No. 753,306. PATENTED MAR. 1, 1904.

J. M. PETERSON & F. F. HUTCHINS.

NON-REFILLABLE BOTTLE.

APPLICATION FILED MAR. 30, 1903.

NO MODEL.

Fig. 1.

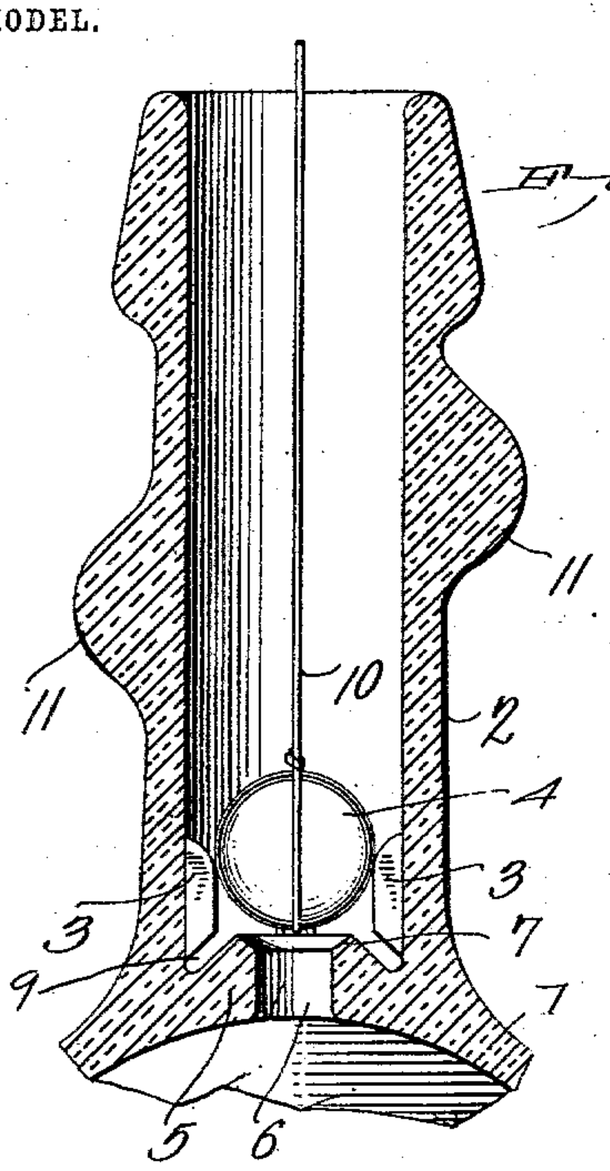


Fig. 2.

