

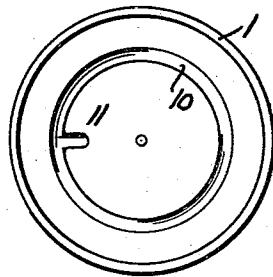
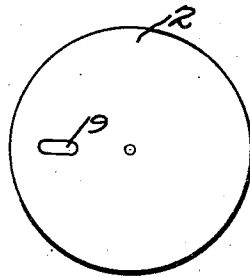
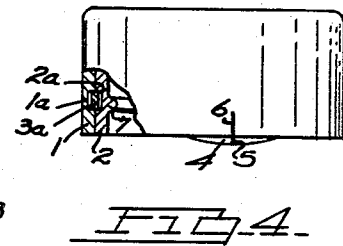
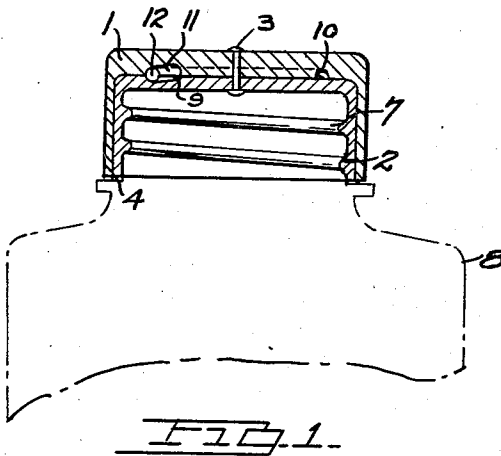
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BOTTLE CLOSURE

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BOTTLE CLOSURE

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3 Claims. (Cl. 215—9)

This invention relates to improvements in bottle closures. At the present time a large number of people each year either become seriously ill or die due to accidentally taking the contents of a wrong medicine bottle. People frequently pick up the wrong bottle in the dark or else reach for a bottle when they are too sleepy to identify it and see that they have the right one.

It is an object of this invention to provide a bottle closure which can be removed only after having set its outer and inner caps rotarily relative to one another and then tipping the cap at an inclination so that an engaging means between the caps moves into locking position. Thus not only must the two caps be in registry but the closure must also be correctly inclined before it is possible to remove it. While both these operations can be very quickly and easily done in the light, the probability of doing it in the dark, or without observing the indicating marks, is very slight indeed.

Another object of the invention is to provide a bottle closure which is cheap and simple to manufacture, and efficient in operation.

Having thus briefly stated some of the major objects and advantages of the invention I will now proceed to describe it in detail with the aid of the accompanying drawing, in which:

Figure 1 illustrates a sectional view of the invention.

Figure 2 is an inverted plan view of the inner cap, and

Figure 3 is a plan view of the outer cap.

Figure 4 is a side view partly in section showing a slight modification.

Referring to the drawing, 1 and 2 designate an outer and an inner cap respectively which are relatively so held as by a rivet 3 that the caps are freely rotatable one within the other. At least a portion of the skirt of the inner cap projects beneath the bottom of the outer cap 1 as shown at 4, and this downwardly projecting skirt portion has an index mark 5 thereon to register with a corresponding index mark 6 upon the outer cap.

The inner cap 2 is provided internally with suitable means, such as a thread 7, for attachment to the neck of a bottle indicated at 8, and also has a slot 9, in this instance a radial slot slightly upwardly inclined towards the center of the cap, formed in its upper side. The outer periphery of this cap 2 is smooth for free rotation within the bore of the outer cap 1.

Formed in the inner face of the outer cap 1 is a concentric annular groove 10, and extending therefrom, in the present instance, radially in-

wards, and adapted to register with the slot 9 is a corresponding slot 11 which is also somewhat upwardly inclined towards the center of the cap. Resting in the slot 9, and usually in the outer extremity of the said slot, is a ball 12 which is also normally in engagement with the annular groove 10 so that free rotation of the caps relative to one another is permitted. If however the caps 1 and 2 are so turned that the slots 10 and 11 are in alignment, when the indexing marks 5 and 6 are in registry, then by slightly raising the closure side wherein these slots are formed so that the cap assumes an inclined position the ball 12 rolls inwardly in the slots. When this occurs rotation of the outer cap 1 also turns the inner cap 2 and the closure may be readily removed from the bottle 8. In order that the closure may be correctly inclined the registering index marks 5 and 6 are placed in radial alignment with the slots 9 and 11.

It will thus be seen that to turn the inner cap with the outer one the two slots 9 and 11 must be in registry and the ball 12 must be between them to constitute a locking member; and for the ball to travel inwardly between these slots the cap must be slightly tilted or inclined in such a manner that the ball will roll inwardly. It is therefore apparent that there is very slight possibility of inner cap being locked to turn with the outer one unless the index marks are visually indexed, because not only must the two caps be so turned that their slots are in registry but the closure must then be properly tilted to cause the ball to roll inwardly otherwise upon further rotation of the outer cap the ball 12 would again travel freely around the annular groove 10.

A slight modification is shown in Figure 4. In this case registering annular grooves 1a and 2a are formed in the inner periphery of the outer cap and the outer periphery of the inner cap respectively. Both these grooves are engaged by a resilient split locking ring 3a which retains the caps 1 and 2 in their relative positions but permits independent rotation of these caps.

While the preferred embodiments of the invention have been described and shown, it is understood that further alterations and modifications may be made in the construction provided the said alterations and modifications fall within the scope of the appended claims.

What I claim is:

1. A bottle closure comprising an inner and an outer cap, means holding the caps to one another for independent rotation, means carried by the inner cap for engaging the neck of a bottle, one

cap having an annular groove formed therein and a slot extending from the groove, the other cap having a second slot formed therein registering with a portion of said groove at all times and
5 adapted to register with the first named slot, a locking member partly in said second slot and normally extending into the annular groove to permit independent rotation of the caps, the
10 locking member being adapted to move longitudinally in both the slots when the latter are in registry to lock the caps against independent rotation.

2. A bottle closure comprising an inner and an outer cap, means holding the caps relative to one
15 another for independent rotation, means on the inner cap for engaging the neck of a bottle, the

top of the outer cap having a concentric annular groove formed in its inner face and a slot extending therefrom, the top of the inner cap having a second slot formed in its outer face adapted to register with the first slot, a ball in the second
5 slot adapted normally to travel around in the annular groove as the outer cap is turned, said ball being also adapted to travel longitudinally in both
10 said slots when the latter are in registry and hold the two caps against independent rotation.

3. A bottle closure comprising the combination set forth in claim 2, wherein the slots in the two caps are longitudinally inclined whereby it is necessary to incline the closure for the ball to move to
15 locking position.

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