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APPLICATOR AND CLOSURE FOR LIQUID CONTAINERS

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Fig. 1.

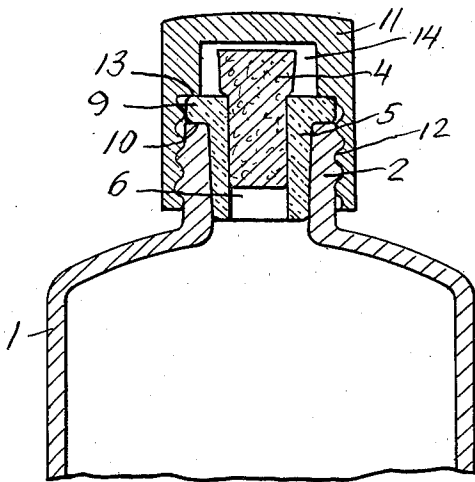


Fig. 2.

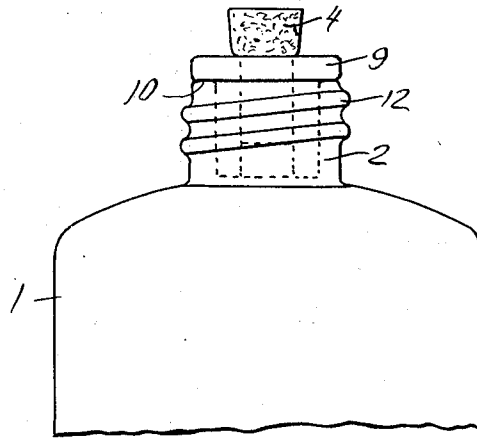


Fig. 3.

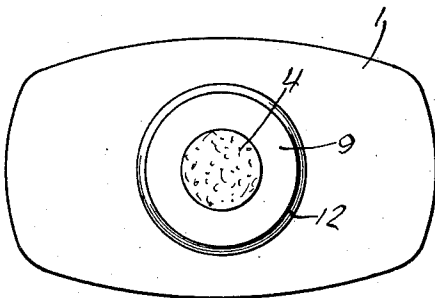
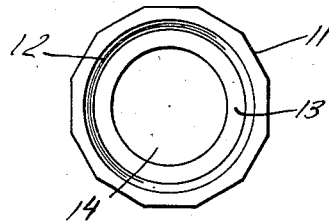


Fig. 4.



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APPLICATOR AND CLOSURE FOR LIQUID CONTAINERS

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3 Claims. (Cl. 91—67.4)

This invention relates to liquid containers and more particularly to a combined applicator and closure construction for bottles and like containers.

Many fluids, such as perspiration deodorizing or inhibiting liquids, cosmetic lotions and the like, are used by the application thereof in a thin layer on the surface of the skin. It is desirable that the containers for such fluids be provided with removable fluid tight closure means and with dispensing or applicator means whereby the fluids may be quickly and easily applied to the skin without waste.

To this end, the present invention has for its object the provision of an improved combined applicator and fluid tight closure means for a container. More specifically, the object of the invention resides in the provision of a liquid applicator and means for attaching such applicator to a container opening, the attachment means cooperating with an improved removable closure for the container opening to form a liquid tight joint between the closure and the container. Various other objects and advantages of the invention will be apparent as the description thereof progresses.

The invention will be best understood by reference to the accompanying drawing in which an embodiment thereof has been illustrated. In the drawing:

Figure 1 is a sectional side view of a bottle incorporating the combined applicator and closure of the invention;

Figure 2 is an elevation of the bottle shown in Fig. 1 with the cap removed;

Figure 3 is a plan view of the bottle neck with the cap removed; and

Figure 4 is a bottom plan view of the bottle cap.

Referring to the drawing, the disclosed embodiment of the invention is shown in combination with a container comprising a bottle 1 having the usual substantially cylindrical neck 2 forming the bottle opening. In accordance with the invention, an applicator member or sponge 4 is fixed in communication with the bottle opening so that liquid from the bottle may saturate this sponge and may be applied to the skin or other surface by passing the sponge in contact therewith. The sponge 4 may be formed of various known substances, such as natural sponge or absorbent woven or felted fabrics, but in the preferred form of the invention, this sponge is formed of rubber.