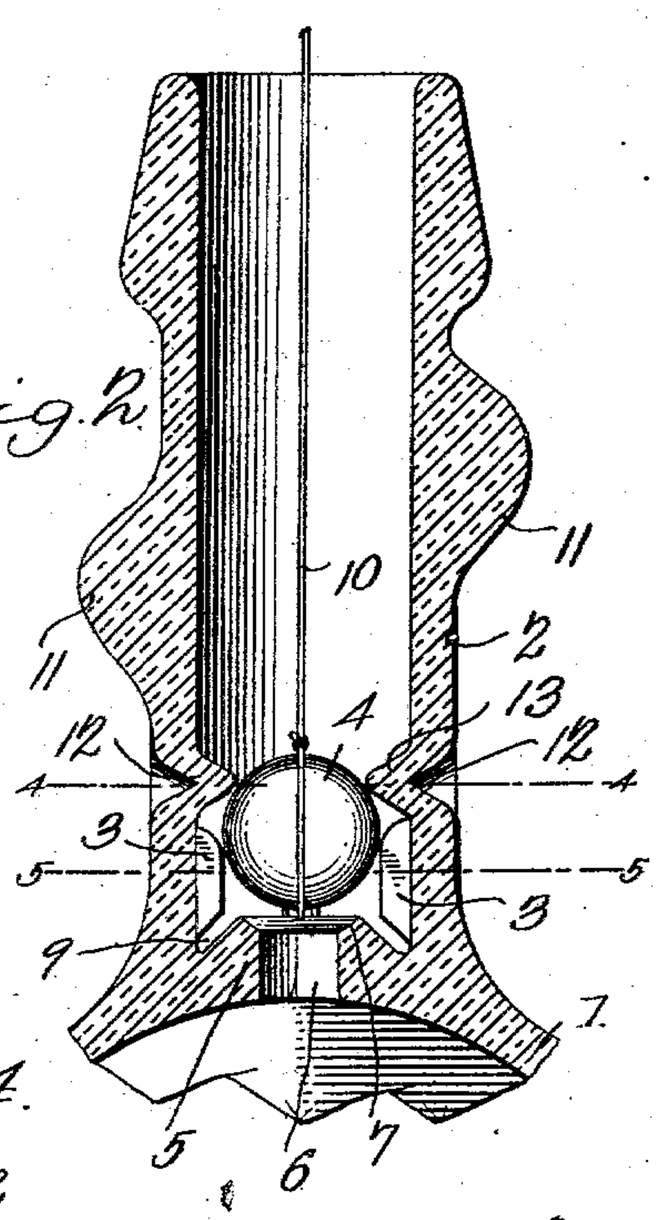


Fig. 4.

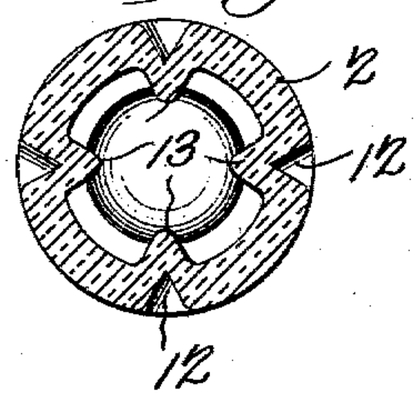


Fig. 3.

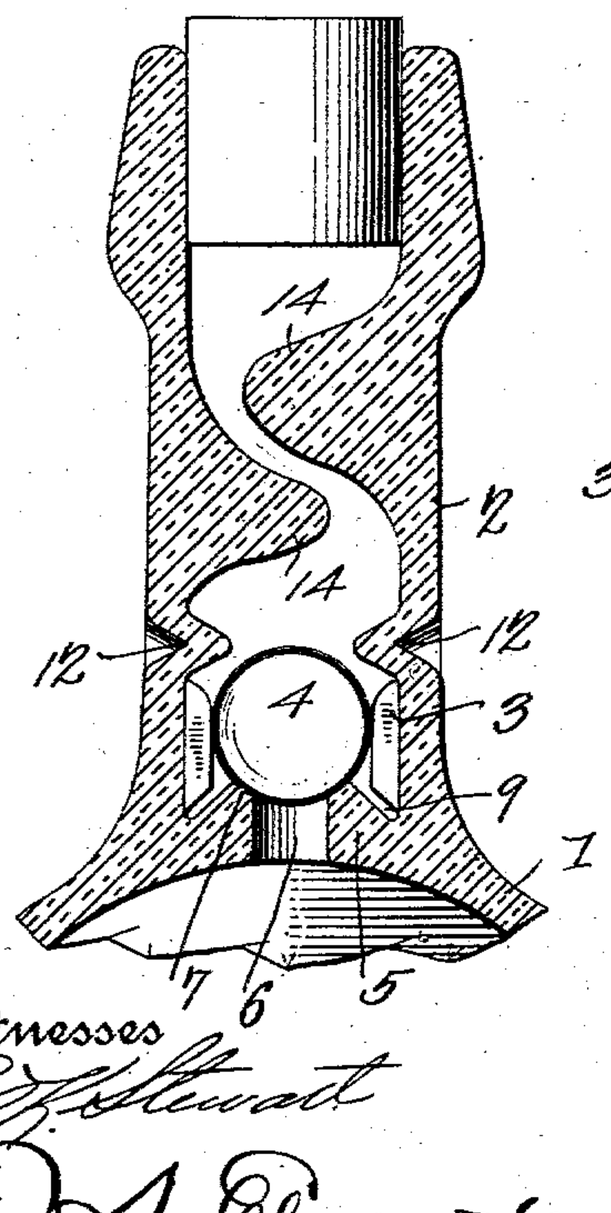


Fig. 5.

