

No. 714,949.

Patented Dec. 2, 1902.

J. M. & D. RAYNOR.

BOTTLE PROTECTOR.

(Application filed July 3, 1902.)

(No Model.)

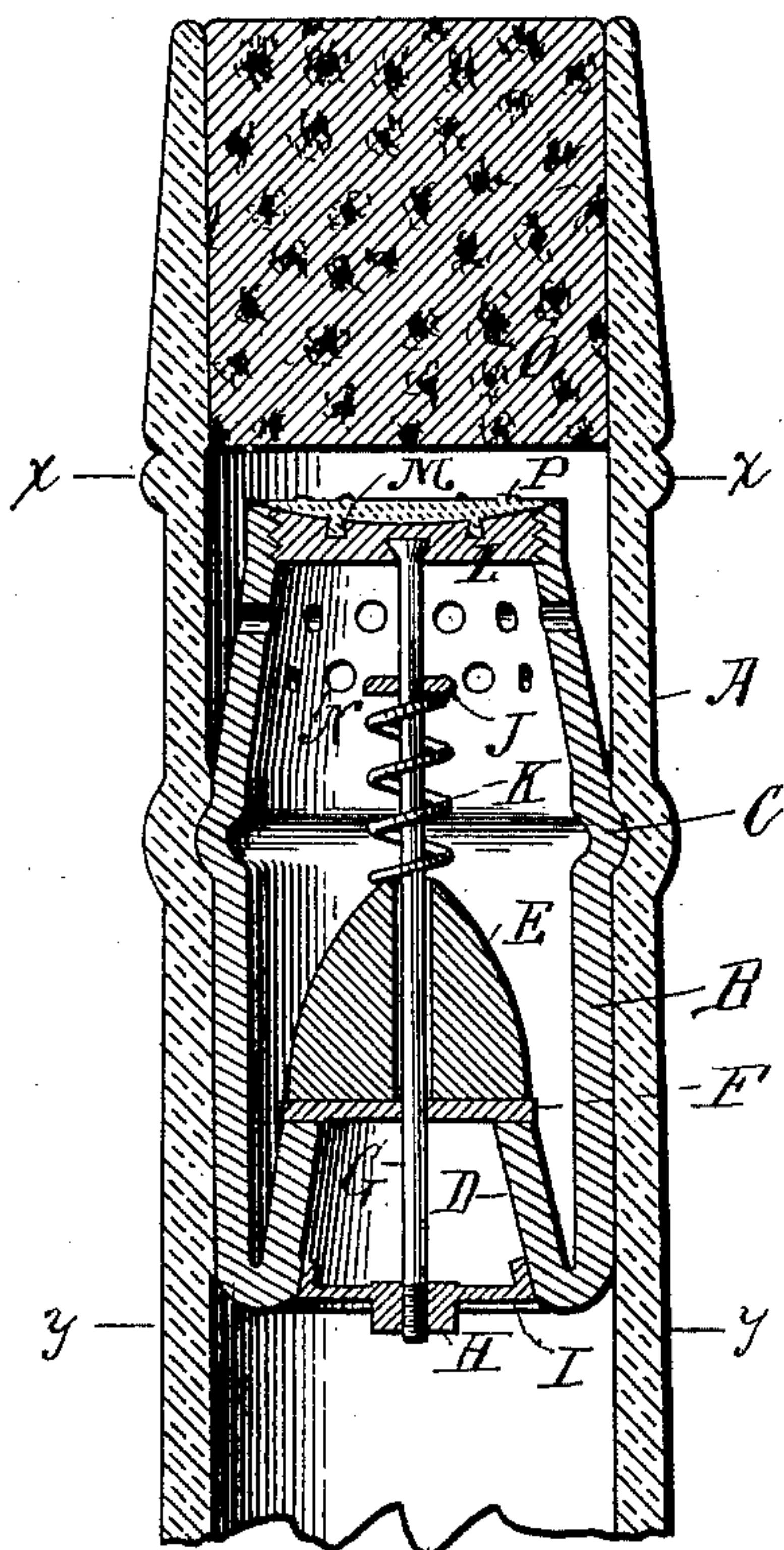


Fig. 1.

