J. H. RICHARD.

NON-REFILLABLE BOTTLE.

APPLICATION FILED JAN. 9, 1908.

903,504. Patented Nov. 10, 1908.

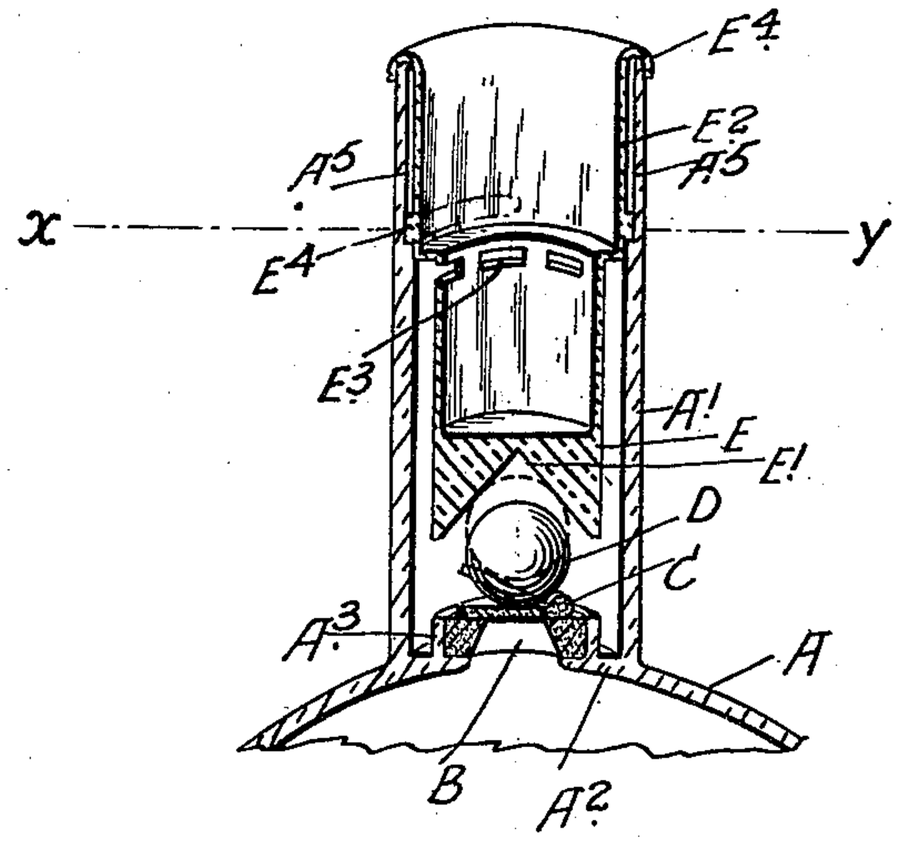
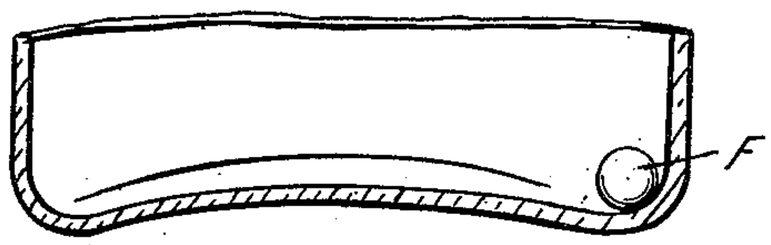


FIG. 1.



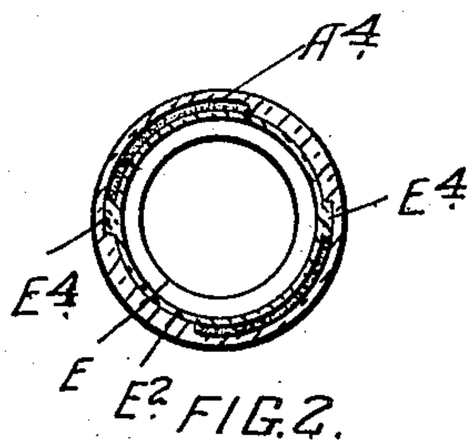


FIG. 2.

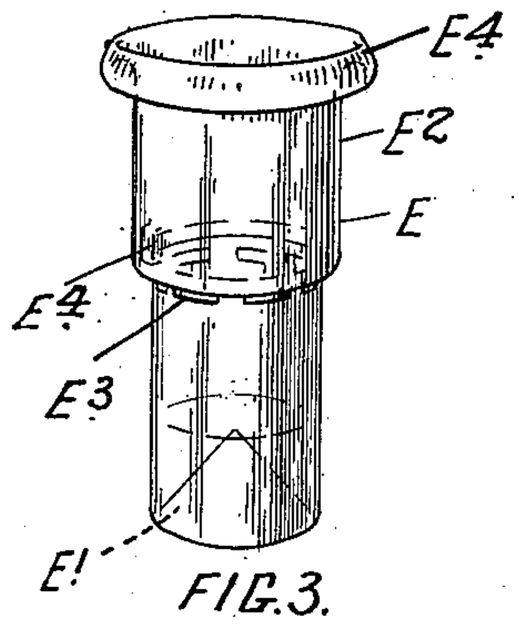


FIG. 3.

WITNESSES.

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UNITED STATES PATENT OFFICE.

JOHN HENRY RICHARD, OF NIAGARA FALLS, ONTARIO, CANADA, ASSIGNOR OF ONE-HALF TO WALTER JAMES CORBY, OF NIAGARA FALLS, CANADA.

