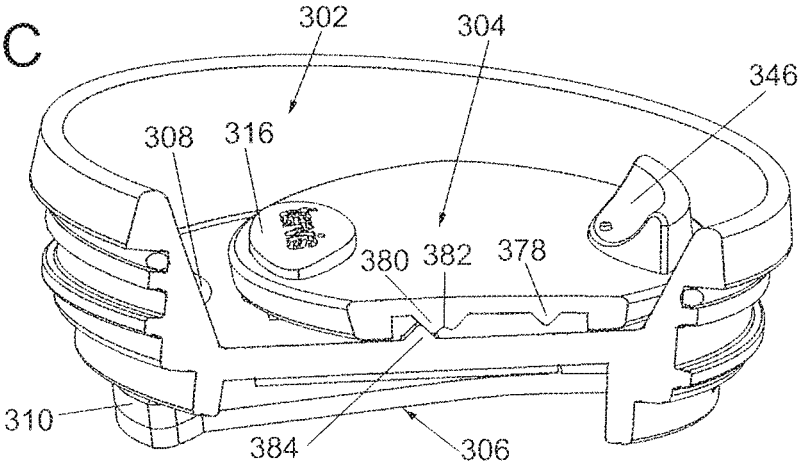


Fig. 38

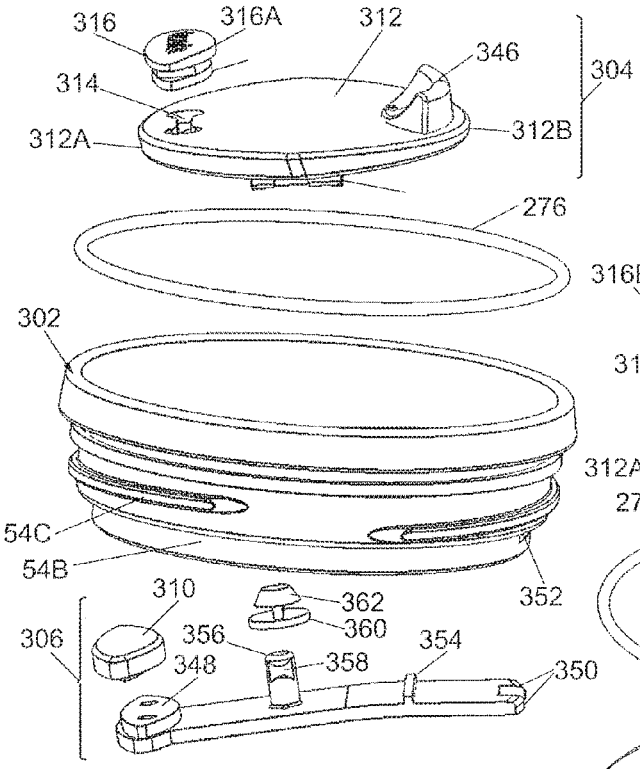
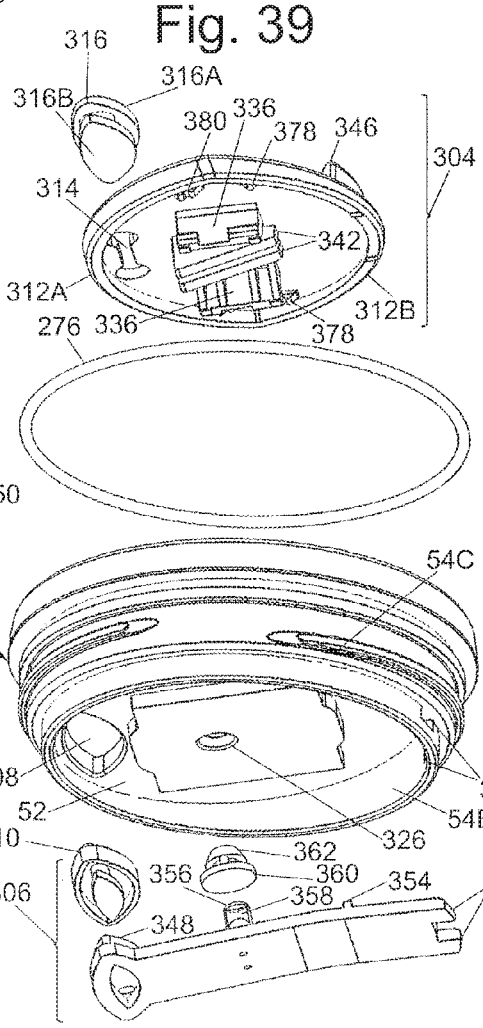


Fig. 39



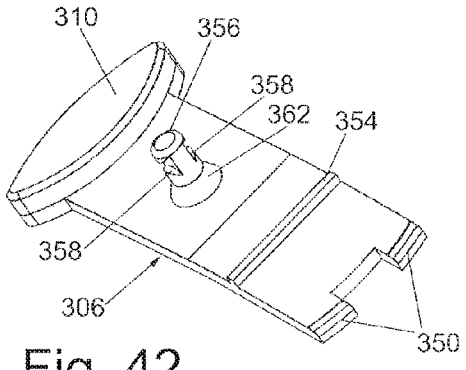


Fig. 42

Fig. 40

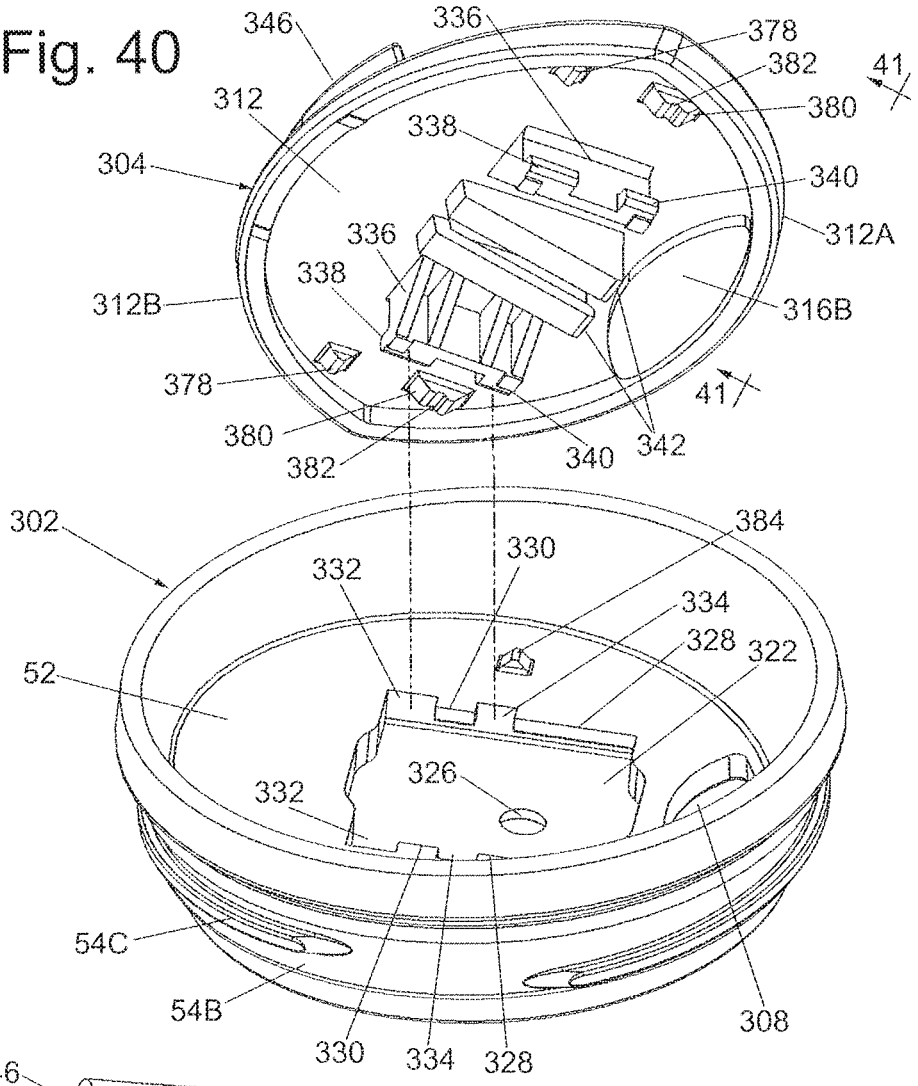
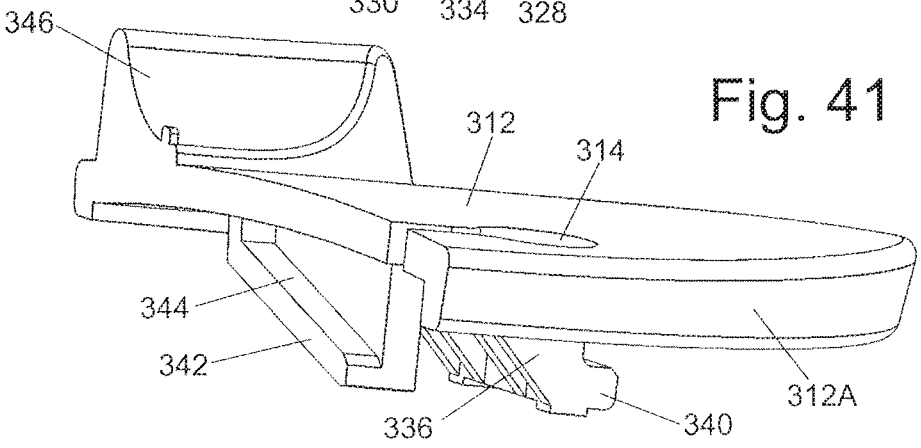

346
336
378
382
41
312
380
338
304
340
336
312A
338
312B
316B
378
41
380
340
342
382
302
384
330
332
334
328
322
52
326
332
54C
54B
308
330
334
328

Fig. 41


346
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314
344
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312A
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340

LID ASSEMBLIES FOR HOT BEVERAGE DRINKING VESSELS AND HOT BEVERAGE DRINKING VESSELS INCLUDING THE SAME

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application claims priority from provisional applications: Ser. No. 62/215,313, filed on Sep. 8, 2015, Lid Assemblies For Hot Beverage Drinking Vessels And Hot Beverage Drinking Vessels Including The Same, whose disclosure is specifically incorporated in its entirety by reference herein and which application is assigned to the same assignee as this invention.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

[0002] "Not Applicable"

INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISK

[0003] "Not Applicable"

FIELD OF THE INVENTION

[0004] This invention relates generally to drinking vessels and more particularly to lid assemblies for insulated drinking vessels for hot beverages and drinking vessels including such lid assemblies.