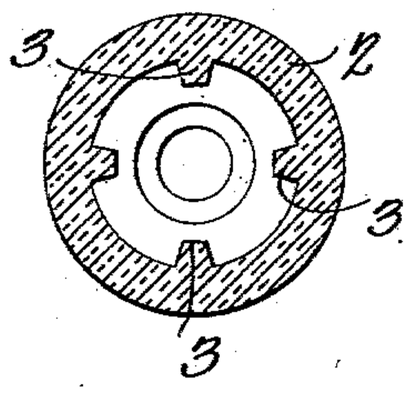
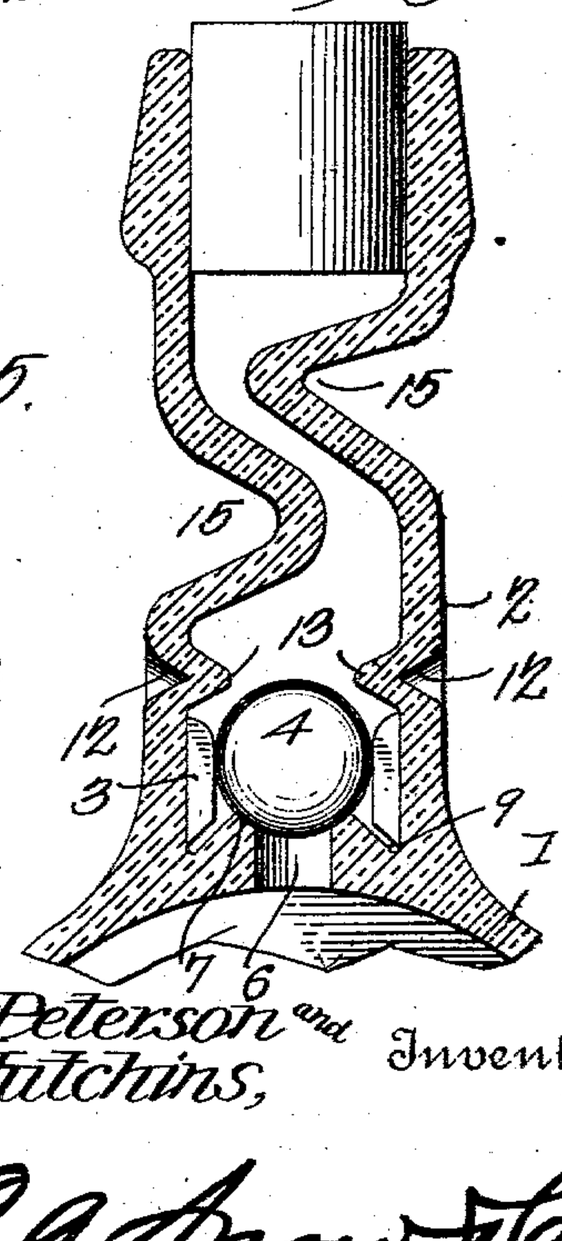


Fig. 6.



Witnesses
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No. 753,306. Patented March 1, 1904.

UNITED STATES PATENT OFFICE.

JEREMIAH M. PETERSON, OF CANISTEO, AND FREDRICK F. HUTCHINS, OF HORNELLSVILLE, NEW YORK, ASSIGNORS OF ONE-THIRD TO DORA L. WETTLIN, OF HORNELLSVILLE, NEW YORK.

NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 753,306, dated March 1, 1904.

Application filed March 30, 1903. Serial No. 150,262. (No model.)

To all whom it may concern:

Be it known that we, JEREMIAH M. PETERSON, residing at Canisteo, and FREDRICK F. HUTCHINS, residing at Hornellsville, in the county of Steuben and State of New York, citizens of the United States, have invented a new and useful Non-Refillable Bottle, of which the following is a specification.

Our invention relates to non-refillable bottles, and has for its objects to produce a device of this character which will be simple of construction, efficient in operation, one which may be produced at a minimum cost, and one in which tampering with the valve is effectively prevented, thus obviating the fraudulent substitution of an inferior grade of goods for that originally contained by the bottle.

To these ends the invention comprises the novel details of construction and combination of parts more fully hereinafter described.

In the accompanying drawings, Figure 1 is a vertical transverse section through a bottle-neck constructed in accordance with our invention. Fig. 2 is a similar view illustrating the first step in the sealing of the bottle. Fig. 3 is a similar view illustrating the parts when the bottle is finally sealed. Fig. 4 is a horizontal section on the line 4 4 of Fig. 2. Fig. 5 is a similar view on the line 5 5 of Fig. 2. Fig. 6 is a vertical transverse section illustrating a modified form of the device.

Referring to the drawings, 1 indicates the bottle, and 2 its neck, these parts being preferably composed of glass, but may of course be of any other suitable material. In accordance with our invention the neck has formed upon its inner wall a series of longitudinal ribs 3, which project laterally inward and serve as a guide for the valve 4 and as a means for spacing the same from the inner wall of the neck to permit liquid to flow between them. The valve 4 is preferably of spherical form and composed of glass, but may be of other suitable or desired material—such, for example, as copper, aluminium, or steel.

