

W. CHRISTOPHER.
NON-REFILLABLE BOTTLE.
APPLICATION FILED FEB. 20, 1912.

1,047,748.

Patented Dec. 17, 1912.

Fig. 1.

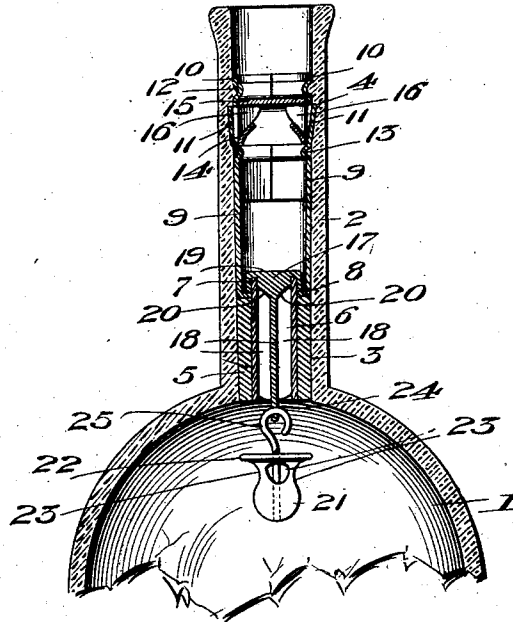


Fig. 5.

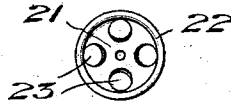


Fig. 2.

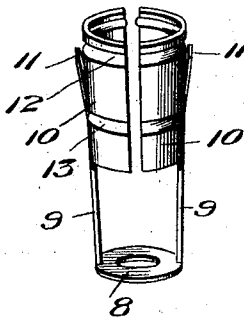


Fig. 3.

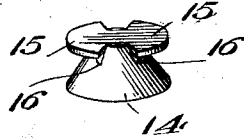
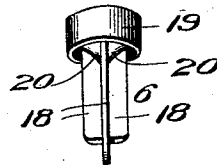


Fig. 4.



WITNESSES

W. L. Newcomb
W. L. Newcomb

INVENTOR

William Christopher
By Geo. N. Hamlin
Attorney

UNITED STATES PATENT OFFICE.

WILLIAM CHRISTOPHER, OF TONAWANDA, NEW YORK.

NON-REFILLABLE BOTTLE.

1,047,748.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM CHRISTOPHER, a citizen of the United States, residing at Tonawanda, county of Erie, and State of New York, have invented certain new and useful Improvements in Non-Refillable Bottles, of which the following is a specification.

This invention relates to non-refillable bottles.

My object is to provide, in a non-refillable bottle, first, a valve of novel construction and also combined with its seat in a new manner, whereby it will be impossible to force or introduce liquid past the valve, regardless of the means employed to accomplish such refilling.

To that end, the invention embodies, first, a valve having wings and a cap arranged to cooperate with the valve-seat in a new manner and, further, in the provision of a valve as aforesaid, which has inserts of new form between the wings, whereby any fluid which may be forced into the bottle neck will effectually seal the valve and, further, the inserts will throw the fluid aside and resist its tendency to enter the valve and seat.

Another object of the invention is the provision of a novel operating device for the valve of a non-refillable bottle, whereby the fluid may be readily poured from the bottle, but upon the first movement of the bottle toward an upright position, the valve will be instantly closed. This object is carried out by the provision, in connection with the valve, of a pendant having a free or loose connection with the valve and provided with a circular base adapted to cooperate with the bottle and exert a leverage on the valve to close it immediately the bottle neck is raised toward an upright position, the circular base being provided with openings.

A still further object is the provision of a novel frame adapted to automatically lock when pushed into the bottle neck and having new means for holding a valve guard or baffle, as also a baffle of novel construction; these objects being accomplished by the provision of a sheet metal stamping adapted to be combined with a cork or stopper having a seat for the valve and provided with struck-up spring arms or catches adapted to engage devices inside the bottle neck to lock the frame and stopper in position and, further, internal beads for confining against

their upward or downward motion the baffle plate or bottle guard.

In the accompanying drawings:—Figure 1 is a vertical section showing the complete invention, the valve being closed; Fig. 2, a detail perspective of the frame with the split parts separated to indicate the resiliency of the arms; Fig. 3, a detail perspective of the valve guard; Fig. 4, a detail perspective of the valve; and Fig. 5, a view looking toward the base of the pendant.

