Oct. 15, 1935. G. A. MENGLE 2,017,603

COMBINED BOTTLE CAP AND FOUNTAIN APPLICATOR BULB

Filed March 31, 1933

Fig. 1.

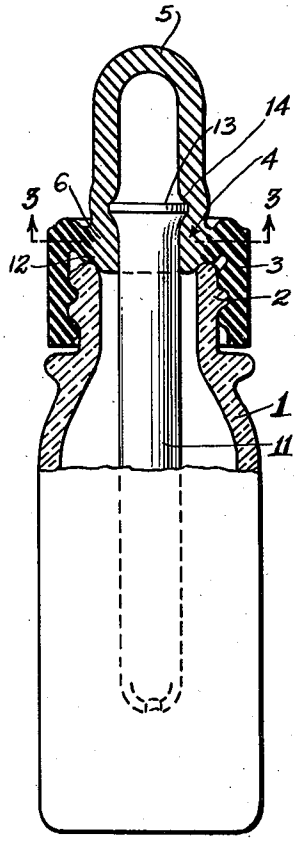


Fig. 2.

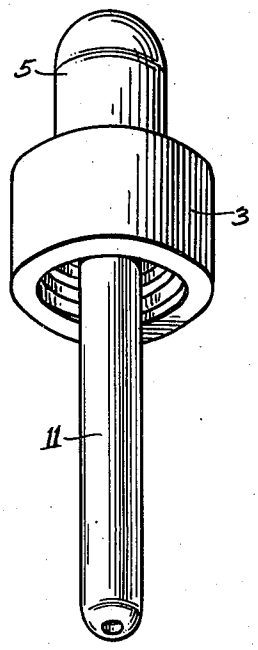
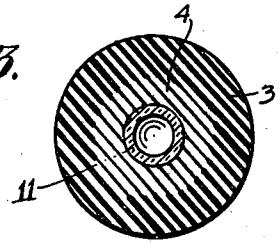


Fig. 3.



Inventor

G. A. MENGLE

By Mason Fenwick & Lawrence

Attorneys

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COMBINED BOTTLE CAP AND FOUNTAIN APPLICATOR BULB

Glenn A. Mengle, Brockway, Pa., assignor to Brockway Sales Company, Brockway, Pa., a corporation of Pennsylvania

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1 Claim. (Cl. 221—148)

This invention relates to a combined bottle cap and fountain applicator or dropper. It proposes constructing the cap and the bulb of the applicator as a unit.

One of the objects of the invention is the provision of a combined device of the class described in which the bulb of the applicator and the cap are made integral.

Another object of the invention is to provide an integral cap and applicator bulb in which the cap portion or at least the socket part thereof which embraces the screw threads at the mouth of the bottle is vulcanized hard, while the bulb portion remains soft and flexible.

A further object of the invention is to provide a device of the character described in which the inner walls of the socket member is yieldable and constitutes an inwardly projecting flange surrounding the applicator and adapted to be forced a slight distance into the mouth of the bottle when the cap is screwed in place.

Other objects of the invention will appear as the following description of a preferred and practical embodiment thereof proceeds.

In the drawing which accompanies and forms a part of the following specification and throughout the several figures of which the same characters of reference have been employed to denote identical parts:

Figure 1 is a similar view illustrating the combined cap and applicator bulb with the present invention;

Figure 2 is a perspective view of the cap and applicator bulb with the applicator in place; and

Figure 3 is a section taken along the line 3—3 of Figure 1.

Referring now in detail to the several figures, the numeral 1 represents a bottle having the mouth screw threaded as at 2. The combined cap and applicator bulb comprises a surrounding socket member 3 and a top closure 4 which is expanded outwardly to form the bulb 5. The combined device is made of rubber or its equivalent and due to the controlled distribution of the vulcanizing ingredient or ingredients in the rubber or to some other factor in the process of manufacturing, the surrounding or socket portion 3 when vulcanized is hard and inflexible. The bulb 5 on the other hand remains soft and flexible and it is a matter of preference whether the intermediate web portion 6 of the closure is hard or soft. In the present illustrative embodiment of the invention, the line of demarcation between the hard and soft portions is indicated by difference in the heaviness of the cross hatching. The inner part of the closure 4 which fits intermittently against the top of the mouth of the bottle is formed as a yielding annular flange or teat 12 surrounding the applicator 11, the latter being made of glass and inserted into the inner end of the bulb 5. Preferably, the applicator has a flange 13 at its inner end which seats in a groove 14, molded in the interior of the bulb 5. The teat 5 is adapted to be compresed a slight distance into the mouth of the bottle when the cap is screwed tightly in place, forming a seal.

In the known constructions in which the bulb and cap are made in separate parts, it may happen that if the end surface of the mouth of the bottle is wet with medicament when the applicator and cap is replaced, the flange 8 will stick to the mouth of the bottle, so that when it is attempted at a later date to unscrew the cap 9, the latter will come free independently of the bulb 7, leaving the latter stuck to the mouth of the bottle. It is quite a nuisance to have the cap and applicator bulb come away in two parts.

By the present invention, since the cap and bulb are integral, they must come off together. A further advantage is that should the bulb and cap portion become stuck by reason of the mouth of the bottle having become wet with the medicament from a previous using, it is not necessary to break the entire adhesion at a single effort. Since the bulb 5 and at least part of the web 6 may be soft and flexible, there can be relative rotary displacement between the bulb and the hard cap portion 3. Consequently, the force applied to the cap need be merely sufficient to break the seal between the hard rubber portion and the mouth of the bottle. Once this seal is broken, the cap may rotate through an angle relative to the bulb until the torque developed by the displacement of the cap is sufficient to break the adhesion between the bulb and the end of the mouth of the bottle.

While I have in the above description disclosed what I believe to be a preferred and practical embodiment of my invention, it is to be understood that the specific details of construction as shown and described are merely by way of example and not to be construed as limiting the scope of the appended claim.

What I claim is:

Combined bottle cap and applicator comprising a soft flexible tubular portion closed at the outer end forming a bulb and open at its inner end to receive an applicator tube, said tubular portion intermediate its ends having an integral annulus extending laterally therefrom, said annulus being

hard and having an integral hard depending threaded flange forming with said annulus a bottle cap, an applicator tube inserted in said tubular portion up to a point beyond the zone of juncture of said annulus with said tubular portion, the inner extending end of said tubular portion constituting a teat adapted to be forced into the mouth of a bottle by the screwing on of said cap, and the hard annulus exerting constricting pressure upon the soft tubular portion in the zone of said annulus when the applicator is in place.

GLENN A. MENGLE.