5 is a retaining member formed integral with the lower end of the neck at its point of union with the body of the bottle. This member has formed through it a central reduced opening 6, which is beveled at its upper end, as at 7, to form a seat for the valve, which latter when in position thereon fits snugly and tightly with the seat to prevent ingress of liquid to the bottle. The upper face of the member 5 is beveled outwardly and downwardly from the seat 7 to form a circumferential recess 9, which at its upper end lies within the circumferential radius of the valve for the purpose hereinafter explained, and the ribs 3 terminate at their lower ends short of the bottom of said recess.

10 indicates a retainer which is passed into the bottle-neck beneath the valve 4 and serves the function of maintaining the valve away from its seat until the bottle has been filled, when the retainer will be withdrawn to release the valve and permit it to assume its normal operative position, as will hereinafter appear. This retainer is preferably of asbestos cord, though it may be of wire formed from any suitable metal—such, for example, as any of those above mentioned in connection with the valve.

In producing a bottle-neck having a valve associated therewith in accordance with our invention we first mold or otherwise form the neck of the bottle with the inner ribs 3 and valve-retaining member 5, formed integral therewith, and with lateral enlargements 11, formed upon the outer wall of the neck, as illustrated in Figs. 1 and 2. We next drop the ball-valve 4 into the bottle-neck with the retainer 10 in position beneath the same for sustaining it distant from its seat, as illustrated in Fig. 1. Next we reheat the bottle-neck to the requisite degree to permit of the material composing the same being readily worked and indent the same, as at 12, to form four diametrically opposite retaining-fingers 13, which extend inward from the inner wall of the neck immediately above the valve 4, and finally subject the heated neck to pressure in any suitable manner to displace the material forming the lateral enlargements 11 from the exterior to the interior of the neck, as clearly illustrated in Fig. 3, thus producing within

the neck alternating protectors 14, which overlie the valve and conjointly form an irregular reduced discharge-opening, which obviates the ready manipulation of a wire or other instrument for tampering with the valve.

In Fig. 6 we have illustrated a modified form of the device, in which instead of employing the lateral enlargements 11 to be manipulated for partially closing the discharge-opening above the valve we form the neck originally in the usual manner, and after placing the valve therein and indenting the same to form the retaining-fingers 13 we finally subject the neck while in its reheated condition to the action of a grooving-roller or the like in order to spirally indent the bottle-neck above the valve, as at 15, thus producing the reduced irregular discharge-opening above the valve.

In both forms of the device, however, the retainer 10 will be employed to support the valve distant from its seat until after the bottle has been filled, when upon withdrawal of the retainer the valve will be permitted to assume its normal position, and further introduction of liquid into the bottle will be effectually prevented. In this connection it is to be noted that the valve cannot be tampered with by means or a wire or other instrument, owing to the fact that the reduced irregular character of the discharge-opening above the valve precludes ready manipulation of such an instrument, and should one be introduced it would contact with the curved surface of the valve and be deflected into the recess 9.

From the foregoing it will be seen that we produce a simple and efficient device which obviates the employment of complicated mechanism to prevent fraudulent manipulation of the valve and, further, one in which the valve itself is of a very simple character, thus reducing the cost of the device to a minimum, and in attaining these ends it is to be understood that we do not limit or confine ourselves to the precise details herein shown and described, inasmuch as various minor changes may be made therein without departing from the spirit or scope of our invention. For example, we may employ a light spring in the bottle-neck above the valve to normally hold the same to its seat. Also it is our intention in practice to equip the device with a suitable hook or like instrument for removing the asbestos cord after filling the bottle.

Having thus described our invention, what we claim is—

1. The combination with a bottle and its neck, the latter formed integral with the bottle and having a discharge-opening, of a movable valve situated within the discharge-opening, a retaining member associated with the neck beneath the valve and provided with a valve-seat and with a circumferential downwardly and outwardly extending recess, and integral retaining members formed upon the neck above the valve, said discharge-opening being permanently reduced in size above the upper retaining members.

2. The combination with a bottle and its neck, the latter formed integral with the bottle and having a discharge-opening provided with inner longitudinal spacing members, a movable valve situated within the discharge-opening, a retaining member formed integral with the neck beneath the valve and provided with a valve-seat, integral retaining members formed upon the neck above the valve, said neck having its discharge-opening permanently reduced in size and of irregular contour above the upper retaining members.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

JEREMIAH M. PETERSON.
FREDRICK F. HUTCHINS.

Witnesses:
JOHN F. RICHARDSON,
GEORGE P. WETTLIN.