No. 822,400. PATENTED JUNE 5, 1906.

R. STOCK.

BOTTLE STOPPER.

APPLICATION FILED SEPT. 7, 1905.

Fig. 1.

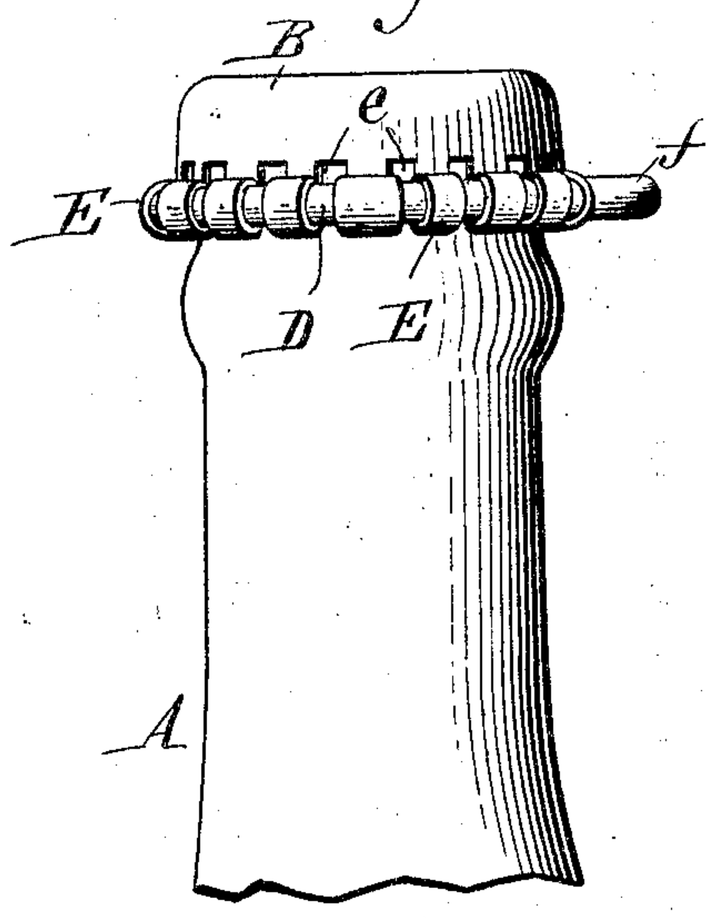


Fig. 2.

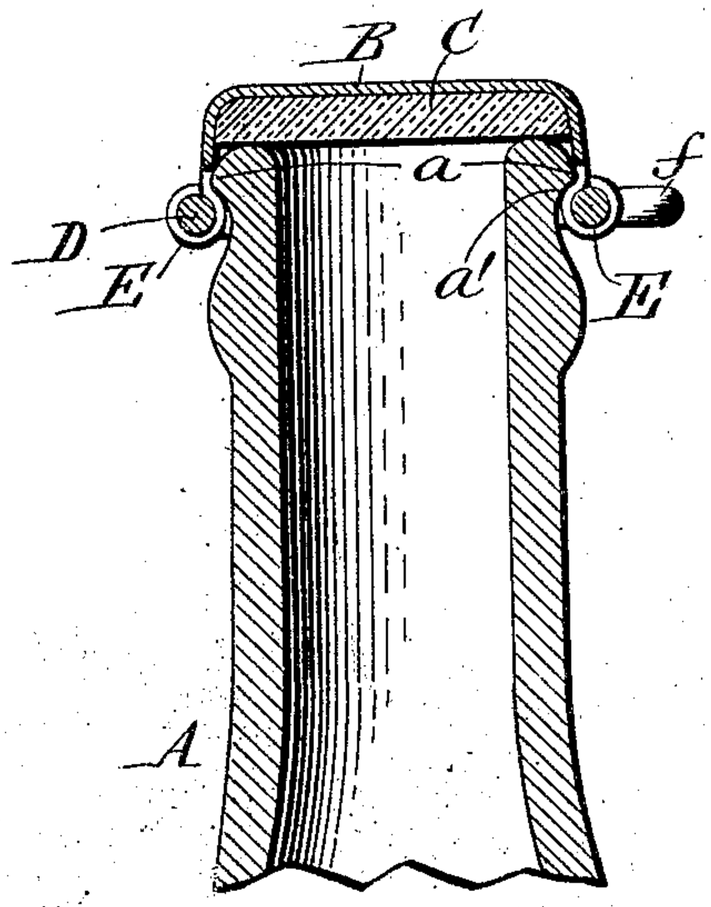


Fig. 4.