BACKGROUND OF THE INVENTION

[0005] Many double walled drinking vessels are commercially available from various typically are formed of an inner vessel located within and spaced from an outer vessel by an annular air or vacuum space to thermally insulate the inner vessel and its contents from the ambient atmosphere. A lid is commonly provided for releasable mounting on the vessel to seal the contents of the beverage within the vessel. One common type of lid includes a slidable cover that when opened enables a user to drink the beverage through the lid or pour the beverage through the lid when desired.

[0006] In co-pending provisional application Ser. No. 62/135,963, filed on Mar. 20, 2015, entitled Lid Assemblies For Drinking Vessels And Drinking Vessels Including The Same, which is assigned to the same assignee as this invention and whose disclosure is incorporated by reference herein, there is disclosed a lid assembly for a beverage vessel and a beverage vessel including such a lid assembly which overcomes many of the disadvantages of the prior art by enabling ease of mounting, dismounting, ease of use, resistance to accumulation of liquids on the top of the lid, and the potential for abrupt splashing or sputtering of hot liquid when the lid assembly is opened due to the build-up of steam pressure within the vessel.

[0007] The subject invention is also directed to lid assemblies for beverage drinking containers, e.g., tumblers, and particularly to those for holding hot beverages and provides many advantages over the prior art.

SUMMARY OF THE INVENTION

[0008] In accordance with one aspect of this invention there is provided a lid assembly for releasable mounting on a drinking vessel having a hollow body bounding an internal cavity configured for receipt of a beverage to enable a user to drink or pour the beverage through the lid assembly. The hollow body has an annular rim at a top edge thereof. The lid assembly comprises a lid, a slider and a sealing member. The lid comprises a top wall and a peripheral sidewall extending about the top wall. The top wall of the lid includes a port configured for communication with the internal cavity of the vessel when the lid assembly is mounted on the vessel. The slider is located at the top wall and is slidably connected thereto. The slider is configured to be in any one of a closed, e.g., locked, state, an opened, e.g., unlocked, state, and a removal state. When in the closed state the slider is slidably connected to the top wall with the sealing member sealing the port. When in the opened state the slider is slidably connected to the top wall but with the sealing member exposing the port. The slider is slidable between the closed state and the opened state, and vice versa. The slider is also movable to the removal state whereupon the slider is disconnected from the top wall so that it can be removed from the lid assembly and thereafter reconnected to the lid when desired.

[0009] In accordance with one aspect of this invention, the lid assembly is configured, e.g., includes engagement surfaces, to releasably secure the slider in the opened and closed positions.

[0010] In accordance with another aspect of this invention, the lid comprises a vent hole and wherein the lid assembly additionally comprises a vent seal configured to seal the vent hole when the slider is in the closed state and to expose the vent hole when said slider is in said opened state.

[0011] In accordance with another aspect of this invention, the lid includes an elongated recess directed towards the port, with the recess having a surface forming a track. The slider includes at least one projection for slidable receipt within the recess to enable the slider to be slid along the track from the closed state to the opened state, and vice versa.

[0012] In accordance with another aspect of this invention the track includes a ramped portion to pull the sealing member into tight engagement with the port when the slider is in the closed state.

[0013] In accordance with another aspect of this invention the track includes a recessed portion into which the at least one projection snap-fits when the slider is in the closed state, and wherein the slider includes an actuator. The actuator is configured when actuated to move the at least one projection out of the recessed portion to thereby enable the slider to be moved to the opened state.

[0014] In accordance with another aspect of this invention the slider comprises the sealing member and a movable switch. The switch is selectively movable to any one of a first, second, and third positions. When in the first position the switch enables the slider to be in said closed state. When in the second position the switch enables the slider to be in said opened state. When in the third position the switch enables the slider cover to be in the removal state.

[0015] In accordance with another aspect of this invention the top wall of the lid includes a bottom surface and wherein the sealing member is configured to engage the bottom surface of the top wall contiguous with the port. The sealing member is mounted on the upper surface of a sealing beam, which is located below the top wall of the lid. The sealing beam is coupled to the slider and configured to move the

sealing member into engagement with the bottom surface of the top wall contiguous with the port when the slider is in the closed state.

[0016] In accordance with another aspect of this invention the top wall of the lid slopes downward toward the port, and wherein the peripheral sidewall has a top edge located above the top wall, with the downwardly sloped top wall providing a path for any beverage that may become located on the top wall to flow into the port.

[0017] Another aspect of this invention is the combination of the lid assembly and the vessel, wherein the vessel comprises a doubled walled tumbler for holding hot liquids therein.

DESCRIPTION OF THE DRAWING

[0018] FIG. **1** is an isometric view of a first exemplary lid assembly and an insulated drinking vessel e.g., a tumbler, constructed in accordance with this invention, with the lid assembly including a lid and a slider having a sealing member and with the slider being shown in its closed, e.g., locked, state on the lid;

[0019] FIG. **2** is an isometric view of a portion of the structure shown in FIG. **1**, with the slider being shown in its opened, e.g., unlocked, state;

[0020] FIG. **3** is an isometric view similar to FIG. **2**, but showing the slider its removal state;

[0021] FIG. **4** is an isometric view of the insulated tumbler shown in FIG. **1**;

[0022] FIG. **5** is an enlarged vertical sectional view of the tumbler shown in FIG. **4**;

[0023] FIG. **6** is an enlarged sectional view of a portion of the tumbler shown within the broken circle identified with the reference number **6** in FIG. **5**;

[0024] FIG. **7** is an exploded isometric view of the lid assembly shown with respect to the tumbler;

[0025] FIG. **8** is an exploded isometric view of the lid assembly shown in FIG. **7**, but taken from a different angle, e.g., from obliquely below;

[0026] FIG. **9** is an enlarged isometric view of the slider;

[0027] FIGS. **10**A and **10**B are respective isometric views, taken from different angles, showing a switch component making up a portion of the slider;

[0028] FIG. **11** in an enlarged exploded isometric view of the slider;

[0029] FIGS. **12**A and **12**B are respective isometric views, taken from different angles, showing the lid of the lid assembly;

[0030] FIG. **13** is an enlarged sectional isometric view of the lid shown in FIGS. **12**A and **12**B, with the section being taken along the a line perpendicular to line **15**A-**15**A in FIG. **1**;

[0031] FIG. **14**A is an enlarged isometric view of a portion of the lid shown in FIGS. **12**A and **12**B;

[0032] FIG. **14**B is an enlarged isometric view similar to FIG. **14**A, but showing a portion of the lid taken from a different angle;

[0033] FIG. **15**A is an enlarged sectional view taken along line **15**A-**15**A in FIG. **1** showing the slider is in its closed, e.g., locked, state;

[0034] FIG. **15**B is an enlarged sectional view taken along a line perpendicular to the line **15**A-**15**A of FIG. **1** showing the slider in its closed, e.g., locked, state;

[0035] FIG. **16**A is an enlarged sectional view taken along line **16**A-**16**A in FIG. **2** showing the slider in its opened, e.g., unlocked, state;

[0036] FIG. **16**B is an enlarged sectional view taken along a line perpendicular to the line **16**A-**16**A of FIG. **2** showing the slider is in its opened, e.g., unlocked, state;

[0037] FIG. **17** is an isometric view that is somewhat similar to FIG. **1**, but partially broken away and showing a second and more preferred exemplary embodiment of a lid assembly including a movable slider and a lid constructed in accordance with this invention, with the slider being shown in its closed, e.g., locked, state;

[0038] FIG. **18** is an isometric view of the upper side of the lid assembly of FIG. **17** shown in its closed, e.g., locked, state;

[0039] FIG. **19** is an isometric view, similar to FIG. **18**, but showing the lid assembly of FIG. **17** in its opened, e.g., unlocked, state;

[0040] FIG. **20** is an isometric view, similar to FIGS. **18** and **19**, but showing the lid assembly of FIG. **17** in its removal state;

[0041] FIG. **21**A is a slightly enlarged sectional isometric view taken along line **21**A-**21**A of FIG. **18**, i.e., the lid assembly in its closed, e.g., locked, state;

[0042] FIG. **21**B is a slightly enlarged sectional isometric view taken along line **21**B-**21**B of FIG. **18**, i.e., the lid assembly in its closed, e.g., locked, state;

[0043] FIG. **21**C is a slightly enlarged sectional isometric view taken along line **21**C-**21**C of FIG. **18**, i.e., the lid assembly in its closed, e.g., locked, state;

[0044] FIG. **22**A is a slightly enlarged sectional isometric view taken along line **22**A-**22**A of FIG. **19**, i.e., the lid assembly in its opened, e.g., unlocked, state;

[0045] FIG. **22**B is a slightly enlarged sectional isometric view taken along line **22**B-**22**B of FIG. **19**, i.e., the lid assembly in its opened, e.g., unlocked, state;

[0046] FIG. **22**C is a slightly enlarged sectional isometric view taken along line **22**C-**22**C of FIG. **19**, i.e., the lid assembly in its opened, e.g., unlocked, state;

[0047] FIG. **23**A is a slightly enlarged sectional isometric view taken along line **23**A-**23**A of FIG. **20**, i.e., the lid assembly in its removal state;

[0048] FIG. **23**B is a slightly enlarged sectional isometric view taken along line **23**B-**23**B of FIG. **20**, i.e., the lid assembly in its removal state;

[0049] FIG. **23**C is a slightly enlarged sectional isometric view taken along line **23**C-**23**C of FIG. **20**, i.e., the lid assembly in its removal state;

[0050] FIG. **24** is a slightly enlarged sectional view taken along line **24**-**24** of FIG. **18**;

[0051] FIG. **25** is an exploded isometric view showing the slider and the lid of the lid assembly of FIGS. **17**-**20**;

[0052] FIG. **26** is a slightly enlarged isometric view of a cover forming a portion of the slider shown in FIG. **25**;

[0053] FIG. **27** is a somewhat enlarged isometric view of an actuator forming a portion of the slider shown in FIG. **25**;

[0054] FIG. **28** is a somewhat enlarged isometric view of a seal forming a portion of the slider shown in FIG. **25**;

[0055] FIG. **29** is an exploded isometric view showing the actuator, the cover and the seal shown in FIG. **25**;

[0056] FIG. **30** is an isometric view similar to FIG. **17**, but showing a third exemplary embodiment of lid assembly including a movable slider, a sealing beam assembly, and a

lid constructed in accordance with this invention, with the slider being shown in its closed, e.g., locked, state;

