

J. S. HARDCASTLE.  
NON-REFILLABLE BOTTLE.  
APPLICATION FILED MAY 6, 1912.

1,050,018.

Patented Jan. 7, 1913.

Fig. 1

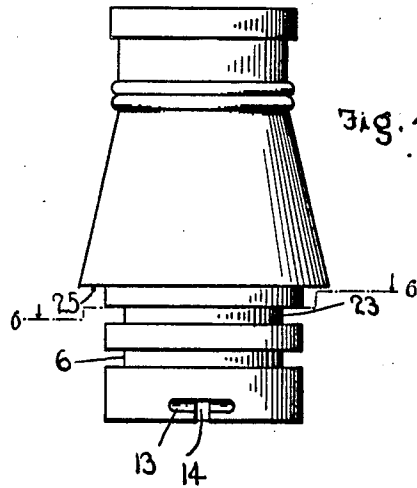
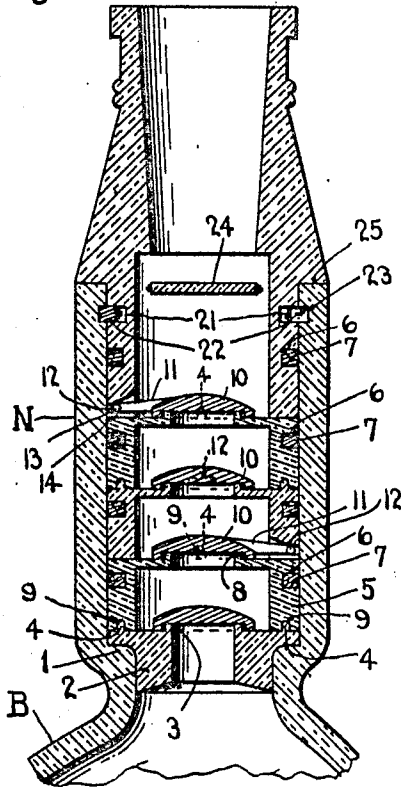


Fig. 4

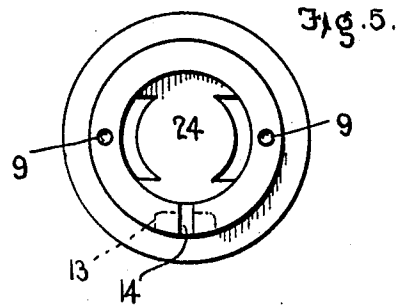


Fig. 5.

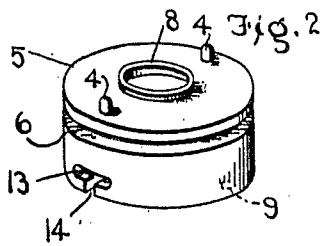


Fig. 2

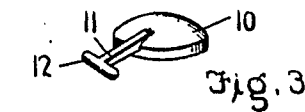


Fig. 3

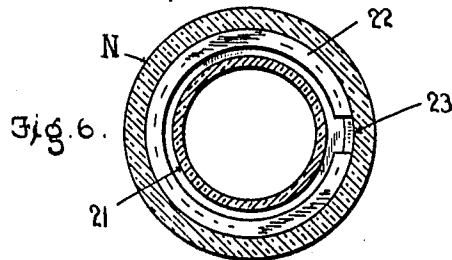


Fig. 6.

Witnesses

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# UNITED STATES PATENT OFFICE.

JOSEPH S. HARDCASTLE, OF HALEDON, NEW JERSEY.

## NON-REFILLABLE BOTTLE.

1,050,018.

Specification of Letters Patent.

Patented Jan. 7, 1913.

Application filed May 6, 1912. Serial No. 695,548.

*To all whom it may concern:*

Be it known that I, JOSEPH S. HARDCASTLE, a citizen of the United States, residing at Haledon, in the county of Passaic and State of New Jersey, have invented certain new and useful Improvements in Non-Refillable Bottles; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to bottles and jars, and more especially to the stoppers thereof; and the object of the same is to produce an improved stopper which will prevent the bottle from being refilled whether it is inverted or laid upon its side at any angle. This and other objects are accomplished by the construction hereinafter more fully described and claimed, and as shown in the drawings wherein—

Figure 1 is a central vertical section through a bottle neck provided with this invention; Fig. 2 is a perspective detail of one of the bushings with the valve omitted, and Fig. 3 is a perspective detail of the valve; Fig. 4 is a side elevation of the uppermost bushing which differs slightly from the other as explained herein, Fig. 5 is a bottom plan view thereof, and Fig. 6 is a cross section on the line 6—6 of Fig. 4.

