No. 756,343. PATENTED APR. 5, 1904.

O. EICK.

BOTTLE CLOSURE.

APPLICATION FILED AUG. 21, 1902.

NO MODEL.

Fig. 1

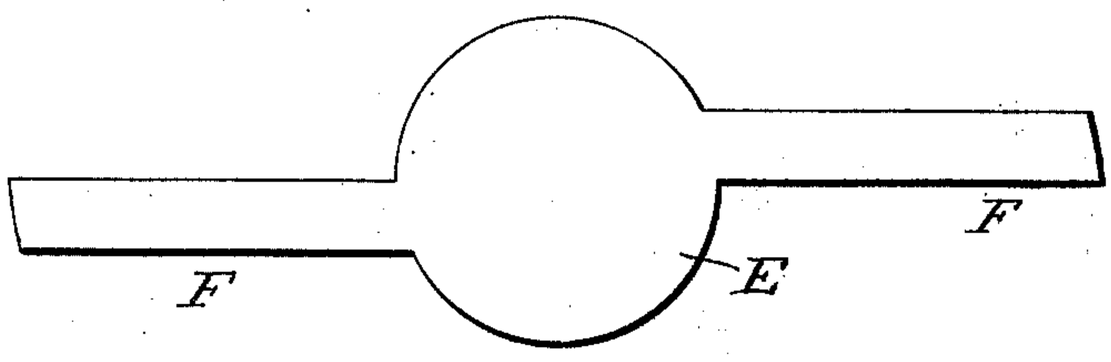


Fig. 2.

Fig. 3.

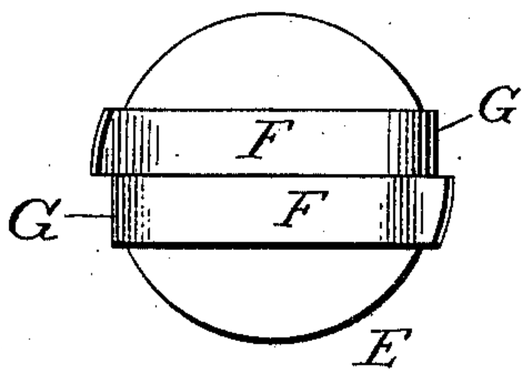


Fig. 4.

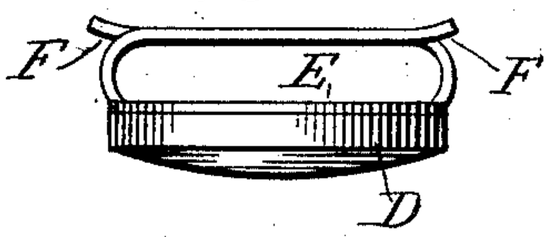


Fig. 5.

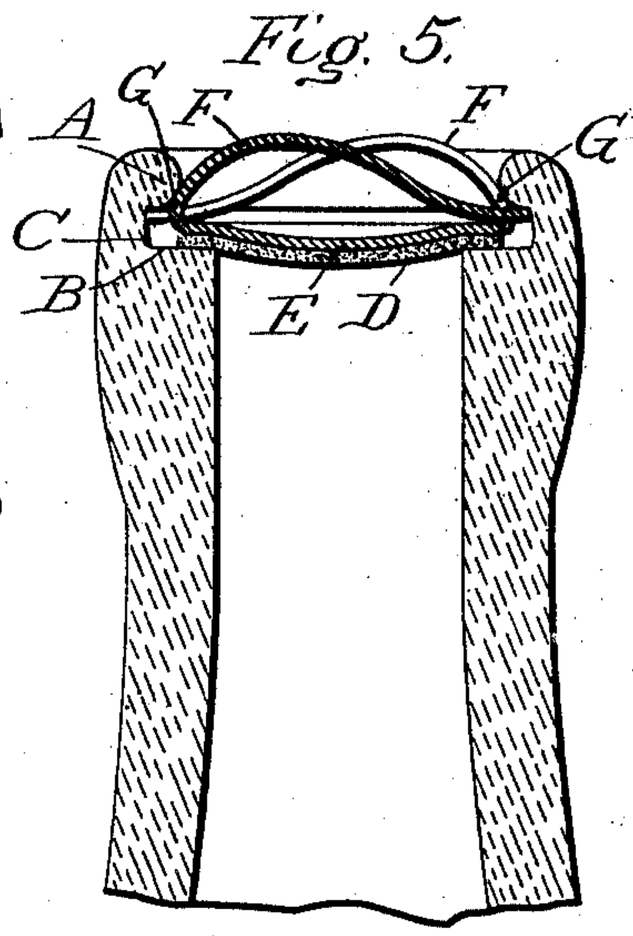


Fig. 6.