[0057] FIG. **31** is an isometric view of the upper side of the lid assembly of FIG. **30** shown in its closed, e.g., locked, state;

[0058] FIG. **32** is an isometric view, similar to FIG. **31**, but showing the lid assembly of FIG. **30** in its opened, e.g., unlocked, state;

[0059] FIG. **33** is an isometric view, similar to FIGS. **31** and **32**, but showing the lid assembly of FIG. **30** in its removal state;

[0060] FIG. **34**A is a slightly enlarged sectional isometric view taken along line **34**A-**34**A of FIG. **31**, i.e., the lid assembly in its closed, e.g., locked, state;

[0061] FIG. **35**A is a slightly enlarged sectional isometric view taken along line **35**A-**35**A of FIG. **32**, i.e., the lid assembly in its opened, e.g., unlocked, state;

[0062] FIG. **36**A is a slightly enlarged sectional isometric view taken along line **36**A-**36**A of FIG. **33**, i.e., the lid assembly in its removal state;

[0063] FIG. **34**B is a slightly enlarged sectional isometric view taken along line **34**B-**34**B of FIG. **31**, i.e., the lid assembly in its closed, e.g., locked, state;

[0064] FIG. **35**B is a slightly enlarged sectional isometric view taken along line **35**B-**35**B of FIG. **30**, i.e., the lid assembly in its opened, e.g., unlocked, state;

[0065] FIG. **34**B is a slightly enlarged sectional isometric view taken along line **34**B-**34**B of FIG. **32**, i.e., the lid assembly in its removal state;

[0066] FIG. **34**C is a slightly enlarged sectional isometric view taken along line **34**C-**34**C of FIG. **31**, i.e., the lid assembly in its closed, e.g., locked, state;

[0067] FIG. **35**C is a slightly enlarged sectional isometric view taken along line **35**C-**35**C of FIG. **33**, i.e., the lid assembly in its opened, e.g., unlocked, state;

[0068] FIG. **36**C is a slightly enlarged sectional isometric view taken along line **36**C-**36**C of FIG. **33**, i.e., the lid assembly in its removal state;

[0069] FIG. **37** is an isometric view of the underside of the lid assembly of FIG. **30** shown in its removal, e.g., locked, state;

[0070] FIG. **38** is a slightly reduced size exploded isometric view showing all the components of the lid assembly of FIGS. **30**-**33**; and

[0071] FIG. **39** is another slightly reduced size exploded isometric view, but taken from a different angle than that of FIG. **38**, showing all the components of the lid assembly of FIGS. **30**-**33**;

[0072] FIG. **40** is a slightly enlarged exploded isometric view showing the slider and the lid of the lid assembly of FIGS. **30**-**33** oriented sot that they can be assembled together;

[0073] FIG. **41** is an isometric view of one half of the slide taken along line **41**-**41** of FIG. **40**, but with a seal component not show in the interest of drawing clarity; and

[0074] FIG. **42** is an enlarged isometric view of one of the components shown in the exploded isometric views of FIGS. **38** and **39**.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0075] Referring now to the various figures of the drawing wherein like reference characters refer to like parts, there is shown at **20** in FIG. **1** one exemplary embodiment of a lid assembly constructed in accordance with this invention. The lid assembly **20** is configured for releasable securement on a drinking vessel **22**, e.g., a double walled tumbler, holding a hot beverage, and includes an openable port to enable the user of the vessel to drink or pour the hot liquid through the port in the lid assembly. It should be pointed out at this juncture that the drinking vessel **22** shown and described hereinafter is a double walled, insulated, tumbler. However, the vessel can be of any suitable construction. Thus, the tumbler **22** is exemplary of numerous vessels with which the lid assembly of the subject invention can be used.

[0076] As can be seen in FIGS. **4**-**6** the double walled tumbler **22** basically comprises an assembly of a hollow outer body or vessel **24** and a hollow inner body or vessel **26** which are fixedly secured together. The outer vessel **24** is a hollow member having a bottom wall **24**A and a sidewall **24**B. The sidewall **24**B is a body of revolution extending about a central longitudinal axis A. The outer vessel can be formed in any manner, e.g., injection molded of any suitable plastic material. The hollow inner vessel **26** is also a hollow member having a bottom wall **26**A and sidewall **264**B. The sidewall **264**B is also a body of revolution extending about the central longitudinal axis A. The inner vessel can also be formed in any manner, e.g., injection molded of any suitable plastic material. In accordance with one exemplary preferred embodiment of this invention the outer vessel **24** is an integral unit that is molded of a transparent plastic material, e.g., Eastman Tritan™ copolyester sold by Eastman Chemical Company. The outer vessel **24** is also an integral unit that is also molded of any suitable plastic material, e.g., Eastman Tritan™ copolyester.

[0077] The sidewall **26**B of the inner vessel includes a top section **28** (FIGS. **5** and **6**) which forms the rim portion of the tumbler **22**. The bottom of the section **28** is in the form of an undercut ledge **30** extending radially inward from the outer surface of the section **28**. The section **28** is somewhat triangular in cross section and tapers upward terminating in a top edge **32** forming the rim of the tumbler. In accordance with one preferred aspect of this invention the section **28** is molded in-situ or co-molded on the remaining portion of the inner vessel, i.e., the portion of the inner vessel below the undercut ledge **30**. For example, a pre-molded precursor of the inner vessel can be placed within an injection molding machine or device (not shown), with the top surface of that precursor being in communication with a ring-shaped mold cavity (not shown) that is shaped like the top section **28**. The ring shaped mold cavity can be of any suitable thickness and height to form the rim or lip of a drinking tumbler, e.g., it may have a thickness in the range of approximately 0.06 inch to 0.20 inch at its top edge **32**, and a height in the range of approximately 0.650 inch to 0.750 inch. A molten plastic material, preferably the same material as that from which the precursor of the inner vessel was pre-molded, can then be injected under pressure into the mold cavity to fill the ring shaped portion of the cavity and thereby form the section **28**. The molten injected plastic forming the section **28** engages the exposed top surface of the pre-molded precursor to cause that surface to melt and reflow, whereupon the injected plastic intermingles with the melted plastic of the inner vessel, to form a homogenous joint thereat, thereby completing the inner vessel. If desired, the plastic material making up the section **28** may be colored in the interest of aesthetics.

[0078] In accordance with one preferred embodiment of this invention the portion of the inner vessel below the section **28** is preferably semi-opaque or translucent, so that when the tumbler **22** is filled with coffee or tea, the user is able to see that there is a beverage in the tumbler, but not be able to see any details of the beverage. This enhances the aesthetics for the tumbler, since the inner vessel will obscure any coffee grinds or tea leaves which may be in beverage. The translucency or semi-opaqueness of the inner vessel can be achieved in various ways, e.g., sandblasting or otherwise texturing the outer surface of the inner vessel.

[0079] As best seen in FIG. **6**, the sidewall **24**B of the outer vessel **24** includes a top edge having an annular recess **34** located at the point at which that top edge mergers with the inner surface of the sidewall **24**B. The annular recess **34** is configured to receive or mate with an annular recess **36** located on the section **28** of the inner vessel **26** where the undercut ledge **30** meets with the outer surface of that section **28**. That arrangement enables the outer vessel **24** to support the inner vessel **26** on those engaging annular surfaces wherein the outer surface of the inner vessel **26** is disposed opposite and confronting the inner surface of the outer vessel **24**, but is spaced slightly therefrom to form an annular thermally insulating air space **38** therebetween and with the thin top rim of the inner vessel forming the top rim of the tumbler. In accordance with one preferred embodiment of this invention the sidewall of the inner vessel is similarly shaped to the sidewall of the outer vessel so that the thickness of the insulating air space **38** remains relatively constant through the entire length of the tumbler. The inner vessel is fixedly secured to the outer vessel at the engaging annular surfaces **34** and **36** by any suitable bonding technique, e.g., an ultrasonic weld.

[0080] If desired, a decorative wrap or sleeve **40** may be located within the air space **38** in the interest of aesthetics.

[0081] As mentioned earlier, the sidewalls **24**B and **26**B constitute bodies of revolution about the central longitudinal axis A. The particular shape of those sidewalls may be a matter of design or may be shaped for reasons that are functional and aesthetic. In the preferred embodiment of this invention the shape of the sidewalls **24**A and **26**A is both aesthetically pleasing and functional. In particular, the sidewall **24**B preferably includes a bulbous upper section **42** which extends downward to an intermediate point **44** along the longitudinal axis A. At that point **44** the bulbous upper section **42** merges with an undercut and slightly conical lower section **46**. The maximum outer diameter of the lower section **46** is less than the maximum outer diameter of the bulbous upper section **42**. This feature enables a user to comfortably hold the tumbler in his or her hand by wrapping his/her fingers around the lower section **46** immediately below the upper section **42**, whereupon the radially outwardly extending portion of the upper section above the user's hand prevents the tumbler from slipping out of the user's grip.

[0082] The lid assembly **20** is shown generally in FIGS. **1-3** and basically comprises a lid **48** and a slider **50**. The slider **50** is in the form of a slidable cover subassembly. The lid includes a top wall **52** and a circular peripheral sidewall **54** extending about the top wall. The top wall includes an orifice or port **56** configured for communication with the internal cavity in the tumbler **22** when the lid assembly **20** is mounted on the tumbler **22**. The slidable cover subassembly **50** will be described in detail later. Suffice it for now to state that it includes a cover member **58**, a switch **60** and a sealing member **62**. The slidable cover subassembly is located at the top wall of the lid **48** and is configured to be in any one of three states, namely, a closed, e.g., locked, state, an open, e.g., unlocked, state, and a disconnected or removal state. When the slider is in the closed state it is connected to the lid **48** on the top wall with the seal member **58** closing off or otherwise sealing the port **56** and is locked in place in that state, as will be described later. When the slidable cover subassembly is in the opened state it is also connected to the lid on the top wall but the sealing member does not close off or otherwise seal the port **56**. Thus, in that state the port is exposed to enable a user to drink from the tumbler through the port or to pour contents of the beverage within the tumbler out through the port. When the slidable cover subassembly is in the removal state it is disconnected from the top wall of the lid so that it can be removed as a unit from the lid to enable it and the rest of the lid assembly to be cleaned thoroughly and then be reconnected to the lid when desired.

