

United States Patent

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[54] **MEASURING CAP**
4 Claims, 6 Drawing Figs.

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222/556

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[50] Field of Search **222/444,**
450, 451, 452, 454, 457, 556

[56] **References Cited**
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ABSTRACT: A measuring cap for use on containers is disclosed. This cap has a hollow cap body divided into an entrance chamber and a measuring chamber by an internal wall. A lid is rotatably mounted on the top of the cap body so as to be capable of being rotated between a closed position covering the top of the body and an open position in which the top of the body is uncovered. A valve member is attached to the lid so as to rotate therewith. This valve member is formed so that when the lid is in a closed position, the two chambers are in communication with one another and so that when the lid is in an open position the entrance chamber is covered.

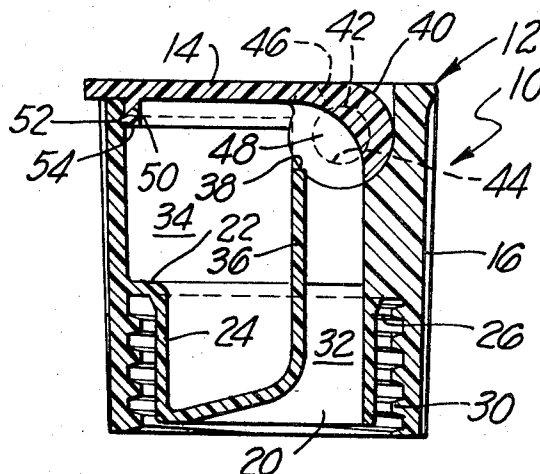


FIG. 1.

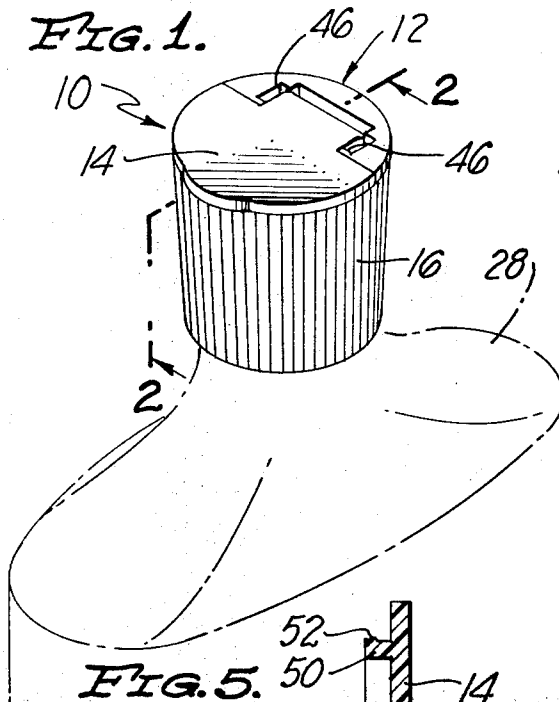


FIG. 2

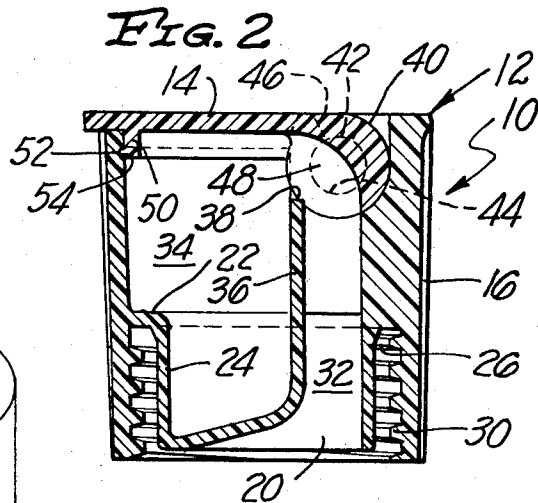


FIG. 3.

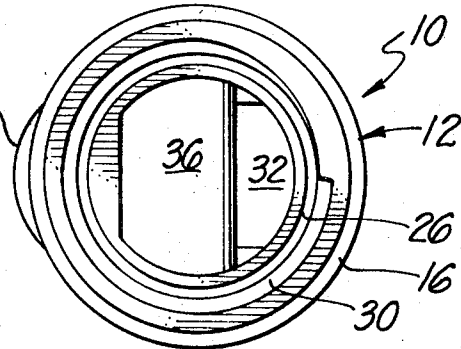


FIG. 5.

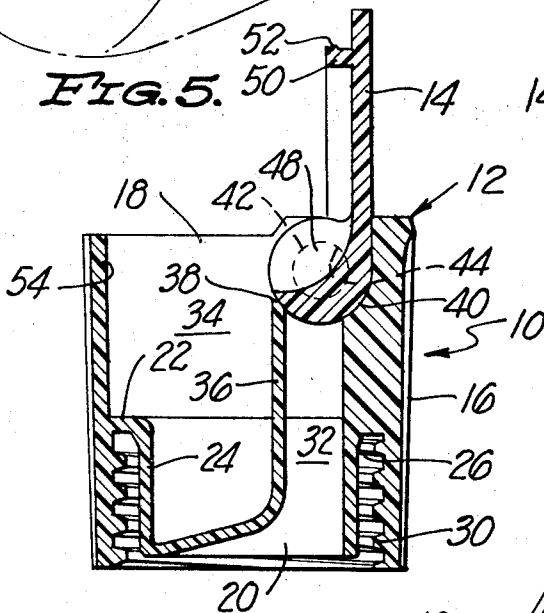


FIG. 4.