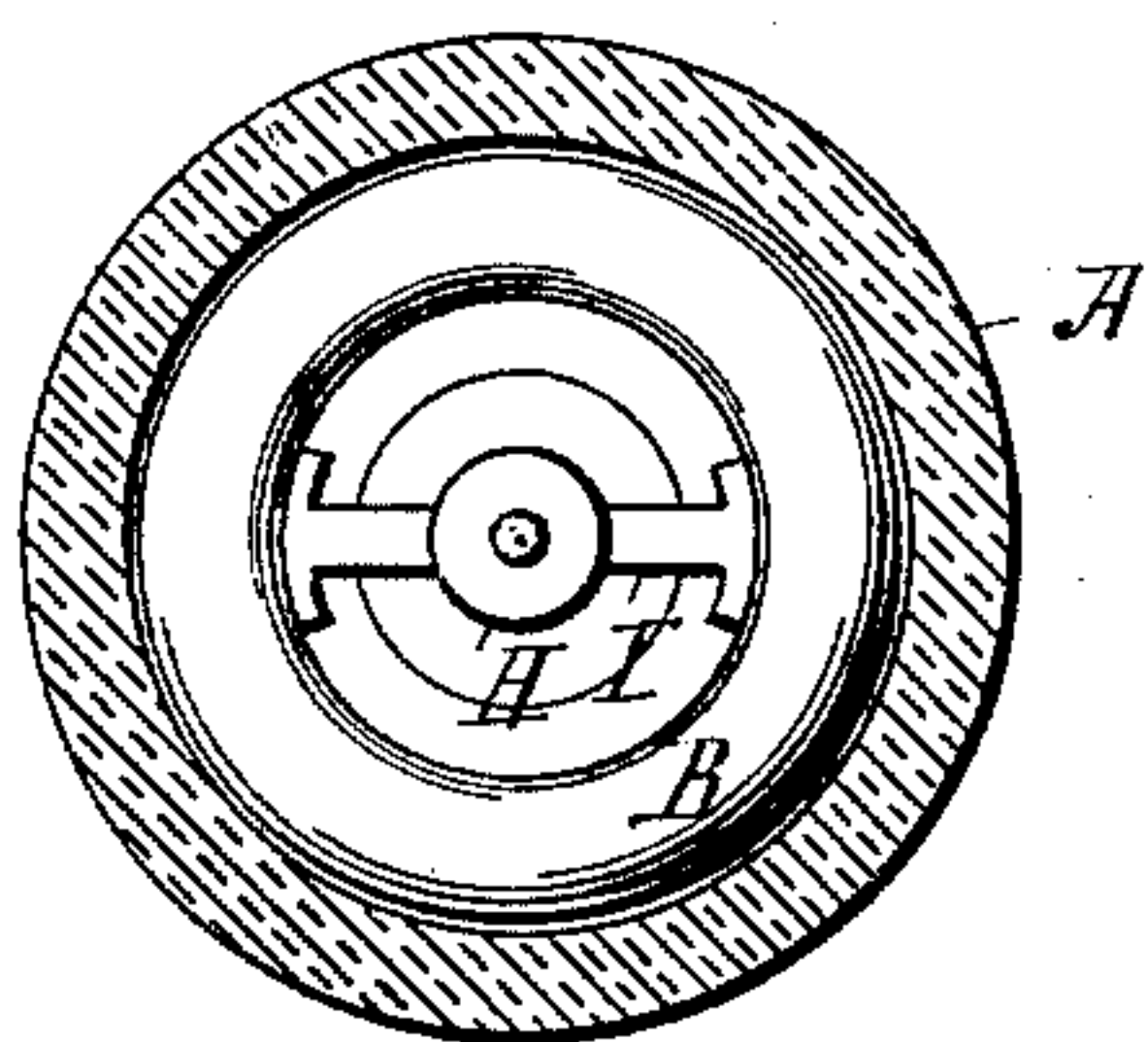


Fig. 3.