The sponge 4 is attached to the bottle opening

by means of a perforated stopper 5, the sponge extending across the perforation in the stopper whereby liquid from the bottle may flow into the interstices of the sponge. In the disclosed embodiment, the stopper 5 is formed of resilient material, such as rubber, and is fixed within the bottle neck 2 by frictional engagement with the inner surface thereof. A central and preferably cylindrical opening 6 is formed through the stopper 5 and the sponge 4 extends entirely across this opening. The sponge 4 may be conveniently secured to the stopper 5 by inserting one end of the sponge within the opening 6 and cementing the sponge to the stopper, the outer end of the sponge protruding beyond the outer end of the stopper.

The stopper 5 is provided with an integral flange portion 9 adjacent the outer end thereof, which flange extends outwardly away from the sponge 4 and overlies the upper edge 10 of the bottle neck 2. This flange performs the combined function of limiting the movement of the stopper 5 into the bottle neck, and acting as a gasket to form a liquid tight seal between the removable bottle cap and the bottle opening.

A closure or cap 11 formed of rigid material, such as hard rubber or a phenolic condensation product, is provided for the bottle. The cap 11 is designed to cooperate with the flange 9 of the stopper 5 to form a liquid tight joint with the bottle neck, while at the same time, enclosing the protruding end of the applicator sponge 4 without compressing or crushing the same. To this end, the cap 11 and the bottle neck 2 are provided with suitable interengaging means such as the screw threads 12 for drawing the cap on to the neck and an annular ledge or abutment 13 is provided within the cap 11 for engaging the outer surface of the stopper flange 9 and compressing this flange between the edge 10 of the bottle neck 2 and the abutment 13. A recess 14 is formed in the cap 11 within the abutment 13 for the reception of the protruding end of the sponge 4. Thus when the cap 11 is screwed down on the bottle neck, the flange 9 of the stopper 5 forms a liquid tight seal between the cap and the bottle, and the sponge 4, carried by the stopper and protruding therefrom, is enclosed within the sealed recess 14 of the cap and is not pinched, compressed or otherwise deformed.

In using the device, the cap 11 is removed and the bottle 1 inverted or shaken whereby the sponge 4 is saturated with liquid passing through the opening 6 in the stopper 5. The liquid is then conveniently applied by passing the protruding

end of the sponge over the skin or other surface to be treated, any excess of the liquid remaining in the sponge and eventually draining back into the bottle. With this procedure, the application
5 of liquid is accomplished without waste, the liquid passing directly from the container to the surface where it is required, and the liquid cannot come into contact with the fingers of the user.

Although the improved applicator container of
10 my invention has been described as suitable for carrying perspiration inhibiting liquids or other cosmetic lotions, it should, of course, be understood that the invention is in no way limited to use with any particular liquid. The container
15 may carry water, liquid glue or any other fluid which it is desired to apply to a surface.

I claim:

1. In combination with a container having an opening therein, a resilient stopper having an
20 opening therethrough and having a portion extending within and frictionally engaging the interior surface of said container opening, an integral outwardly extending flange on said stopper engaging and overlying the portion of said con-
25 tainer immediately surrounding said opening, a liquid absorbent applicator member permanently fixed directly to the stopper across the opening therein and protruding outwardly from said stop-
30 per and a closure removably secured over said container opening in compressive engagement with said stopper flange and so forming a liquid tight seal for said container opening and said applicator.

2. In combination with a bottle having a neck
35 with an opening therein, a resilient stopper having an opening therethrough and having a por-

tion extending into and frictionally and remov-
ably retained within the opening in the bottle neck, an integral outwardly extending flange ad-
5 jacent the outer end of said stopper overlying the edge of said bottle opening and limiting the movement of said stopper into said bottle neck, an applicator sponge permanently attached directly to said stopper and extending across the stopper opening, a removable closure for said container
10 opening, interengaging means on said bottle neck and said closure for attaching said closure to said neck and an abutment within said closure for engaging said stopper flange and so forming a liquid tight seal for said opening and said appli-
15 cator when said closure is in place.

3. In combination with a bottle having a neck with an opening therein, a rubber stopper having a portion thereof extending into and frictionally and removably retained within the bottle neck and having an integral radially extending flange
20 adjacent the outer end thereof overlying the edge of the bottle opening and limiting the movement of said stopper into the bottle neck, said stopper having a substantially central opening there-
25 through, an applicator sponge permanently fixed directly to and within the opening in said stopper and protruding outwardly from the outer end of said stopper, a cap for said bottle removably con-
30 nected over the bottle opening by interengaging means on said cap and said bottle neck and an abutment within said cap for engaging said stopper flange and so sealing the bottle opening when said cap is in place, said cap having a recess there-
35 in for the reception of said protruding sponge.

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