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CONTAINER

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FIG. 1.

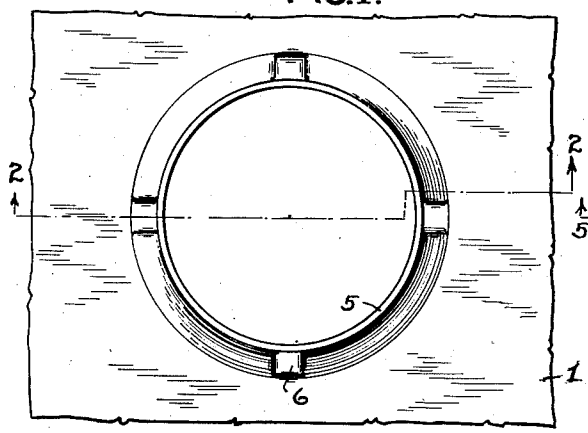


FIG. 4.

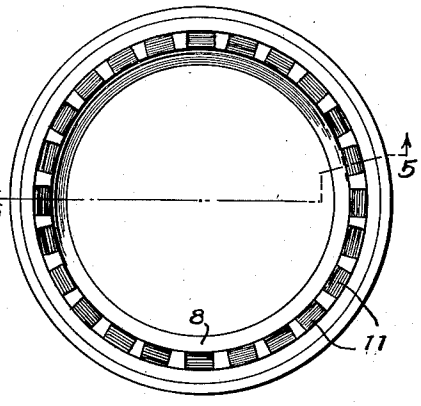


FIG. 2.

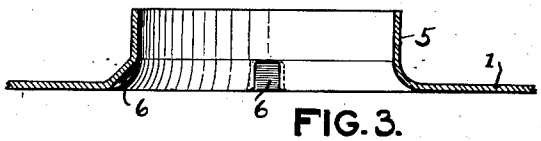


FIG. 5.

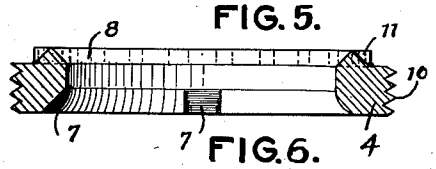


FIG. 3.

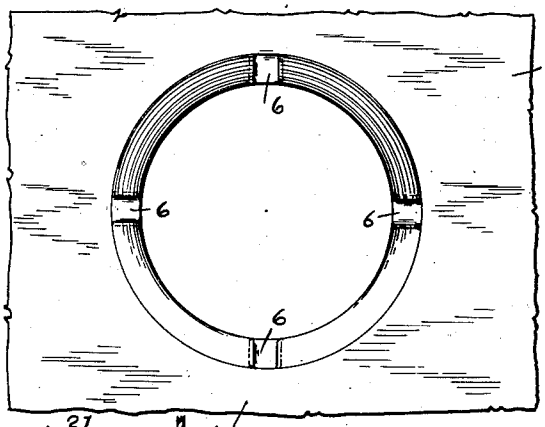
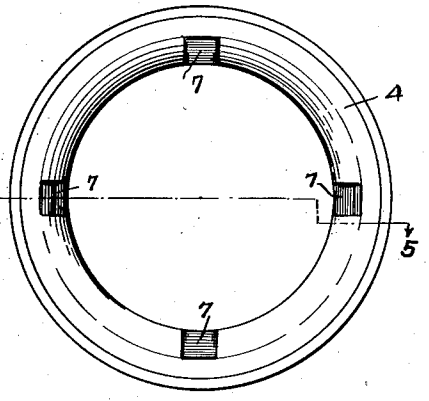


FIG. 6.



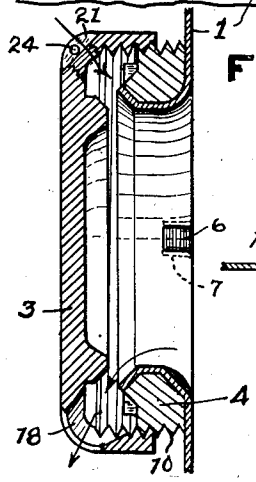


FIG. 12a.

FIG. 7.

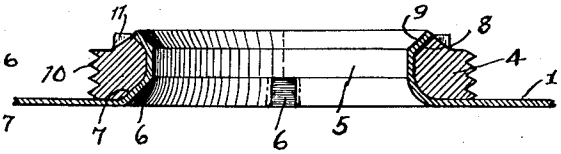


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FIG. 8.

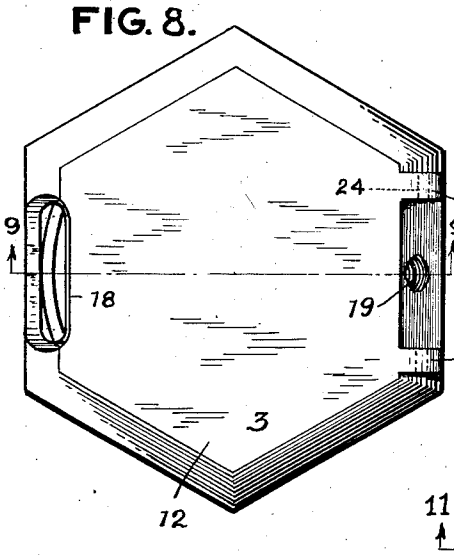

FIG. 11.

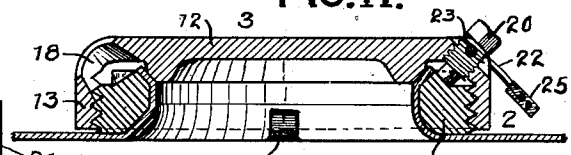

FIG. 12.

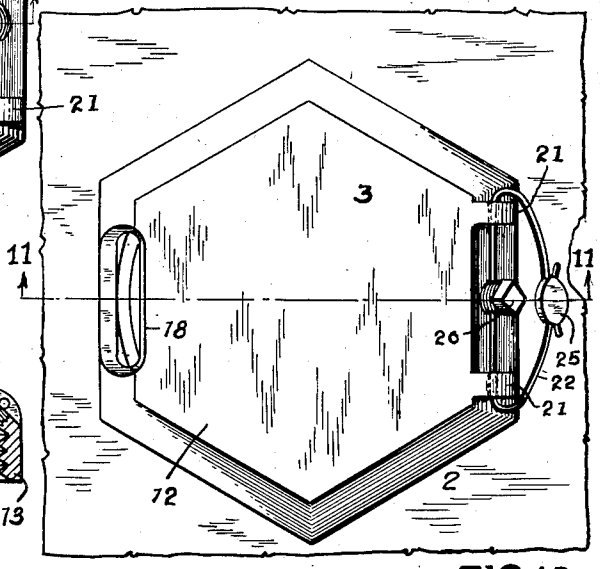

FIG. 9.

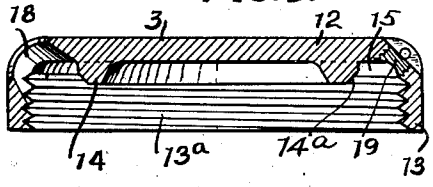

FIG. 10.