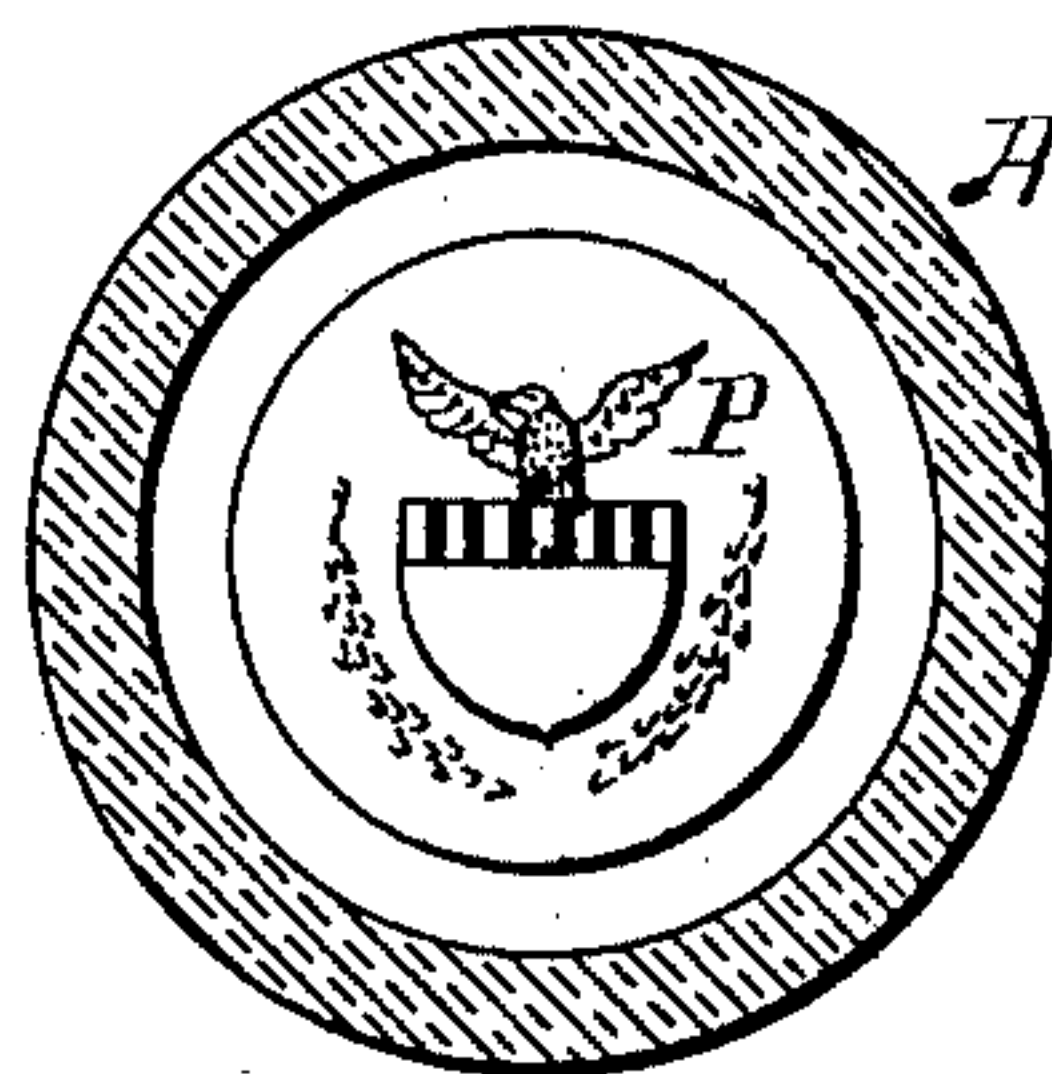


Fig. 2.

