

A. E. POOLE.
NON-REFILLABLE BOTTLE.
APPLICATION FILED MAY 8, 1912.

1,043,720.

Patented Nov. 5, 1912.

Fig. 1

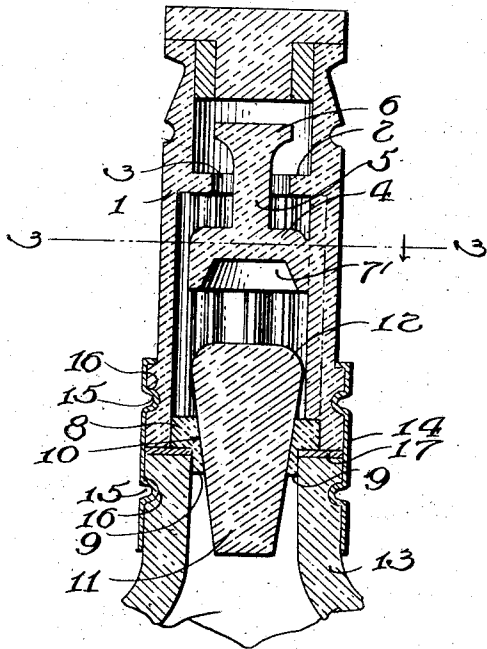


Fig. 2

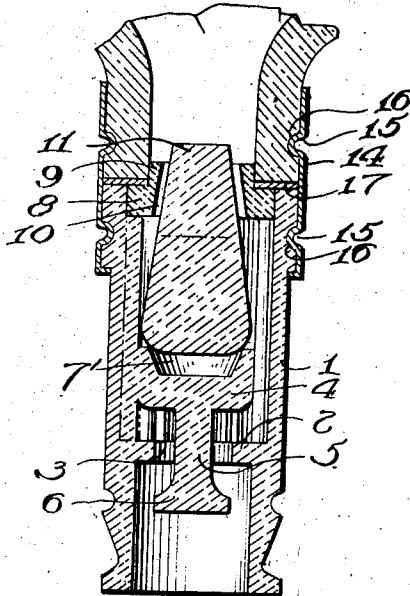


Fig. 3

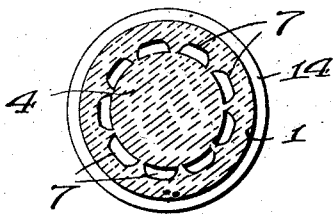
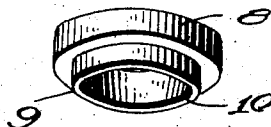


Fig. 4



WITNESSES

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UNITED STATES PATENT OFFICE.

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NON-REFILLABLE BOTTLE.

1,043,720.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ARTHUR E. POOLE, citizen of the United States, residing at Trenton, in the county of Mercer and State of New Jersey, have invented certain new and useful Improvements in Non-Refillable Bottles, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to a non-refillable bottle, and has for its object the production of an efficient means whereby the insertion of any liquid after the valve casing has been placed upon the bottle, is prevented.

Another object of this invention is the production of an efficient valve seat and plunger, whereby the plunger is forced more firmly upon the valve seat in case it is attempted to force any liquid into the bottle.

With these and other objects in view this invention consists in certain novel combinations, constructions, and arrangements of parts as will be hereinafter fully described and claimed.

In the accompanying drawings:—Figure 1 is a vertical section of the device showing the valve in a closed position. Fig. 2 is a vertical section of the device showing the valve in an open position. Fig. 3 is a section taken on the line 3—3 in Fig. 1 looking in the direction of the arrow. Fig. 4 is a perspective view of the improved valve seat.

Referring to the accompanying drawing by numerals, 1 designates a valve casing provided with the circumferential flange 2. This circumferential flange 2 is positioned near the top of the casing and is provided with an aperture 3. A shield 4 is positioned beneath the circumferential flange 2, and is provided with the upwardly extending neck 5. This neck 5 extends through the aperture 3 formed in the flange 2, and is provided with an enlarged head 6, which is substantially of the same size as the aperture 3 formed in the flange 2. It will be seen that by use of this head 6 and the flange 2, that it will be impossible to insert any foreign object to grip the valve for holding the same out of engagement with the valve 6 when it is desired to insert in a liquid. The shield 4 is provided with a plurality of longitudinally extending channels 7, through which the liquid passes when it is desired to empty the bottle. The shield 4 is formed integral with the casing 1, and is provided

upon its lower side with the recess 7'. By use of this recess, it will be seen that the valve is held in such position to allow the liquid to flow freely from the bottle when it is desired to empty the same.

A washer 8 constituting the valve seat and provided with the depending annular rib 9, is positioned on the lower side of the casing. The inner wall 10 of this valve seat 8 is larger at the top than it is at the bottom, and in this manner forms a very efficient seat for the valve. The valve consists of a conical plunger 11 and normally rests upon the wall 10 of the washer or valve seat 8. The upper corners of the plunger 11 are rounded as shown at 12, and in this manner eliminates any sharp corners whereby the plunger may be easily gripped by some tool for lifting the same out of engagement with the valve seat when it is desired to insert some liquid.

The casing 1 is held upon the neck of the bottle 13 by means of the metallic band 14 which is provided with the inwardly extending gripping portions 15 which register with the circumferential grooves 16 formed upon the casing and bottle. Positioned between the casing 1 and the bottle 13, is a washer 17 which forms a tight closure after the two sections have been fastened together by means of the band 14.

When it is desired to empty the bottle, the same is inverted and the plunger 11 leaves its position upon the washer or valve seat 8, and rests upon the recess 7' formed in the shield 4, the liquid passing through the valve seat and longitudinally extending channels, and out through the aperture formed in the circumferential flange 2. But if the bottle were turned in this position and it were attempted to fill the same, the force of the liquid upon the plunger would force it upon the valve seat and the more pressure with which the liquid is inserted, the tighter would be the engagement between the plunger and the valve seat. It will also be seen by use of the shield provided with the neck and enlarged head portion and the circumferential flange, it would be impossible to insert a tool therein, but should a wire or similar substance be inserted through this combination and the longitudinally extending channels, it would be impossible to grip the plunger since the wire would slip off the rounded corners.

Having thus described my invention, what is claimed as new is:—

In a non-refillable bottle of the class described, the combination with a valve casing, a valve seat formed in said valve casing, said valve seat provided with an aperture having elongated inclined side walls, a circumferential rim formed upon the lower edge of said valve seat adapted to fit in the neck of a bottle for holding said valve seat upon the neck of a bottle, a conical plunger positioned within said valve seat, said inclined walls of said valve seat gripping said plunger for a considerable distance when said valve seat is in a closed position, said

conical plunger provided with a gradually rounded upper end for presenting a smooth surface throughout its length, the end of said plunger always extending through the aperture formed in said valve seat for constituting a centering means for guiding said plunger upon said valve seat, and a shield positioned above said valve.

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

ARTHUR E. POOLE.

Witnesses:

CHAS. MACOVEN,
EDWARD E. REED.

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