

[54] FLUID DISPENSING COVER

[76] Inventor: **Hugh W. Riddle**, P.O. Box 287,
Ravenna, Ohio 44266

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[52] U.S. Cl. **222/207, 222/209, 222/213**

[51] Int. Cl. **B65d 37/00**

[58] Field of Search 222/193, 207, 209,
222/212, 213, 383, 401, 402, 477, 568,
400.5, 400.7

[56] **References Cited**

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Primary Examiner—Samuel F. Coleman

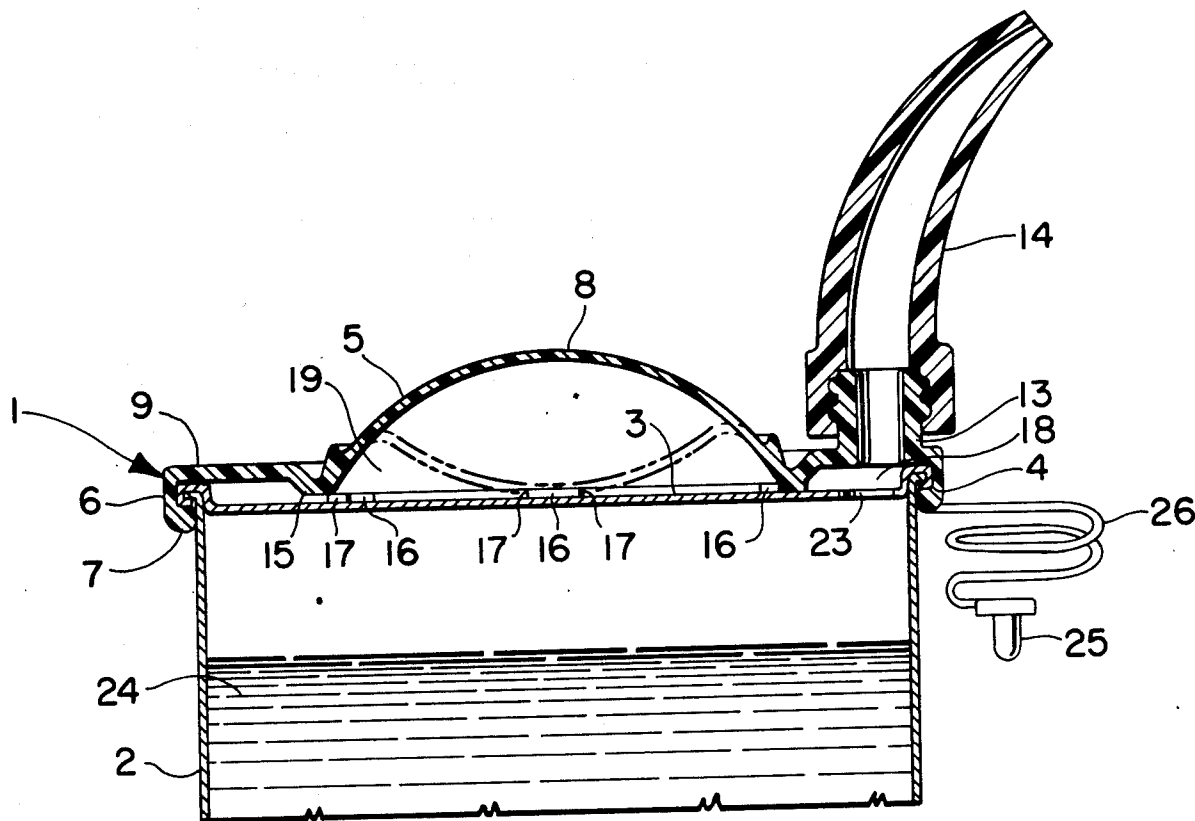
Assistant Examiner—Larry Martin

Attorney—Frederick K. Lacher

[57] **ABSTRACT**

A dispenser having an outer flanged edge for gripping the edge of a container and a wall for covering the top of the container. The space between the wall and the top of the container is divided into two chambers. One of the chambers is covered by a resilient, depressible protruberance and the other chamber is covered by a portion of the wall containing a spout. Openings between the chambers permit flow of fluid to the spout for dispensing the fluid.

