June 25, 1940. R. S. SKINNER 2,205,825

CLOSURE FOR CONTAINERS

Filed Feb. 20, 1939

FIG. 1

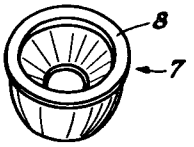


FIG. 3

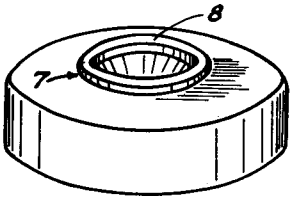


FIG. 2

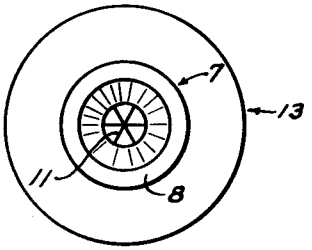


FIG. 4

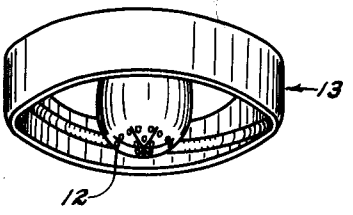


FIG. 5

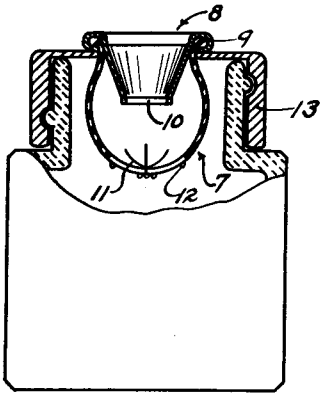
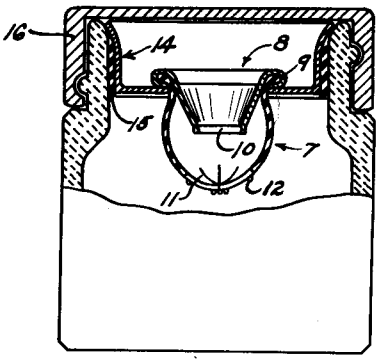


FIG. 6



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CLOSURE FOR CONTAINERS

Riley S. Skinner, Sentinel, Okla.

Application February 20, 1939, Serial No. 257,470

1 Claim. (Cl. 120—68)

This invention relates to closures for bottles and other containers, and has for its main object the provision of a novel means for preventing a fluid from being spilled from the bottle or container in case it is accidentally tilted or upset, and at the same time providing free access to the interior of the container.

Other objects of the invention are: to provide a closure for ink bottles and ink wells which prevents an excess of ink remaining on a pen point after the point has been dipped into the ink; which prevents the dipping of the pen to the bottom of the bottle, and yet which provides an adequate supply of ink for a number of dippings, even though the pen does not actually reach the surface of the liquid in the bottle; which makes possible the use of all the ink in the bottle, even though there is scarcely enough to cover the bottom of the bottle; which prevents the sides of the pen holder from becoming soiled from contact with the sides of the bottle; and which will be efficient in accomplishing all of the purposes for which it is intended.

A further object is to provide a device of this class which not only has these special attributes, but which is also possessed of the usual attributes of simplicity, cheapness of manufacture, and reliability.

Heretofore, devices of this class have made use of an auxiliary valve to accomplish similar objects. My invention has no such valve.

The details in the construction of the preferred form of my invention, together with other objects attending its production, will be better understood from the following description when read in connection with the accompanying drawing, which is chosen for illustrative purposes only, and in which—

Figure 1 is a perspective view of the device;

Figure 2 is a plan view of the device in position in a special top for the container;

Figure 3 is a perspective view of the device in position in the special top;

Figure 4 is a view similar to Figure 3 save that it shows the underneath side of the device and the special container closure;

Figure 5 is a partial section of a container with the device in position, and shows the device in connection with one type of special closure for the container; and

Figure 6 is a view similar to Figure 5 but shows the device in connection with another type of special closure for the container.

The invention consists primarily of a rubber guard half ovoid in shape and substantially circular in cross section, which guard is designated as a whole in the various figures by numeral 7, in combination with a metal guard which is designated as a whole by the numeral 8, and which is frusto-conical in shape and substantially circular in cross section, and the upper end of which is crimped tightly over the rim 9 of the rubber guard. The aperture 10 in the lower end of the metal guard, is of sufficient diameter to permit the passage therethrough of the largest of pen points, but to prevent the passage therethrough of the end of an ordinary pen holder. The distance between the aperture 10 in the metal guard and the lower normally closed end of the rubber guard 7 is variable and does not affect the principle of the invention. The lower end of the rubber guard 7 is slotted as indicated by the numeral 11, the plurality of cross slots forming a normally closed opening in the bottom of the rubber guard.