The body B and neck N of this bottle may be formed as usual, excepting that where they merge they are provided with an internal upwardly facing shoulder 1, and upon this shoulder rests a reducer 2 carrying an upwardly facing valve seat 3 around its bore and provided in its upper face with two pins 4. Next above the reducer is a bushing comprising an annular body 5, preferably having an external surrounding groove 6 for packing as shown at 7, having an internal flange 8 carrying a valve seat around the opening therein; and the upper end of the body carries two pins 4 opposite each other like those on the reducer, while in its lower end are formed two sockets 9 also opposite each other but at right angles to the pins 4. It follows that when the sockets 9 are engaged with the pins 4 of the reducer 2, the pins in this bushing will stand at right angles to the pins in the lower member or reducer 2.

The valve comprises a disk-shaped body 10 which may be convex on its upper face and concave on its lower face, and a T-shaped shank whose stem 11 projects radially from said body and whose head 12 extends rigidly across the outer end of the stem. In the wall of the bushing at right angles to its sockets 9 is formed a recess 13 cut laterally into the outer face of the bushing and of a proper size to receive the head 12 of said shank, and cut vertically upward and entirely through said wall from its lower edge to the top of said recess is a notch 14 of a width to receive the stem 11 of said shank. The valve is by preference of aluminum, the bushing and reducer of glass, and a rubber gasket surrounds the groove 6 and fits closely within the bottle neck N.

As best seen in Fig. 1, there are three identical bushings and a reducer, and therefore there are four valve seats and four valves and the latter are set quartering to each other so that the bottle may be laid on its side or rolled or turned to any position and cannot be filled while it is horizontal because at least one of the valves will close against its seat. Obviously it cannot be filled while it is vertical either in an upright position or inverted, because one or more and perhaps all of the valves will obstruct the passage through the neck. The uppermost bushing has the same body, sockets 9 in its lower edge for the pins of the bushing below, and surrounding groove 6 for the rubber gasket 7; but above this groove it is elongated, preferably provided with another groove 21 for a split ring 22 which will expand into an internal groove 23 within the bottle neck and hold the set of bushings in place; and at this point the uppermost bushing by preference carries a transverse baffle 24 (preferably molded across it if the same be of glass) so as to prevent the insertion of an instrument which would hold any of the valves open; and above the baffle this bushing has a flange 25 fitting over the upper end of the bottle neck, above which the bushing may rise for some considerable distance so as to contain a cork if found desirable although not necessary to illustrate.

The parts of this improved device are

assembled by first putting in the reducer 2 which comes to rest upon the shoulder 1; then passing the stem 11 of one of the valves upward through the notch 14 and drawing it into the recess 13 of a bushing, and dropping the latter in place so that its sockets 9 will fit over the pins 4 in the reducer 2; then applying the next two valves and bushings in the same manner, taking care that the pivots of the four valves stand quartering to each other; and finally putting a split ring 22 into the groove 21 in the upper member or mouth piece, and pressing the same into position until the ring snaps outward into the groove 23 in the bottle neck to hold this member in place, and by it in turn hold all others in place. A cork may then be inserted in the mouth piece to prevent the entrance of dust, and the bottle is ready for commercial use. To pour out the contents, the cork is removed and the bottle tipped to one side, when the contents will flow through the neck and pass out the mouth piece as usual. If now it be attempted to fill the bottle after the same has been more or less emptied, it will be found that in whatever position the bottle is placed at least one of the valves will be closed against its seat by gravity, and even if the bottle is entirely inverted and its neck immersed in liquid the upward flow of the liquid will close one or more of the valves and prevent the liquid from gaining access to the body B. It is quite possible that the various members could be made of other materials than glass, and in that case the external grooves and surrounding gaskets might be omitted; but I reserve the right to make

such changes in details as come within the spirit of the invention.

What is claimed as new is:

In a closure of the class described, the combination with the bottle neck having an internal groove near its upper end; of a reducer having a valve seat around its bore, diametrically opposite pins rising from its upper end, three bushings disposed within the neck with the lowermost on said reducer and the others resting on each other, each having a cylindrical body with an external groove for a packing ring and oppositely disposed sockets in its lower end adapted to engage the pins of the member below, oppositely disposed pins rising from its upper end at right angles to said sockets and adapted to engage the sockets in the member above, its wall between the sockets being provided with a notch opening from its lower edge upward and with a transverse recess intersecting the upper end of the notch and in the outer face of the bushing, a valve having a disk-shaped body and a T-shaped shank whose stem fits loosely in said notch and whose head fits loosely in said recess; and an upper bushing of like construction and whose body is extended upward and shouldered on its outer side to fit over the mouth of the bottle, and its bore carries a transverse baffle.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOSEPH S. HARDCASTLE.

Witnesses:

WILLIAM H. YOUNG,  
MARY MCGARRY.