11 Claims, 3 Drawing Figures



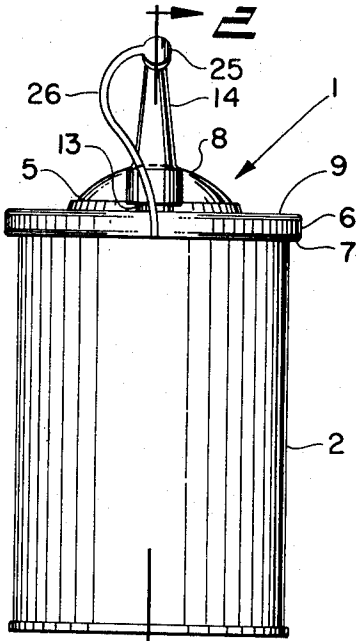


Fig. 1

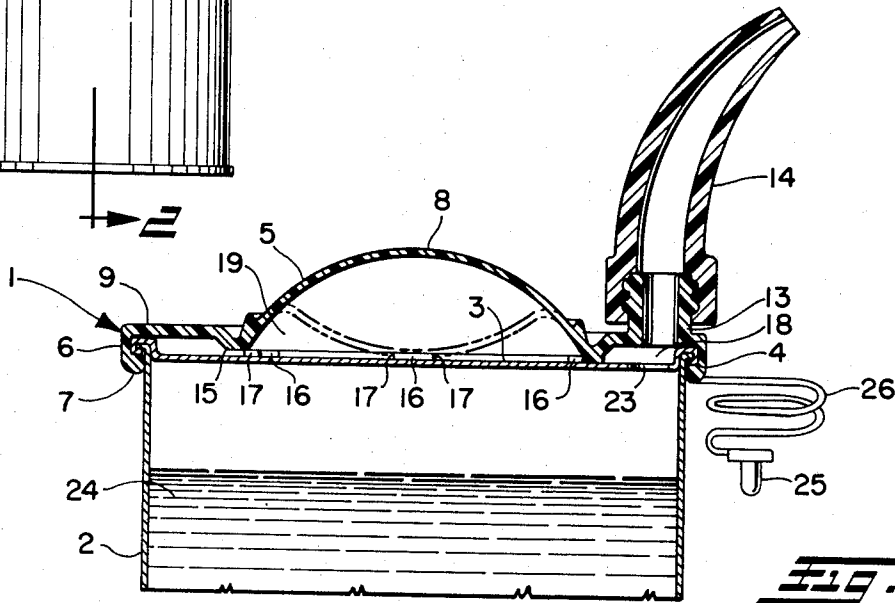


Fig. 2

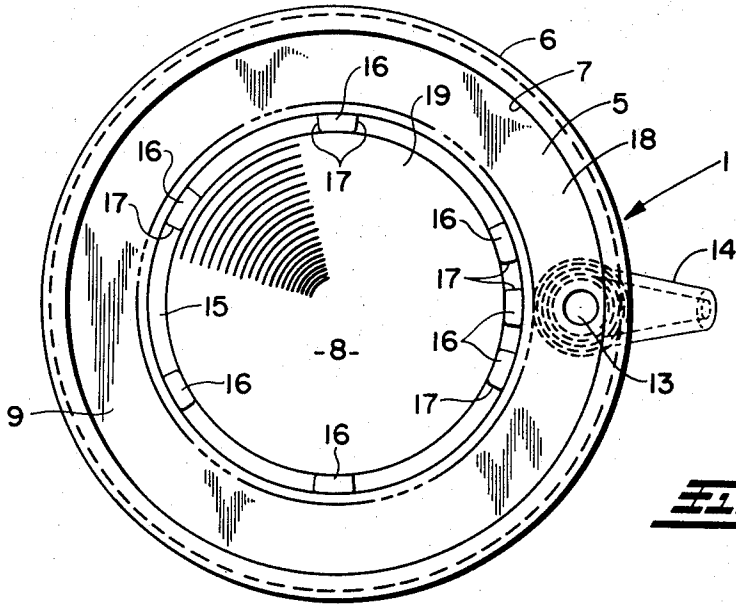


Fig. 3

FLUID DISPENSING COVER

This invention relates generally, as indicated, to a fluid dispensing cover for a fluid container for oil or paint in which the cover fits over the top of the can and is used to apply desired quantities of fluid where needed and protect the fluid in the can from contamination after it has been opened.

