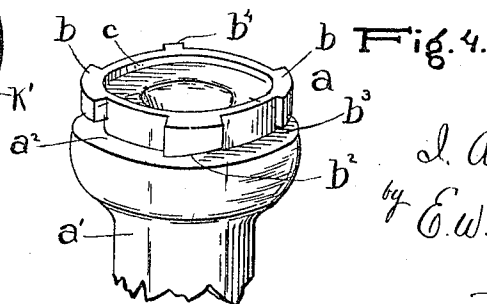
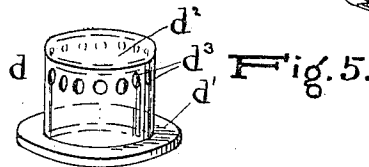
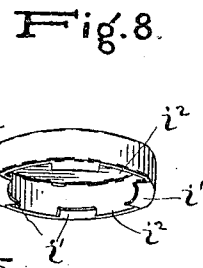
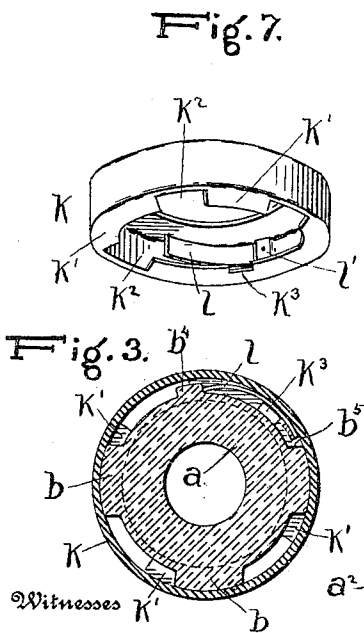
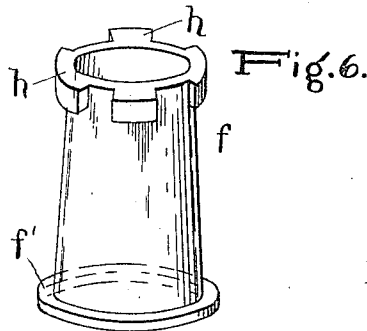
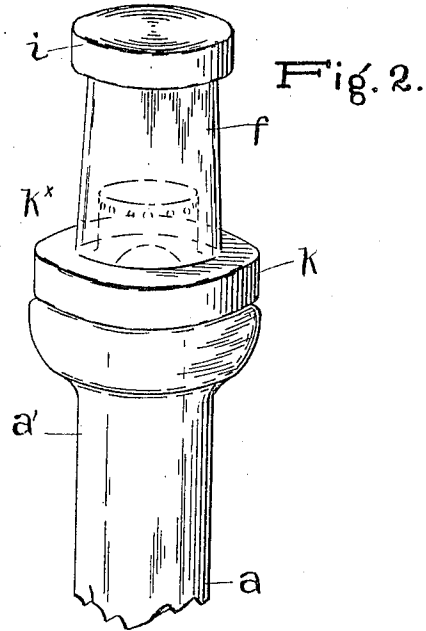
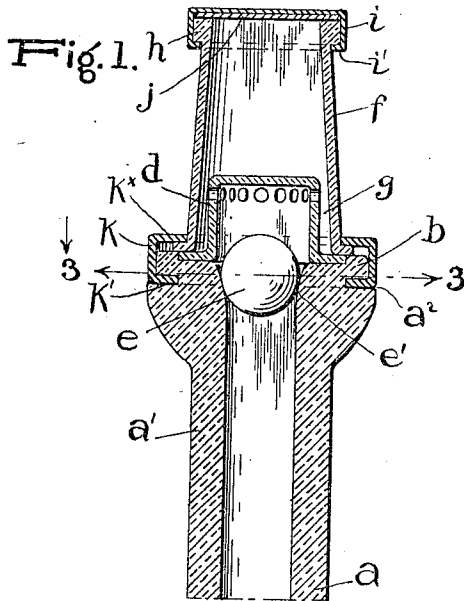


I. A. ROSENFELD, DEC'D.
 B. ROSENFELD, ADMINISTRATRIX.
 NON-REFILLABLE BOTTLE.
 APPLICATION FILED AUG. 31, 1908.

943,895.