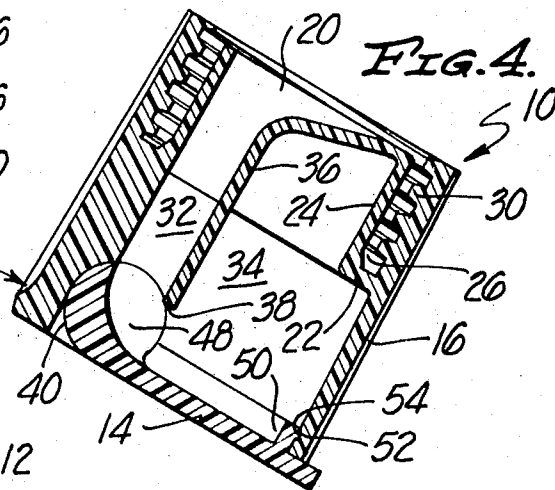
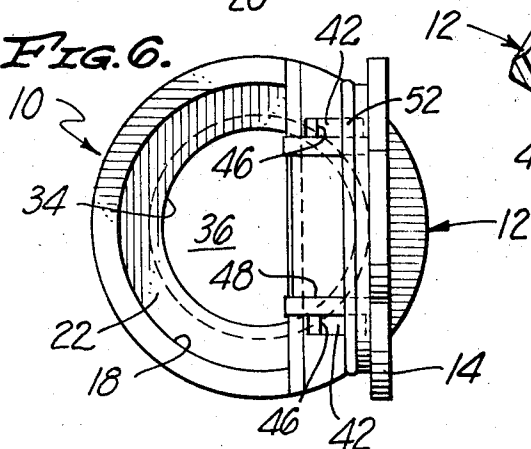


FIG. 6.



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MEASURING CAP

BACKGROUND OF THE INVENTION

Frequently it is necessary or desirable to dispense a measured amount of the contents of a container. Many different structures have been developed for this purpose. A complete review of such structures is considered unnecessary for an understanding of the present invention. It is presently considered that such prior structures are commercially unsatisfactory for any one of a variety of reasons. Among such reasons are cost, complexity, reliability, ease of operation and the like.

Because of the nature of such prior structures for dispensing a measured amount of the contents of a container it is considered that there is a need for new and improved measuring caps or closures which can be used for this purpose. To be acceptable such measuring caps or closures must be comparatively inexpensive. This is related to the factor that such closures should be comparatively easy to manufacture and assemble. To be acceptable such measuring caps or closures must also provide a type of clean-cut appearance, must be comparatively easy to utilize, and must be reliable in operation.

SUMMARY OF THE INVENTION

An objective of this invention is to provide new and improved measuring caps and closures. More specifically the present invention is intended to provide measuring caps or closures which can be manufactured and assembled at a comparatively nominal cost, which are comparatively easy to utilize, which operate reliably and which provide what may be considered as a comparatively neat functional appearance.

In accordance with this invention these objectives are achieved by providing measuring caps, each of which includes a hollow cap body having open ends in communication with one another. A lid is provided on such a body so that this lid is capable of being rotated between an open position exposing the top of the body and a closed position covering the top. The lid includes a valve means or structure which rotates with it as it, the lid, is rotated between these two positions. The body includes an internal dividing wall which divides the interior of the cap body into a measuring chamber and an entrance chamber. This dividing wall extends adjacent to the valve means so that in a closed position of the lid, these two chambers are in communication with one another and so that in an open position of the lid, the two chambers are sealed off from one another.

BRIEF DESCRIPTION OF THE DRAWING

The actual details of this invention as well as the manners in which the invention achieves its objectives will be apparent from a careful consideration of the remainder of this specification, the appended claims and the accompanying drawing in which:

FIG. 1 is an isometric view showing the use of a presently preferred embodiment or form of a measuring cap of this invention on a container;

FIG. 2 is a cross-sectional view taken at line 2-2 of FIG. 1;

FIG. 3 is a bottom plan view of the measuring cap as shown in FIG. 1;

FIG. 4 is a view corresponding to FIG. 2 illustrating an aspect of the use of the measuring cap shown in the preceding FIGS.;

FIG. 5 is a view similar to FIG. 2 showing the measuring cap illustrated with its lid in an open position;

FIG. 6 is a top plan view of the measuring cap shown with the lid in an open position as shown in FIG. 5.

The accompanying drawing is primarily intended to clearly illustrate for explanatory purposes a presently preferred embodiment or form of the measuring cap of this invention. It will be realized that the inventive features of the cap shown may be easily utilized in other differently appearing measuring caps through the use or exercise of routine engineering engineering skill or ability.

