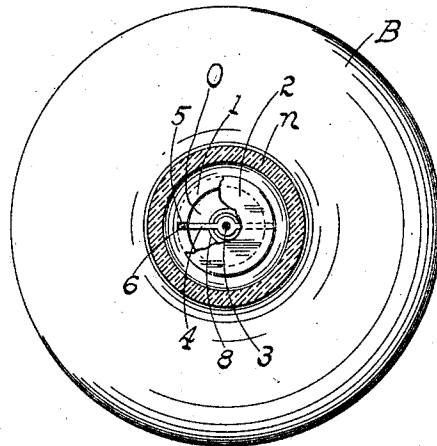
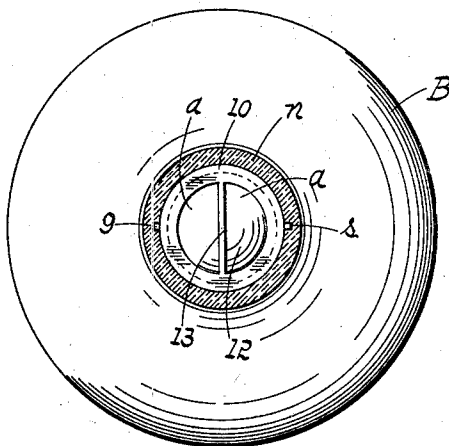
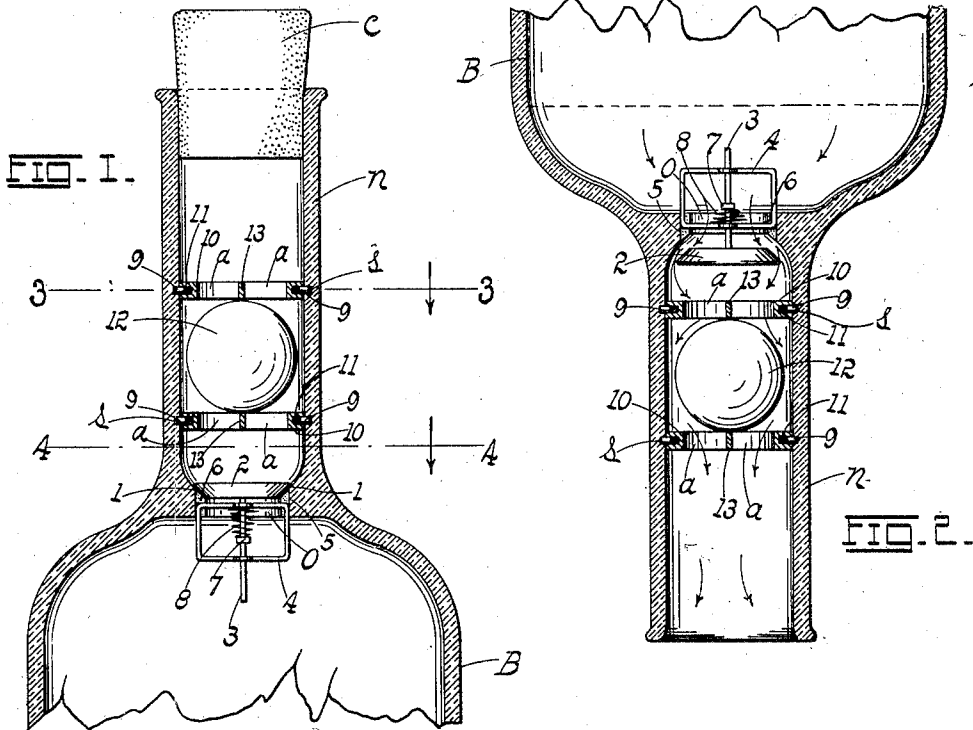


R. W. HAWKINS.
NON-REFILLABLE BOTTLE.
APPLICATION FILED JULY 31, 1911.

1,038,366.

Patented Sept. 10, 1912



WITNESSES: FIG. 3.

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FIG. 4.

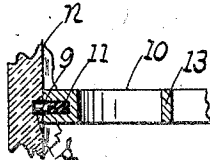


FIG. 5.

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NON-REFILLABLE BOTTLE.

1,038,366.

Specification of Letters Patent.

Patented Sept. 10, 1912.

Application filed July 31, 1911. Serial No. 641,430.