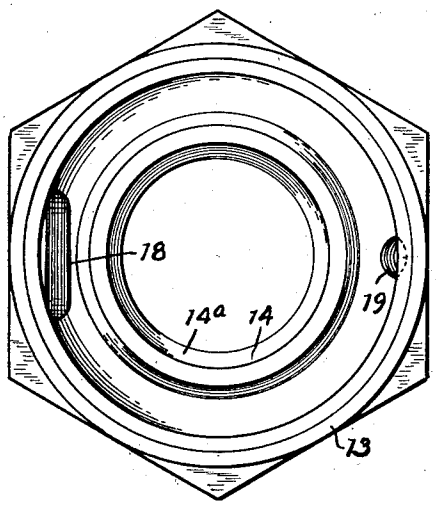

FIG. 13.

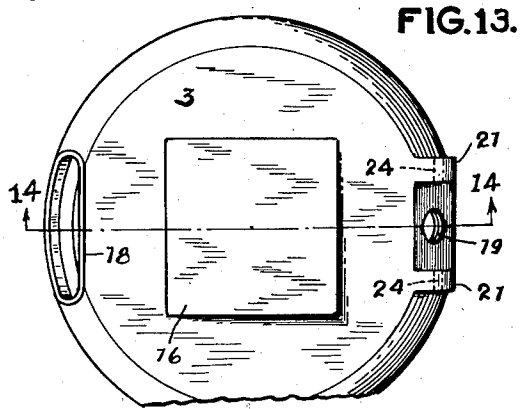

FIG. 14.

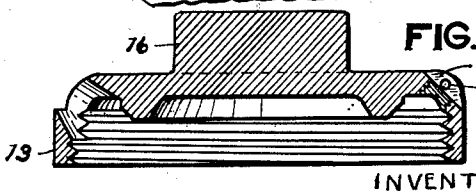

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FIG. 15.

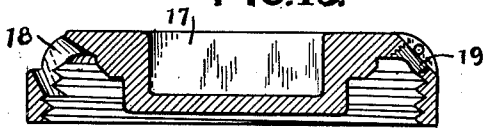


FIG. 16.

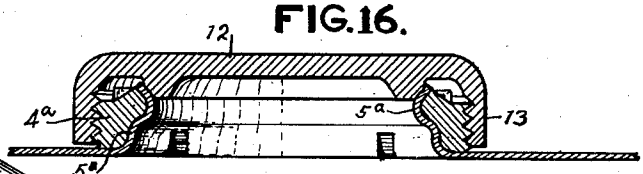


FIG. 17.

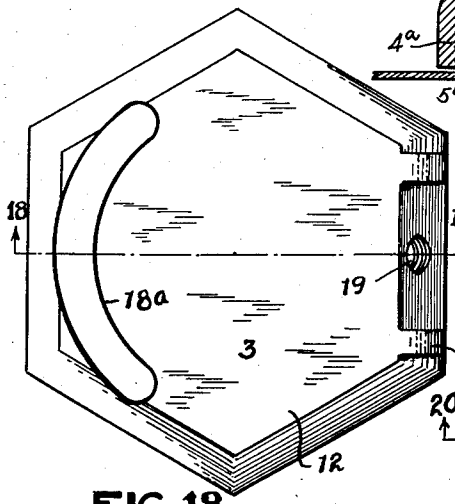


FIG. 21.

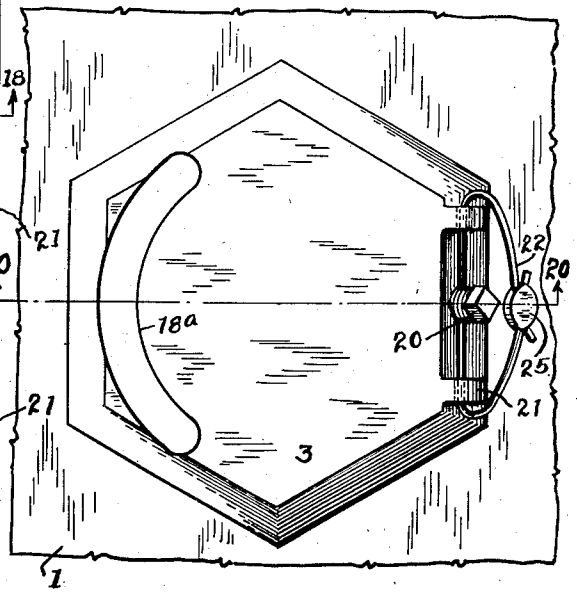


FIG. 18.

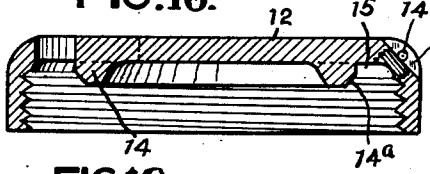


FIG. 19.

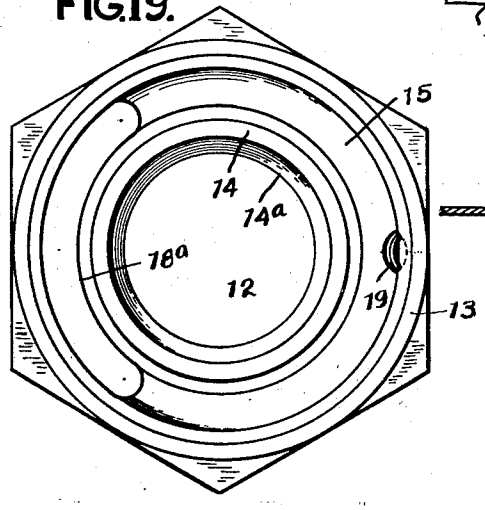
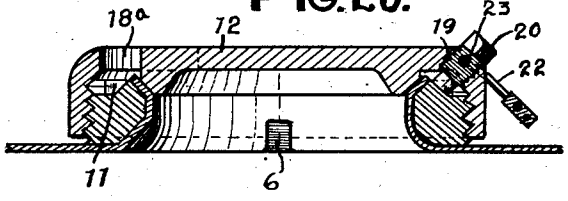


FIG. 20.



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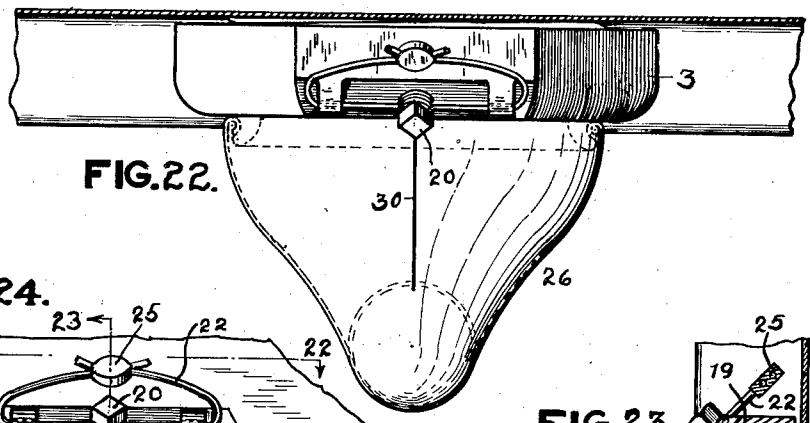

FIG. 22.