WITNESSES:

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JOHN MITCHELL RAYNOR AND DWIGHT RAYNOR, OF WEST HAMPTON
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BOTTLE-PROTECTOR.

SPECIFICATION forming part of Letters Patent No. 714,949, dated December 2, 1902.

Application filed July 3, 1902. Serial No. 114,187. (No model.)

To all whom it may concern:

Be it known that we, JOHN MITCHELL RAYNOR and DWIGHT RAYNOR, of West Hampton Beach, Suffolk county, New York, have invented a new and useful Improvement in Bottle-Protectors, of which the following is a specification.

Our invention relates to means for preventing the refilling of a bottle after the contents thereof have once been poured out.

Our invention consists in the combination, with a bottle or the like, of a valve-chamber, preferably a hollow cylinder of metal, located in the neck thereof and communicating below with the interior of the bottle and having a liquid-escape aperture and also an upwardly-opening check-valve, the said chamber being provided with an upper closure and sealing means, the whole being constructed and arranged so that the bottle can be readily filled but not refilled and so that said closure cannot be tampered with without necessitating sufficient impairment thereof to make the fact manifest.

In the accompanying drawings, Figure 1 is a vertical section of the neck of a bottle containing our device. Fig. 2 is a transverse section on the line *xx* of Fig. 1. Fig. 3 is a section on the line *yy* of Fig. 1.

Similar letters of reference indicate like parts.

A represents the neck of a bottle.

B is a cylinder of sheet metal adapted to fit within said neck and provided with an external circumferential rib C, which enters a corresponding groove in the neck. This groove may be formed and the cylinder B inserted in place during the manufacture of the bottle, so that the cylinder is thus permanently secured in place, or the groove being previously made the cylinder may be inserted and the rib C formed by pressing the metal into the groove by the ordinary spinning process. The lower end of the cylinder is drawn inwardly to form a seat D for the valve E. Between valve E and seat D is interposed a flexible and preferably elastic washer F. The valve E is loose upon the rod G, the lower end of which is threaded to enter the step H, which is carried on the transverse arm I, secured to cylinder B. On rod G is a fixed col-

lar J, between which and the valve E is interposed a light helical spring K. The upper end of the cylinder B is contracted to form a frusto-conical portion the opening of which is preferably internally threaded to receive the screw-plug L, in which plug the upper extremity of rod G may be secured. The plug is hollowed on its upper side and provided with openings M for the reception of a key for turning it when inserted. The upper edges of cylinder B are also beveled to conform to the plug-concavity. After the plug is in place the concavity and keyholes are filled with fusible metal, solder, or any other suitable material, upon the upper surface of which a seal may be impressed. In the upper portion of the cylinder are openings N.

The device is assembled as follows: The cylinder B being in place in the bottle-neck with its upper opening clear, the bottle is filled through said cylinder. When the bottle is filled, the rod G, carrying the valve E, which is of lead or other heavy material, is inserted and the lower end of the rod is screwed into the step H. The plug L is also screwed into the open end of the cylinder and the fusible metal seal M is added. The bottle is then provided with the cork O and is ready for the market.

The device is operated as follows: On withdrawing the cork the seal P is at once exposed, so that the user can see at a glance whether it has in any wise been tampered with. When the bottle is tilted to pour out the contents, the pressure on the under side of valve E lifts said valve against the action of spring K, and the liquid flows into cylinder B and so out of the holes N.

Any attempt to refill the bottle through the holes N results in the incoming liquid, aided by spring K, holding the valve E firmly upon its seat, so that said liquid cannot enter the bottle. The cylinder B cannot be extracted because secured by the rib C in the bottle-neck. The screw-plug L cannot be reached without first destroying the seal M, and as the sealing material fills the keyholes it will be exceedingly difficult to extract the plug. As a further safeguard both plug L and cylinder B may be made of a metal having a low

fusing-point, so that after the plug is in place the application of a hot soldering-iron may fuse the plug fast in its seat. Instead of fixing the upper end of rod G in the screw-plug L it may simply enter an opening in such plug, in which case the rod G and valve E are adjusted in the cylinder B, as already described, and the plug L afterward put in place.