To all whom it may concern:

Be it known that I, RANDOLPH W. HAWKINS, citizen of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in Non-Refillable Bottles, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention has relation to improvements in non-refillable bottles; and it consists in the novel details of construction more fully set forth in the specification and pointed out in the claim.

In the drawings, Figure 1 is a middle longitudinal section taken through the neck of the bottle in an upright position; Fig. 2 is a similar view with bottle inverted; Fig. 3 is a cross-section on the line 3—3 of Fig. 1; Fig. 4 is a cross-section on the line 4—4 of Fig. 1; and Fig. 5 is an enlarged sectional detail of one-half of one of the ball retaining rings.

The object of my invention is to construct a non-refillable bottle which shall be simple, cheap, and requiring a minimum number of parts; one which shall be effective as a non-refiller, and one possessing further and other advantages better apparent from a detailed description of the invention which is as follows:—

Referring to the drawings, B, represents the body portion of a bottle, and *n* the neck thereof, the latter being adapted to be closed by an ordinary cork *c*. Within the bottle and at the base of the neck is formed a valve-seat 1 against which normally rests the head 2 of a piston valve, the stem 3 of the valve reciprocating in a wire frame 4 inserted through the opening O about which the seat 1 is disposed. The walls of the opening O have formed therein grooves or slits 5 through which the sides of the frame 4 are passed, the grooves being subsequently filled with cement 6 which serves to hold the valve-supporting frame against displacement. The valve-stem is provided with a collar 7 between which and the top of the frame 4 is interposed a compression spring 8 coiled about the stem, the spring normally tending to hold the valve to its seat.

Disposed in two distinct planes on the inner surfaces of the neck *n* are sockets *s* which receive locking pins 9 projecting radially from the periphery of suitable rings 10, the pins being inserted into sockets of the rings

at the bottoms of which sockets are placed yielding rubber plugs 11. The plugs being yielding and susceptible to compression allow the pins 9 to be forced into their sockets on the rings as the latter are passed into the neck of the bottle. When the ring comes opposite the neck-sockets *s*, the plugs 11 will force the pins into them, thus locking the ring to the neck and preventing displacement thereof. The rubber plugs thus serve as ejecting devices for the pins. There being two rings, it will of course be necessary to drive the first ring so as not to allow its pins to come opposite the upper row of sockets *s*, otherwise the ring would lock therein and the second ring could not be inserted. In practice therefore, when inserting the first ring the latter is turned slightly so as to keep its pins out of register with the top row of sockets *s*, and when said ring comes opposite the inner row, a slight rotary movement will bring its pins opposite the sockets, and the pins 9 will automatically snap into position. Before passing in the upper ring, a ball 12 is first deposited on the inner ring, the ball being held in place by the ribs 13 formed with, and disposed on the diameters of, the rings as shown. The ribs 13 prevent the ball from closing the openings of the rings, there being sufficient clearance between the ball and the inner wall of the neck *n* to allow for the free flow of the liquid therethrough.

The operation is as follows:—The spring 7 has sufficient tension to hold the valve 2 to its seat for an inverted position of the bottle when empty. If the bottle has liquid in it and is held in an inverted (or partially inverted) position the weight of the liquid on the valve will overcome the tension of the spring, compressing it and forcing the valve to an open position. This allows the liquid to escape (Fig. 2). When the bottle is empty it can not be refilled since the valve 2 remains seated whether the bottle be righted or held up-side down, and the ball 12 acts as an obstruction to the insertion of a wire or equivalent device by which an attempt might be made to reach the valve and dislodge it for purposes of refilling the bottle. Such a wire would have to pass around the ball 12 to reach from the opening *a* of one ring to the corresponding opening *a* of the next ring, and this would be practically impossible on account of the circuitous passage formed around the ball (Fig. 1).

From the foregoing it will be seen that the bottle is practically non-refillable.

Having described my invention, what I claim is:—

- 5 In combination with a bottle having a neck, a valve-seat at the base of the neck, a spring-controlled valve normally seating against the seat, for an upright, or an inverted position of the bottle when empty, a
10 pair of diametrically ribbed rings locked to

the neck and spaced apart, and a ball between the rings, a sufficient clearance being left between the ball and inner wall of the neck to allow for the flow of the liquid.

In testimony whereof I affix my signature, 15
in presence of two witnesses.

RANDOLPH W. HAWKINS.

Witnesses:

EMIL STAREK,
A. W. POWELL.