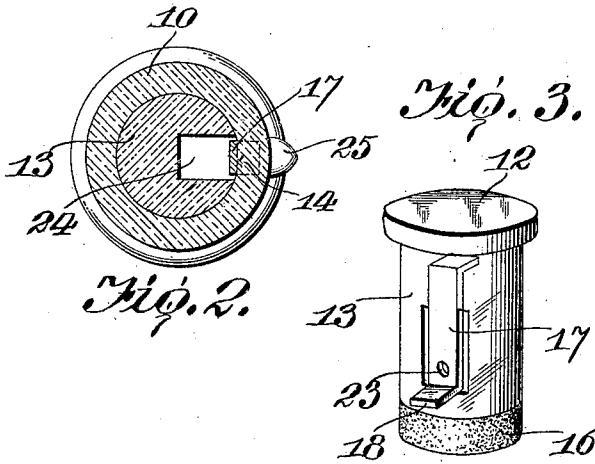
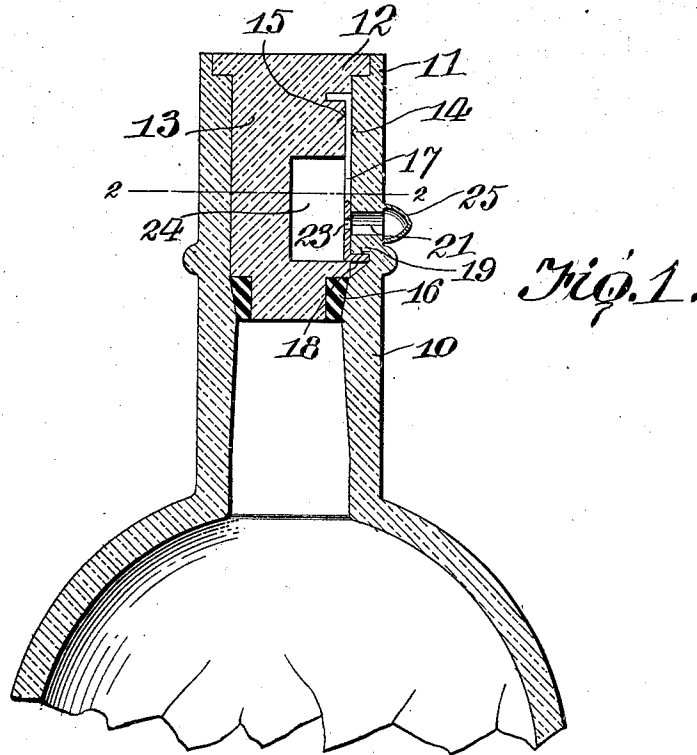


B. DONOHUE.
STOPPER FASTENER.
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946,208.

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UNITED STATES PATENT OFFICE.

BERNARD DONOHUE, OF BROCKTON, MASSACHUSETTS.

STOPPER-FASTENER.

946,208.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, BERNARD DONOHUE, citizen of the United States, residing at Brockton, in the county of Plymouth and State of Massachusetts, have invented certain new and useful Improvements in Stopper-Fasteners, of which the following is a specification.

This invention relates to bottles and the like and refers particularly to a device of this nature which may be sealed.

The invention has for an object the provision of a bottle, the stopper of which may be locked to the bottle so that the same can be removed only by breaking the seal which is formed in the side of the bottle so that the same cannot be resealed but may be used for ordinary purposes thereafter.

The invention further provides the provision of a bottle and stopper of this character which are simple in construction so that the same can be economically manufactured and will at the same time be effective and durable.

For a full understanding of the invention reference is to be had to the following description and accompanying drawings, in which:—

Figure 1 is a vertical section through the bottle neck and stopper disclosing the locking means in a sealed position. Fig. 2 is a transverse section on the line 2—2 of Fig. 1. Fig. 3 is a detailed perspective view of the stopper, and Fig. 4 is a fragmentary and enlarged view of the locking means employed in connection with the bottle neck and stopper.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

Referring to the drawings the numeral 10 designates a bottle neck which is provided at its upper extremity with a shoulder 11 for the reception of a flange 12 formed upon the bottle stopper 13 adapted for insertion within the upper end of the neck 10. The neck 10 is provided at its upper extremity with a flattened side 14 which is adapted to receive the flattened side 15 of the stopper 13 to prevent the rotation of the stopper 13 upon the insertion of the same within the bottle neck 10.