Patented Dec. 21, 1909.



Witnesses
 Stuart Hilder.
 George M. Anderson.

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UNITED STATES PATENT OFFICE.

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ADMINISTRATRIX OF SAID ISAAC A. ROSENFELD, DECEASED.

NON-REFILLABLE BOTTLE.

943,895.

Specification of Letters Patent.

Patented Dec. 21, 1909.

Application filed August 31, 1908. Serial No. 451,014.

To all whom it may concern:

Be it known that I, ISAAC A. ROSENFELD, a subject of the King of Bulgaria, resident of Washington, in the District of Columbia, have made a certain new and useful Invention in Non-Refillable Bottles; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the invention, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 is a central vertical section of the invention as applied. Fig. 2 is a fragmentary perspective view of the neck of a bottle, showing my invention as applied thereto. Fig. 3 is a section taken on the line 3—3 Fig. 1. Fig. 4 is a detail perspective view of the top of the bottle neck. Fig. 5 is a similar view of the valve chamber cap. Fig. 6 is a similar view of the guard. Fig. 7 is a similar view of the locking collar and Fig. 8 is a similar view of the cap closure.

The invention relates to non-refillable bottles, having for its object the provision of simple efficient and inexpensive means for the purpose.

The invention consists in the novel construction and combinations of parts as hereinafter set forth.

In the accompanying drawings, illustrating the invention, the letter *a*, designates the bottle, which is of any ordinary or desired shape and is provided with the usual neck *a'*, having an annular groove *a²*, therein at its outer upper corner, said groove having radial lugs *b*, *b*, projecting outward from the vertical wall thereof, and having lower cam faces *b²*, separated from the horizontal wall of said groove by a space *b³*. A similar radial lug *b⁴*, upon said vertical wall has less radial projection than the lugs *b*, *b*.

The upper horizontal edge of the bottle neck has an annular depression *c*, formed therein, lying within and of less depth than the groove *a²*, and wherein is seated the lower horizontal flange *d'*, of a detachable cylinder valve chamber cap *d*, having a closed top *d²*, and perforations *d³*, in its side wall, adjacent to said top said cap being placed over and inclosing a ball valve *e*, which rests upon the shoulder *e'*, at the top of the bottle neck opening and normally closes the same, the

cap extending above the valve seat to about the extent of the diameter of the valve, and being capable of direct stop engagement with the valve in the raised position thereof. The cap is of greater diameter than that of the ball to allow free passage for the liquid contents of the bottle to the perforations *d³*.

In order to protect the ball valve and prevent any tampering therewith through the perforations of the cap piece a hollow guard device *f*, is placed thereover, which may be of cylindrical or nearly cylindrical character, said guard device having an internal diameter which is slightly greater than the external diameter of the valve chamber cap, leaving an annular narrow passageway *g*, for the liquid bottle contents between the guard and cap. This guard device has a horizontal bottom flange *f'*, which rests upon the bottom flange *d⁴*, of the cap and upon the edge of the bottle neck, outward extending radial projections *h*, *h*, being provided at the top of said guard. The guard extends upward about twice the height of the cap or a little more than twice, and is closed at the top by means of a cap closure *i*, having inward extending radial projections *i'*, *i'*, designed to have engagement with the lower faces of the projections *h*, *h*, whereby when the cap closure is placed upon the guard device with the notches *i²*, *i²*, in register with the projections *h*, *h*, moved downward against the elastic washer *j*, located within and between the same and the edge of the bottle mouth, and turned to engage the projections *i*, *i*, with the projections *h*, *h*, the washer will be compressed to form an effective stop against escape of the bottle contents and will be held under compression by the engagement of such projections. The notches *i²*, *i²*, are of similar dimensions to the projections *h*, *h*.

