

J. G. SMITH.
NON-REFILLABLE BOTTLE.
APPLICATION FILED MAR. 2, 1911.

1,037,069.

Patented Aug. 27, 1912.

Fig. 1.

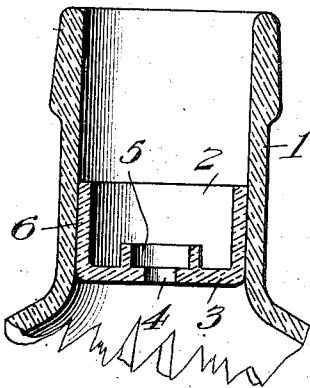


Fig. 2.

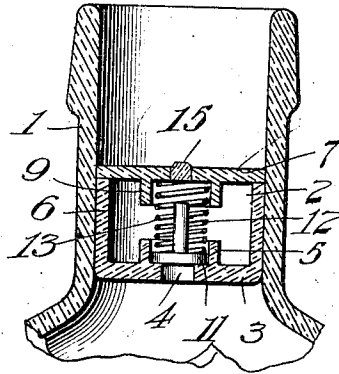


Fig. 3.

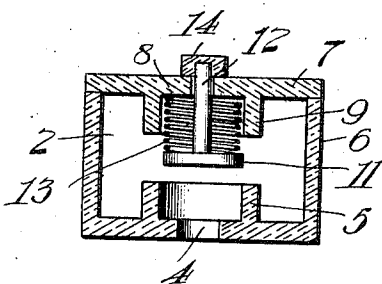


Fig. 4.

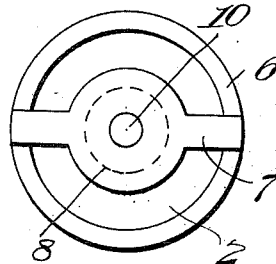


Fig. 5.

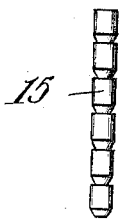
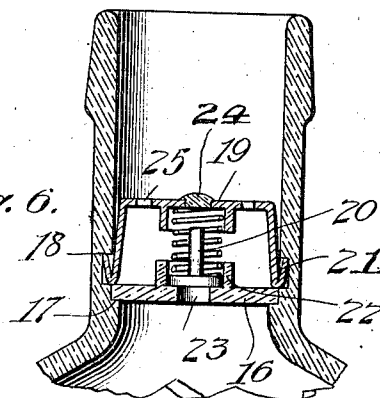


Fig. 6.



WITNESSES

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NON-REFILLABLE BOTTLE.

1,037,069.

Specification of Letters Patent.

Patented Aug. 27, 1912.

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To all whom it may concern:

Be it known that I, JOHN G. SMITH, a citizen of the United States, residing at Duluth, State of Minnesota, have invented certain new and useful Improvements in Non-Refillable Bottles, of which the following is a specification.

The object of this invention is to provide means whereby after a bottle has been filled, its contents may be withdrawn for use, but the refilling of the bottle with other liquids in order to impose upon a customer goods of inferior quality will be prevented.

With this object in view, the invention consists in a certain novel construction and arrangement of parts by which the outward flow of liquid from the bottle will be permitted, but the flowing of other liquids into the bottle will be automatically prevented.

A mechanism embodying my invention is illustrated in the accompanying drawings and the invention consists in certain novel features which will be hereinafter first fully described and then more particularly pointed out in the claims.

In the annexed drawings, Figure 1 is a vertical section of the neck of a bottle with the lower member of my device in position therein. Fig. 2 is a similar view showing the complete device in position in the bottle neck and showing the parts arranged to prevent the filling of the bottle. Fig. 3 is a sectional view of the valve and the valve casing showing the valve in its open position before it has been permitted to seat itself. Fig. 4 is a detail plan view of the upper member of the valve casing. Fig. 5 is a detail view of a series of plugs which are employed in the practical embodiment of the invention. Fig. 6 is a sectional view of a bottle neck showing a modified form of the device in position therein.

In carrying out my invention, I may employ a bottle having a neck 1 of any desired diameter. Within the bottle neck I secure, by cementing or otherwise, a ring or thimble 2 constituting the lower member of a valve casing and provided with a base or diaphragm 3 extending across the neck of the bottle and having a central port 4 as clearly shown. On the upper side of this base or diaphragm and arranged around and concentric with the said port 4 is a flange or circular rib 5, the purpose of which will

