

J. T. DWYER.
BOTTLE CAP AND STOPPER.
APPLICATION FILED OCT. 26, 1916.

1,237,761.

Patented Aug. 21, 1917.

Fig. 1.

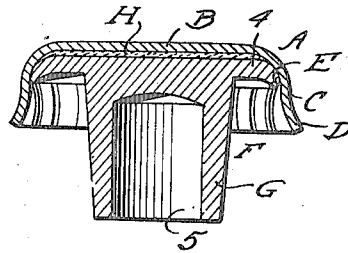


Fig. 2.

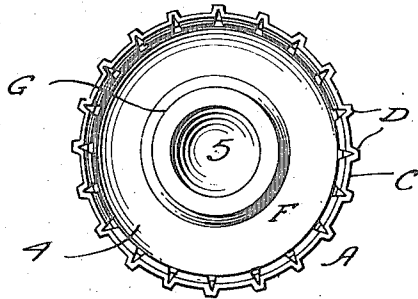
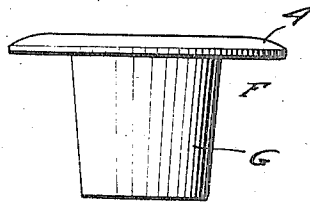


Fig. 3.



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BOTTLE CAP AND STOPPER.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN T. DWYER, a citizen of the United States, and a resident of West Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a certain new and useful Improvement in Bottle Caps and Stoppers, of which the following is a specification.

My present invention relates to closures for bottles or other containers, and comprising a metallic portion to overlie the mouth of the bottle, and adapted to be secured thereto, and a yieldable portion to extend into the mouth of the bottle.

It is now common practice to use crimped metallic caps to seal bottles, the crimped portion engaging, with intimate contact, the lower face of a flange or enlargement on the bottle neck. These caps have been found very efficient in preserving the contents of the bottle against atmospheric influence, but they are usually discarded after the bottles are primarily opened, which not only results in excessive waste but also permits the contents of the bottle to quickly deteriorate if common corks are not used to exclude dust or changing atmosphere. While the crimped metallic caps now in common use may be used to exclude dust from a bottle, they can not be used to effectively close the bottle against ingress of air, or prevent evaporation of liquid in the bottle.

Therefore, the principal object of my invention is to provide bottle caps and stoppers of the character described which will effectively close the openings of the bottles, and maintain the contents sealed against action of the atmosphere, for a considerable length of time, and which may also be used to close the bottles after they have been primarily opened to prevent material evaporation or change of the contents.

Other objects of my invention will appear in the following detailed description, taken in connection with the accompanying drawing, forming a part of this specification, and in which drawing:—

Figure 1 is a central vertical sectional view through a combined cap and stopper constructed according to my invention.

Fig. 2 is a plan view of the same.

Fig. 3 is a side elevation of a stopper member of the closure.

In the drawing, where similar characters

refer to similar parts throughout the views, 55 A designates a metallic inverted cup-like member with its upper portion B plane, and its annular flange C crimped to provide outwardly disposed ribs D and internal shoulders E which confront the upper portion B; 60 and F a stopper member carried by member A and including a hollow cylindrical portion G to fit into the bottle neck. An adhesive H may be provided, if desired, interposed between the members A and F, 65 rigidly securing them together.

Referring first to the member A, it may be substantially like those now in common use, the crimping presenting the shoulders which engage the outer portion of the neck 70 of the bottle in the well known manner, the cap to be lifted by means of a suitable tool which engages the top of the cap, and beneath the flange C.

The stopper member F may be made of 75 any suitable yieldable material, such as cork, rubber, etc., and in its preferred embodiment includes, in addition to the hollow cylindrical portion G, an annular flange 4 at the upper portion of said cylindrical portion, the diameter of said flange being 80 slightly greater than the internal diameter of the member A, so that when the member F is placed into operative relation to the member A, it must be forced into position 85 with the marginal portion of the flange resting upon the shoulders E, and with the lines of thrust converging toward the upper portion B of member A, as is clearly shown in Fig. 1 of the drawing. If desired, the ad- 90 hesive H may be interposed between the upper portion of member F and the inner face of member B of member A.

As to the portion G, it may be slightly tapered downwardly to facilitate insertion 95 into the opening of the bottle neck. In order to render the cylinder hollow, it has formed therein a recess 5, open at the bottom of the cylinder and which permits the lower portion of the cylinder to be com- 100 pressed, so as to be oval in cross section.

In operation, the device is placed on the bottle with the cylindrical portion G extending into the opening of the bottle, after which the device is forced downwardly 105 bringing the cylinder into intimate contact with the interior of the neck of the bottle. The top of the neck may engage and com-

press the flange 4 to assist in sealing the bottle. After the device has been secured in place, the crimped portion of the cap is brought into intimate contact with the exterior of the neck, in the well known manner.

It is to be observed that after the cap is primarily removed from a sealing position with respect to the bottle, it may be used by inserting the cylindrical portion into the opening of the bottle and without necessarily bringing the crimped portion into intimate contact with the neck of the bottle. During the opening of the bottle, the lower portion of cylinder G may yield, having a tendency to collapse the cylinder as the member A is pried from operative relation to the bottle. This yielding of the cylinder G permits the entire device to be moved from operative relation to the bottle without separating the members A and F.

While a closure for bottles of this kind assists in sealing, it is particularly well adapted for use in connection with medicine bottles which are to remain sealed for a considerable length of time, but where the contents are not used rapidly, or in connection with any bottles to contain liquid liable to deteriorate if exposed to the atmosphere, or evaporate if the ingress of air is not shut off.

I claim:—

1. In combination with a cap adapted to be secured over a bottle neck, of a resilient stopper carried in the cap and having a depending hollow portion for binding engagement in the neck of the bottle to seal the same, said hollow portion being adapted to

be compressed and canted in the neck upon the canting of the cap in removing the same.

2. A combined bottle cap and stopper comprising in combination, a metallic inverted cup-like member with its annular flange crimped; and, a yieldable stopper member adapted to engage in the neck of a bottle, said stopper member carried by and depending from the interior of said cup-like member and provided with a recess open at its bottom.

3. A combined bottle cap and stopper comprising in combination, a metallic inverted cup-like member with its annular flange crimped; a yieldable stopper member including a hollow cylindrical portion, open at its bottom and adapted to engage in the neck of a bottle; and, an adhesive securing said stopper member to the interior of said cup-like member to depend therefrom.

4. A combined bottle cap and stopper comprising in combination, a metallic inverted cup-like member with its upper portion plane and its annular flange crimped to provide internal shoulders confronting the inner face of said upper portion; and, a stopper member of yieldable material comprising a cylindrical portion to fit in the neck of a bottle, and an annular flange at the upper portion of said cylindrical portion, said flange being of a diameter slightly greater than the internal diameter of the cup-like member and being sprung thereinto to engage the shoulders in the lines of thrust converging toward said upper portion of said cup-like member.

JOHN T. DWYER.