[0083] The sidewall **54** of the lid **48** includes an upper section **54**A and a lower section **54**B. The cross-sectional shape of the upper section **54**A is such that when the lid assembly is secured onto the tumbler **22** the outer surface of the upper section of the lid is flush with the outer surface of the section **28** of the tumbler so that there is a smooth and continuous transition to facilitate drinking from the tumbler with the lid assembly in place.

[0084] The outer surface of the lower section **54**B of the lid is shaped to mate with the inner surface of the section **28** of the tumbler. In order to releasably secure the lid assembly **48** to the tumbler **22**, the outer surface of the lid's lower section **54**B includes plural low profile thread sections **54**C (FIGS. **7-9**) that are configured to threadedly mate with similar low profile thread sections **28**A (FIG. **4**) on the inner surface of the section **28** of the tumbler **22**.

[0085] As best seen in FIGS. **15**A and **16**A the top wall **52** of the lid **48** slopes downward from the point opposite the port **56** to that port. Moreover, the upper section **54** of the lid's sidewall has its top edge located above the highest point on the top wall **52** and has an inner surface which slopes downward to merge with the top wall. These features ensure that any beverage which may become located on the top wall **52** is channeled to flow back into the tumbler through the port **56** when the port is open, i.e., when the slide subassembly is in the unlocked or open state.

[0086] Turning now to FIGS. **7-11**, the details of the slidable cover subassembly **50** will now be described. As stated above, that subassembly basically comprises the cover member **58**, the switch **60**, and the sealing member **62**. The cover member **58** is a plate-like member formed of any suitable plastic material, e.g., polypropylene. As best seen in FIG. **14**B, the cover member **58** is slightly domed and has a pair of opposed arcuate edges **64** and **66** (FIGS. **7** and **8**). The edge **64** is an arc of a circle to mate with a portion of the inner surface of the circular sidewall of the upper section **54**A of the lid **48** when the slidable cover subassembly **50** is in the removal state shown in FIG. **3**. The opposite edge **66** of the cover member **68** is also an arc of a circle to mate with a portion of the inner surface of the circular sidewall of the upper section **54**A of the lid **48** when the slidable cover subassembly **50** is in the locked state shown in FIG. **1**.

[0087] An opening **68** is provided in the cover member **58** adjacent the edge **66** and is shaped to accommodate the

sealing member or plug **62** therein. In the exemplary embodiment shown both the sealing member **62** and the opening **68** are of a general "football" shape, although other shapes are contemplated. In any case, the sealing member **62** is formed of a resilient material, e.g., silicone.

[0088] The sealing member **62** is mounted within the opening **68** and is normally in the state so that its bottom peripheral edge **70** (FIGS. **7-9** and **11**) is generally flush with the bottom surface of the cover member contiguous with the opening **68**. Member **62** can be over-molded onto cover member **58**. However, being resilient, the sealing member **62** is displaceable with respect to the opening **68**, so that when the sealing member's top surface **72** (FIGS. **1-3**) is pressed downward by a user, the bottom peripheral edge portion **70** of the sealing member will be displaced to move downward below the bottom surface of the cover member **58**. Thus, when the slidable cover subassembly **50** is moved to the locked state, like shown in FIG. **1**, the top surface **72** of the sealing member **62** can be pressed by the user to cause the bottom peripheral edge portion **70** of the sealing member or plug to move into and seal the port **56** of the lid **48**. This action will prevent the beverage within the inner vessel from gaining egress through the slidable cover subassembly when that subassembly is in the locked state.

[0089] Turning now to FIGS. **9** and **11**, it can be seen that the bottom of the cover member **58** includes two elongated wall-like projections **74** and **76**, and a shorter length wall-like projection **78** located between the projections **74** and **76**. The projections **74**, **76** and **78** are configured to fit within respective slots (to be described later) in the top surface **52** of the lid **48**. A recess **80** is located in the bottom surface of the cover member **58** between the front edge **64** and the wall-like projections **74** and **76**. The recess **80** is configured to accommodate a portion of the switch **60** therein.

[0090] The switch **60** is formed of any suitable material, e.g., the same material as the cover member and includes a base portion **82** (FIGS. **10**A and **10**B). The base portion **82** is of a generally T-shape and includes a top surface from which a button **84** (FIGS. **10**A and **10**B) projects upward, and a bottom surface from which a pivot pin **100** (FIGS. **9** and **10**B) projects downward. The base portion **82** is configured to be disposed within the recess **80** of the cover member **58** with the button **84** extending upward through an arcuate slot **86** (FIG. **11**) in the cover member. The slot **86** is in communication with the recess **80**.

[0091] The switch **60** is configured to be pivotable within the recess **80**, so that it can be pivoted to any one of three positions. One of those positions is shown in FIG. **1**, wherein the switch enables the slidable cover subassembly to be brought into its locked state. Another of those positions is shown in FIG. **2**, wherein the switch enables the slidable cover subassembly to be brought into its unlocked state. The last of those positions is shown in FIG. **3**, wherein the switch enables the slidable cover subassembly to be brought into its removal state.

[0092] In order to enable the switch to be pivoted to those three positions, the base portion **82** of the switch **60** includes a hole **88** configured to receive a pin **90** (FIGS. **9** and **11**) located on the underside of the cover member **58** and projecting downward within the recess **80**. Thus, with the pin **90** extending through the hole **88** in the switch, the switch can be pivoted to anyone of those three positions, by the user pushing the button **84** along the arcuate slot **86**. An arcuate wall **92** projects upward from the surface of the cover member **58** adjacent the slot to serve as a guide to enable the user to use one finger of one hand to slide the switch to any of three positions.

[0093] As best seen in FIGS. **1-3** a "closed lock" graphic **94** is embossed in the top surface of the cover member adjacent the right side end of the slot **86**. This graphic designates the position to which the button **84** should be moved to the place the slidable cover subassembly in the locked state. A "double headed arrow" graphic **96** is embossed in the top surface of the cover member adjacent the center of the slot **86** to designate the position to which the button **84** should be moved to the place the slidable cover subassembly in the unlocked state. A "cover removal" graphic **98** is embossed in the top surface of the cover member adjacent the left of the slot **86** to designate the position to which the button **84** should be moved to the place the slidable cover subassembly in the removal state.

[0094] As best seen in FIGS. **9**, **10**B and **11**, a pivot pin **100** projects downward from the undersurface of the base **82** of the switch **60**. The pin **100** includes a bottom surface or free end **100**A (FIGS. **10**B and **11**). The pin **100** is arranged to cooperate with a slot **102** located in the top surface **52** of the lid **48** to guide the slidable cover subassembly to any one of its three states. As best seen in FIGS. **12**A, **12**B and **13** the slot **102** is an elongated linear slot extending along the axis **15**A in FIG. **1**. The axis **15**A forms the centerline of the lid **48** and also the centerline of the slidable cover subassembly **50**. The slot **102** is located centered between two elongated linear side slots **104** and **106**. The side slots **104** and **106** are mirror images of each other and are arranged to receive and guide the wall-like projections **74** and **76**, respectively, therein when the slidable cover subassembly **50** is releasably secured to the lid **48**. To that end, the wall-like projection **74** includes a pin or finger **74**A (FIGS. **9** and **11**) projecting outward therefrom along an axis transverse (perpendicular) the axis **15**A of FIG. **1**. In a similar manner the wall-like projection **76** includes a pin or finger **76**A projecting outward therefrom along that transverse the axis such that the pins **74**A and **76**A are axially aligned.

[0095] Each of the side slots **104** and **106** is undercut. In particular, each slot **104** and **106** includes a portion located below the top wall **52** of the lid **48** and an enlarged entrance portion **108** located at the forward end of the slot and in communication with the top surface **52** of the lid. The entrance portion **108** of the side slot **104** is configured to enable the pin **74**A of wall-like projection **74** to pass therethrough to enter the slot **104**. In a similar manner the entrance portion **108** of the side slot **106** is configured to enable the pin **76**A of wall-like projection **76** to pass therethrough to enter the slot **106**.

[0096] The central slot **102** is configured to enable the pin **100** of the switch and the wall-like projection **70** of the slidable cover member **58** to slide therein. To that end, as best seen in FIGS. **13**, **14**A and **14**B, the central slot **102** includes an entry portion **102**A and a remainder portion **102**B. The entry portion **102**A is located at the end of the slot adjacent the entrances **108** of the slots **104** and **106** and is laterally offset from the central axis of the remainder portion **102**B of the slot **102**. The entry portion **102**A has a bottom surface **102**D. The bottom surface **102**D of entry portion **102**A is of a lesser depth below the top wall **52** of the lid than the bottom surface **102**E of the remainder portion **102**B of the central slot **102**. The bottom surface **102**E of the central slot is the same depth below the top surface **52** of the lid as

the bottom surfaces **104**A and **106**A of the side slots **104** and **106**, respectively, are with respect to the lid's top surface **52**. The entry portion **102**A of the central slot merges with the remainder portion **102**B by means of an angularly extending vertical sidewall **102**C (FIGS. **13** and **14**A). The innermost end of the angularly extending sidewall **102**C merges with the remainder portion **102**B of the central slot a short distance back from the forward end of the entry portion **102**A of that slot. The laterally opposite side of the central slot **102** from the side at which the entry portion **102**A is located is in the form of a ledge having a first top surface **102**F and a second top surface **102**G. The top surface **102**G is planar and is located at the end of the slot **102** adjacent to the entry portion **102**A. The top surface **102**F is also planar and is located at the opposite end of the slot **102**. The top surface **102**F is of a greater depth from the top wall **52** of the lid **48**, than the top surface **102**G to form a vertically extending stop surface **102**F which is located at the interface of the top surfaces **102**F and **102**G.

[0097] As best seen in FIG. **16**B, the width of each of the wall-like projections **74** and **76** is slightly less than the width of the side slots **104** and **106**, respectively, at the top wall **52** of the lid **48**, such that those wall-like projections can fit within those portions of the side slots and be guided therealong. Similarly, the width of the central wall-like projection **78** is slightly less than the width of the portion **102**B of the central slot **102**, such that the wall-like projection **78** can fit within that portion of the central slot and be guided therealong.