presently appear. In filling the bottle, the device is arranged as shown in Fig. 1, in which the lower member or ring 2 of the valve casing is secured in place and the liquid may be poured into the bottle through the neck of the same and the port 4 in the base of the valve casing. After the bottle has been filled, the upper member of the valve casing is placed in position, said member consisting of a ring 6 having a diametrical cross-bar 7 at the center of which is an annular enlargement or disk 8, as shown. Depending from the annular enlargement or disk 8 is a ring, flange or circular rib 9, and at the center of said enlargement is an opening 10. The valve consists of a disk 11 having a central stem 12 rising therefrom, and around the said stem, between the enlargement 8 and the disk 11 and held against lateral movement by the rib or flange 9, is a spring 13 which tends to hold the valve disk 11 projected against the base 3 of the lower member 2 of the valve casing, so that the disk will seat within the rib 5 and cover the port 4. In inserting the upper member of the valve casing in the bottle neck, the valve is equipped with a cap or stop 14 on the upper end of its stem, which by bearing against the upper side of the enlargement 8 will hold the valve to the cross bar 7 against the tension of the spring 13. After the two members of the valve casing are properly seated in the bottle neck, the cap 14 is removed and the spring 13 will then be free to project the valve against its seat so as to prevent the flow of the liquid through the port 4. The opening 10 is then closed by a plug 15 which is coated with cement and inserted in the said opening, as will be readily understood, and as shown in Fig. 2. For convenience, I prefer to make the plugs 15 in a connected series, forming a rod, as shown in Fig. 5, which will be notched at regular intervals, so that after one plug has been inserted in the opening 10, the rod may be fractured across the plane of one of the notches, and the plug thus left in the opening where it will be held by the cement applied before the insertion of the plug.

The spring 13 will have just sufficient tension to hold the valve normally against its seat, but will be unequal to resisting the weight of the liquid against the valve when the bottle is inverted to pour its contents.

It will therefore be seen that although the bottle may readily be filled before the valve is seated, the inflow of liquid subsequent to the seating of the valve will be presented, as the valve will not rise from its seat. The insertion of wire hooks or other instruments to engage the valve stem, will be prevented, as the enlargement 8 will cover the valve and protect the same from such tampering. The opening 10 will be effectually closed by the plug inserted therein, and consequently access to the valve stem through that source cannot be effected.

While I have described the valve as being placed in position after the bottle is filled, it will be readily understood that the two parts of the valve casing may be cemented together, and placed in the bottle either before or after the bottle is filled, provided the valve is held away from its seat until after the filling has been completed: The cap 14 may be secured to the valve stem in any manner which will permit its ready removal, and it may be constructed of glass or other easily broken material, so that it may be readily destroyed and thus release the valve.

In Fig. 6 I have shown a modification of the invention in which the lower member of the valve casing consists of a plate 16 extending diametrically across the neck of the bottle and supported by internal shoulders or projections 17 on the bottle neck. Recesses 18 are formed in the bottle neck above the said plate 16 and a cage 19, carrying the valve 20 exactly as the cross bar 7 carries the valve 11, is inserted into the bottle neck, and has its lower edge turned upwardly so as to form spring fingers 21 adapted to engage the recesses 18 and thereby secure the cage in position. The valve is released, so as to seat upon the plate 16 within a rib 22 thereon, and covers a port 23 therein in the same manner as previously described for seating the valve 11. A plug 24 is secured in the center of the top of the cage to close the opening in which the valve stem had been initially supported and parts 25 are provided in the cage to permit the discharge of the liquid from the bottle.

My device is extremely simple in its construction and may be applied to any bottle at a slight cost. Being composed of few parts, it is not apt to get out of order, and will be found highly efficient for the purposes for which it is designed.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A closure for bottles consisting of a valve casing having a central port in its base and having its top constructed to permit the flow of liquid therethrough and provided with a central opening, a valve having its stem initially projecting through said central opening and equipped with a removable support adapted to bear upon the upper side of the casing, and a plug adapted to be secured in said opening after said support has been removed from the valve stem and the valve has been seated to prevent access to the valve.

2. A closure for bottles comprising a base adapted to form a diametrical partition across the bottle neck and provided with a single central port and an upstanding circular rib close to said port, a ported top coextensive in area with the base and having a central depending rib alining with the rib on the base, the top being further provided with a small central opening encircled by said rib, a valve comprising a disk adapted to seat over the port in the base within the rib thereon, and a stem rising from said disk and adapted to initially project through the opening in the top, a removable support on the upper end of the stem adapted to bear on the upper side of the top to hold the valve initially unseated, a spring housed within the aligned ribs and bearing upon the disk to seat the same and draw the stem entirely through the opening when its support is removed, and means for sealing said opening when the valve is seated.

3. A closure for bottles comprising a valve casing adapted to form a diametrical partition across the bottle neck, said casing having a base, provided with a central port and a circular rib on its upper side adjacent and concentric with said central port, and the casing having a ported top provided on its under side with a depending annular rib alining with the rib on the base but terminating short thereof whereby a passage for the flow of liquid is provided, a valve disk housed within the rib on the base and adapted to seat upon the base to cover the central port therein, and a spring housed within the rib on the top of the casing and bearing on the valve.

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

JOHN G. SMITH.

Witnesses:

JAMES L. JOHNSON,
HENRY HANSON.