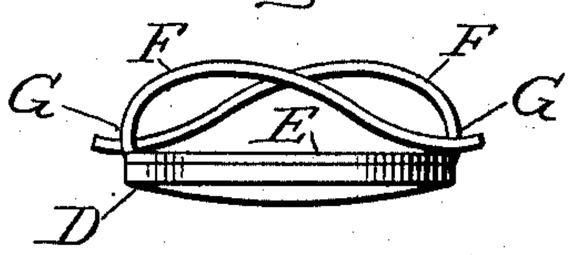


Fig. 7.

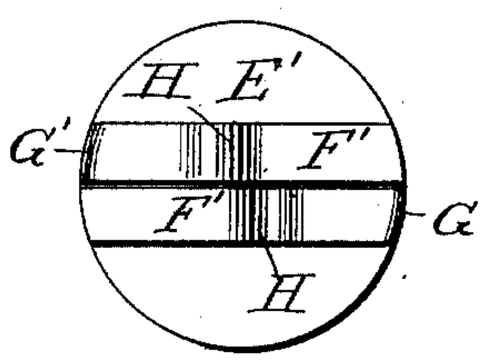


Fig. 8.

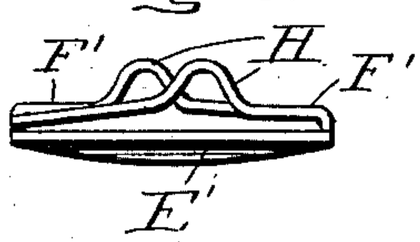
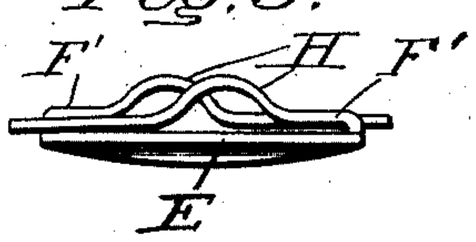


Fig. 9.



Witnesses
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No. 756,343. Patented April 5, 1904.

UNITED STATES PATENT OFFICE.

OTTO EICK, OF BALTIMORE, MARYLAND.

BOTTLE-CLOSURE.

SPECIFICATION forming part of Letters Patent No. 756,343, dated April 5, 1904.

Application filed August 21, 1902. Serial No. 120,526. (No model.)

To all whom it may concern:

Be it known that I, OTTO EICK, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Bottle-Closures, of which the following is a specification.

My present invention pertains to improvements in bottle-closures, the construction and advantages of which will be hereinafter set forth, reference being had to the annexed drawings, wherein—

Figure 1 is a plan view of one form of the fastening device in its extended position or as it appears after having been struck out of or punched from a sheet of metal or other suitable material modified to suit the object in view; Fig. 2, a longitudinal sectional view thereof; Fig. 3, a top plan view after the retaining fingers or arms have been bent back over the body, the parts being in position for insertion into the bottle-neck; Fig. 4, a side elevation of the complete device, showing the sealing-disk in place beneath the retainer; Fig. 5, a sectional view of the upper portion of a bottle-neck, showing the closure in position therein; Fig. 6, a side elevation of the device, illustrating the position which the parts occupy when the closure is in place in the bottle-neck; Fig. 7, a top plan view of a modified form; Fig. 8, a side elevation thereof, and Fig. 9 a similar view showing the arms extended as they would be in practice when the closure is in the bottle-neck.

The closure is designed to be employed in conjunction with the usual or standard bottle now on the market—that is to say, a bottle provided with an inwardly-projecting shoulder A near the upper end of the neck and with a lip B, which overhangs the shoulder to a slight extent, forming an undercut groove or channel C.

The closure comprises a sealing-disk D, formed of cork, sheet asbestos, or the like, which may be treated with paraffin or other liquid-proofing substance, and a retaining device which holds the disk tightly in place upon the shoulder after it has been compressed or forced down upon the same.

The retaining device is formed from sheet metal such as sheet-brass, sheet-steel, or other material which has sufficient spring and which may be readily bent or worked into shape. In the form shown in Figs. 1 to 6, inclusive, it comprises a central body portion E, preferably dished or concaved to a slight extent, and two arms or fingers F F, which when the parts are first struck out extend from opposite sides of the body, the outer ends of the fingers being formed on a curve, as is clearly shown in Figs. 1 and 3.

The fingers, which, as will be seen, are out of line with each other, are then bent back over the body, as indicated in Figs. 3 to 6, inclusive, the outer ends of the fingers preferably, though not necessarily, projecting slightly beyond the body portion, the bent portions of the fingers forming shoulders near the body, as at G.

The body of the retaining device will of course be made of such size as to pass down into the opening in the bottle-neck and the sealing-disk, which, by preference, will be secured to the body of the retaining device by some suitable cement, will bear directly upon the inwardly-projecting shoulder A.