[0098] The releasable securement of the slidable cover subassembly **50** to the lid **48** is achieved as follows. The switch **60** is pivoted to the "removal" position, like shown in FIG. **3**, whereupon the downwardly projecting pin **100** of the switch **60** will be located slightly laterally of the centerline of the slidable cover subassembly. The slidable cover assembly can then be juxtaposed over the lid **48**, with the pin **100** aligned with the entry portion **102**A, and with the projecting fingers **74**A and **76**A aligned with the entrances **108** of the side slots **104** and **106**, respectively. Downward pressure on the slidable cover subassembly will cause the pin **100** to enter the end of the entry portion **102**A and the projecting fingers **74**A and **76**A to enter the entrances **108** of the side slots **104** and **106**, with the bottom surface **100**A of the pin **100** being disposed on the bottom surface **102**D of the entry portion **102**A. The slidable cover assembly can then be slid down those slots, whereupon the pin **100** will be guided along the angularly extending sidewall **102**C, thereby pivoting the switch **60** to a centered position within the recess **80**. This action causes the bottom surface of the pin **100** to eventually drop off of the bottom surface **102**D of the of the entry portion **102**A, whereupon the a portion of the bottom surface of the pin **100** will ride along the surface **102**G of the ledge and the projecting fingers **76**A and **76**B will move into the undercut portions of the side slots **104** and **106**, respectively. The slidable cover assembly can then be slid further down the slots **102**, **104** and **106** until the sealing member or plug **62** is aligned with the port **56** in the lid. The top surface **72** of the sealing member **62** can then be pressed to displace its bottom peripheral edge **70** into the port **56** to seal the port, as described above. The button **84** can then be pivoted to the right along the slot **86** so that it is in the locked position like shown in FIG. **1**, whereupon the slidable cover assembly will be in the locked state, and will be held in that state until the button is moved to either the unlock or remove positions. In particular, when the switch is pivoted to the locked position the bottom surface **100**A of the pin **100** will be pivoted onto the top surface **102**F of the ledge and immediately adjacent the stop surface **102**H as shown in FIG. **15**A.

[0099] In order to enable the user to drink or pour the beverage from the inner vessel through the port **56** in the lid, all that the user has to do is to pivot the switch **60** to the unlock position by pressing on the button **84** to move it to the unlock position like shown in FIG. **2**. In addition, the user has to press on the portion of the slidable cover **58** adjacent the button to cause the slidable cover **58** to pivot in a counter-clockwise direction thereby withdrawing or freeing the sealing member or plug **62** from the port **56**, whereupon the slidable cover subassembly can be slid to the open or unlocked state shown in FIGS. **16**A and **16**B.

[0100] When it is desired to remove the slidable cover subassembly **50** from the lid **48** to enable it and the lid to be cleaned, all that is required is for the user to slide that subassembly to the open or unlocked state, and then to slide the button **84** along the slot **56** toward the "remove" position. That action places the bottom surface **100**A of the pin **100** onto the bottom surface **102**D of the central slot **102**. Continued pressure on the button **84** towards to "remove" position while sliding the slidable cover assembly down the slots **102**, **204** and **106** away from the port **56** causes the bottom surface of the pin **100** to slide along the central slot surface **102**D following the angularly extending sidewall **102**C until the pin **100** is located at the end of the entry portion **102**A. When the pin **100** is located at that position, the fingers **74**A and **76**A of the slidable cover member will be located within the entrance portions **108** of the slots **104** and **104**, respectively, and thus out of the undercut portions of those slots. This action effectively disconnects the slidable cover subassembly from the lid. Thus, once that has been accomplished the slidable cover assembly can be lifted up and off of the lid.

[0101] As should be appreciated by those skilled in the art, the lid assembly **20** is easy to use and is effective to ensure that the port or orifice is effectively locked in its sealed state when the slider is in that state. Moreover, when the lid assembly **20** is disassembled for cleaning there are only two components that need to be cleaned, i.e., the slider and the lid. This factor reduces the risk that the disassembled components will be lost or misplaced when disassembled for cleaning.

[0102] Turning now to FIG. **17** there is shown a second, and more preferred exemplary embodiment of a lid assembly **200** constructed in accordance with this invention. The lid assembly **200** is shown releasably secured to a drinking vessel **22**, which is constructed like that of FIG. **1**. However, it must be pointed out at this juncture that the lid assembly **200**, as well as the lid assembly **20**, and the lid assembly **300** shown in FIG. **30** (and any other lid assembly constructed in accordance with this invention) can be used on any type of vessel from which a person can drink a beverage through the lid assembly or can pour a beverage out of the vessel. In the interest of brevity the common features of the vessel **22** shown in FIGS. **1**-**5**, **17** and **30** will be given the same reference numbers and the details of their construction and operation will not be reiterated.

[0103] The lid assembly **200** is shown generally in FIGS. **17**-**20** and basically comprises a lid **202** and a slider **204**. The slider **204** is in the form of a sub-assembly of a cover **206**,

an actuator **208** (FIG. **27**) and a seal **210** (FIG. **28**). The lid **202** is similar in several respects to the lid **48** of the slider **20** shown in FIGS. **1-3**. Thus, in the interest of brevity, the common components of the lid **202** and the lid **48** will be given the same reference numbers and the details of their construction and operation will not be reiterated. As can be seen in FIG. **18** the lid **202** includes a top wall **52** and a circular peripheral sidewall **54** extending about the top wall. The top wall includes an orifice or port **212** (FIGS. **19** and **20**), which is configured for communication with the internal cavity in the tumbler **22** when the lid assembly **200** is mounted on the tumbler **22**. A groove or ledge **212**A is provided in the top surface of the top wall **52** about the periphery of the orifice or port **212**. The slider **204** is located at the top wall of the lid **202** and is configured to be in any one of three states, namely, a closed, e.g., locked, state, an open, e.g., unlocked, state, and a disconnected or removal state. When the slider is in the closed state it is connected to the lid **202** on the top wall with a portion of seal **210** closing off or otherwise sealing the port **212** and is locked in place in that state, as will be described later. When the slider is in the opened state it is also connected to the lid on the top wall but the seal **210** does not close off or otherwise seal the port **212**. Thus, in that state the port is exposed to enable a user to drink from the tumbler through the port or to pour contents of the beverage within the tumbler out through the port. When the slider is in the removal state it is disconnected from the top wall of the lid so that it can be removed as a unit from the lid to enable it and the rest of the lid assembly to be cleaned thoroughly and then be reconnected to the lid when desired.

[0104] Like the lid **48** of the lid assembly **20**, the top wall **52** of the lid **202** slopes downward from the point opposite the orifice or port **212** to that port. Moreover, the upper section **54** of the lid's sidewall has its top edge located above the highest point on the top wall **52** and has an inner surface, which slopes downward to merge with the top wall. These features ensure that any beverage, which may become located on the top wall **52** is channeled to flow back into the tumbler through the port **212** when the port is open, i.e., when the slide subassembly is in the unlocked or open state.

[0105] Turning now to FIGS. **18-21** and **26-28**, the details of the slider **204** will now be described. As stated above, the slider basically comprises the cover **206**, the actuator **208**, and the seal **210**. The cover **58** is a plate-like member formed of any suitable plastic material, e.g., polypropylene. The cover **206** has a pair of opposed arcuate edges **206**A and **206**B (FIG. **18**). The edge **206**A is an arc of a circle to generally mate with a portion of the inner surface of the circular sidewall of the upper section **54**A of the lid **202** when the slider is in the closed state shown in FIG. **18**. The opposite edge **206**B of the cover **206** is also an arc of a circle to be located closely adjacent the inner surface of the circular sidewall of the upper section **54**A of the lid **202** when the slider is in the removal state shown in FIG. **20**.

[0106] As best seen in FIG. **28**, the seal **210** is formed of any suitable elastomeric material, e.g., a soft thermoplastic elastomer (TPE). The seal basically includes two portions, namely, a generally football shaped portion **214** and a circular tubular portion **216** which is connected to the football shaped portion **214** by a bridging link **218**. The bridging link **218** is produced by the unitary molding of the components **214** and **216** in a one-shot over-molding process. The football shaped portion include a generally planar upper section **214**A and a generally planar lower section **214**B which are spaced apart parallel to each other and connected by a bridging portion **214**C. As best seen in FIG. **26** the undersurface of the cover **206** includes a downwardly projecting wall of a generally football shape to form a recess **218** for accommodating the lower section **214**B of the seal **210**. In particular, the seal **210** is over-molded onto the cover to be fixedly secured thereto, with the lower section **214**B of the seal located within the recess **218**, with the upper section **214**A of the seal being disposed on the top surface of the cover, and with the bridging section **214**C extending through an correspondingly shaped opening **220** in the cover **206**. Thus, with the seal fixedly secured to the cover **206**, when the slider **204** is in its closed state the lower section **214**B of the seal fits within the groove or ledge **212**A of the lid contiguous with the periphery of the orifice or port **212** to thereby seal the port to prevent the egress of any liquid through the interface between the seal **210** and the ledge **212**A of the orifice or port **212**. This action will prevent the beverage within the inner vessel from gaining egress through the slider when the slider is in the closed state.

[0107] The actuator **208** is fixedly secured to the cover **206** to produce the slider **204**. As best seen in FIG. **27** the actuator basically comprises a button **246**, a base section **248** and an intermediate section **250**. The base section includes a top wall **252** having a hole **254** extending through it and a short channel **256** extending from the hole **254** to the front end of the base section. The channel **256** receives the bridging link **218** of the seal when the seal is over-molded onto the cover. A first pair of sidewalls **258** projects downward from respective sides of the base section adjacent the front end of the base section. Each sidewall includes a short cam surfaced tab **260** projecting outward therefrom. A second pair of sidewalls **262** projects downward from respective sides of the base section adjacent the rear end of the base section. Each sidewall **262** includes a wide ear **264** projecting outward therefrom. The upper surface of each ear adjacent the forward end thereof is in the form of a downwardly slanting cam surface. The button **246** is a hollow member having a bottom surface of a generally football shaped periphery having an arcuate forward edge portion **266**A and an arcuate rear edge portion **266**B. The top surface **268** of the button is concave to receive a finger of the user, so that the user can press on the button to slide the slider **202**, as will be described later.

[0108] As can be seen in FIG. **26** the rear edge **206**B of the cover **206** includes an arcuate recess **206**C in it. The recess **206**C is configured to receive the arcuate front edge **266**A of the actuator **208** when the actuator is fixedly secured to the cover. The cover includes a pair of downwardly projecting planar sidewalls **270**, each of which extends parallel to the longitudinal central axis of the cover between the forward end **206**A and the recess **206**C in the rear end **206**B. Each wall includes a longitudinally extending linear slot **272**. Each slot **272** is configured to receive a respective one of the tabs **260** of the actuator to fixedly secure the actuator to the cover. Each sidewall of the cover also includes a narrow ear **274** projecting outward from it adjacent the forward end of the sidewall. A short cylindrically shaped rod **276** projects downward from the underside of the cover between the sidewalls **270**. The rod is received within the interior of the tubular portion **216** of the seal **210** when the seal is over-molded onto the slider, such as shown in FIG. **29**.