FIG. 24.

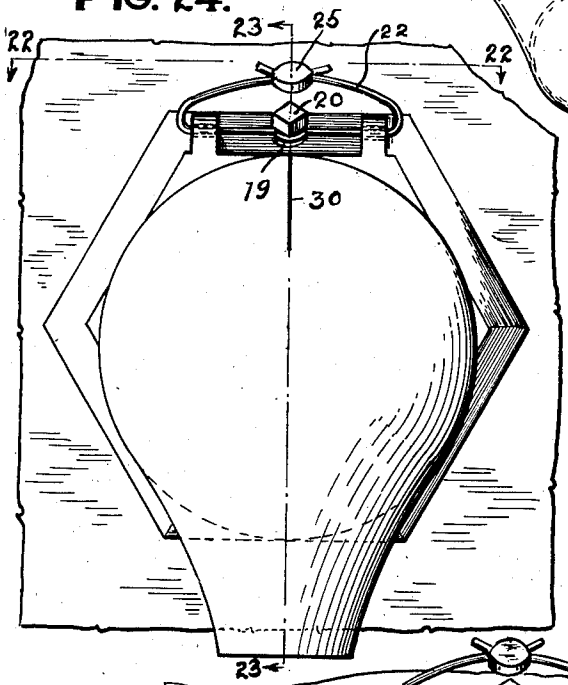

FIG. 23.

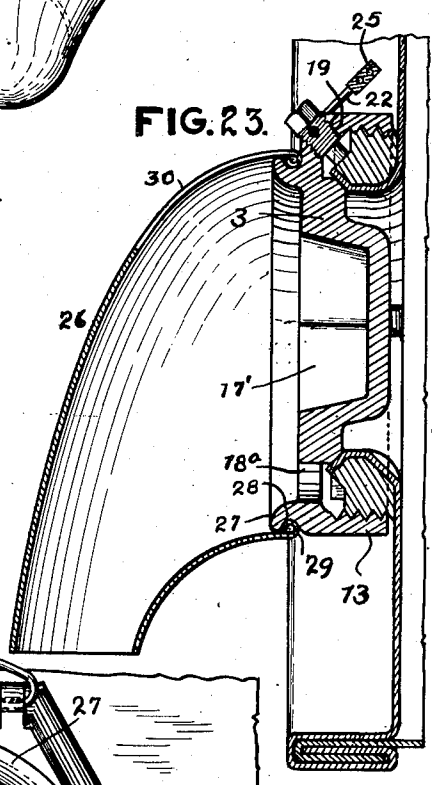

FIG. 25.

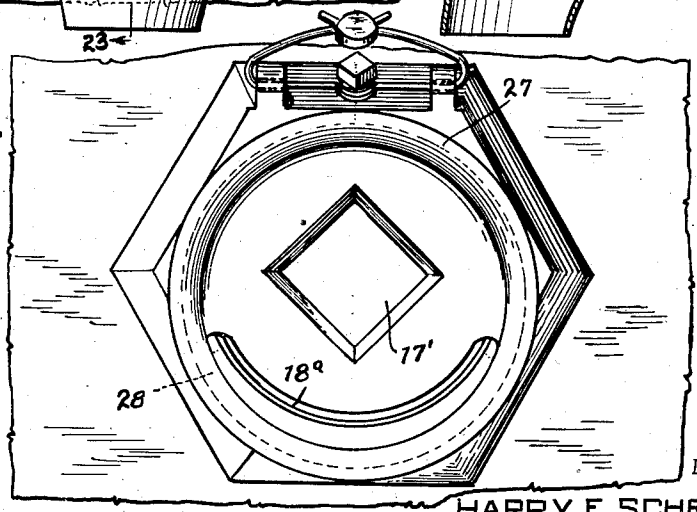

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FIG.26.

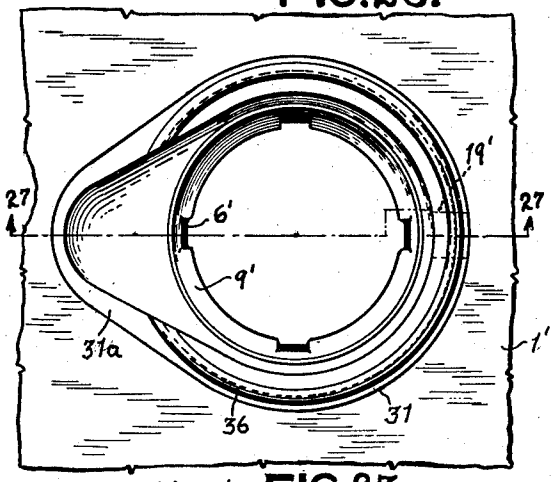

FIG.28.

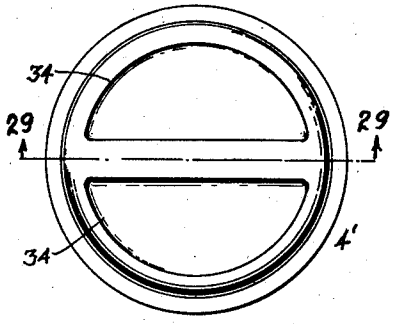

FIG.29.

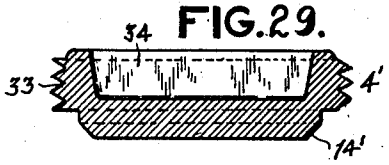

FIG.27.

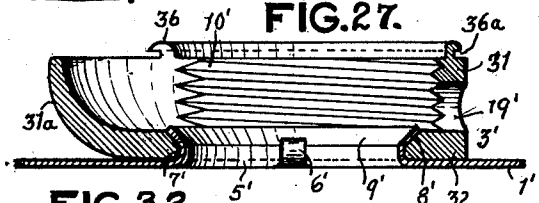

FIG.30.

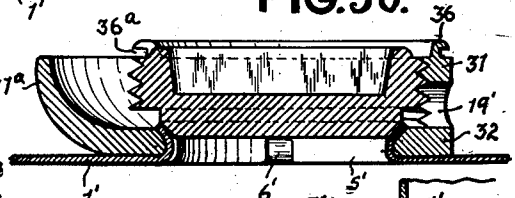

FIG.32.

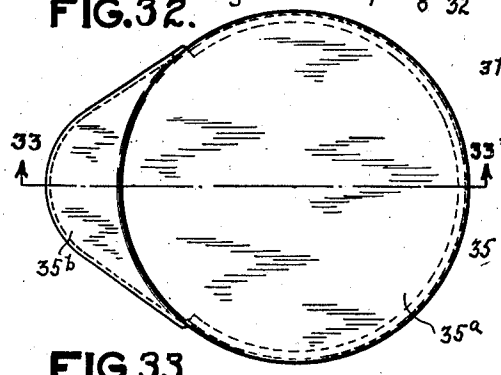

FIG.31.