The bottle or receptacle 1 and neck 2 will, preferably be blown from glass, as usual with bottles, and provided with a somewhat tapered stopper seat 3 where the neck joins the body, while in the upper part of the neck there will be blown an internal annular groove 4. The seat 3 is designed to receive a cork or other suitable stopper 5, through which passes a tube 6 which projects somewhat above the stopper as at 7 to constitute a seat for the cap of the valve. Suitably secured to the stopper and surmounting it is a frame which is preferably stamped from sheet metal, such as steel, and has a ring 8 which surrounds the tube 6, arms 9 rising therefrom and substantially semi-circular shell portions 10 which are provided with struck-up springy fingers 11 adapted to snap into the groove 4 when the device is inserted in the bottle neck. The shell portions are provided with internal upper and lower beads 12 and 13.

Located between and held by the beads 12 and 13 against either upward or downward movement is the baffle or valve guard which may be formed of metal, porcelain, glass or any other suitable material, having a circular base 14, baffles 15 and openings 16 under the baffles. The baffles are of sector shape and their edges conform to the inner surfaces of the shell members. The base of the baffle bears against the lower bead 13 and the baffles themselves against the upper bead 12, whereby the baffle is prevented from having either upward or downward movement.

The valve 17 has a stem composed of wings 18 which are adapted to easily fit and slide in the tube 6. At the upper end of the valve is a cap 19 of inverted cup-shape. The depending flange of the cap is separated from the outer edges of the wings of the valve a little greater distance than the thickness of the wall of the tube 6, and in conse-

quence, the cap is adapted to telescope down over the projecting upper end 7 of the tube and to rest upon the stopper. In the spaces between the wings of the valve there are
 5 provided inclined shoulders 20, and the valve is preferably made completely solid and circular where it lies within the cap. This form of valve possesses very great advantages over any valve heretofore used in
 10 a non-refillable bottle, so far as I am aware, for it absolutely prevents any such manipulation as will permit fluid to be introduced past the valve into the bottle. The telescoping of the cap over the upper end 7
 15 of the tube causes a fluid seal to be formed between the cap and the tube if it is attempted to introduce fluid into the bottle and the very act of such introduction efficiently seals the valve. Furthermore, the
 20 inclined shoulders 20 throw the liquid out beyond the tube end 7 and prevent it from entering the tube, and thus perfect the fluid seal when fluid is attempted to be forced into the bottle. If liquid is poured into the neck
 25 of the bottle, it at once settles around the cap of the valve and makes an airtight joint. It will be seen that the air in the bottle will not permit any liquid to enter, until some of the confined air is allowed to escape and
 30 such escape of the confined air is efficiently prevented by the liquid around the cap. The baffle prevents the insertion of any instrument for the purpose of raising the valve and holding it off its seat.
 35 To automatically seat the valve when the bottle is in upright position and to permit the valve to open for purposes of pouring the liquid from the bottle, I provide a pendant valve-closing weight 21 which limits the
 40 opening of the valve and also pulls the valve closed. This pendant is preferably of the novel construction shown, being provided with a circular base 22 having openings 23
 45 for the free passage of the fluid from the bottle. The lower end of the valve is provided with an eye 24 which receives a hook 25 connected to the center of the base 22 of the weight. Regardless of the position of

the bottle, a portion of the base will rest against the bottle so that upon the slightest
 50 upward movement of the neck toward vertical position, the leverage exerted by the weight will cause an instantaneous closing of the valve and as the valve is free to turn on its longitudinal axis in the tube 6, the
 55 immediate opening of the valve when the bottle is tilted and its instantaneous closing when raised, is insured.

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

1. In a non-refillable bottle, the combination with a tubular valve-seat, of a valve having a tubular inverted cap adapted to telescope over said valve seat, and a stem provided
 65 with wings which slide in the valve-seat, and with sloping or inclined parts on its stem adjacent the said cap and between the wings aforesaid, said parts being adapted to divert the liquid, and a pendant for said
 70 valve adapted to normally keep it telescoped over its seat.

2. In a non-refillable bottle, a valve guard holding frame of springy sheet metal having a lower ring fitting the bottle neck, and upwardly extending arms provided with substantially semicircular parts fitting the bottle neck and having struck-up fingers adapted to engage the bottle neck.

3. In a non-refillable bottle, a valve guard
 80 holding frame of springy sheet metal having a lower ring, upwardly extending arms provided with substantially semicircular parts having struck-up fingers adapted to engage the bottle neck, said frame having upper and
 85 lower internal beads, a valve guard held between and by both of said beads, a valve controlling the opening in the ring of the arm, and a pendant for said valve.

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

WILLIAM CHRISTOPHER.

Witnesses:

ALBERT W. SOUTHALL,
 ELIAS ROOT.