NON-REFILLABLE BOTTLE.

No. 903,504. Specification of Letters Patent. Patented Nov. 10, 1908.

Application filed January 9, 1908. Serial No. 409,984.

To all whom it may concern:

Be it known that I, JOHN HENRY RICHARD, of the city of Niagara Falls, in the county of Welland, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Non-Refillable Bottles, of which the following is the specification.

My invention relates to improvements in non-refillable bottles, and the object of the invention is to devise a simple, and cheap device, which may be readily placed in the bottle, so as to prevent it being refilled and it consists essentially of a bottle having the lower portion of the neck provided with an internal annular enlargement, a valve seat and valve located thereon, a ball normally resting on the valve, a cap plug having a conical bottom and circumferential orifice intermediate of its length, the cap plug being formed of glass and provided at the top with a reverse U-shaped rim and teats, which are designed to extend into and be held in circumferential grooves in the neck of the bottle, the parts being arranged and constructed in detail as hereinafter more particularly explained.

Figure 1, is a sectional perspective view of a bottle intermediately broken away. Fig. 2, is a cross section through the line *x—y* Fig. 1. Fig. 3, is a detail of the hollow plug cap.

In the drawings like letters of reference indicate corresponding parts in each figure.

A is the body of the bottle and A′ the neck and A^2 an annular flange provided with an upwardly extending annular rim A^3.

B is the valve seat, which has a cone-frustum shaped orifice and is formed of rubber, cork or other like material not liable to be affected by the liquid contents of the bottle.

C is the valve, which is preferably a flat valve of the usual type and formed of like material to the seat being preferably hinged thereon.

D is a ball, which normally rests on the valve C. E is the hollow cap plug, which is provided at the bottom with a conical recess E′, which is located but slightly above the ball, so as to allow of but a limited movement of the ball. The distance between the lower edge of the hollow cap plug and the rim A^3 is such as will not allow of the ball to pass out laterally beyond the periphery of the cap plug. The cap plug E is enlarged at the top at E^2 and preferably beneath the shoulder formed by the enlargement I provide the orifices E^3, which are designed to allow of the escape of the liquid. I also provide teats E^4 preferably located diametrically opposite each other on the enlargement E^2. The top of the enlargement E^2 is formed with a reverse U-shaped rim E^4. The hollow cap plug is preferably formed of glass and in order to insert the cap plug and hold it in position I provide in the neck of the bottle A′ at the top the vertical grooves A^5 which extend from the top edge of the neck to the bottom circumferential grooves A^4.

The cap plug is first wiped with a suitable cement around the enlargement E^2 and is then inserted, so that the teats E^4 will slide down the vertical grooves A^3 to the circumferential groove A^4 when the cap plug may be turned around, so that the teats pass away from opposite the vertical grooves. The cement placed on the outside of the enlargement E^2 will flow down the same and fill the grooves A^4 on each side of the teats, and thereby when hardened prevent the cap E from being turned and consequently from being withdrawn.

At the bottom of the bottle I preferably provide a supplemental ball F, which is designed, when the bottle is tilted, to empty the contents, to prevent any liability of the valve C from sticking especially in small bottles as the ball F will project itself against the valve on the bottle being tilted.

In utilizing my bottle, of course, when it is tilted in the usual way the ball D will pass from the valve C and the liquid will pass out from the flat valve around the outside of the plug, and then inwardly through the orifices E^3 and out by the mouth of the neck. Immediately the bottle is tilted from the position necessary to pour out the liquid the ball will force the flat valve back on its seat, and thereby prevent any liquid being placed in the bottle.

What I claim as my invention is:

1. In a non-refillable bottle, the combination with the body portion provided with a straight neck having an internal flange at the bottom, a seat located thereon, a valve located on the seat and a ball normally resting on the valve, of a hollow cap plug provided with an upper chamber adapted to receive a stopper and with a conical recess at

the bottom designed to limit the movement of the ball and having orifices formed intermediate of its length for the passage of the liquid therethrough, and means for permanently securing the cap plug in position as specified.

2. In a non-refillable bottle, the combination with the body portion provided with a straight neck having an internal flange at the bottom, a seat located thereon, a valve located on the seat and a ball normally resting on the valve, of a hollow cap plug provided with a conical recess at the bottom designed to limit the movement of the ball, and having orifices formed intermediate of its length for the passage of the liquid therethrough, means for permanently securing the cap plug in position, and a minor ball located within the bottle to the inside of the valve and of a size less than the diameter of the valve seat as and for the purpose specified.

3. In a non-refillable bottle, the combination with the body portion provided with a straight neck having an internal flange at the bottom, a seat located thereon, a valve located on the seat and a ball normally resting on the valve, of a hollow cap plug provided with a conical recess at the bottom designed to limit the movement of the ball and having orifices formed intermediate of its length for the passage of the liquid therethrough, the said cap plug being of less diameter than the internal diameter of the neck of the bottle at the lower portion and of substantially the same diameter at the upper portion and provided with orifices and with an over turned rim and teats, and the neck of the bottle being formed with vertical grooves, and circumferential grooves at the bottom of the same designed to receive the teats aforesaid and a suitable cement filling as and for the purpose specified.

4. In a device of the class described, a hollow cap plug comprising a lower portion of less diameter than the neck and provided with a conical recess at the bottom and orifices extending through the same near the top and an enlarged upper portion provided with an over turned upper rim and diametrically opposite teats designed to fit into retaining grooves in the neck of the bottle as specified.

JOHN HENRY RICHARD.

Witnesses:

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