No. 817,700. PATENTED APR. 10, 1906.

A. FERARO.

NON-REFILLABLE BOTTLE.

APPLICATION FILED SEPT. 21, 1905.

Fig. 1.

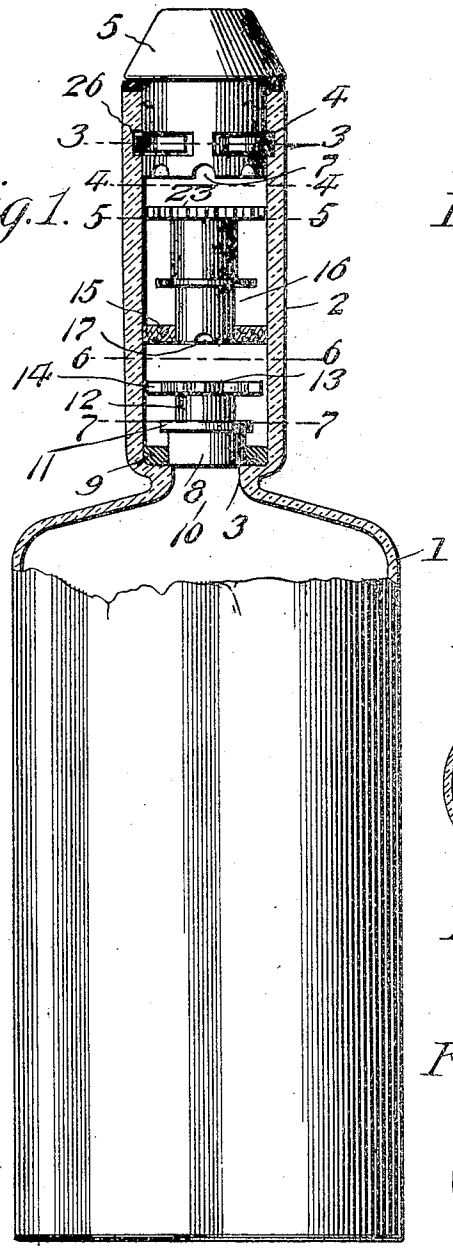


Fig. 2.

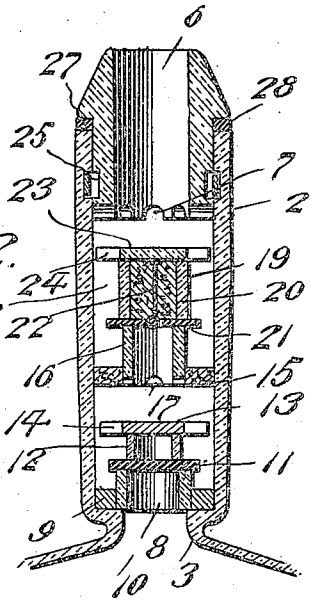


Fig. 3.

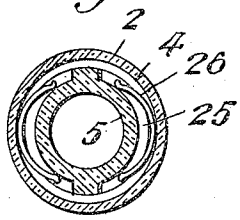


Fig. 4.

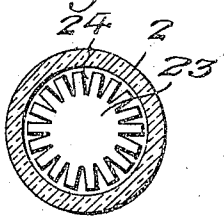


Fig. 5.

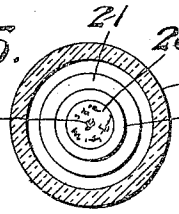


Fig. 6.

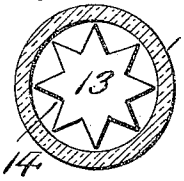
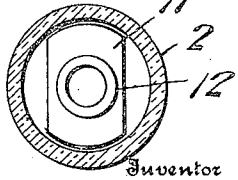


Fig. 7.



Witnesses

Geo. Ackmann Jr.

F. J. Elmore

Inventor

Angelo Feraro,

By Victor J. Evans.

Attorney

UNITED STATES PATENT OFFICE.

ANGELO FERARO, OF BROOKLYN, NEW YORK.

NON-REFILLABLE BOTTLE.

No. 817,700. Specification of Letters Patent. Patented April 10, 1906.

Application filed September 21, 1905. Serial No. 279,447.

To all whom it may concern:

Be it known that I, ANGELO FERARO, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Non-Refillable Bottles, of which the following is a specification.

This invention relates to non-refillable bottles, and has for its objects to produce a simple efficient device of this character in which the parts of the valve mechanism and guard may be inexpensively installed in the neck of the bottle, one whereby refilling of the bottle is obviated, thus preventing the fraudulent substitution of an inferior grade of goods for that originally contained in the bottle, and one whereby the introduction of a wire or other instrument for tampering with the valve is precluded.

With these and other objects in view the invention comprises the novel features of construction and combination of parts more fully hereinafter described.

In the accompanying drawings, Figure 1 is a side elevation, partly in section, of a bottle equipped with a valve mechanism embodying the invention. Fig. 2 is a longitudinal section centrally through the neck of the bottle and the contained mechanism. Fig. 3 is a cross-section taken on the line 3 3 of Fig. 1. Figs. 4, 5, 6, and 7 are detail sections taken on the correspondingly-numbered lines of Fig. 1.