When the retaining device and disk are dropped into place, pressure is applied to the body of the retainer, so as to force the disk closely to its seat upon the shoulder. This pressure is applied to the body at each side of the arms or fingers, and while such pressure is retained pressure is also applied to the free ends of the fingers, causing said fingers to pass down over the lip B and into the groove C. Naturally by reason of the applied pressure on the fingers and the inherent spring of the arms or fingers the ends will pass into the groove, the curved form of said ends facilitating their movement and preventing them from twisting or bending out of their correct plane. The shoulders G also engage the under face or edge of the lip, thereby more securely locking the retainer in place. The concave formation of the body E tends to force the disk more surely into intimate contact with the edge of the inwardly-projecting shoulder.

The loops formed by the fingers when the

closure is in place afford a ready means for withdrawal. Any pointed instrument may be passed through one or the other or both of the loops and the closure pried out. The closure has likewise a marked advantage in that it may be reused without the necessity of reforming it.

It will be readily seen that the fingers may take the form shown in Fig. 4 when originally produced or the ends of the fingers may lie close to or upon the upper face of the body portion. It will further be noted that the metallic portion of the closure cannot by any possibility come into contact with the liquid contained in the bottle. This is also a point of marked advantage and permits the use of metal in the construction of the retaining device, which would otherwise be precluded. It is apparent, likewise, that but one arm or finger need be used, inasmuch as the shoulder G passes into the groove to a slight extent, while the opposite side of the body portion will be held by the end of the finger. In other words, with but one finger the retaining device would be held at diametrically-opposite points. It is preferable, however, to employ two fingers and not rely solely upon the shoulder G.

In Figs. 7 to 9, inclusive, a slightly-modified construction is shown. The arms F′ instead of being curved upwardly away from the body, as in the form just described, are bent directly back over the body, so that no shoulder, as G, is produced. Each arm is formed with an upwardly-extending loop H, and the body of the arm lies close to the body E′. When using this form of closure, pressure is applied directly to the looped portions H, and the cork or other sealing-disk is compressed between the body E′ and the lip B. When the limit of compression in the disk is reached, further or continued pressure on the loops causes the loops to flatten, as shown in Fig. 9, thereby projecting the ends of the arms into the groove in the bottle-neck, securely holding the disk in place under compression. As in the former construction, no metal is exposed to the contents of the bottle, and the device may be readily removed and again used, if desired.

Having thus described my invention, what I claim is—

1. In a closure for bottles and the like, the combination of a sealing-disk; and a retaining device therefor, said retaining device comprising a body portion arranged to bear upon the upper face of the disk, and an arm formed integrally with the disk, said arm being bent back over the body portion and extending a slight distance beyond the periphery of the body portion, whereby the end of the arm may be forced into a groove or channel in the bottle-neck, while the bent or curved portion of the arm adjacent to the body will likewise pass into the groove, substantially as described.

2. In a closure for bottles and the like, the combination of a sealing-disk; and a retaining device therefor, said retaining device comprising a body portion adapted and arranged to bear upon the upper face of the disk, and arms connected to opposite sides of said body portion, said arms being bent back over the body portion with their free ends projecting slightly beyond the face of the body portion, substantially as and for the purpose described.

3. In a closure for bottles and the like, the combination of a sealing-disk; and a retaining device therefor, said retaining device comprising a body portion adapted and arranged to bear upon the upper face of the disk, and arms formed integrally with the body portion upon opposite sides thereof, said arms being bent back over the body portion forming loops thereover, and the ends of said arms projecting slightly beyond the periphery of the body portion, substantially as described.

4. In a closure for bottles and the like, the combination of a sealing-disk; and a retaining device therefor, said retaining device comprising a body portion having arms formed integrally therewith upon opposite sides of said body, the arms being out of line with each other and bent back over the body portion forming loops thereover, substantially as described.

5. In a closure for bottles and the like, the combination of a sealing-disk; and a retaining device therefor, said retaining device comprising a body portion having arms formed integrally therewith upon opposite sides of said body, the arms being out of line with each other and bent back over the body portion forming loops thereover, the free ends of the arms extending slightly beyond the periphery of the body portion, substantially as described.

6. In a closure for bottles and the like, the combination of a sealing-disk; and a retaining device thereof, said retaining device comprising a body portion having arms formed integrally therewith upon opposite sides of the body portion, the arms being bent back over the body portion past each other, the ends of the arms being curved, substantially as described.

7. In a closure for bottles and the like, the combination of a sealing-disk; and a retaining device therefor, said retaining device comprising a body portion formed with a slight concavity and having arms integrally formed therewith upon opposite sides of the body portion, said arms being bent back over the body portion and forming loops thereover, substantially as described.

8. A retaining device for bottle-closures, comprising a body portion, the said body portion being slightly concave, and arms formed

integrally with said body portion upon opposite sides thereof, said arms being out of line with each other and bent back over the body portion, forming loops thereover, the free ends of the arms being curved, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

OTTO EICK.

Witnesses:
ROBERT C. RHODES,
WILLIAM L. EUELL.