

No. 761,978.

PATENTED JUNE 7, 1904.

W. F. MERCER.
NON-REFILLABLE BOTTLE.
APPLICATION FILED FEB. 13, 1904.

NO MODEL.

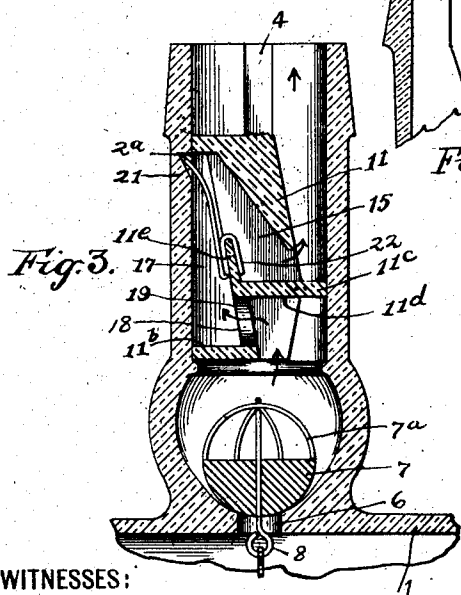
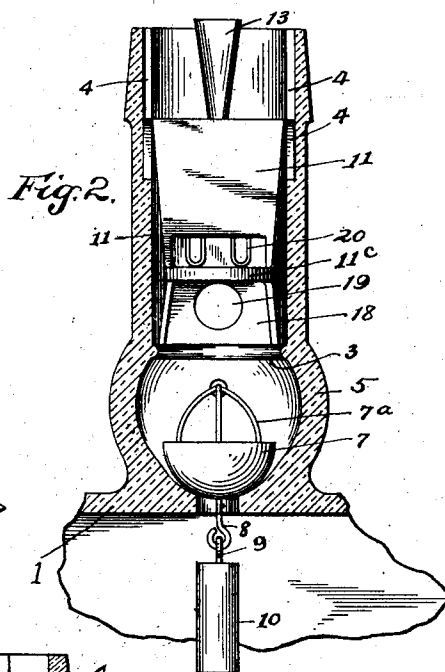
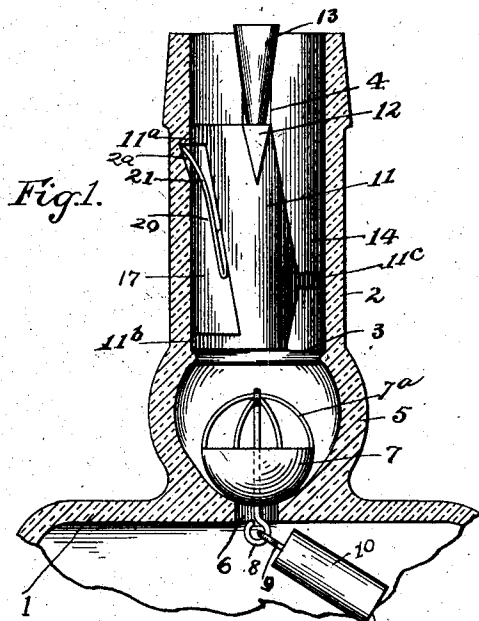


Fig. 7.

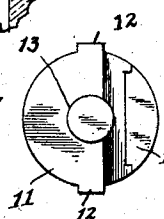


Fig. 4.

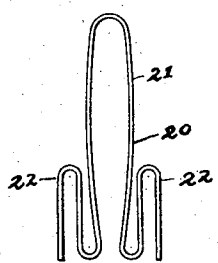


Fig. 5.

Fig. 6.

WITNESSES:

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WILLIAM F. MERCER, OF COLUMBUS, OHIO.

NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 761,978, dated June 7, 1904.

Application filed February 13, 1904. Serial No. 193,405. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. MERCER, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented a certain new and useful Improvement in Non-Refillable Bottles, of which the following is a specification.

My invention relates to the improvement of non-refillable bottles; and the objects of my invention are to provide an improved bottle and closure therefor of such construction as to prevent the bottle from being refilled, to provide improved means within the bottle-neck whereby access to the closure-valve is prevented, and to produce other improvements in details of construction and arrangement of parts, which will be more fully pointed out hereinafter. These objects I accomplish in the manner illustrated in the accompanying drawings, in which—

Figure 1 is a central vertical section through a bottle-neck, showing my improvements therein in elevation. Fig. 2 is a similar sectional view taken at right angles with that shown in Fig. 1. Fig. 3 is a central vertical section through the bottle-neck and through my improved closure devices which are contained therein. Fig. 4 is a plan view of the outer closure or guard. Fig. 5 is a plan view of the closure-valve, and Fig. 6 is a view in elevation of a wire spring-frame which I employ in the manner hereinafter described. Fig. 7 is a vertical section of the upper portion of the neck of the bottle, showing in detail one of the vertical recesses or ways.

Similar numerals refer to similar parts throughout the several views.

1 represents a portion of a bottle, of which 2 is the tubular neck thereof, said neck being formed in its lower portion with an internal continuous shoulder 3 and in its upper portion with oppositely-located internal and vertical recesses or ways 4, each of which preferably tapers toward its lower end. That portion of the bottle-neck which is below the shoulder 3 is preferably slightly enlarged and rounded, as indicated at 5, and a comparatively small central opening 6 connects said enlarged portion 5 with the interior of the bottle-body. I also form the bottle-neck with

an inner side recess, which is indicated at 2^a. Normally seated within the enlargement 5 and over the opening 6 is a rounded valve 7, which may, as indicated in the drawings, be in the nature of a ball, the lower half of which is solid and the upper half of which is formed of suitable wire framework 7^a. Depending from the valve thus formed and extending downward through the opening 6 is a central hanger or rod 8, with which is movably connected the stem 9 of a suitably-shaped body 10.