10 We do not limit ourselves to the particular mode here shown of fastening the cylinder B in the bottle-neck, as any means of permanently securing said cylinder in place will serve the desired end.

15 We claim—

1. The combination in a bottle-protector of a hollow cylindrical shell adapted to fit within the bottle-neck, the said shell being constricted at its upper end, and provided with a liquid-escape aperture, a detachable device for closing said upper end, a valve seated in said shell and closing the lower end thereof and means for guiding said valve in its movement to and from its seat, substantially as described.

2. The combination in a bottle-protector of a hollow cylindrical shell adapted to fit within the bottle-neck, the said shell being internally constricted at its upper end and also near its lower end and provided with a liquid-escape aperture in its wall, a detachable device for closing said upper end, a valve seated in the constricted lower portion, and means for guiding said valve in its movement to and from its seat, substantially as described.

3. The combination in a bottle-protector of a hollow metallic cylindrical shell adapted to fit within the bottle-neck and having an external circumferential rib adapted to enter a corresponding groove in said neck, the said shell being constricted at its upper end by drawing in the metal wall thereof, and constricted at its lower end by turning inwardly the said wall and provided with a liquid-escape opening, a detachable device for closing said upper end, a valve seated in said constricted lower end and means for guiding said valve in its movement to and from its seat, substantially as described.

4. The combination in a bottle-protector, of a hollow cylinder adapted to enter and be secured within a bottle-neck, the said cylinder being provided with a liquid-escape aperture in its wall, a guide-rod secured within said cylinder, a valve loose upon said guide-rod, seated within said cylinder and closing the lower end thereof and a device for closing the upper end of said cylinder, substantially as described.

5. The combination in a bottle-protector of a hollow cylinder adapted to enter and be secured within a bottle-neck, the said cylinder

being provided with liquid-escape openings, a guide-rod secured within said cylinder, a valve loose upon said guide-rod, seated within said cylinder and closing the lower end thereof, and a screw-plug for closing the upper end of said cylinder, substantially as described.

6. The combination in a bottle-protector of a hollow cylinder adapted to enter and be secured within the bottle-neck, the said cylinder having a contracted upper portion and liquid-escape apertures in the wall thereof, a detachable device for closing said contracted portion, means for sealing said closure in place, a valve seated within said cylinder and closing the lower end thereof, and means for guiding said valve in its movement to and from its seat, substantially as described.

7. In combination with a bottle or the like, a valve-chamber located in the neck thereof, and communicating below with the interior of said bottle, and having at its upper portion an aperture of area sufficient for the insertion of its valve, and also liquid-escape openings, an upwardly-opening check-valve seated within said chamber, a closure for said valve-insertion opening and means for sealing said closure in place; the said closure and sealing means being constructed and arranged so that the removal of said closure cannot be effected without impairment of the seal, substantially as described.

8. The combination with the bottle-neck A, of the cylindrical shell B having contracted valve-seat D formed by inwardly bending said shell and escape-apertures N, guide-rod G within said cylinder, valve E loose on said guide-rod, and closure L, substantially as described.

9. The combination with the bottle-neck A of the cylinder B, having contracted valve-seat D and escape-apertures N, guide-rod G within said cylinder, step H receiving said rod, valve E loose on said rod, spring K interposed between valve E and an abutment, and closure L, substantially as described.

10. The combination with the bottle-neck A, of the cylinder B having contracted valve-seat D and escape-apertures N, guide-rod G within said cylinder, step H receiving said rod, valve E loose on said rod, spring K interposed between valve E and an abutment on said rod, and closure L receiving the upper end of said rod, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JOHN MITCHELL RAYNOR.
DWIGHT RAYNOR.

Witnesses:

E. H. BISHOP,
E. P. RAYNOR.