Referring to the drawings, 1 designates a bottle or vessel having a neck 2, provided at its lower end with a bearing-shoulder 3 and at a point adjacent its upper end with an inner marginal groove or recess 4, said neck being provided with an upper section 5, having a stopper-receiving opening 6 and provided at its lower end with radial grooves or channels 7 for a purpose which will hereinafter appear.

Fixed in the lower end of the neck 2 at its point of juncture with the bottle is a tubular member or section 8, composed of glass and secured in a cork piece 9, in turn seated on and cemented or otherwise secured to the bearing-shoulder 3, there being arranged to seat upon the upper end of the section 8, which communicates with the discharge-opening 10, leading from the bottom, a valve member or disk 11, preferably composed of rubber, while loosely arranged in the neck and to seat on the valve 11 is a tubular member or weight 12, composed of glass and adapted for normally holding the valve upon its seat and in turn adapted to receive upon its upper end a loosely-arranged and independently-movable valve member 13, composed of cork or other suitable buoyant material, and preferably of star shape to present marginal recesses 14, constituting discharge-passages. It is to be noted in this connection that the parts 11, 12, and 13, which conjointly compose the valve, are separately and independently movable within the neck for a purpose which will be hereinafter explained.

Fixed in the neck 2 at a point above and suitably remote from the valve is a cork bearing-piece 15, in which is secured the lower end of a tubular member or section 16, composed of glass and provided at its lower end with radial grooves 17, forming channels, while loosely seated upon the upper end of the section 16 is a second or auxiliary valve 18, comprising a tubular glass portion or section 19, containing a cork filling 20 and a rubber portion or disk 21, secured to the lower end of section 19 by means of a silk or other thread 22, suitably threaded through the cork filling 20 and knotted at the upper end of the latter, whereby the disk 21 forms a permanent bearing-face for the valve 18 to seat liquid-tight upon the upper end of the section 16.

Arranged above the auxiliary valve 18 is a shield 23, composed, preferably, of glass and in the form of a disk having marginal notches or serrations 24, constituting passages for the liquid in its escape from the bottle, it being noted in this connection that the shield 23 is loosely disposed in the neck and movable independently of the valve 18.

Formed in the upper section 5 of the neck are peripheral grooves or seats 25, designed to register with the groove 4 and adapted to receive locking members 26, preferably in the form of substantially semi-elliptical springs, which in practice project at their centers beyond the grooves 25 into the groove 4 for locking engagement with the shoulders formed of the latter, there being formed upon the section 5 at a point adjacent its upper end a marginal projecting portion or flange 27, between which and the upper end of the neck there is arranged a rubber packing-gasket 28, forming a liquid-tight joint between the section 5 and neck 2.

In practice after the bottle 1 has been filled the valves and shield are introduced in the above-described order into the neck, after which section 5 is seated in the upper end of

the latter for securing said parts in place, it being understood that after the said section has been properly arranged the spring members 26 extend into the groove 4 for automatically locking the section 5 in place, thus preventing future removal of the section and also of the mechanism disposed therebeneath. The parts having been thus arranged, the liquid will when the bottle is canted flow freely outward through the sections 8 and 16, it being understood, of course, that the valve 11 and valve 18 are moved from their normally seated positions on said sections to permit passage of the liquid. As soon, however, as the bottle is turned to its normal position the valves become properly reseated on the sections 8 and 16, while the shield 23 seats upon the upper end of valve 18 and prevents the introduction of a wire or other instrument for tampering with the valve.

It is to be particularly noted that if an attempt be made to fill the bottle while in an inverted position the cork piece 13 will, as soon as liquid enters the neck of the bottle, be moved on the surface of the liquid into engagement with the member 12, which in turn will act on the rubber-valve piece 11 for forcing the same into firm contact with the outer end of the tubular section 8, thus effectually closing the bottle, while, on the other hand, the valve 18 serves to prevent the introduction of liquid to the bottle when the latter is in normal position. It may also be noted in this connection that when the rubber valve 11 is, under the action of the parts 12 and 13, moved into contact with the end of section 8 it is caused through suction to adhere tightly to the end of the section for closing the same, whereby its displacement by shaking the bottle is obviated. In pouring the liquor should the shield 23 move to a position against the inner end of the neck-section 5 the liquid may pass freely through the openings 24 and channels 7, as will be readily understood.

From the foregoing it is apparent that I produce a simple and inexpensive device admirably adapted for the attainment of the ends in view, it being understood that minor changes in the details herein set forth may be resorted to without departing from the spirit of the invention.

Having thus fully described my invention, what I claim as new is—

1. In a device of the class described, a bottle having a neck provided with a valve-seat, a valve designed to rest upon the seat and comprising a pair of disks and an interposed weight, and a shield arranged above the valve.

2. In a device of the class described, a bottle having a neck provided with a valve-seat, a valve designed to rest upon the seat and comprising a pair of disks and an interposed weight, one of said disks being composed of buoyant material, and a shield arranged above the valve.

3. In a device of the class described, a bottle having a neck provided with a valve-seat, a valve designed to rest upon the seat and comprising a pair of disks and an interposed tubular weight, and a shield arranged above the valve.

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

ANGELO FERARO.

Witnesses:
JOHN L. FLETCHER,
JOHN F. BYRNE.