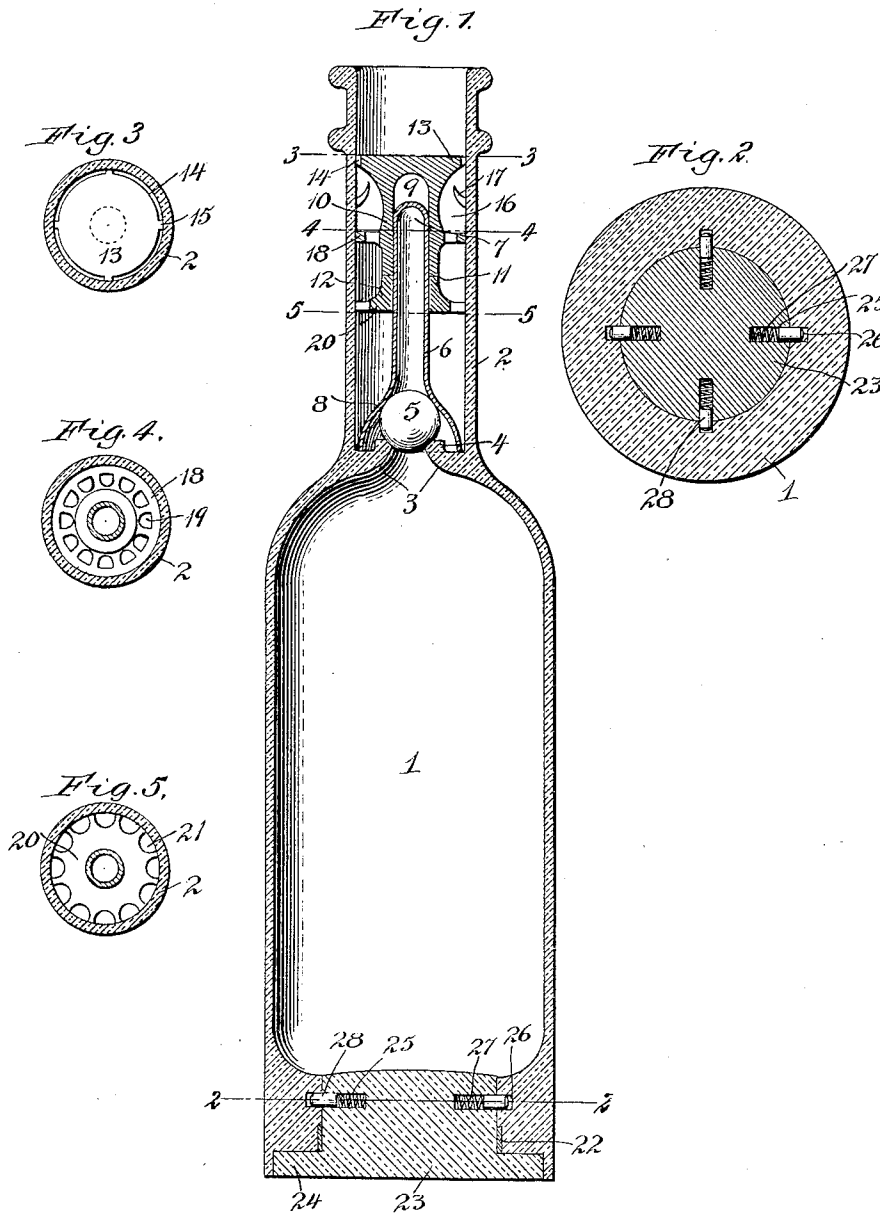


J. C. ROTH & J. F. BERRICK.
 NON-REFILLABLE BOTTLE.
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UNITED STATES PATENT OFFICE.

JOSEPH C. ROTH AND JOHN F. BERRICK, OF BUFFALO, NEW YORK.

NON-REFILLABLE BOTTLE.

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Specification of Letters Patent.

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Application filed June 5, 1912. Serial No. 701,779.