[0109] The fixed securement of the actuator to the cover is accomplished by orienting the actuator **208** with respect to the cover **206** so that the downwardly projecting rod **276** is aligned with the hole in like shown in FIG. **29** and moving those two components relative to each other so that the sidewalls **258** of the actuator flex slightly inward, whereupon the cam surface of each of the tabs **260** engage the a respective one of the slots **272** to cause the tabs to snap fit within the slots, thereby fixedly securing the actuator to the cover. With the actuator and the cover fixedly secured together, as described above, that completes the assembly of the components of the slider.

[0110] The slider is configured to be releasably connected to the lid by means of a recess in the lid to enable the slider slid to any one of the closed, open and removal states. In particular, as best seen in FIG. **25** the top wall **52** of the lid **202** includes an elongated recess **222** in it. The recess includes a closed bottom wall **224** having a central channel **226** in it, with the end of the channel **226** located closely adjacent the orifice or port **212** including an upwardly sloping surface **228** having a vent hole **230** in it. The vent hole is in fluid communication with the interior of the vessel **22** when the lid assembly **200** is mounted on the vessel **22**. Each side edge of the recess **222** includes a first flange **232** and a second flange **234** extending inward toward the centerline of the recess such that the vertical sidewall of each recess is undercut. A wide notch **236** is located between the end wall of the recess **222** that is located opposite the orifice **212** and the flange **234**. A narrow notch **238** is located between the flanges **234** and **232**. The undersurface of the flange **234** is in the form of a ramp **240**, whose undersurface slopes downward toward the bottom surface of the recess from the notch **236** toward the notch **238**. The undersurface of the flange between the ramp **240** and the notch **238** is in the form of an undercut ledge **242**. The undersurface **244** of the flange **232** is planar and extends parallel to the top surface of the top wall **52**.

[0111] The slidable securement of the slider **204** to the lid **202** will best be appreciated by reference to FIG. **25**. In particular, the slider is oriented so that the wide ears **264** are aligned with the wide notches **236** in the recess **222** of the lid and with the narrow ears **274** aligned with the narrow notches **286** in the recess **222**. Downward pressure on the slider causes those ears to be located adjacent the bottom of the recess **222**, whereupon the slider will be in the removal state, like shown in FIG. **23**B. In that state it can be readily removed from the lid by merely lifting up on it. Once the slider is in the removal state it can be slid down the recess in the direction toward the orifice or port **212**. That action is accomplished by pressing down on the button **246** to cause the bridging section **250** of the actuator to flex downward, thereby bringing the top surface of each ear **264** flush with the ramp undersurface **240** of the associated flange **234** and at the same time bringing the top surface of each ear **274** flush with the undersurface **244** of the associated flange **232** like shown in FIG. **23**B. Pushing the button **246** of the actuator toward the orifice or port **212** will cause the ears **264** and **274** to slide along the surfaces **240** and **244**, respectively, until the slider reaches the position shown in FIG. **22**B, whereupon the slider will be in the opened state. That position is established by a detent mechanism, to be described later.

[0112] If the button **246** is pressed to move the slider from the open position towards the orifice or port **212**, i.e., to close the orifice or port, that action overcomes the detent mechanism, whereupon the top surface of each ear **264** will slide along the ramp undersurface **240** of each flange **234** thereby pulling the slider's forward end, i.e., the end adjacent the edge **206**A, downward. When the slider reaches the position at which the ears **264** reach the undercut ledges **242**, those ears will snap-fit therein, thereby releasably securing or locking the slider in the closed state as shown in FIG. **21**B. At the same time the ears **742** will have slid along the undersurfaces **244** as also shown in that figure. When the slider is in that position it will be in its closed state, whereupon the seal **201** will close off and seal the orifice or port **212**, as described above.

[0113] As should be appreciated by those skilled in the art, the downward pulling of the forward end of the slider toward the orifice **212** when the slider is brought to the closed state pulls the seal **210** downward, whereupon the underside of the seal section **214**B will tightly engage the top surface of the ledge **212**A surrounding the periphery of the orifice or port **212** to effectively close off the orifice or port **212** and form a good fluid-tight seal. Thus, the flanges **232** and **234** and their undersurfaces establish what can be considered a pair of tracks for guiding the ears of slider as it moves along the recess so that it can be slid longitudinally along the recess **222** to any one of the opened, closed and removal states from any one of those states. Moreover, the sloped portion **240** of the flange surfaces overhanging the recess **222** serves to pull the forward end of the slider **204** with its seal **210** tightly into engagement with the orifice or port **212** when the slider is slid from its open state to its closed state as described above.

[0114] As best seen in FIG. **25** the front end of the cover **206** includes a short elongated tab **206**D (FIGS. **26** and **29**), which is configured for receipt within a horizontally oriented matingly shaped recess **54**D (FIG. **25**) when the slider is in the closed state. Thus, when the slider is in the closed state even if pressure should build up within the vessel **22** due to the presence of a hot liquid therein, which pressure would tend to push the slider with its seal upward, the mating receipt of the tab **206**D within the recess **54**D will prevent the forward end of the slider from flexing upward. Thus, the liquid-tight interface between the seal **210** and the orifice or port **212** will be maintained to prevent the egress of liquid through that interface when the slider is in the closed state.

[0115] In order to open the orifice or port **212** so a user can drink that the liquid within the vessel, all that is required is for the user to press down on the actuator button **246** to thereby flex the actuator, whereupon the portion of the actuator at which the ears **264** are located will move downward to free those ears from their respective undercut ledges **242**. Accordingly, the ears **264** can then slide on the undersurface **240** of their associated ramp to bring the slider to the opened position or state as the slider is pushed rearward, i.e., away from the orifice or port **212**. When it is desired to reclose the orifice or port all that is required is for the user to again press on the actuator button **246** in the forward direction, whereupon the slider will be slid to the closed state as described above. This action can be repeated as often as desired.

[0116] When it is desired to clean the lid assembly **200**, one will want to disconnect the slider from the lid to individual clean each of them. That action is accomplished by sliding the slider to the removal position. In particular, if the slider is in the closed position, it is operated as discussed

above to slide it to its opened position. However, instead of stopping at the opened position the slider is slid down the recess **222** away from the port or orifice until it reaches the removal state, like shown in FIG. **23**B. In that state the ears **264** will be aligned with the notches **236** and the ears **274** will be aligned with the notches **238**. Thus, one can lift up on the slider to disconnect the slider from the lid. The slider and the lid can then be cleaned. Once cleaned, the slider can be reconnected to the lid as described above.

[0117] As mentioned earlier the lid assembly **200** includes a detent mechanism to hold the slider in the opened position. That mechanism is best seen in FIG. **25**. In particular, the underside of the cover **206** includes a pair of triangularly shaped projections **280** located outside of each of the sidewalls **270** and closely adjacent the side edges of the cover. The apex of each of the projections is in the form of an arcuate recess **282** (FIGS. **26** and **29**). The top wall **52** includes a pair of triangularly shaped projections **284** located between the notches **238** and the adjacent peripheral sidewall **54** of the lid. As can be seen in FIG. **21**C when the slider is in its closed position or state, the downwardly extending triangular projections **280** of the cover are located between the upwardly extending triangular projections **284** and the orifice or port **212**. When the slider is slid to the opened position from the closed position, the rear-most edge of the downwardly extending projection **280** will ride up the front-most edge of the upwardly extending projection **284** causing the cover to flex slightly upward until the apex of the upwardly extending projection **284** snaps into the recess **282** in the apex of the downwardly extending projection **280**. This action releasably locks the slider in the opened position. When it is desired to slide the slider to the removal position, all that is required is to slide the slider away from the orifice or port **212**, whereupon the apex of the upwardly extending projection **284** will exit the recess **282** in the apex of the downwardly extending projection **280** so that the front-most surface of the downwardly extending projection **280** can slide over the rear-most edge of the upwardly extending projection **284**, whereupon the ears **264** and **274** will be aligned with the notches **236** and **238**, respectively. In this position the slider will be in its removal state, so that it can be readily disconnected from the lid by lifting upward on the slider.

[0118] As discussed earlier the lid includes a vent **232**. That vent is provided to enable air to enter into the vessel when a user is drinking from the vessel or pouring liquid from the vessel through the lid when the slider is in the opened state. In order to ensure that no liquid can gain egress through the vent when the slider is in the closed state, the heretofore mentioned portion **216** of the seal comes into play. In particular, that portion of the seal is located on the outer surface of the downwardly extending rod **276** of the cover. Thus, when the slider is in the closed state the elastomeric undersurface of the seal portion **216** will be in a liquid-tight engagement with the inner surface **228** contiguous with the vent **230**, thereby sealing the vent, as shown clearly in FIG. **21**A. When the slider is in the open state the seal section **216** will be located within the channel **226** and the vent **230** will be exposed and open, such as shown in FIG. **22**A. So too, when the slider is in the removal position the seal section **216** will be located within the channel **226** and the vent **230** will be exposed and open, such as shown in FIG. **23**A.

[0119] As best seen in FIG. **24** an O-ring seal **276** is located within an annular recess in the sidewall **54**B to for a good liquid-tight seal between the lid **202** and the vessel **22**.

[0120] As should be appreciated by those skilled in the art, the lid assembly **200** is easy to use, is effective to ensure that the port or orifice is effectively locked in its sealed state when the slider is in that state, is relatively simple in construction and has a low parts count. Moreover, when the lid assembly **200** is disassembled for cleaning there are only two components which need to be cleaned, i.e., the slider and the lid. This factor reduces the risk that the disassembled components will be lost or misplaced when disassembled for cleaning.

[0121] Turning now to FIG. **30** there is shown a third exemplary embodiment of a lid assembly **300** constructed in accordance with this invention. The lid assembly **300** is shown releasably secured to a drinking vessel **22**, which is constructed like that of FIG. **1**. The lid assembly **300** is shown generally in FIGS. **30-33** and **37** and basically comprises a lid **302** (FIGS. **31-33**), a slider **304** (FIGS. **31-33**), and a sealing lever or beam **306** (FIG. **37**). The lid **302** is similar in several respects to the lid **48** of the slider **20** shown in FIGS. **1-3**. Thus, in the interest of brevity, the common components of the lid **302** and the lid **48** will be given the same reference numbers and the details of their construction and operation will not be reiterated.