The rubber guard 7 is preferably made of soft rubber, or if desired, only the bottom portion of it may be made of soft rubber, to facilitate the passage of a pen point through the slotted normally closed opening.

The outer surface of the rubber guard immediately surrounding the portion defined by the slots 11 is preferably roughened in any suitable manner as by contact with a coarse buffing wheel, or is alternatively provided with a plurality of integral rubber projections 12, as shown in the drawing. Preferably each segment of the bottom of the rubber guard is treated in this manner. The projections, rather than the roughened treatment, have been shown mainly because they could be illustrated more clearly. The reason for this treatment of the outer surface of the rubber guard is to increase the grasp of any liquid which comes in contact with that surface due to the inherent surface tension of the liquid. A container equipped with my device, even though it contains barely enough ink to cover the bottom of the container, can be inverted to cause the ink to accumulate around the top of the container, and when the container is again placed in its normal position the ink which has contacted the upper end of the rubber guard during the inverting process will run down the outer surface of the rubber guard 7 and accumulate on the roughened surface of the individual segments defined by the slots 11. The roughened surface, or the projections 12, accomplish the same result as would be accomplished by some chemical which might be introduced into the ink to increase its surface tension. In other words, a quantity of

ink is held on the outer surface of the segments defined by the slots 11, and when the pen is inserted through the aperture 10 in the metal guard and is forced through the slotted opening in the rubber guard it contacts the ink which has accumulated on the outer surface of the segmental bottom and is supplied with a quantity of ink the same as if it were actually dipped into the body of fluid in the container.

It is necessary, or at least preferable, that my invention be used in combination with a partial closure for the container. One type of partial closure is illustrated by Figures 2 to 5 inclusive. This particular type partial closure is designated by the numeral 13. It is provided with internal threads, or any other suitable means, to facilitate its attachment to the upper end of the container. It is provided centrally with a port or hole, through which my device may be manually inserted. Since the rubber guard 7 is somewhat bulbous in form and is elastic, the perforation or hole in the partial closure 13 is preferably made slightly smaller than the diameter of the rubber guard 7 at its point of greatest diameter. Thus, the rubber guard and its complemental metal guard may be inserted through the perforation in the partial closure 13 and after it has entered and its upper rim is seated on the shoulder immediately surrounding the perforation in the partial closure 13, that portion of the rubber guard 7 below the perforation expands and serves to hold the entire device firmly in position in the partial closure.

Another type partial closure has been illustrated in Figure 6. This closure is designated as a whole by the numeral 14 and it has the central perforation the same as the partial closure 13. However, it is of a configuration to be inserted within the neck of the container, rather than to fit over and around the neck of the container. It is sealed in position within the neck of the container by any suitable means, as by a resilient packing 15, and such packing is tightly impinged between the interior surface of the container neck and the exterior surface of the partial closure 14, thus preventing the partial closure 14 from leaving its position in case the container is inverted. By using this type partial closure the usual type full closure 16 may be used to tightly close the opening in the container.

The metal guard 8 serves not only to prevent the pen holder from passing into the interior of the ink container and thereby becoming soiled, but also serves as a trap for any liquid which may be drawn up into the interior of the rubber guard 7 during the process of dipping the pen. If liquid is pulled into the interior of the rubber guard, and the ink container is then inverted, the metal guard 8 prevents any part of that ink from passing through the aperture 10.

While I have described and illustrated a specific embodiment of my invention, I am aware that numerous alterations and changes may be made therein, and I do not wish to be limited except by the prior art and by the scope of the appended claim.

I claim:

The combination with a centrally perforated partial closure for an ink container, said partial closure adapted to close the open end of a container save at the point of perforation, of, a closure for the perforation in said partial closure comprising: a bulbous soft rubber cup-like ink guard slightly larger in diameter than said perforation; an inverted funnel-like metal ink guard projecting into said rubber ink guard, the large end of said metal guard being firmly crimped over the rim of said rubber guard affording a liquid tight connection between the two guards; the end of said rubber guard opposite its rim being cross slotted to form a self closing passage through said end into the container; and a plurality of integral projecting teats on the outer surface of each of the segments formed by the slots in said end, said teats being sufficiently close together to increase the surface tension grasp of any liquid which comes in contact with said surface; said closure adapted to be held securely within said perforation by the expansion of its rubber outer wall after it has been forced through said perforation.

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