To all whom it may concern:

Be it known that we, JOSEPH C. ROTH and JOHN F. BERRICK, citizens of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented a certain new and useful Improvement in Non-Refillable Bottles, of which the following is a specification.

This invention relates to improvements in non-refillable bottles.

The primary objects of the invention are to provide means whereby the bottle may be filled through an opening in the bottom of the bottle, to secure a positive and automatic gravity actuated sealing mechanism and to locate same in the neck of the bottle to prevent refilling, and to arrange a self locking stopper or closure for the opening in the bottom of the bottle, which when in place cannot be removed without breaking the bottle.

The invention also relates to certain details in the construction thereof which will be hereinafter described and claimed, reference being had to the accompanying drawings in which a preferred embodiment of the improved bottle is shown.

Figure 1, is a central vertical section through a bottle of the improved type. Fig. 2, is a transverse section through the lower portion of the improved bottle on line 2—2 Fig. 1. Fig. 3, is a transverse section through the neck of the improved bottle on line 3—3 Fig. 1. Fig. 4, is a transverse section through the neck of the improved bottle on line 4—4 Fig. 1. Fig. 5, is a transverse section through the neck of the improved bottle on line 5—5 Fig. 1.

In referring to the preferred embodiment of the improved bottle shown in the accompanying drawings in detail, like numerals designate like parts.

The body 1 of the bottle, together with the neck 2 are preferably found in one integral piece of glass or other suitable material. An inwardly extending annular flange 3 which is also preferably formed integral with the body 1 and neck 2 is located at the lower end of the neck at its juncture with the body and practically forms an inwardly extending continuation of the reduced

upper portion of the bottle body as shown in Fig. 1. A raised annular valve seat 4 is formed on the top surface of the inner portion of the flange 3 and constitutes a seat with which a ball valve 5 is adapted to co-act. The ball valve 5 is normally centered and held in position on the seat 4 by a hollow slide bar 6, which has a closed upper end 7 and an enlarged round lower end portion 8 which fits over and incloses the ball 5 when the bottle is in an upright position as shown in Fig. 1. The upper portion of the hollow slide bar 6 is fitted within and arranged to slide in a deep central vertical recess 9, formed in a stationary element rigidly arranged and fastened within an intermediate portion of the neck 2. The stationary element may be constructed in one integral piece of any suitable material or it may be made in sections as desired.

In the adaptation illustrated, the stationary element is constructed in three horizontally divided sections which will be hereinafter respectively designated as the upper section 10, the intermediate section 11 and the lower section 12. The upper section 10 has an enlarged top outwardly flanged portion 13, which is of circular form being slightly smaller in circumference than the interior of the neck 2 to provide curved openings 14 between itself and the neck through which the liquid contained in the bottle can flow, and said flange portion 13 is provided at intervals with short peripheral projections 15 which fit tightly and snugly within the neck of the bottle as shown in Fig. 3, holding the upper section 10 rigidly in place therein. That portion of the upper section below the flange portion 13 is reduced in size to leave a fairly wide annular space 16 between itself and the inner surface of the neck and a series of inwardly extending, upwardly curving projections 17 are arranged at intervals around the interior of the bottle neck which extend within the space 16 and serve to intercept and stop any wires or other implements which may be thrust down through the openings 14 for the purpose of disarranging or breaking the non-refilling mechanism.

The upper portion of the vertical recess 9

is formed in the upper section 10 and is closed at its upper end by the solid wall of the top of said section 10 as shown in Fig. 1.

The intermediate section 11 is provided with an enlarged flanged top portion 18, which fits tightly within the bottle neck and has a series of openings 19 for the passage of liquid as shown in Fig. 4, and the lower section 12 is also provided with an enlarged bottom flange portion 20 which fits tightly within the bottle neck and has a series of vertical peripheral grooves 21 as shown in Fig. 5 which constitute openings for the passage of liquid.