DESCRIPTION OF THE PREFERRED EMBODIMENT

In the drawing there is shown a measuring cap 10 which includes a cap body 12 and a cap lid 14. The cap body 12 has a generally cylindrical exterior 16 and an open top 18 and an open bottom 20. Within the interior of the cap body 12 there is located a small offset internal flange 22. This flange 22 supports an internal cylindrical wall 24 which extends adjacent to the plane of the bottom 20.

The flange 22 and the wall 24 define an annular internal cavity 26 which is adapted to receive a neck (not shown) of a container such as the container 28 shown in FIG. 1 of the drawing in phantom. The interior of the cap body 12 within the cavity 26 may be formed with conventional threads 30 to be used in securing the complete cap 10 in place on a container neck. Other equivalent means for securing the measuring cap 10 may of course be employed.

The interior of the cap body 12 is divided into an entrance chamber 32 and a measuring chamber 34 by an internal dividing wall 36. This dividing wall 36 extends from the portion of the wall 24 adjacent to the bottom 20 to a comparatively short distance from the top 18. It is located so as to extend completely across the interior of the cap body 12 and it is of an imperforate nature. This wall 36 terminates in an edge 38 which is straight.

The edge 38 is adapted to fit closely against the periphery of a cylindrical valve body 40. This valve body 40 carries aligned trunnions 42 which are rotatably supported in bearing openings 44 located on the body 12 adjacent to the top 18. Each of the bearing openings 44 is provided with restricted entrances 46 for purposes hereinafter described. The valve body 40 includes a cutout or notch 48 and carries the lid 14 proper. If desired, the valve body 40 and the trunnion 42 may be considered as part of this lid 14.

From the undersurface of the lid 14 there depends a small flange 50 having a projecting lip 52. This flange 50 is adapted to fit closely against the interior of the body 12 adjacent to the top 18 when the lid 14 is in a closed position. The lip 52 engages the interior of the body 12 in this position so as to form a seal therewith. Although it is not considered necessary, it is possible to locate a small groove 54 in the interior of the body 12 to receive the lip 52 by temporary deformation of this lip, the flange 50 and the body 12.

The parts of the measuring cap 10 may be conveniently formed by conventional molding techniques at a comparatively nominal cost using a somewhat resilient material such as a series of common polyolefins. Both linear and nonlinear polyethylene may be satisfactorily employed. When the parts of the cap 10 are formed of such materials, the lid 14 may be assembled on the cap body 12 by merely locating it generally above its ultimate position as indicated in FIGS. 1 and 2 of the drawing and then by applying force to the trunnions 42 and/or adjacent portions of the lid 14 so as to pop the trunnions 42 past the restricted entrances 46 into the bearing openings 44. As this occurs normally the entire lid 14 will move to a position as indicated in FIGS. 1 and 2 of the drawing. At this point the entire cap can be assembled on a container such as the container 28.

During the use of the cap 10, this cap and the container attached to it is moved so that the cap is in an upside down orientation as indicated in FIG. 4. Because of this position, material will move through the entrance chamber 32 and the notch 48 into the measuring chamber 34. The amount of material which is moved in this manner will depend to a limited degree on the amount of air trapped in the measuring chamber 34. Normally it is considered that a sufficient, substantially uniform quantity of material for practical purposes will move into the measuring chamber 34 as the cap 10 is held upside down in this manner.

After such material is trapped in the measuring chamber 34, the cap 10 is moved to a normal upright position as indicated in FIG. 2. Then the lid 14 is manually engaged so as to be rotated to a vertical position as shown in FIG. 5. In this position, the valve body 40 will fit against the edge 38 so as to

close off the entrance chamber 34 through a valvelike action. Material exposed by this movement of the lid 14 may then be removed from the cap 10 or may be poured from the cap 10 without danger of pouring out the entire contents of the container to which the cap is attached.

I claim:

1. A measuring cap which includes:

a hollow cap body having an open top and an open bottom in communication with one another;

means located on said cap body for securing said cap to a container;

a lid rotatably mounted on said closure cap adjacent to said top, said lid being capable of being rotated between an open position exposing said open top and a closed position covering said top;

said lid including a valve means located thereon, said valve means extending into the interior of said closure cap;

said valve means being a cylinder having a notch formed therein;

a dividing wall located within the interior of said closure cap so as to divide the interior of said closure cap into an

entrance chamber and a measuring chamber;

said dividing wall abutting against said valve means so that said valve means closes off said entrance chamber when said lid is in said open position, said valve means allowing communication between said chambers when said lid is in said closed position.

2. A measuring cap as claimed in claim 1 including: sealing means for forming a seal with said cap body located on said lid.

3. A measuring cap as claimed in claim 1 wherein:

said cap body and said lid are formed of a polyolefin material and including:

bearing openings formed on said cap body and trunnions formed with said lid, said trunnions being capable of being snapped into said bearing openings, said trunnions and bearings rotatably mounting said lid on said cap body.

4. A measuring cap as claimed in claim 3 including: sealing means for forming a seal with said cap body located on said lid.

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