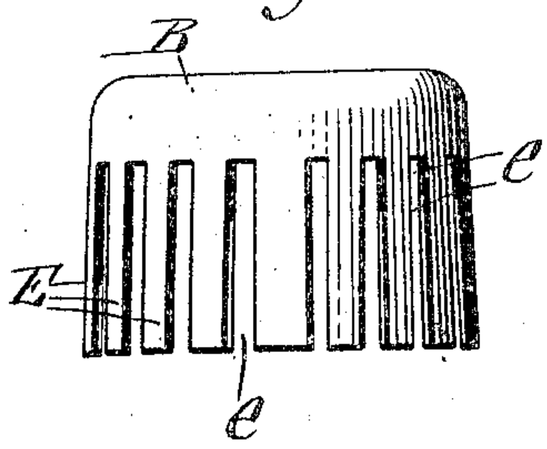


Fig. 5.

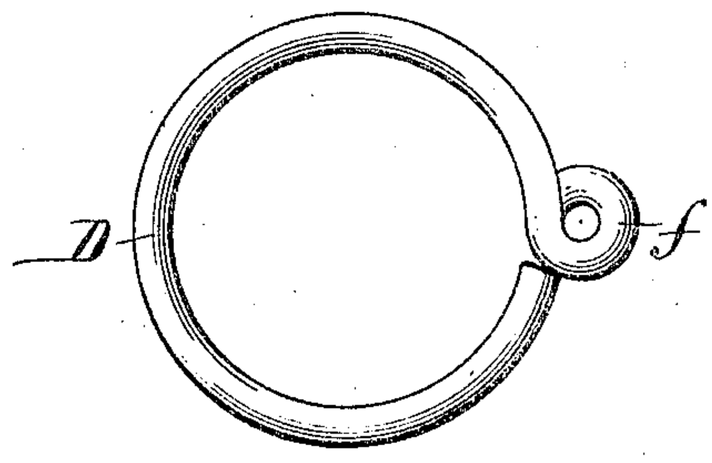
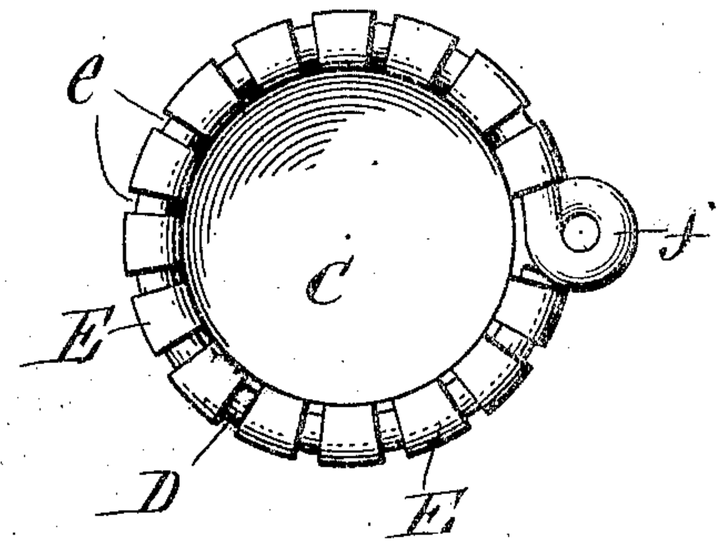


Fig. 3.



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UNITED STATES PATENT OFFICE.

ROBERT STOCK, OF BUFFALO, NEW YORK.

BOTTLE-STOPPER.

No. 822,400. Specification of Letters Patent. Patented June 5, 1906.

Application filed September 7, 1905. Serial No. 277,293.

To all whom it may concern:

Be it known that I, ROBERT STOCK, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Bottle-Stoppers, of which the following is a specification.

This invention relates to a bottle-stopper which is more particularly designed for sealing or closing the necks of bottles containing beverages, although the same may also be used for bottles in which other material is packed.

The object of this invention is to provide a stopper which is simple and inexpensive in construction, which can be readily applied to and removed from the bottle without the use of special tools or machinery, and which will effectually seal the bottle when applied thereto.