The liquid within the bottle is poured therefrom by turning it sufficiently to allow the hollow slide bar to slide within the recess and the ball valve to move away from its seat. This opens the seal of the non-refilling mechanism and permits the liquid to flow around the ball and enlarged lower end of the slide bar and to pass through the grooves 21, the openings 19 and the openings 14 finally dropping from the top of the neck of the bottle into any desired glass or receptacle.

To facilitate the filling of the bottle, a round opening is formed in the bottom of the body and a stopper is fitted therein as shown in Figs. 1 and 2.

The stopper is made of glass or other suitable material and to form a tight joint a washer 22 of cork or other material is fitted between the annular wall of the opening in the bottom of the bottle and the surrounding edge of the stopper as shown in Fig. 1.

The circular opening in the bottom of the bottle is counter-sunk or enlarged at its lower end and the stopper employed consists of a body portion 23 which fits fairly snugly within the circular opening and an enlarged bottom flange portion 24 which fits in the counter-sunk portion of the opening as shown in Fig. 1.

The stopper is automatically locked in place in the opening by spring pressed pins.

Referring to Figs. 1 and 2, it will be noted that a series of radial, horizontal recesses 25 are formed in the outer surface of the stopper and a like series of radial, horizontal recesses are formed in the inner surface of the annular wall of the circular opening in the bottom of the bottle body. The recesses in the inner surface of the annular wall are indicated by the numeral 26 and register exactly with the recesses 25 when the stopper is properly fitted in the circular opening. A series of springs 27 are arranged within the inner portions of the recesses 25 and press against pins 28 arranged within the outer portions of said recesses 25.

When the stopper is fitted in place in the

circular opening, the springs 27 force the outer portions of the pins 28 into the recesses 26 as shown in Figs. 1 and 2 and thereby automatically and permanently lock the stopper in place in the bottom of the bottle.

This improved bottle may be altered, modified or changed or some parts may be altogether omitted within the scope of the following claims without departing from our invention.

We claim—

1. A non-refillable bottle having a neck and a valve seat at the lower end of said neck, a ball valve co-acting with said valve seat, a hollow slide bar completely inclosed within the bottle neck and having an enlarged lower portion fitting over the ball, and a stationary element rigidly secured within an intermediate portion of the bottle neck and having a central vertical recess closed at the top in which the upper portion of the slide bar fits and is adapted to slide and a series of side openings for the passage of liquid.

2. A non-refillable bottle having a neck and a valve seat at the lower end of said neck, a ball valve co-acting with said valve seat, a hollow slide bar completely inclosed within the bottle neck and having a closed upper end and an enlarged lower portion fitting over the ball and a stationary element rigidly secured within an intermediate portion of the bottle neck and having a central vertical recess in which the slide bar fits and is adapted to slide; said recess being closed at the top and said element being also additionally provided with a series of side openings extending throughout the same for the passage of liquid.

3. A non-refillable bottle having a neck and a valve seat at the lower end of said neck, a ball valve co-acting with said valve seat, a hollow slide bar completely inclosed within the bottle neck and having a closed upper end and an enlarged lower portion fitting over the ball and a stationary element rigidly secured within an intermediate portion of the bottle neck and having a central vertical recess in which the slide bar fits and is adapted to slide; said recess being closed at the top and said element being also additionally provided with a series of side openings extending throughout the same for the passage of liquid and being formed in a plurality of sections.

4. A non-refillable bottle having a neck and a valve seat at the lower end of said neck, a ball valve co-acting with said valve seat, a hollow slide bar completely inclosed within the bottle neck and having a closed upper end and an enlarged lower portion fitting over the ball and a stationary element

rigidly secured within an intermediate portion of the bottle neck and having a central vertical recess in which the slide bar fits and is adapted to slide; said recess being closed
5 at the top and said element being also additionally provided with a series of side openings extending throughout the same for the

passage of liquid and being formed in a plurality of horizontally divided sections.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