11 represents the outer closure or guard, which is in the nature of a rounded upright body or plug, as shown, the body portion of which is of such thickness or diameter in one direction as to fit snugly within opposing sides of the bottle-neck, and these sides of said closure or body are formed in their upper portions with opposing V-shaped laterally-projecting lugs 12, which are adapted when the closure is inserted within the bottle-neck to enter and travel downward through the recesses 4 of said neck, said closure projections adapted to be wedged into engagement with the lower portions of said recesses. This external closure-body 11 is preferably formed of glass and has projecting upward from its upper end, central of the bottle-neck, a head or stem 13. The closure-body 11 is of such form, however, as to bring those sides which are at right angles with the sides having the projecting lugs 12 at distances from the inner surface of the bottle-neck. The upper end of the body 11 is formed on one of its reduced sides with a laterally-projecting flange 11^a, which contacts with the inner surface of the neck 2, and a similar flange is provided beneath the flange 11^a at the lower end of the body 11, this latter flange being indicated at 11^b. Projecting from the opposite side of the closure-body from that having the projections 11^a and 11^b is a flange or laterally-projecting lip 11^c, which is in the nature of a continuation of the horizontal bottom 11^d of the closure-body and which comes into contact or engagement with the inner surface of the bottle-neck. Leading diagonally upward through the body 11 from a point immediately above the flange 11^c is a passage 15, the latter connecting the spaces 14 and 17, which are on opposite sides of said closure-

body. Between the bottom 11^a and the flange 11^b is an upright wall 18, which is provided with a central opening 19.

20 represents a wire catch which preferably consists of a single piece of wire bent centrally to form a rounded loop 21, the terminal portions of which are bent upon themselves to form oppositely-located hook members 22. The wire catch thus formed is adapted to be interposed in the opening or mouth of the passage 15, where it communicates with the space 17, said guard being preferably secured in its position therein by having its hook portions 22 engage the inner wall of the passage 15, which wall is indicated at 11^c.

In utilizing my invention, the bottle being filled and the valve 7 being seated over and closing the opening 6, the closure 11 is inserted into the bottle-neck until its lugs 12 are wedged into the recesses 4, and said closure is thus properly seated with its flange 11^b and the extensions of its sides bearing upon the shoulder 3. As will be understood from the drawings, the outer end of the loop 21 springs into engagement with the recess 2^a of the bottle-neck when the closure-body 11 is inserted therein, thus anchoring said closure within the bottle-neck and preventing its withdrawal therefrom. This being accomplished, the projecting head 13 may be readily broken by suitable means from the body of the closure and an ordinary cork or stopper inserted into the mouth of the bottle-neck above said closure. When the bottle is tipped sufficiently to pour liquid therefrom, it is obvious that the pressure of the liquid will be sufficient to so displace the valve 7 as to permit the liquid to flow through the opening 6, thence out through the opening 19 into the space 17, thence through the passage 15 to the space 14, and out through the mouth of the bottle-neck.

In case an attempt is made to pour liquid into the body of the bottle through the neck it will be understood that the valve 7 will serve in the well-known manner to prevent the liquid flowing into the bottle. In case the bottle is tipped with the intention of displacing the valve and permitting liquid to run into the bottle through the opening 6 it will be understood that the pendulum-like body 10 will swing to one side or to the position indicated in Fig. 1 of the drawings and continue to exert sufficient pull on the valve 7 to prevent the displacement of said valve from its seat. Owing to the inclination of the passage 15 and the angular passage or connection between the

space 17 and the valve-chamber it is obvious that the insertion of a wire or other instrument through the bottle-neck with the intention of displacing the valve will be rendered exceedingly difficult.

Owing to the breaking of the head 13 from the body of the closure 11 it will be observed that a comparatively smooth top surface for the closure 11 is provided, thus leaving no projection which may be employed in an attempt to pull the closure from the bottle-neck.

Having now fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a non-refillable bottle, the combination with a bottle and its neck having a connecting-opening 6, said neck having an internal shoulder 3, of a movable valve, means for retaining the latter normally seated over the entrance to the bottle-body, a closure-body contained in the neck of the bottle above the valve having an inclined opening therein, and a readily-breakable head projecting from the upper side of said closure-body.

2. In a non-refillable bottle, the combination with a bottle and its neck having a connecting-opening 6, said neck being provided with an internal shoulder 3 and a recess 2^a, of a movable valve, means for retaining the latter normally seated over the entrance to the bottle-body, a closure-body contained in the neck of the bottle above the valve, said closure-body having an inclined opening therein, a readily-breakable head projecting from the upper side of said closure-body and a spring-catch having its lower portion engaging said closure and its upper portion adapted to spring into engagement with said neck-recess 2^a.

3. In a non-refillable bottle, the combination with a bottle-body and its neck having a connecting-opening 6, said neck having an internal shoulder 3 and oppositely-located recesses 4 formed in the upper portion of said neck, of a valve 7 adapted to normally close the opening between the neck and the bottle, a body 10 depending from said valve within the bottle, a closure 11 adapted to be inserted in the bottle-neck, said closure having oppositely-located lugs 12 and a readily-breakable head projecting from the top of the closure and an inclined passage formed through said closure-body.

WILLIAM F. MERCER.

In presence of—

C. C. SHEPHERD,
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