The stopper 13 is provided at its lower extremity with a strip of resilient material 16,

such as rubber, cork or the like for the purpose of sealing the passage between the stopper and the neck of the bottle. The stopper 13 is further provided in its flat side 15 with a leaf spring 17 which extends downwardly from the upper end thereof flush with the flat side 15 and is provided with a lug 18 which projects outwardly therefrom. The lug 18 is adapted for engagement against a shoulder 19 formed in the inner face of the side 14 of the bottle neck 10 which is formed by the provision of a notch 20 disposed in the side 14.

The bottle neck 10 is provided with an aperture 21 formed through the side 14 for the purpose of inserting a pin 22 to engage against the outer face of the leaf spring 17 when it is desired to unseat the lug 18 from engagement with the shoulder 19 to withdraw the stopper 13 from the bottle neck 10. The leaf spring 17 is further provided with an aperture 23 into which the pointed extremity of the pin 22 is adapted to engage when it is desired to raise the stopper 13 in order to carry the flange 12 out of engagement with the shoulder 11 so that the same may be grasped by the fingers of the operator in order to withdraw the stopper from the bottle neck 10. The stopper 13 is provided intermediately with a recessed portion 24 which is adapted to receive the lower end of the leaf spring 17 when the same is retracted.

The sealing device comprises a projection 25 which is preferably hollow and which is positioned over the outer end of the aperture 21 to close the same. The projection 25 is preferably formed of glass or the like in order to enable the breaking of the same to gain access to the leaf spring 17 without injury to the bottle neck 10.

In operation when the contents of the bottle have been disposed therein and it is desired to seal the bottle the stopper 13 is inserted in the upper end of the neck 10, the flat side 15 thereof being disposed in registered relation with the flat side 14 of the bottle neck 10. The stopper 13 is now pushed into the bottle when the lug 18 is slidably engaged over the side 14 until it reaches the shoulder 19 when the same is sprung outwardly beneath the shoulder 19 into the notch 20 under the tension of the leaf spring 17 thereby sealing the stopper 13 within the bottle neck 10 and disposing

the flange 12 against the shoulder 11 to prevent access to the same by means of which the stopper 13 might be pried out of position. When the bottle is thus closed it is in position to insert the pin 22 within the aperture 21 owing to the fact that the projection 25 completely closes the aperture 21 and that access cannot be gained to the spring 17.

When it is desired to open the bottle the projection 25 is broken from the bottle neck 10 when the pin 22 is inserted against the spring 17, the reduced and pointed extremity of the same engaging through the opening 24 to admit of the firm engagement of the pin 22 thereagainst, and to thereby retract the lug 18 from the shoulder 19 to admit of the forward movement of the stopper 13 from the raising of the pointed end 22. The aperture 21 through the neck 10 is therefore slightly elongated to permit of this forward movement of the pin 22 to raise the flange 12 above the shoulder 11 so that the same may be grasped by the operator to withdraw the stopper 13 from the bottle neck 10.

Having thus described the invention what is claimed as new is:

1. In a device as specified the combination with a bottle neck, a flat side formed in said bottle neck at the upper end thereof, a shoulder formed about the inner wall of said neck at the upper extremity thereof, a shoulder formed at the lower end of said flat side, said flat side having an aperture formed therethrough, a breakable projection formed about the aperture through said flat side at the outer end thereof, a stopper for engagement in said neck, a flat side formed on said stopper, a leaf spring disposed on said stopper in said flat side, a lug outwardly extended from the lower end of said leaf spring for engagement with said shoulder

in said flat side in said neck, and a flange formed on the upper end of said stopper for engagement with the shoulder in the upper wall of said neck.

2. In a device as specified the combination with a bottle neck and a stopper therefor of a leaf spring mounted in the side of said stopper, a lug formed on said spring in the lower end thereof, a shoulder formed in the side of said bottle neck for engagement with said lug, said bottle neck having an aperture formed through one wall of the same for access to said spring and a breakable projection formed about the aperture upon the outer face of said neck for sealing the aperture.

3. A device as specified comprising a bottle neck having a shoulder formed upon the inner face thereof and an aperture formed through the same above said shoulder, a seal disposed over the outer end of the aperture on said bottle neck, a stopper engaged in said neck, a spring carried by said stopper, and a lug mounted on said spring for engagement with said shoulder.

4. A device as specified comprising a bottle neck having a shoulder formed in the inner wall of the same and an aperture formed therethrough above said shoulder, a stopper disposed in said neck, a spring actuated lug carried by said stopper for engagement against said shoulder, and a breakable seal engaged over the aperture upon the outer wall of said neck.

In testimony whereof I affix my signature in presence of two witnesses.

BERNARD DONOHUE. [L. s.]

Witnesses:

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