In order to lock the guard and valve chamber cap in position upon the neck of the bottle, a collar *k*, is provided, said collar having a horizontal top flange *k^x*, overlying the horizontal bottom flange of the guard, and a vertical wall provided with radial inward extending projections *k'*, *k'*, at the lower portion thereof and having cam engagement with the lower faces of the projections *b*, *b*, of the bottle neck. The projections *k'*, *k'*, are separated by notches *k²*, *k²*, of similar dimensions to the projections *g*, *g*, one of the projections *k'*, being longer than

the others and being provided with a radial notch k^3 , therein of less depth than the notches k' , and being designed for engagement with the radial lug b^4 , of the bottle neck. A catch spring or pawl l , lies within and below the top flange k^x , and within the longer radial projection k' , extending at its fast end a little to one side of the notch k^3 , where it is secured by a small plate l' , placed thereover and having suitable rivet connection with the vertical wall of the collar, said plate l' , forming a radial outward extending projection from said vertical wall. Thus when the collar is placed over the guard with its notches k^2 , k^2 , in register with the projections b , b , and the notch k^3 , in register with the projection b^4 , moved downward and turned slightly to one side, the projections k' , k' , will have cam engagement with the lower faces of the projections b , b , to tightly secure the parts against upward movement, the pawl spring at the same time passing over and locking behind the lug b^4 , to prevent rotary movement of the collar in one direction, while the plate l' , will lie closely against the face b^5 , of the nearest lug b , and prevent rotary movement of the cap in the other direction.

All of the parts of my device with the exception of the cap closure and the locking collar are made preferably of glass, for which they are designed. The valve is effectually guarded against being tampered with, and owing to the simple nature of the parts they may be made and assembled in practice at small cost.

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

1. The combination with a bottle having a valve seat at the upper end of its neck, of a ball valve fitting in said seat, a cylinder-form valve chamber cap extending above the valve seat to about the extent of the diameter of said valve and having perforations in its side walls adjacent to its top, said valve chamber cap being capable of direct stop engagement with said valve in the raised position thereof, and a guard device having an internal diameter slightly greater than the external diameter of and extending above said cap.

2. In a non-refillable bottle, a ball valve at the top of the bottle neck, a valve chamber

cap for said valve having perforations in its side wall, a guard device for said cap having an internal diameter slightly greater than the external diameter of and extending above said cap, a cap closure for said guard device, and hidden inaccessible spring means for locking said valve chamber cap and guard device in position.

3. In a non-refillable bottle, a ball valve at the top of the bottle neck, a valve chamber cap for said valve having perforations in its side wall and a bottom flange, a guard device for said cap having an internal diameter slightly greater than the external diameter of and extending above said cap, and having a bottom flange overlying the bottom flange of said cap, a locking collar having hidden inaccessible spring locking means and a flange overlying the bottom flanges of said cap and guard device, and a cap closure for said guard device.

4. The combination with a bottle having an annular groove, the vertical wall of said groove having outward extending radial projections, of a valve at the top of the bottle neck, a valve chamber cap for said valve having perforations in its side wall and a bottom flange, a guard device for said cap having an internal diameter slightly greater than the external diameter of and extending above said cap, and having a bottom flange overlying the bottom flange of the cap, a locking collar having a flange overlying the bottom flanges of said cap and guard device and having inward extending radial projections having engagement with the radial projections of the bottle neck, and hidden inaccessible means for locking said collar against rotary movement in either direction.

5. The combination with a bottle having radial projections, a valve, and a guard device thereover, of a locking collar for said guard device provided with radial projections having cam engagement beneath the radial projections of the bottle, and hidden inaccessible spring locking means for preventing rotary movement of said collar in either direction.

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

I. A. ROSENFELD.

Witnesses:

GEORGE M. ANDERSON,
STUART HILDER.