[0122] As can be seen in FIG. **31** the lid **302** includes a top wall **52** and a circular peripheral sidewall **54** extending about the top wall. The top wall includes an orifice or port **308** (FIGS. **37** and **20**), which is configured for communication with the internal cavity in the tumbler **22** when the lid assembly **300** is mounted on the tumbler **22**. The slider **304** is located on the top wall of the lid **302**. The sealing lever or beam **306** is located under the bottom surface of the top wall **52** and is coupled to the slider **304** via a ramped track and a coupling pillar (both to be described later). The sealing lever or beam **306** includes a seal **310**, which will also be described later, and is configured to be pivoted into any one of three states, namely, a closed, e.g., locked, state, an open, e.g., unlocked, state, and a disconnected or removal state by the sliding movement of the slider to respective longitudinal positions corresponding to each of those states. In particular, when the slider is slid to the closed state position the sealing lever or beam **306** will be pivoted to the position, like shown in FIGS. **34**A and **34**B, wherein the seal **310** will engage the undersurface of the top wall **54** contiguous with the orifice or port **308** to close off or otherwise seal that orifice or port. The lid assembly **300** also includes a detent mechanism, which will be described in detail later, and which serves to lock the slider in the closed position. When the slider **304** is slid to the opened position state that action pivots the sealing lever or beam **306** downward to the position, like shown in FIGS. **35**A and **35**B, wherein the seal **310** will be brought out of engagement with the undersurface of the top wall **54** contiguous with the orifice or port **308** to thereby expose that orifice or port. Thus, in that state the port **308** is exposed to enable a user to drink from the tumbler through the port or to pour contents of the beverage within the tumbler out through the port. When the slider is slid to the position constituting the removal state, such as shown in FIGS. **36**A and **36**B it will be disconnected from the top wall of the lid so that it can be removed, e.g., lifted off of the lid, to enable it to be cleaned thoroughly and the lid to be clean thor-

oughly. The removal of the slider **304** from the lid **302** frees the sealing lever or beam **306**, so that it can be readily removed from the lid for cleaning, as well, as will be described later.

[0123] Like the lid **48** of the lid assembly **20**, the top wall **52** of the lid **302** slopes downward from the point opposite the orifice or port **308** to that port. Moreover, the upper section **54** of the lid's sidewall has its top edge located above the highest point on the top wall **52** and has an inner surface, which slopes downward to merge with the top wall. These features ensure that any beverage, which may become located on the top wall **52** is channeled to flow back into the tumbler through the port **308** when the port is open, i.e., when the slide subassembly is in the unlocked or open state. Like the lid assembly **200**, the lid assembly **300** includes an O-ring seal **276** located within an annular recess in the sidewall **54**B to for a good liquid-tight seal between the lid **302** and the vessel **22**.

[0124] Turning now to FIGS. **38-40**, the details of the slider **304** will now be described. To that end, it can be seen that the slider **304** basically comprises a generally planar plate-like member **312** that has a similar profile to the cover **206**. In particular, the plate-like member is formed of any suitable plastic material, e.g., polypropylene, and has a pair of opposed arcuate edges **312**A and **312**B. The edge **312**A is an arc of a circle to generally mate with a portion of the inner surface of the circular sidewall of the upper section **54**A of the lid **302** when the slider **204** is in the closed state shown in FIG. **38**. The opposite edge **312**B of the slider **304** is also an arc of a circle to be located closely adjacent the inner surface of the circular sidewall of the upper section **54**A of the lid **302** when the slider is in the removal state shown in FIG. **33**. The plate-like member includes a generally dog-bone shaped opening **314** closely adjacent the center of the arcuate edge **312**A and on the longitudinal centerline of the slider. The opening **202** serves as the point at which an elastomeric, e.g., a soft TPE, seal **316** is over-molded onto the slider or which could be inserted into the slider. The seal **316** basically comprises a planar upper section **316**A of a generally football-shaped profile and a planar lower section **316**B also of a generally football-shaped profile. The sections **316**A and **316**B are interconnected by a bridging section, which extends through the dog-bone shaped opening. The location of the seal **316** on the slider ensures that when the slider is in the closed state, the elastomeric section **316**B engages the top wall **52** contiguous with the orifice or port **308** to close off that orifice or port from the upper side thereof. At the same time the seal **310** on the sealing lever or beam **306** engages the periphery of the underside of the top wall **52** contiguous with the orifice or port **208** to seal that orifice or port from the underside.

[0125] As mentioned earlier the slider **304** is configured so that it can be slid to any one of the closed, open and removal states. That action is accomplished by sliding the slider along the top wall **52** of the lid **302**. In particular, as best seen in FIG. **40** the top wall **52** of the lid **302** includes an elongated recess **322** in it. The recess includes a closed bottom wall **324** (FIG. **37**) with a vent hole **326** (FIG. **40**) in it. The vent hole is conical in shape and flares downward from the top surface of the wall making up the recess to the bottom surface of that wall, so that the vent will be in fluid communication with the interior of the vessel **22** when the lid assembly **300** is mounted on the vessel. Each side edge of the recess **322** includes a first flange **328** and a second flange **330** extending inward over the recess **322** such that each sidewall of the recess is undercut. A wide notch **332** is located between the end wall of the recess **322** that is located opposite the orifice **308** and the flange **330**. A narrow notch **334** is located between the flanges **328** and **330**. The undersurface of both of the flanges **328** and **330** are planar, flush with each other and parallel to the top surface of the top wall **52**.

[0126] A pair of braced walls **336** project downward from the undersurface of the slider **302** and are equally spaced from the longitudinal centerline of the slider. Each wall **336** includes a wide ear **338** and a narrow ear **340** projecting outward therefrom. The narrow ears **340** are located adjacent the end of the wall closest to the seal **316**B. Located between the walls **336** is a pair of ramped tracks **342**. The tracks **342** are flanged members, which are mirror images of each other. In particular, as best seen in FIG. **41**, each flanged track **342** includes a top surface or ledge **344** which is planar and which slopes upward from the end of the track located closest to the seal **316**. The end of each track **342** closest to the seal **316** is open, whereas the opposite end of each track is closed. A button **346**, shaped similarly to the button **246** of the lid assembly **200**, is projects upward from the top surface of the slider **304** centered on the longitudinal central axis of the slider and located opposite the seal **316**. In accordance with one preferred aspect of this embodiment the slider **304** is molded as a one-piece integral unit and the seal **316** over-molded thereon.

[0127] The slider **304** is configured to be slidably connected to the lid. That action will best be appreciated by reference to FIG. **40**. In particular, the slider is oriented so that the wide ears **338** are aligned with the wide notches **332** in the recess **322** of the lid and with the narrow ears **340** aligned with the narrow notches **334** in the recess **322**. Downward pressure on the slider causes those ears to be located adjacent the bottom of the recess **322**. At that point the slider is in its removal state and the sealing lever or beam **306** can be connected to the slider.

[0128] As can be seen in FIGS. **38** and **39** the sealing lever or beam **306** basically comprises an elongated member having a front end in the form of an upstanding mesa **348** of a generally football shaped profile. The seal **310** is formed of a soft TPE and is over-molded onto the mesa **348** to fixedly secure it in place. The opposite end of the sealing lever or beam **306** includes a pair of tabs **350** projecting outward from the end thereof and configured for receipt in respective ones of slots **354** in the annular downwardly projecting sidewall portion **54**B, as best seen in FIGS. **34**A, **37** and **39**. A short height transversely oriented wall **354** projects upward from the top surface of the sealing lever or beam **306** somewhat adjacent the end having the tabs **350**. The top surface of the wall **354** abuts the undersurface of the top wall **54** at the location of the recess **322** as best seen in FIGS. **34**A, **35**A and **36**A. As best seen in FIGS. **38**, **39** and **40** a rod-like post **356** projects upward from the top surface of the sealing lever or beam **306**. The post includes a pair of slots **358** located adjacent the top of the post. The slots **358** are diametrically opposed to each other, with one slot **358** being located facing one long side of the sealing lever or beam and with the other slot **358** facing the opposite long side of the sealing lever or beam. Each slot **358** is sized and configured to receive a respective flanged edge of the tracks **342**. In particular, the top surface **344** of one track **342** is configured to engage the top surface of one of the slots **348**,

and with the top surface **344** of the other track **342** engaging the top surface of the other slot **348**. An elastomeric vent seal **360**, having an external conical surface **362** is over-molded on the post. As best seen in FIG. **38** the portion of the sealing lever or beam **306** from a point between the upstanding wall **354** and the upstanding post **356** extends at a slight downward angle to the remaining portion of the sealing lever or beam **306** for a reason which will become apparent shortly.

[0129] With the ears **336** and **340** of the slider **302** located within the notches **332** and **334**, respectively, as described above such that the slider is in its removal position or state, the top end portion of post **356** can be extend through the vent hole **326** to bring the slots **358** of the post immediately adjacent and flush with the ends of the tracks **342** as shown in FIG. **36**B. At this point the conical surface **362** of the vent seal **360** will move toward axial alignment with the vent hole **326** but will be spaced from it.

[0130] In order to close the orifice or port **308**, the button **346** of the slider **304** is pushed to slide the slider down the recess toward the orifice or port. This action causes the slots **358** of the post to slide up and ride along the upwardly sloping surfaces **344**, thereby pulling the end of the sealing lever or beam with the seal **310** upward and into tight sealing engagement with the underside of the top wall contiguous with the orifice or port, thereby sealing that orifice or port. Moreover, the upward pivoting of the sealing lever or beam will bring the conical sealing surface **360** of the vent seal into tight engagement with the conical vent hole **326**, thereby sealing that vent to prevent any liquid from exiting through the vent, as can be seen in FIG. **34**B.

[0131] In order to open the orifice or port so that a user can drink the liquid within the vessel through that port or else pour the liquid in the vessel through the port, all that the user has to do is push on the button **346** to slide the slider away from the orifice or port to the opened position or state. That action will move the tracks **342** away from the orifice or port, whereupon the slots in the post will slide down along the sloped surfaces **344** of the tracks, thereby pivoting the end of the sealing lever or beam with the seal **310** on it downward and away from the orifice or port until the slider is in the opened state. In that state the orifice or port will be exposed so that any liquid within the vessel can pass through the opened port. Moreover, the conical surface **360** vent seal **358** will no longer be in engagement with the vent as shown in FIG. **35**B, whereupon air can enter the vessel through the vent as the liquid is drawn out of the vessel through the orifice or port **308**. If it is desired to reclose the orifice or port **308** all that is required is for the slider to be slid in the opposite direction to the closed state, whereupon the orifice or port will be resealed. The opening and closing of the orifice by the lid assembly **300** can be repeated as many times as desired.