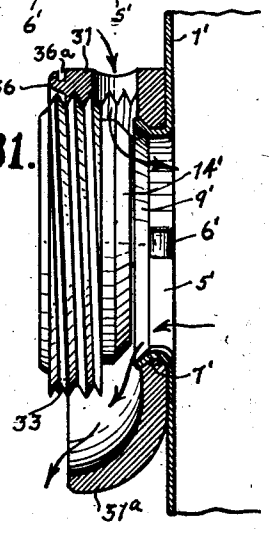

FIG.33.

FIG.34.

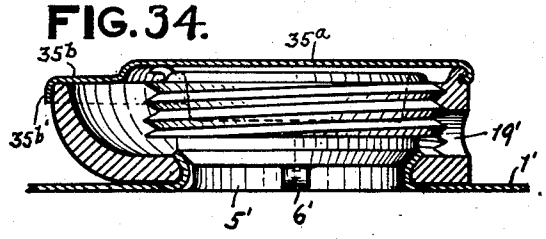

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FIG. 35.

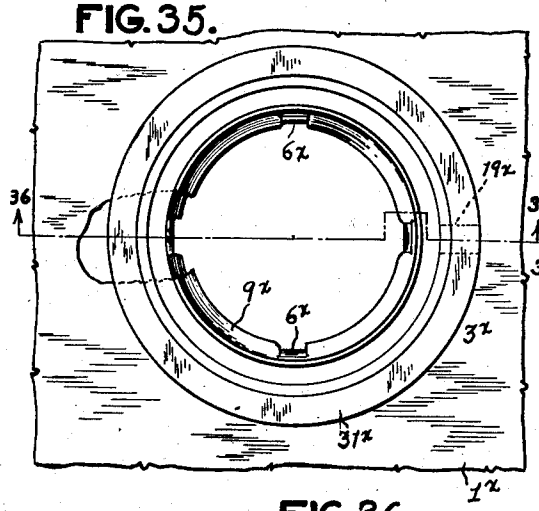


FIG. 36.

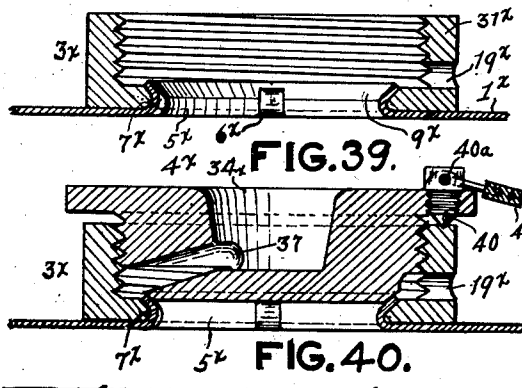


FIG. 39.

FIG. 40.

FIG. 37.

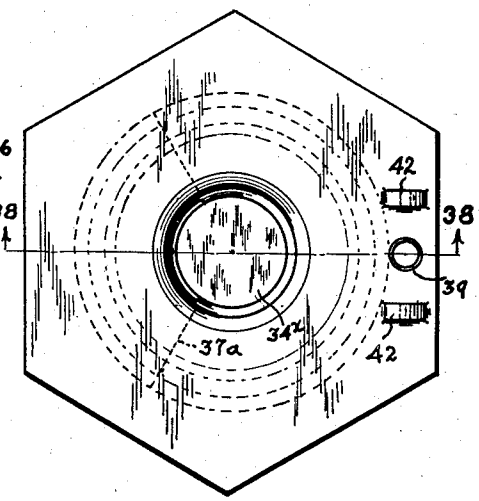


FIG. 38.

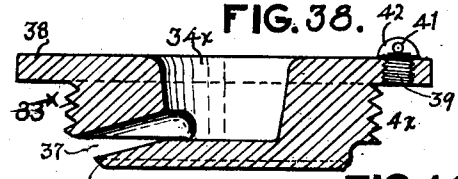
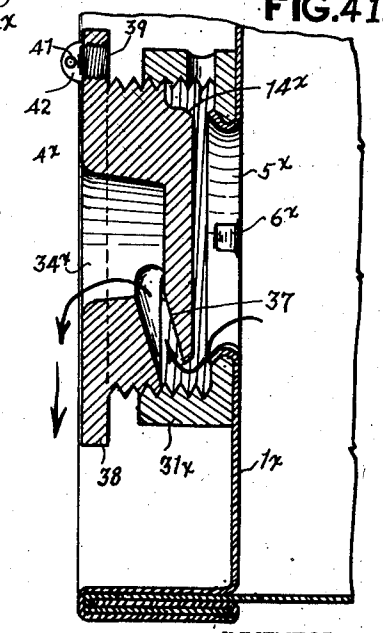
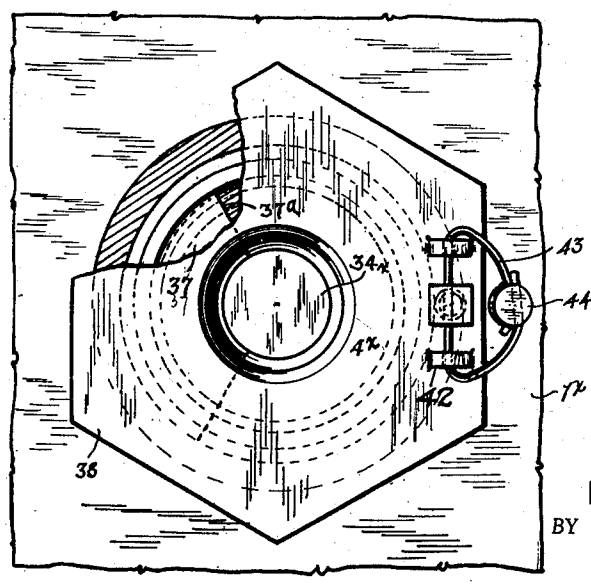


FIG. 41.





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Patented Dec. 30, 1941

2,267,754

UNITED STATES PATENT OFFICE

2,267,754

CONTAINER

Harry E. Schroeder, Cleveland, Ohio, assignor to The Buckeye Forging Company, Cleveland, Ohio, a corporation of Ohio

Application November 18, 1937, Serial No. 175,264

14 Claims. (Cl. 221—20)

This invention relates to a container, more particularly to the means which provide for filling and closing the container for shipment and emptying it in a ready manner and process of mounting or incorporating one element of the filling, closing and emptying means in the container wall. The invention is shown applied to a sheet metal container (for example, a barrel, drum and the like), but it is obvious that the walls of the container other than the one on which the herein disclosed filling, closing and emptying means are mounted, may be formed of any desired material or combination of materials.

The filling, closing and emptying means herein disclosed may be mounted on any wall of the container, but is shown mounted on one head thereof (see Figs. 12*a* and 23), usually termed the top wall. In the construction of sheet metal containers it has been customary to provide them with two or more openings, each having a bung ring and plug therefor and a sealing means for each plug, one opening for filling and emptying the container and the other or another (smaller in size) for venting purposes. This has required at least two sets of dies for forming the openings and mounting the bung rings therein, two tools for applying the caps, the handling of different sized rings, plugs and caps, and extra expense in equipping each container with at least one extra ring and a plug therefor and a cap or sealing means for the plug. My construction eliminates the extra equipment, labor and expense above referred to, since it provides for filling the container, closing it in a liquid tight manner, sealing it against unauthorized opening or emptying, emptying the container and full drainage thereof through a single opening in one wall of the container. However, such novel construction does not preclude the equipment on the container of a separate filling and emptying means as herein disclosed or a separate opening and closure therefor, where such equipment may be desirable.

One object of the invention is to provide an improved process of mounting on the wall of a container one element of a filling, closing and emptying means.

Another object of the invention is to construct an improved container having a combined closure and emptying means which provide a liquid tight closing of the container and venting thereof during emptying.

Another object of the invention is to construct an improved container wherein provision is made to permit filling and emptying of the container through a single opening in the container wall, liquid tight closing of the container for shipment, venting during emptying and full drainage.

Another object of the invention is to construct a container having improved closure means which provide for liquid tight closing, sealing against tampering and venting during emptying.

Another object of the invention is to provide in a container, improved means for sealing the container against tampering and venting during emptying.

Another object of the invention is to provide in a container an improved closure and emptying means wherein the element which provides for venting during emptying, also serves as an element of the means to prevent tampering.

A further object of the invention is to provide, in a container, an improved filling and closure means, whereby the filling opening may be liquid tight closed without use of a gasket.

Other objects of the invention will be apparent to those skilled in the art to which my invention relates from the following description taken in connection with the accompanying drawings, wherein—

Fig. 1 is a plan view of that sheet metal wall for a container (end wall or side wall) on which my filling and emptying means are to be mounted, this view illustrating one step of the process of mounting one element thereof.

Fig. 2 is a section on the line 2—2 of Fig. 1.

Fig. 3 is a bottom plan view of Fig. 1.

Fig. 4 is a plan view of the element (ring) which is to be mounted in the wall shown in Figs. 1, 2 and 3.

Fig. 5 is a section on the line 5—5 of Figs. 4 and 6.

Fig. 6 is a bottom plan view of the element or ring shown in Fig. 4.

Fig. 7 is a sectional view corresponding to Figs. 2 and 5, but showing the last or final step of the process, wherein the element or ring is mounted in the container wall and interlocked thereto against rotative movement and movement axially of the ring.

Fig. 8 is a plan view of the closure and discharge element.

Fig. 9 is a section on the line 9—9 of Fig. 8.

Fig. 10 is a bottom plan view of the element shown in Fig. 8.

Fig. 11 is a section on the line 11—11 of Fig. 12.

Fig. 12 is a plan view of the container and the filling and emptying means mounted thereon and sealed ready for shipment.

Fig. 12a is a section on the line 11—11 of Fig. 12, but showing the closure and discharge element operated to open position to permit emptying of the container.

Fig. 13 is a plan view showing a modified form of closure and discharge element.

Fig. 14 is a section on the line 14—14 of Fig. 13.

Fig. 15 is a sectional view showing another modified form of closure and discharge element.

Fig. 16 is a sectional view similar to Fig. 11, but showing a modified form of construction.

Fig. 17 is a plan of another modified form of closure and discharge element.

Fig. 18 is a section on the line 18—18 of Fig. 17.

Fig. 19 is a bottom plan view of the element shown in Fig. 17.

Fig. 20 is a section on the line 20—20 of Fig. 21.

Fig. 21 is a fragmentary plan view of a container showing the filling and emptying means, of the form shown in Fig. 17, mounted thereon and sealed ready for shipment.

Fig. 22 is a fragmentary section on the line 22—22 of Fig. 24, showing the filling and emptying means in end elevation and a spout in position thereon.

Fig. 23 is a section on the line 23—23 of Fig. 24.

Fig. 24 is a plan view of the parts shown in Figs. 22 and 23.

Fig. 25 is a view similar to Fig. 24, with the spout removed.

Fig. 26 is a fragmentary plan view of a different embodiment of my invention.

Fig. 27 is a section on the line 27—27 of Fig. 26.

Fig. 28 is a plan view of one form of closure adapted for use in the embodiment shown in Fig. 26.

Fig. 29 is a section on the line 29—29 of Fig. 28.

Fig. 30 is a fragmentary section similar to Fig. 27, but showing the closure in position, the latter also being in section.

Fig. 31 is a sectional view similar to Fig. 30, but showing the closure backed-up to illustrate the operation of emptying the container.

Fig. 32 is a plan view of an anti-tampering member adapted to seal the container.

Fig. 33 is a section on the line 33—33 of Fig. 32.

Fig. 34 is a fragmentary section substantially similar to Fig. 30 and showing the anti-tampering member in position.

Fig. 35 is a fragmentary plan view of another embodiment of my invention, parts being broken away.

Fig. 36 is a section on the line 36—36 of Fig. 35.

Fig. 37 is a plan view of one form of closure adapted for use in the embodiment shown in Fig. 35.

Fig. 38 is a section on the line 38—38 of Fig. 37.

Fig. 39 is a section similar to Fig. 36, with the closure in position (the latter being in section) and sealed.

Fig. 40 is a plan view of the parts shown in Fig. 39, portions being broken away.

Fig. 41 is a sectional view similar to Fig. 39, but showing the closure backed-up to illustrate the operation of emptying the container.

In the drawings (referring particularly to Figs. 1 to 13, inclusive), 1 indicates a sheet metal wall of a container, for example, a steel barrel or drum having a body and end walls, such wall being for illustrative purposes shown as the top wall thereof, on which is mounted a filling and emptying means, indicated as an entirety at 2, embodying my invention. As shown in Figs. 11, 12 and 12a, these means consist of two members indicated at 3, 4, the latter consisting of an annulus incorporated in and interlocked to the wall 1, by a "pressed on" process, whereby it is permanently held against movement rotatively and axially, relative to the wall. In carrying out this process, the wall 1 is formed with an opening and the metal there-around is drawn laterally to form a collar 5, having at its base and contiguous to the adjacent portions of the wall 1, offset embossments 6, disposed in spaced relation circumferentially of the collar, four such embossments being shown. Next, I form the annulus 4, preferably by a drop forging operation, the inner wall of the annulus adjacent one end being formed with recesses or notches 7 complementary to the embossments 6; also, the inner wall of the annulus 4, at its upper end, is beveled to form an outwardly upwardly inclined surface 8. Next, the annulus 4 is positioned in the collar 5 with the embossments 6 fitting into the recesses 7, and by means of suitable dies, the outer marginal portion of the collar 5 is forced laterally, throughout its circumference, into engagement with the surface 8, as shown at 9 (see Fig. 7), thereby clamping the annulus 4 between the laterally bent wall 9 and wall 1, the effect of which is to secure the annulus or ring in position against endwise movement and against rotative movement by the interlocking relation of the embossments 6 and recesses 7. In this arrangement, the wall 9 forms a seat for engagement by a portion of the member 3, as later set forth, to close, in a liquid tight manner, the container opening.

It will be obvious that the invention is not to be limited to the sequence of steps above described, since, for example, the off-set embossments 6 may be omitted from the collar 5 during or following the formation of the latter and that the dies employed to clamp the annulus between the walls 1 and 9 may be shaped to strike-up the metal of the collar 5 at the base thereof, into the recesses 7.

By preference, before the annulus 4 is incorporated in the wall 1, its external side wall is provided with screw threads 10, which are engaged by screw threads on a wall of the member 3 and its top wall outwardly of the beveled surface 8, is provided circumferentially with a series of notches 11, for a purpose later to appear. The bottom walls of the notches 11 are preferably inclined.

The member 3 is also by preference formed by a drop forging operation and is shaped to provide a top wall 12, and a circumferential rim or skirt 13 and an annular wall or rib 14 on the inner face of the wall 12, forming with the rim or skirt an annular recess or chamber 15. The inner wall of the rim or skirt 13 is provided with screw threads 13a arranged to engage the screw threads 10 on the outer wall of the annulus 4; also, the annular wall or rib 14 is machined by a suitable tool to provide a beveled surface 14a which is arranged to engage the wall or seat 9, when the member 3 is tightened on the member 4, to close the opening through the latter, these engaged surfaces serving to provide a liquid tight joint without the use of a gasket. The outer side wall of the rim or skirt may be of polygonal shape to take a suitable tool to facilitate tightening and loosening of the member 3, but when such wall is made round the top wall 12 may be provided with a polygonal boss 16 (see Figs. 13 and 14) or formed with a socket 17 of polygonal shape in cross section (see Fig. 15).

18 indicates a discharge opening formed in and

extending through the walls of the closure member 3, so as to communicate with the chamber 15. When the closure member 3 is tightened on the member 4 to effect a liquid-tight engagement of the rib 14 with the seat 9 (see Fig. 11), the container is closed, so that its contents cannot leak out or flow into the chamber 15 and through the opening 18, but upon loosening the member 4 and backing it up, the container contents will flow into the chamber 15 and through the opening 18, as indicated by the arrows in Fig. 12a. 19 indicates a vent formed in the walls of the member 4, preferably diametrically disposed to the discharge opening 18. The vent 19 communicates with the chamber 15, so that when the container is closed, as above set forth, the vent is also closed against admission of air to the container or leakage of its contents therethrough. However, when the closure member is moved to its discharge position (Fig. 12a), air flows through the vent into the container.

Since the closing rib 14 is disposed concentric to but spaced from the rim or skirt 13, the chamber 15 extends entirely around the rib 14, and accordingly the discharge opening may be enlarged circumferentially, as shown at 18a (see Figs. 17, 18, 19, 20, and 21) to increase its capacity.

Fig. 16 shows a modified form of construction wherein the metal wall 1, which is deformed laterally to form the collar 5a, is subjected to two draw operations to avoid undue strains on the metal. When the collar 5a is of the shape shown, the inner wall of the annulus 4a is also correspondingly shaped.

The walls of the vent 19 are provided with screw threads so as to receive a bolt 20, the inner end of which is arranged to project into and engage the bottom wall of one of the notches 11, to thereby lock the closure member 3 to the annulus 4 (see Fig. 20). However, it will be obvious that the notches 11 may be omitted and the bolt 20 tightened against the annulus 4 to lock the member 3 against turning. The bolt 20 is utilized to form one element of a sealing means, to prevent tampering or unauthorized opening of the container, that is, backing-up of the closure member 3 and emptying the container of all or a portion of its contents. The other element of the sealing means consists of an integral lug 21 (preferably two lugs) provided on the member 3, adjacent the vent 19, so that by means of a wire 22 threaded through an opening 23 formed in the bolt 20 and openings 24 formed in the lugs 21, and a slug 25 connecting the ends of the wire, the closure member is sealed. The lugs 21 are provided by cutting away the metal of the member 3 at opposite sides of the vent 19, so that the remaining portion of the member 3 is utilized as the lugs 21. By this arrangement the lugs do not project beyond the surfaces of the top 12 and skirt 13; it also leaves a portion of the shank of the bolt 20 exposed so that the opening 23 therethrough may be disposed below the bolt head.

Figs. 22 to 25, inclusive, illustrate a modification wherein the closure member is arranged to removably support a spout, indicated as an entirety at 26. In this form of construction I provide the top wall 12 of the member 3 with an annular wall 27, preferably shaped to flare outwardly whereby a groove 28 is formed between its periphery and the skirt 13. The wall 27 is disposed eccentrically to the axis of the closure member 3 so as to extend outwardly of and around the opening 18a and inwardly of the vent 19, whereby the latter communicates with the chamber 15 independently of the spout 26. The spout 26 has an enlarged annular inlet end terminating in an inwardly disposed false bead 29 which is adapted to removably and rotatively fit into the groove 28 and thus removably connects the spout 26 to the member 3. The walls of the spout 26 have a general converging relation toward its discharge end and preferably extend laterally to direct the flow of material from the container downwardly. At the upper portion of the spout, the spout wall is slitted at 30, the slit extending from the inlet end of the spout or bead 29 longitudinally toward its discharge end. As the metal of the spout is slightly resilient, the slit 30 permits the marginal portion of the spout at its inlet end to be expanded, whereby it may be slipped over the edge of the wall 27 in attaching or detaching the spout. The member 3 is provided with a tool socket 17' and the outer side of its skirt is of polygonal shape, so that while it may be operated in either direction by a tool fitting the socket or a wrench engaging the skirt, when the spout 26 is not employed, a wrench may be used to loosen and back-up the member 3 when the spout is in position. When the spout 26 is to be used, it is applied to the member 3 before the latter is loosened and backed up; and then as this operation takes place to permit emptying of the container, the spout is held stationary, the yieldable engagement of the bead 29 with the wall 27 permitting the member 3 to be rotated relative to the spout 26 when the latter is held.

It will be noted that in my construction, no part or portion of the filling and emptying means extend into the container and that the inner end of the collar 5 is flush with the inner surface of the adjacent container wall; accordingly, full drainage of the container may be effected.

In operation, the closure member 3 is removed for filling the container. The member 3 is then screwed on the member 4 and tightened, such operation closing off both the discharge opening and vent. To lock the closure member against turning due to knocks, the bolt 20 is threaded through the vent 19 into one of the notches 11, which are placed relatively close to receive the inner end of the bolt in any position in which the closure member comes to rest when tightened. To seal the closure, and thus prevent tampering, a wire 22 is inserted through the opening 23 in the bolt 20 and the openings 24 in the lugs 21 and connected by a suitable slug 25. To empty the container, it is tilted and the member 3 backed-up. By removing the member 3, the riser of a pump may be inserted through the opening into the container.

Figs. 26 to 41, inclusive, show different embodiments of my invention, wherein the closure or a portion thereof fits within and has threaded engagement with a portion of the annulus, instead of extending over and engaging its outer wall. In this arrangement, the casing of a standard type of pump may be mounted on the annulus when desired.

Referring particularly to Figs. 26 to 31, inclusive, 3' indicates an annulus and 4' indicates a closure. In this form of construction the annulus 3' is shaped to form a side wall 31 and an inwardly extending annular base 32 at its lower end arranged to engage the wall 1' of the container and surround the collar 5' provided on the wall 1', as already set forth. The inner wall

of the base 32 adjacent its outer end, is formed with recesses 7' into which the off-sets 6' formed in the collar 5 project. Also, the upper edge of the inner wall of the base 32 is beveled, as shown at 8' and the inner marginal portion of the collar 5' is bent laterally throughout its circumference into engagement with the beveled wall 8', as shown at 9', to thereby secure the annulus 3' to the wall 1' against endwise or axial movement, the interlocking relation between the off-sets 6' and recesses 7' serving to prevent rotative movement of the annulus 3' relative to the wall 1'. The laterally bent wall 9' forms a seat for the annular wall 14' provided on the inner side of the closure 4'. The inner side of the wall 31 is provided with screw threads 10' which are engaged by the externally threaded wall 33 of the closure 4', and when the closure is mounted in the annulus 3' and tightened, the wall 14' engages the seat 9' in a liquid tight manner without the use of a gasket, to close the opening through the collar 5'. That side of the wall 31 adjacent the container chime or side is extended laterally to form a pouring lip 31a and diametrically opposite the lip 31a the wall 31 is formed with an opening 19' which serves as a vent for the container during emptying thereof, as shown by the arrows in Fig. 31. It will be noted that the vent 19' is arranged outwardly of the seat 9' so that when the wall 14' of the closure 4' engages therewith, the vent 19' is closed by the latter (see Fig. 30). The closure 4' is formed with recesses 34, whereby a suitable tool or other device may be employed to tighten and loosen it; but it will be obvious that the closure 4' may be formed with a recess as shown in Fig. 15 or a boss as shown in Figs. 13 and 14, or a polygonal flange as shown in Figs. 37, 38 and 40.

The form of construction shown in Figs. 26 and 27 lends itself for sealing against tampering or unauthorized opening by means of a sealing cap formed of thin sheet metal, as indicated as an entirety at 35, which is capable of deformation or mutilation in the event any attempt is made to remove the cap. In this form of sealing means, the upper end of the annulus 4' throughout that portion of the side wall 31 which is concentric to the axis of the annulus, is provided with an integral, up-standing rib 36, the outer wall of which is formed with a groove 36a. The cap 35 is shaped to provide a top wall 35a of circular shape and substantially equal in diameter to the outer side of the rib 36 and an extension 35b, which is off-set in a plane below the top wall 35a, as shown at 35x, to lie over and engage the pouring lip 31a, to close the latter to prevent access through the lip to the closure 4'. The marginal portion of the top wall 35a is curled over and inwardly, as shown at 35a', the free edge of which portion is arranged to extend into the groove 36a; whereas the extension 35b is provided with a flange 35b' arranged to engage the outer sides of the lip 31a so that the cap 35 cannot be rotated about the annulus 4', and thus expose the closure through the lip 31a. As the cap 35 is formed of resilient metal, its curled over marginal portion 35a' may be readily sprung over the rib 36 to effect the projection of its free edge in the groove 36a. As the cap is readily deformable, any attempt to remove it will result in detection. It will be obvious that the rib 36 may be shaped to form a shoulder and the cap provided with a skirt which is adapted to be crimped inwardly below the shoulder.

Where the closure 4' is provided with a tool engaging boss, as shown in Figs. 13 and 14, the top wall 35a of the cap 35 may be shaped to enclose and fit over the boss.

Referring to Figs. 35 to 41, inclusive, 3x indicates an annulus and 4x indicates a closure. The annulus 3x is substantially similar in construction to the annulus 3' and mounted in the same manner in the wall 1x, except that the side wall 31x is concentric to the axis of the annulus throughout its circumference and not extended at one side to form a pouring lip. The wall 31x is formed with a vent 19x. The closure 4x is also mounted in the annulus 3x, similarly to the closure 3' to close the opening through the collar 5x and vent 19x, but differs from the closure 3' in that it is formed with an outlet preferably consisting of a recess 34x formed in its outer face and a passage 37 extending from one side of the threaded portion 33x, above the closing wall 14x, to the recess 34x. If desired, the recess 34x may be shaped to take a tool as shown in Fig. 15 and serve as a means for tightening and loosening the closure. The recess 34x and outlet 37 operate as the discharge or emptying opening when the closure 4x is backed-up, as shown in Fig. 41. As shown, the vent 19x is arranged on that side of the wall 31x remote from the adjacent portion of the container chime or side wall, and when the closure 4x is backed-up to permit emptying of the container, the vent is opened and the outlet opening 37 is positioned diametrically to the vent 19x. The side walls 37a of the outlet opening 37 preferably extend radially, as shown in Figs. 37 and 40.

Since the discharge of the material takes place through the closure, that is, through the opening 37 and recess 34x, it may be provided on its outer surface with an annular wall, as shown at 27 in Figs. 22, 23 and 25, to removably support a spout. Also, the side wall 31x may be provided with a rib, as shown at 36 in Figs. 26, 27, 30, 31 and 34, whereby the container may be sealed by a suitable deformable cap.

In the form of closure 4x shown it is provided with a polygonal flange 38 whereby a suitable tool may be utilized to tighten and loosen it. In this arrangement the flange 38 is formed with a threaded opening 39 to receive a bolt or set screw 40, which, when tightened against the wall 31x (see Figs. 39 and 40), serves to lock the closure 4x to the annulus 3x. The head of the bolt 40 is formed with an opening 40a (the head may be formed with two through openings disposed at right angles to each other) alined with openings 41 formed in lugs 42 integral with the flange 38 and disposed upon opposite sides of the opening 39, so that a wire 43 may be threaded through the openings 40a, 41 and its ends connected by a suitable lead slug 44, whereby the closure is sealed.

From the foregoing description it will be noted that in the manufacture of containers, less equipment is required, less labor employed and fewer parts needed to be stocked and handled, all of which tends to more economical production, and since fewer parts are required for each container, there is a substantial saving in cost of fittings therefor.

It will also be noted that the container may be closed without the use of gaskets between the annulus 4 and wall 1 and collar 5, or between any portion of the container and the closure member since the latter engages directly with the collar 5, that is, the laterally bent portion 9 thereof, which portion is integral with the container wall.

It will also be noted that the sealing means, in certain of the embodiments, are incorporated with the locking means between the closure and the annulus, so that the locking means cannot be removed or loosened nor the closure loosened without breaking the seal. In place of a locking bolt, a screw having a kerf in its outer end may be employed to avoid a projection extending beyond the surfaces of the closure.

To those skilled in the art to which my invention relates, many changes in construction and widely differing embodiments and applications of the invention will be apparent without departing from its spirit and scope. My disclosures and the description herein are purely illustrative and not intended to be in any sense limiting.

