

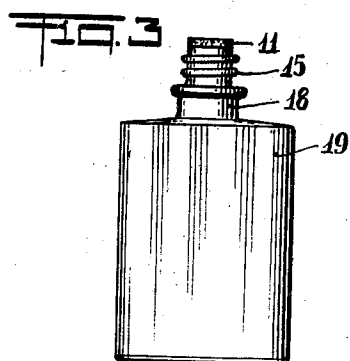
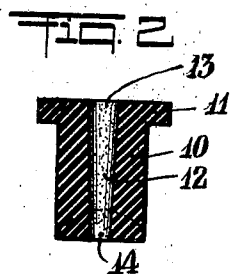
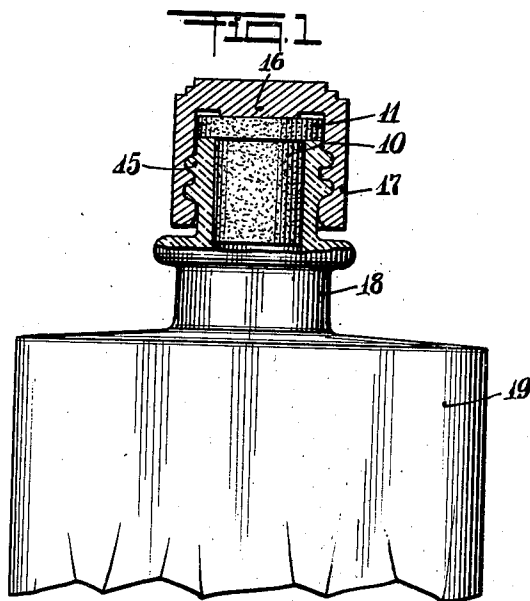
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BOTTLE CLOSURE

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BOTTLE CLOSURE

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3 Claims. (Cl. 221-148)

This invention relates to improvements in bottle closures and has for its object the provision of an improved and economical bottle closure for bottles of perfume and similar volatile liquids.

A particular object of this invention is the provision of an improved form of bottle closure which shall operate in association with a cap of synthetic composition known as "Bakelite" or similar plastic material.

Further objects of the invention will be apparent from the specification and drawing, in which:
Fig. 1 is a side elevation partly in section showing my improved bottle and closure.

Fig. 2 is a vertical section of the elastic stopper element used in my improved closure and which is inserted in the opening in the bottle.

Fig. 3 is a side elevation of the form of bottle I employ in association with my improved closure.

10 designates the elastic stopper element made of rubber or similar material inserted in the opening in the bottle, this elastic element 10 having a head flange 11 and a perforation going entirely therethrough, indicated as 12. The top of the perforation adjacent the flange, I have designated as 13, and the bottom of the perforation as 14, and it will be noted that the perforation is tapered so that the inner opening which is adjacent the liquid in the bottle is smaller than the opening at the top of the bottle, or at the delivery end. 15 designates the thread on the outside of the neck of the bottle, 17 the closure cap, the bottom of which cap has a boss which presses against the stopper element 10, as indicated at 16. 18 is the neck of the bottle, and 19, the bottle itself. It should be noted that the top of the elastic element 10 may be rounded instead of flat as this, in some cases, will increase the impermeability of the closure when the top member is forced down upon the member 10.

In use, the bottle is first filled with liquid and then the stopper member 10 (see Fig. 2) is inserted. The cap 17 is then screwed upon the neck of the bottle and it will be noted that by moving the cap 17 downward, pressure is exerted against the elastic flange 11 so as to afford a very tight closure which will not leak under any conditions. It will be noted that the pressure boss 16 of cap 17 has a diameter which is less than the internal diameter of the bottle neck. This feature is particularly advantageous for the reason that when the cap 17 is screwed upon the neck of the bottle, the boss 16 of cap 17 will exert a strong pressure against the elastic flange 11, thus causing the top portion 13 of the perforation 12 to converge and form a constriction in the aperture. This will

provide a very tight closure which will not easily leak.

The advantage of tapering the perforation 12 is that by making the inner opening 14 sufficiently small and increasing this opening upwardly in a tapering fashion as shown in Fig. 2, even when the cap 17 is disengaged from the bottle, the bottle will not leak when held in any position, as the smallness of the opening 14 will tend to retard any capillary action.

Unless the closure member 10 is removed from the bottle, the only way for liquid to escape through the opening 12 is by shaking the bottle, by which operation as many drops as may be desired will be ejected from the bottle.

By using this type of closure, leakages are prevented from small perfume vials even, if the cap is disengaged from the bottle, or if it is only lightly forced upon the neck of the bottle.

It is obvious that changes may be made in the form of the several elements constituting my closure, without departing from the spirit of my invention.

What I claim is:

1. An elastic stopper element adapted to be located in the opening of the neck of a bottle, having a flange integral with the material of said element to substantially cover the top surface of the neck of the bottle, said element having a bore, in which the wall converges evenly downward throughout the length of the stopper to form a substantially straight surface for dropping the liquid from the bottle.

2. An elastic stopper element for a bottle, said element having a straight cylindrical shank adapted to be pressed into the opening of the neck of a bottle, and a flange integral with the shank to substantially cover the top surface of the neck of the bottle, said stopper element having a passage for the liquid in the bottle, the wall of which converges substantially throughout its length in a direction toward the inside of the bottle, to permit the liquid to be dropped.

3. An elastic stopper element for a bottle or the like, said element having a straight cylindrical shank adapted to be pressed into the opening of the neck of a bottle, and a flange integral with the shank to substantially cover the top surface of the neck of the bottle, said stopper element having a passage for the liquid in the bottle, the cross sectional contour of said passage showing a wall which diverges from substantially the bottom surface of said stopper element in a direction toward the top surface thereof.

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