[0132] When it is desired to clean the slider and lid, all that is required is to slide the slider to the removal position, whereupon the slider can be lifted out of the recess **322** and disconnected from the sealing lever or beam, since the post of the sealing lever or beam will be outside open end of the tracks and hence free. That action disconnects the slider from the lid, whereupon each can be separately cleaned. Moreover, the sealing lever or beam can be readily disconnected from the lid by pulling its tabs **350** from the slots **352**. Reassembly of the slider, the lid and the sealing lever or beam can be readily accomplished by connecting the sealing lever or beam to the lid via the tabs **350** and slots **352**. Then the ears **338** and **340** on the underside of the slider can be disposed into their respective notches **332** and **334** in the recess **322** whereupon the top end of the post will be located immediately adjacent the open end of the track formed by the flanges **342**, as described above.

[0133] As mentioned earlier the lid assembly **300** includes a detent mechanism. That mechanism serves to releasably lock the slider **304** in any one of the closed, opened and removal position. That mechanism is best seen in FIGS. **34**C, **35**C, **36**C, and **40**. In particular, as can be seen in FIG. **40**, the underside of the slider **302** includes a first pair of triangularly shaped projections **378** located outside of each of the braced walls **336** and closely adjacent the edge **312**B near where that edge merges with edge **312**A. A second pair of triangularly shaped projections **380** is located outside of each of the braced walls **336** and closely adjacent the edge **312**A near where that edge merges with edge **312**B. Each of the projections **380** is slightly larger than each of the projections **378** and is constructed similar to the projections **280** of the lid assembly **200**. Thus, the apex of each of the projections **380** is in the form of an arcuate recess **382**. The top wall **52** of the lid **302** includes a pair of triangularly shaped projections **384** (only one of which can be seen in FIG. **40**) which are located outside and slightly longitudinally offset from the notches **334** and the adjacent peripheral sidewall **54** of the lid. As can be seen in FIG. **34**C when the slider **304** is in its closed position or state, the rear-most edge of the downwardly extending triangular projections **378** of the slider are in engagement with the front-most edge of the upwardly extending triangular projections **384**, thereby preventing the slider from sliding away from the orifice or port **308**. However if one were to push on the button **346** in a direction away from that orifice or port, the rear-most edge of the downwardly extending projections **378** will ride up and over the apex of the upwardly extending projections **384**, thereby causing the slider's plate-like portion to flex, freeing the slider from the closed state. Continued pushing on the button **346** in a direction away from the orifice or port **108** causes the rear-most edge of the downwardly extending projections **380** to ride up on the forward-most edge of the upwardly extending projections **384** until the apex of each of the upwardly extending projections **384** snap fit into the respective recesses **382** in the downwardly extending projections **380**. This action releasably locks the slider in the opened position. When it is desired to slide the slider to the removal position, all that is required is to slide the slider away from the orifice or port **308** by pushing on the button **386**, whereupon the apex of the upwardly extending projection **384** will exit the recess **382** in the apex of the downwardly extending projection **380** so that the front-most surface of the downwardly extending projection **380** can slide over the apex and into engagement with the rear-most edge of the upwardly extending projection **384**, whereupon the ears **338** and **340** will be aligned with the notches **332** and **334**, respectively. In this position the slider **304** will be in its removal state, so that it can be readily disconnected from the lid **302** by lifting upward on the slider.

[0134] As should be appreciated by those skilled in the art, by sealing the orifice or port **308** from the underside as is accomplished by the lid assembly **300**, any pressure which may build up within the vessel due to the presence of a hot liquid therein will apply a further upward force on the seal **310** at the forward end of the sealing lever or beam **306**. That action provides even more sealing force to the orifice or port

308, thereby further lessening the chances that any liquid could leak out of that interface. Moreover, the lid assembly **300** is simple in construction, easy to use and has a low parts count. When disassembled for cleaning there will be three separate components, namely, the slider, the lid and the sealing lever or beam and the vent seal incorporated therein.

[0135] It must be pointed out at this juncture that the various components as described above with respect to the exemplary embodiments 20, 200 and 300 are merely examples of various components that can be used to produce a lid assembly and a drinking vessel, e.g., tumbler, in accordance with this invention. Moreover, while the invention has been described with reference to holding hot beverages, it is of course contemplated that the tumbler can be used to hold cold beverages. In fact, it is contemplated that the tumbler may be single walled or otherwise uninsulated, if that is desired.

[0136] Without further elaboration the foregoing will so fully illustrate our invention that others may, by applying current or future knowledge, adopt the same for use under various conditions of service.

We claim:

1. A lid assembly for releasable mounting on a drinking vessel having a hollow body bounding an internal cavity configured for receipt of a beverage to enable a user to drink or pour the beverage through the said assembly, the hollow body having an annular rim at a top edge thereof, said lid assembly comprising:

a) a lid comprising a top wall and a peripheral sidewall extending about said top wall, said top wall including a port configured for communication with the internal cavity when said lid assembly is mounted on the vessel;

b) a sealing member; and

c) a slider coupled to said sealing member, said slider being located at said top wall and slidably connected thereto, said slider being configured to be in any one of a closed state, an opened state, and a removal state, said slider when in said closed state being slidably connected to said top wall with said sealing member sealing said port, said slider when in said opened state being slidably connected to said top wall with said sealing member exposing said port, said slider being slidable between said closed state and said opened state, and vice versa, said slider being movable to said removal state whereupon said slider is disconnected from said top wall so that said slider can be removed from said lid.

2. The lid assembly of claim **1** wherein said top wall slopes downward toward said port, and wherein said peripheral sidewall has a top edge located above said top wall, said downwardly sloped top wall providing a path for any beverage that may become located on said top wall to flow into said port.

3. The lid assembly of claim **1** wherein said lid assembly is configured to releasably secure said slider in said opened and closed positions.

4. The lid assembly of claim **3** wherein said lid assembly includes engagement surfaces to releasably secure said slider in said opened and closed positions.

5. The lid assembly of claim **1** wherein said lid assembly comprises a detent mechanism.

6. The lid assembly of claim **1** wherein said lid comprises a vent hole and wherein said lid assembly additionally comprises a vent seal configured to seal said vent hole when said slider is in said closed state and to expose said vent hole when said slider is in said opened state.

7. The lid assembly of claim **1** wherein said sealing member comprises an elastomeric member.

8. The lid assembly of claim **7** wherein said sealing member comprises a portion of said slider.

9. The lid assembly of claim **8** wherein said top wall includes a top surface and wherein said sealing member is configured to engage said top surface of said top wall contiguous with said port.

10. The lid assembly of claim **1** wherein said lid includes an elongated recess directed towards said port, said recess having a surface forming a track, and wherein said slider includes at least one projection for slidable receipt within said recess to enable said slider to be slid along said track from said closed state to said opened state, and vice versa.

11. The lid assembly of claim **10** wherein said track includes a ramped portion to pull said sealing member into tight engagement with said port when said slider is in said closed state.

12. The lid assembly of claim **11** wherein said track includes a recessed portion into which said at least one projection snap-fits when said slider is in said closed state, and wherein said slider includes an actuator, said actuator being configured when actuated to move said at least one projection out of said recessed portion.

13. The lid assembly of claim **1** wherein slider comprises said sealing member and a movable switch, said switch being selectively movable to any one of a first, second, and third positions, said switch when in said first position enabling said slider to be in said closed state, and when in said second position enabling said slider to be in said opened state, and when in said third position enabling said slider to be in said removal state.

14. The lid assembly of claim **13**, wherein said switch is configured to be slid through a path across a portion of said top wall to assume said first, second and third positions.

15. The lid assembly of claim **14** wherein said switch includes a pivot pin coupled to a recess in said lid to enable said switch to be pivoted in said recess about a pivot axis, whereupon said switch can be pivoted to any of said first, second and third positions.

16. The lid assembly of claim **7** wherein said top wall includes a bottom surface and wherein said sealing member is configured to engage said bottom surface of said top wall contiguous with said port.

17. The lid assembly of claim **16** additionally comprising a sealing beam coupled to said slider and with said sealing member being located on an upper surface of said sealing beam, said sealing beam being located below said top wall of said lid and being configured to move said sealing member into engagement with said bottom surface of said top wall contiguous with said port when said slider is in said closed state.

18. The lid assembly of claim **17** wherein said lid assembly additionally comprises a detent mechanism, said detent mechanism being configured to hold said slider in said closed and opened states.

19. The lid assembly of claim **1** wherein said peripheral sidewall has a top edge located above said top wall, said top edge being of a thickness in the range of approximately 0.06 inch to 0.10 inch to facilitate drinking of the liquid through the lid assembly.

20. A drinking vessel comprising the lid assembly of claim **1**.

21. The drinking vessel of claim **20**, wherein said drinking vessel comprises a doubled walled tumbler for holding hot liquids therein, said tumbler comprising an outer vessel and an inner vessel, said inner vessel comprising a sidewall in the form of a body of revolution extending about a central longitudinal axis, said sidewall of said inner vessel comprising a thin top rim from which an upper section extends downward to an intermediate point along said axis, where said upper section merges with a lower section, said top rim and a portion of said upper section of said inner vessel being co-molded to the remainder of said inner vessel to form an integral unit having a radially inwardly projecting undercut ledge, said outer vessel comprising a sidewall in the form of a body of revolution extending about said central longitudinal axis and having a top edge from which an outwardly bowed bulbous upper section extends downward to an intermediate point along said axis, where said bulbous upper section of said outer vessel merges with an undercut lower section of said outer vessel, the maximum outer diameter of said lower section of said outer vessel being less than the maximum outer diameter of said bulbous upper section of said outer vessel, said undercut ledge of said inner vessel being disposed on said upper edge of said outer vessel and welded thereto, whereupon an insulating spaced is created between portions of said inner vessel and said outer vessel and wherein said thin top rim of said inner vessel forms the top rim of said tumbler.

22. The drinking vessel of claim **20**, wherein said upper section of said inner vessel constitutes an outwardly bowed bulbous upper section, and wherein said lower section of said outer vessel has a maximum outer diameter less than the maximum outer diameter of said bulbous upper section of said outer vessel.

23. The drinking vessel of claim **21** additionally comprising a decorative sleeve located within said insulating space.

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