The most common method of packaging oil and similar fluids is in quart cans and in the past it has been the practice to either use all of the oil in the can at the time the can is opened or pour the oil into a special dispensing container such as the spouted oil can or an oil can with a pump for applying the lubricant. Many times there is a greater quantity of oil in the container than is needed, either for filling another container or applying to apparatus which needs lubricating and as a result oil is left in the container in an exposed condition where dirt and other contaminating material can drop through the hole in the top of the can.

In the past, special caps with pumps built in have been proposed for converting an oil can into an oil dispenser; however, these devices have necessitated elaborate pumping elements including tubular stems for insertion into the can, resulting in constructions which have been either too costly or complicated for general usage by the public.

With the foregoing in mind, it is the principal object of this invention to provide a fluid dispensing cover in which the space under the cover is divided into separate chambers with the chambers connected for flow of fluid therebetween.

Another object of the invention is to provide for supporting the wall of the cover with a downwardly extending rib having projections to provide the openings for passage of fluid between the chambers.

A further object of the invention is to provide an annular discharge portion and chamber surrounding the central depressible portion of the wall.

A still further object is to provide a cover of resilient material which may be depressed and will tend to return to the extended position upon release.

A still further object is to provide a construction in which the spout may be attached and removed with ease for easy handling and packaging.

Another object is to provide a spacing member with openings spaced for greater support where needed and lesser support and greater flow of fluid where the support is not needed.

These and other objects of the present invention may be achieved by positioning the spacing members between the discharge and compression chambers to provide wall support and flow of fluid between chambers.

To the accomplishment of the foregoing and related ends, the invention, then, comprises the features hereinafter fully described and particularly pointed out in the claims, the following description and the annexed drawings setting forth in detail a certain illustrative embodiment of the invention and a modification thereof, this being indicative, however, of but some of the various ways in which the principles of the invention may be employed.

In the annexed drawings:

FIG. 1 is a front elevational view of a container with the fluid dispensing cover of the invention mounted thereon.

FIG. 2 is an enlarged sectional view taken along the plane of line 2—2 of FIG. 1, parts being broken away and with the spout closure plug in the detached position.

FIG. 3 is a plan view of the cover shown in FIG. 2 showing the underside of the cover.

Referring to FIGS. 1 and 2, a fluid dispensing cover 1 embodying the invention is shown mounted on a container such as cylindrical can 2 which may be of metal. The can 2 is of a type normally used for oil and other fluids and has a substantially flat top 3 and a flange 4 where the top joins the side of the can. The cover 1 has a wall 5 with a generally circular shape to conform to the shape of the can 2 and a downwardly extending flanged edge 6 having an enlarged bead 7 for mounting over the flange 4 of the can in sealing engagement.

The wall 5 has a depressible portion in the form of a hemispherical protruding center 8 which may be depressed from the hemispherical shape, shown in solid lines, to the concave position, shown in chain-dotted lines in FIG. 2. Surrounding the center 8 and adjacent the edge 6 of the wall 5 is an annular discharge portion or rim 9 extending inwardly a spaced-apart distance from the edge and having an outlet such as nipple 13 extending upwardly for receiving a snap-on spout 14 over the end of the nipple for conveying fluid from the nipple to a desired point of application.

The wall 5 is held in spaced-apart relationship from the top 3 of the can 2 by a spacing member or rib 15 extending downwardly from the wall at the area of the wall between the rim 9 and center 8. Passage of fluid through the rib 15 is facilitated by downwardly extending projections such as lugs 16 in spaced-apart positions along the edge of the rib providing openings 17. The space between the wall 5 and the top 3 is divided by the rib 15 into a discharge chamber 18 and a compression chamber 19 with the openings 17 connecting the chambers for passage of fluid therebetween.

The rib 15 is circular and surrounds the center 8 of the wall 5 providing a stiffening member for resisting the spreading movement and forces generated upon depression of the center. It is important the depression of the center 8 does not cause the rim 9 to tilt and thereby deflect the spout 14 making it difficult to control the flow of fluid from the spout to the desired point of application. As shown in FIG. 3, the lugs 16 are spaced apart around the edge of the rib 15 with the lugs adjacent the nipple 13 and spout 14 being located at closely spaced-apart positions providing additional reinforcement and support for the rim 9 to further resist tilting of the rim upon depression of the center 8.