What I claim is:

1. A container having a sheet metal wall formed with an opening, a mounting for a closure including an annulus surrounding said opening and interlocked to said wall against rotative and endwise movements and threaded exteriorly, the outer end of said annulus being formed with notches throughout its circumference, a closure comprising a top and a skirt, the inner wall of said skirt being provided with screw threads arranged to engage the threads on said annulus, the inner wall of said top being provided with an annular rib arranged to engage said mounting to close said opening, and means operable exteriorly of said closure for locking it to said annulus, said locking means comprising a threaded opening formed in said closure outwardly of said rib and a threaded element mounted in said opening and extending into one of said notches.

2. A container having a sheet metal wall formed with an opening, a closure mounting including an annulus interlocked to said wall against rotative and endwise movements and threaded exteriorly, and a closure comprising a top and a skirt, the inner wall of said skirt being provided with screw threads arranged to engage the threads on said annulus, the inner wall of said top being provided with an annular seat arranged to engage said mounting to close said opening, said closure being formed with openings outwardly of said annular seat, one opening to permit emptying of said container and the other opening serving as a vent during emptying.

3. A container having a sheet metal wall formed with an opening, a mounting for a closure including an annulus interlocked to said wall against rotative and endwise movements and threaded exteriorly, and a closure comprising a top and a skirt, the inner wall of said skirt being provided with screw threads arranged to engage the threads on said annulus, the inner wall of said top being provided with an annular wall in concentric relation to and spaced from said skirt and arranged to engage said mounting to close said opening, the wall of said closure between said annular wall and said skirt being formed with openings, one opening being elongated circumferentially of said closure to permit emptying of said container and the other opening being arranged to serve as a vent during emptying.

4. A container having a sheet metal wall formed with an opening, a closure mounting including an annulus interlocked to said wall against rotative and endwise movements and threaded exteriorly, a closure comprising a top and a skirt, the inner wall of said skirt being provided with screw threads arranged to engage the threads on said annulus, the inner wall of said top being provided with an annular wall arranged to engage said mounting to close said opening, said closure being formed with openings outwardly of said annular wall, one opening to permit emptying of said container and the other opening serving as a vent during emptying, a device removably fitting one of said openings and arranged to engage said annulus to prevent loosening or removal of said closure, and means for sealing said device in position.

5. A container having a sheet metal wall formed with an opening, a mounting for a closure including an annulus interlocked to said wall against rotative and endwise movements and threaded exteriorly, the outer end of said annulus being formed with notches throughout its circumference, a closure comprising a top and a skirt, the inner wall of said skirt being provided with screw threads arranged to engage the threads on said annulus, the inner wall of said top being provided with an annular wall arranged to engage said mounting to close said opening, said closure being formed with openings outwardly of said annular wall, one opening to permit emptying of said container and the other opening serving as a vent during emptying, one of said openings being threaded, and an element threaded into said threaded opening and arranged to be extended into one of said notches to prevent turning of said closure.

6. A container as claimed in claim 5 wherein are provided means engaging said element and said mounting for sealing said element in position.

7. A container having a sheet metal wall formed with an opening and a collar surrounding said opening, in combination with an annulus consisting of a side wall threaded interiorly and formed with a vent, and an annular, inwardly extending base at one end of said side wall surrounding said collar and disposed in engagement with said metal wall, the outer marginal portion of said collar being bent laterally circumferentially into engagement with said base to secure said annulus to said metal wall and arranged to form a seat, one side of said side wall above said seat being extended to form a pouring lip and the remaining portion of said side wall being provided on its outer end with a rib adapted to be engaged by a deformable sealing cap, and a closure having an externally threaded wall arranged to engage the threaded wall of said annulus and an annular wall arranged to engage said seat to close off said vent and pouring lip.

8. A container having a sheet metal wall formed with an opening and a collar surrounding said opening, in combination with an annulus consisting of a side wall threaded interiorly and formed with a vent, and an annular, inwardly extending base at one end of said side wall surrounding said collar and disposed in engagement with said metal wall, the outer marginal portion of said collar being bent laterally circumferentially into engagement with said base to secure said annulus to said metal wall and arranged to form a seat, one side of said side wall above said seat being extended to form a pouring lip, and the remaining portion of said side wall being provided on its outer end with a rib, a closure having an externally threaded wall arranged to engage the threaded wall of said annulus and an annular wall arranged to engage said seat to close off said vent and pouring lip, and a deformable sealing cap arranged

to engage said rib and provided with an extension to close said pouring lip.

9. A container as claimed in claim 8, wherein the extension on said sealing cap is provided with a flange extending over the sides of said pouring lip.

10. A container having a sheet metal wall formed with an opening and a collar surrounding said opening, in combination with an annulus consisting of a side wall threaded interiorly and formed with a vent, and an annular inwardly extending base at the inner end of said side wall surrounding said collar and disposed in engagement with said metal wall, the outer marginal portion of said collar being bent laterally circumferentially into engagement with said base to secure said annulus to said metal wall and arranged to form a seat, said side wall being extended laterally at one side of said annulus above said seat to form a pouring lip, and a closure having an externally threaded wall arranged to engage the threaded wall of said annulus and an annular wall arranged to engage said seat, the bottom portions of said vent and pouring lip being disposed in substantially the same plane, whereby said annular wall simultaneously closes off said vent and pouring lip or permits communication therethrough.

11. A container having a sheet metal wall formed with an opening and an up-standing collar surrounding said opening, in combination with an annulus consisting of an internally threaded side wall formed with a vent and an annular, inwardly extending base at its inner end, having a beveled wall contiguous to its upper face, interlocking means between said base and said collar contiguous to the said sheet metal wall, the outer marginal portion of said collar being bent laterally outwardly into engagement with said beveled wall and arranged to form a seat, the side wall of said annulus above said seat being extended laterally at one side to form a pouring lip, and a closure having an externally screw threaded wall arranged to engage the threaded side wall of said annulus and a substantially conical wall on its lower end arranged to engage and disengage the laterally bent wall of said collar.

12. A container having a sheet metal wall formed with an opening and a collar surrounding said opening, in combination with a mounting consisting of an annular member and a closure member having screw threaded engagement with said annular member, said collar extending into said annular member and its outer marginal portion being bent laterally into engagement with an annular portion of said annular member to form a seat, an annular wall on said closure member for engaging said seat to close said opening, one of said members being formed with a discharge opening and one of said members being formed with a vent, said vent and the inlet end of said discharge opening being in substantially the same plane, whereby said annular wall simultaneously closes off said vent and said discharge opening or permits simultaneous communication therethrough.

13. A container as claimed in claim 12 wherein one of said members is provided with a movable device arranged to engage said other member to lock said members together.

14. A container having a sheet metal wall formed with an opening and a collar surrounding said opening, in combination with a mounting consisting of an annular member and a closure member provided with discharge means and having screw threaded engagement with said annular member, said collar extending into said annular member and its outer marginal portion being bent laterally into engagement with an annular portion of said annular member to form a seat, an annular wall on said closure member for engaging said seat to close said opening, said discharge means consisting of a passage formed in and extending through said closure member outwardly of said annular wall and said annular member being formed with a vent outwardly of said seat, whereby said annular wall closes off said vent and said discharge passage or permits communication therethrough.

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