In the accompanying drawings, Figure 1 is a fragmentary side view of a bottle-neck having my improved stopper applied thereto. Fig. 2 is a vertical section thereof. Fig. 3 is a bottom plan view of the stopper removed from the bottle. Fig. 4 is a side elevation of the cap which forms part of my improved stopper, showing the condition of the same before the stopper is completed. Fig. 5 is a plan view of the split spring-ring whereby the cap of the stopper is yieldingly held upon the neck of the bottle.

Similar letters of reference indicate corresponding parts throughout the several views.

The neck A of the bottle which is intended to receive my improved stopper is provided at its upper end or mouth with an external annular bead or enlargement *a*, forming a downwardly-facing shoulder *a'* on the exterior of the neck.

My improved stopper comprises a cap B, adapted to fit over the neck of the bottle, a disk-shaped packing C, of cork, rubber, or other suitable material, seated on the under side of the cap and adapted to rest upon the upper end of the neck, and a split spring-ring D applied to the rim of the cap and adapted to contract the lower part thereof and hold the same in engagement with the shoulder of the bottle-neck for securing the cap firmly thereto.

In order to render the rim of the bottle more elastic and enable the same to yield to the pressure of the spring-ring, this rim is provided with a plurality of vertical slots *e*, extending upwardly from the lower edge of the rim and forming an annular row of depending elastic fingers or lips E on the rim. The split ring is applied to the outer side of these lips, and the ends of the latter are bent or curled outwardly and upwardly around the ring, as shown in Figs. 1 and 2, whereby the ring is permanently connected with the cap. In the normal condition of the lips and spring-ring the internal diameter thereof is less than the external diameter of the bead on the bottle-neck. Upon pressing the stopper downwardly over the neck of the bottle the split ring and the depending lips of the cap are expanded in passing over the bead of the bottle-neck and again contracted after passing below this bead and engaging with the shoulder on the under side thereof. The parts of the bottle and of the stopper are so proportioned that when the lips are held in engagement with the shoulder of the bead by the spring-ring the packing of the cap fits against the upper end of the neck. This shoulder instead of being abrupt inclines downwardly slightly, which causes the resilience of the spring in pressing the lips against the shoulder to constantly tend to draw the cap downwardly, and thus insure a perfectly tight closure of the packing over the mouth of the bottle at all times and also compensating for slight inaccuracies in the manufacture of the parts.

The stopper can be removed from the bottle by exerting an upward pull upon the same sufficient to overcome the resilience of the spring and cause the same to spread sufficiently together with the lips of the cap to clear the bead of the bottle-neck.

In order to facilitate removal of the stopper from the bottle, one end of the split ring is provided with a laterally-projecting nose or lifting-lug *f*. Upon pressing upwardly against this lug either by means of the fingers or by means of an ordinary bottle-opener the stopper can be readily pried off from the neck.

For preventing injury to the fingers when the stopper is removed without the aid of a tool the lifting-lug is constructed in the form of a loop, as shown in Figs. 3 and 5, whereby only round surfaces are formed with which the fingers engage instead of sharp or angular surfaces, which would be likely to injure the fingers. By permanently connecting the cap and spring-ring of the stopper these parts are not liable to become misplaced when removed from the bottle.

My improved bottle-stopper can be readily replaced over the mouth of the bottle, so as to properly seal the same after having been once removed, without the use of any special tools for this purpose. This renders the same particularly desirable for bottling liquids for household use, which require the bottle to be again sealed after the contents have been partially used.

I claim as my invention—

1. A bottle-stopper comprising a cap having its rim slitted to form an annular row of depending lips and a spring-ring to which the lower ends of said lips are connected, substantially as set forth.

2. A bottle-stopper comprising a cap having its rim slitted to form an annular row of depending lips, and a split ring to which the lower ends of said lips are connected and which is provided at one end with a laterally-projecting lug, substantially as set forth.

3. A bottle-stopper comprising a cap having its rim slitted to form an annular row of depending lips, and a split spring-ring around which the lower ends of said lips are curled for connecting the ring with said lips, substantially as set forth.

4. A bottle-stopper comprising a cap having its rim slitted to form an annular row of depending lips, a split spring-ring around which the lower ends of said lips are curled for connecting said ring with said lips, and a laterally-projecting lug of loop form arranged on one end of said ring, substantially as set forth.

Witness my hand this 2d day of September, 1905.

ROBERT STOCK.

Witnesses:
THEO. L. POPP,
MAY E. MCARTHUR.