The cover 1 is preferably molded of a resilient plastic material such as polystyrene with the edge 6 having sufficient resiliency to snap over the flange 4 of a can 2 and retain the cover on the can in fluid sealing relationship. The center 8 of the cover 1 is preferably of a resilient material which may be of the same material as the remainder of the cover and have the property of being depressible to the position shown in chain-dotted lines and returnable to the position shown in full lines in FIG. 2. The spout 14 may also be molded of a plastic material such as vinyl and have resilience to stretch over the nipple 13.

As shown in FIGS. 1 and 2, a plug 25 may be provided for closing the opening in the spout 14 and may be molded with the cover 1 so as to have a connecting

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cord or filament 26 from the edge 6 of the cover to the plug.

Installation of the cover 1 involves snapping the edge 6 and bead 7 over the flange 4 of the can after an opening 23 is made in the top 3 of the can. The opening 23 in the top 3 may be located, as shown in FIG. 2, directly adjacent the nipple 13 and spout 14; however, the opening may be spaced from the spout and there also may be more than one opening in the top of the can if desired. After the cover 1 is snapped over the can 2, the spout 14 may be applied over the nipple 13 and the plug 25 inserted in the open end of the spout. This will protect the fluid 24 in the can from contamination.

When it is desired to apply the fluid 24 from the can 2 to a point of application, the plug 25 is removed, the can is tilted causing fluid to enter the discharge chamber 18 and fill the spout 14. The control of the flow of fluid 24 from the spout 14 is obtained by depressing the center 8 of the wall 5 to increase the flow of fluid from the spout and permitting the center to resiliently resume the hemispherical shape to stop the flow of fluid from the spout. In this manner, it is possible to obtain precise control of the flow of fluid 24 from the can 2 and at the same time protect the contents and fluid of the can from contamination during periods when the can is not being used. While a certain representative embodiment and details have been shown for the purpose of illustrating the invention, it will be apparent to those skilled in the art that other changes and modifications may be made therein without departing from the spirit or scope of the invention.

I, therefore, particularly point out and claim as my invention:

1. A fluid dispensing cover for mounting on a container having a top with an opening for emptying fluid from the container comprising a wall member, a spacing member disposed between said wall member and said top providing a space over said top and under said wall member and partitioning said space into at least two chambers, said wall member having a discharge portion with an outlet for the flow of fluid from one of said chambers, a depressible portion for movement towards and away from said top in another of said chambers to change the volume of said space, an edge portion for mounting said wall member on said container in sealing engagement to enclose said space at the edges of the container and openings in said spacing

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member to permit the flow of fluid between said chambers for dispensing the fluid through said outlet.

2. A fluid dispensing cover according to claim 1 wherein said spacing member includes a downwardly extending rib on said wall member with downwardly extending projections at spaced-apart positions providing said openings in said spacing member.

3. A fluid dispensing cover according to claim 1 wherein said discharge portion is located between said edge portion and said depressible portion.

4. A fluid dispensing cover according to claim 1 wherein said depressible portion is of a resilient material whereby it will tend to return to the undepressed condition upon release of downward forces on said depressible portion.

5. A fluid dispensing cover according to claim 4 wherein said depressible portion protrudes upwardly from said wall member.

6. A fluid dispensing cover according to claim 3 wherein said cover is circular and adapted for mounting on a cylindrical container, said depressible portion being circular and located at the center of said cover and said discharge portion being annular and concentric with said depressible portion.

7. A fluid dispensing cover according to claim 6 wherein said spacing member includes a downwardly extending circular rib at the edge of said depressible portion with downwardly extending projections at spaced-apart positions providing said openings in said spacing member.

8. A fluid dispensing cover according to claim 7 wherein said downwardly extending projections are closely spaced at positions adjacent said outlet and less closely spaced at positions remote from said outlet.

9. A fluid dispensing cover according to claim 1 wherein said outlet in said discharge portion of said wall member includes an upwardly extending spout.

10. A fluid dispensing cover according to claim 9 wherein said spout is detachable and said outlet further includes a nipple mounted on said discharge portion for insertion in one end of said spout.

11. A fluid dispensing cover according to claim 9 further comprising a removable closure for said spout to protect the fluid in the container when not being dispensed.

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,777,941 Dated December 11, 1973

Inventor(s) Hugh W. Riddle

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

In the Abstract, line 8, substitute --chambers-- for "chamers".

Column 3, line 45, substitute --container-- for "counter".

Signed and sealed this 9th day of April 1974.

(SEAL)

Attest:

EDWARD M. FLETCHER, JR.
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents