

No. 835,446.

PATENTED NOV. 6, 1906.

J. E. LESUEUR.
NON-REFILLABLE BOTTLE.
APPLICATION FILED FEB. 28, 1906.

Fig. 1.

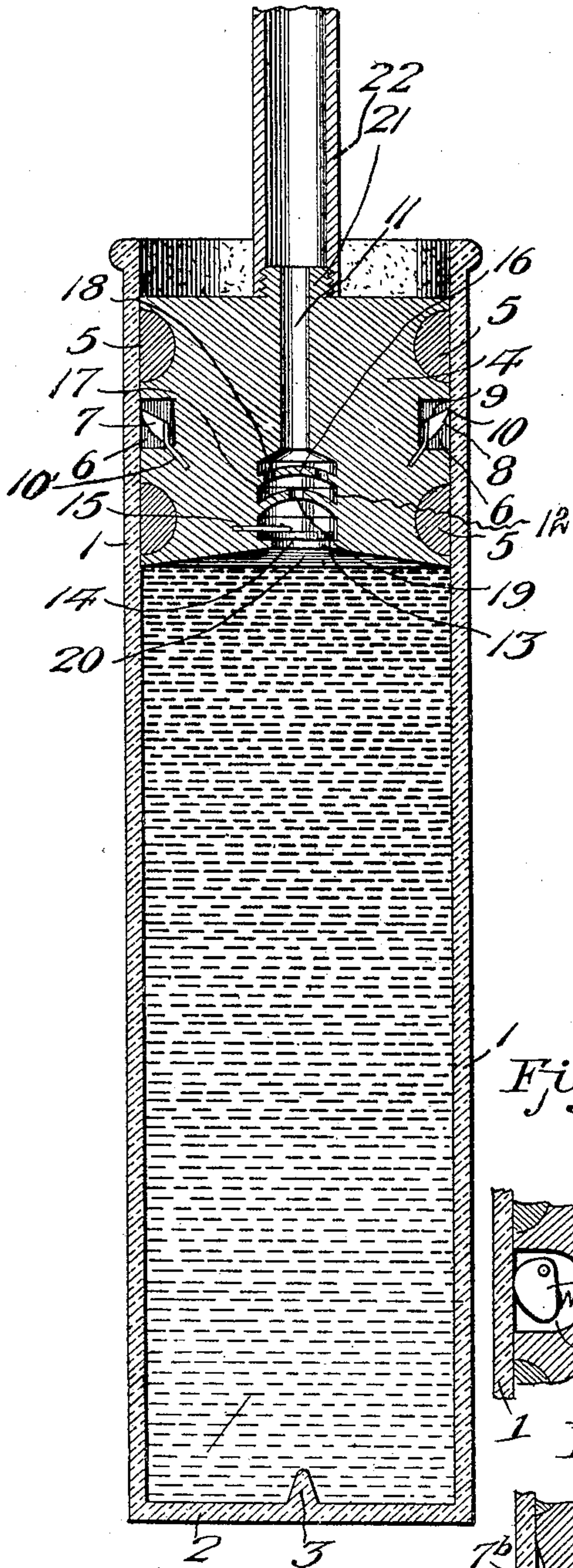


Fig. 2.

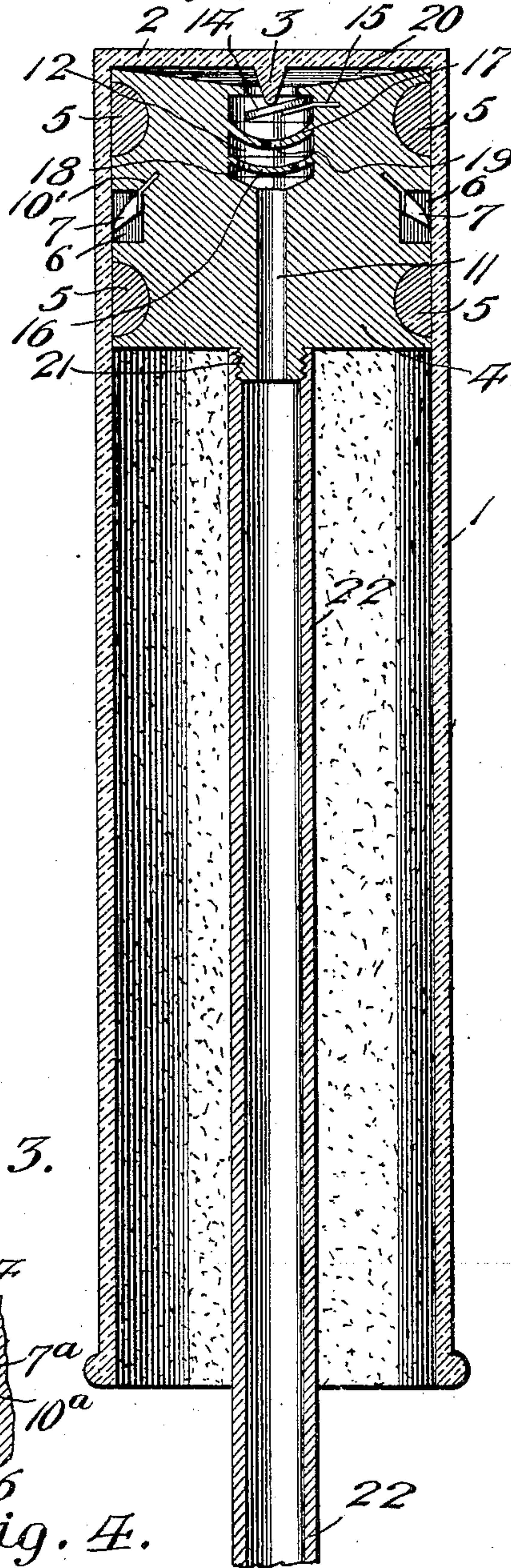


Fig. 3.

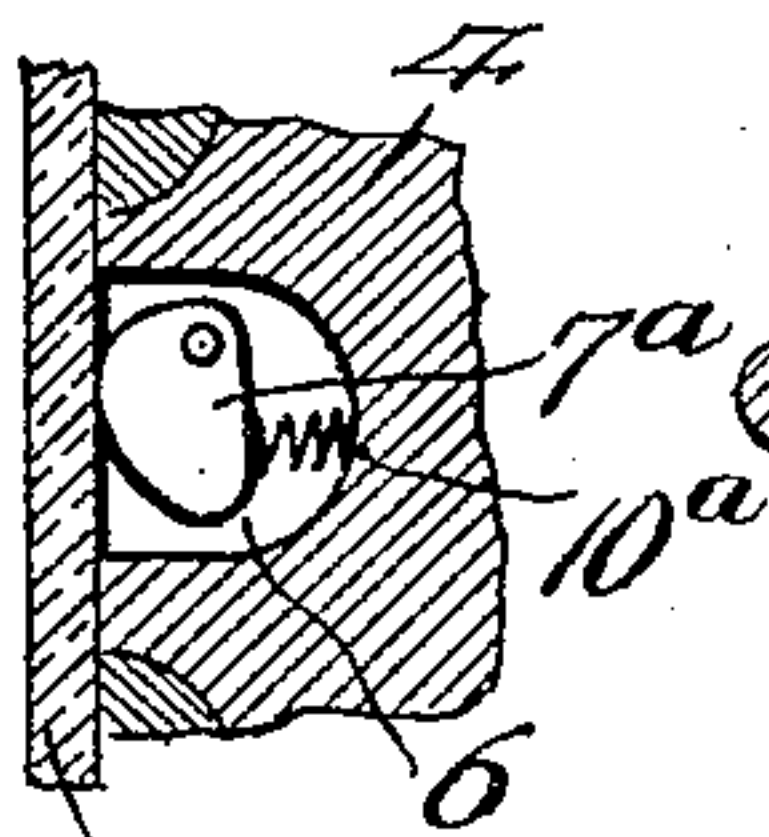
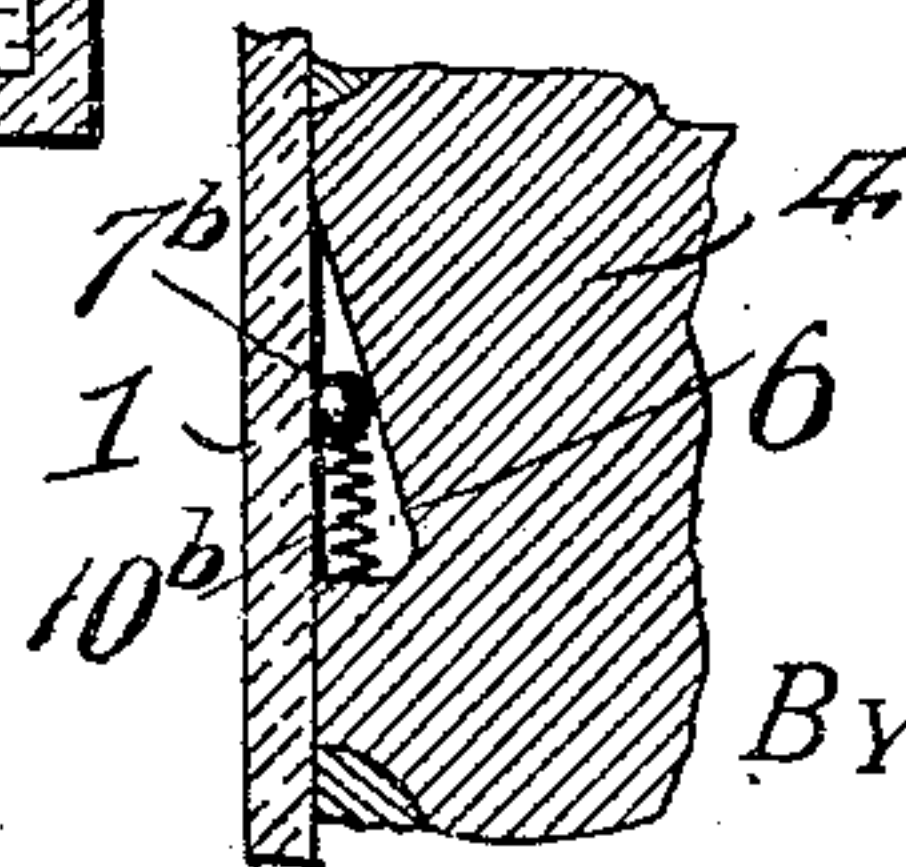


Fig. 4.



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UNITED STATES PATENT OFFICE.

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NON-REFILLABLE BOTTLE.

No. 835,446.

Specification of Letters Patent.

Patented Nov. 6, 1906.

Application filed February 28, 1906. Serial No. 303,502.

To all whom it may concern:

Be it known that I, JOHN E. LESUEUR, a citizen of the United States of America, residing at Nashville, in the county of Davidson and State of Tennessee, have invented new and useful Improvements in Non-Refillable Bottles, of which the following is a specification.

This invention relates to improvements in bottles, the object of the invention being to provide a bottle of novel construction which cannot be refilled and reused after having been emptied of its original contents and which will effectually prevent the introduction of liquid thereinto to take the place of any portion of the original liquid discharged therefrom.

In the accompanying drawings, Figure 1 is a vertical longitudinal section of a non-refillable bottle embodying my invention, the bottle being arranged in its normal or upright position. Fig. 2 is a similar section with the bottle inverted and the stopper in position to discharge the last of the contents. Figs. 3 and 4 are detail sections showing modified means for holding the stopper from withdrawal.

Referring now more particularly to the drawings, 1 designates the body of the bottle, which may be of any preferred size, shape, and material, and is of uniform internal cross-sectional area or dimensions throughout its length. The inner surface of the bottle is ground or roughened for a purpose herein-after described, and the lower end of the bottle is closed by a permanent bottom 2, formed with a central upwardly-extending lug or projection 3. A piston or follower-stopper 4 is provided for closing the mouth or open end of the bottle. This comprises a plug of any suitable material conforming in configuration with the interior of the bottle and adapted to snugly fit the same. The plug is annularly recessed above and below its center to receive packing-rings 5, of rubber, asbestos, or other suitable material, which rings project into contact with the wall of the bottle and prevent the liquid contents thereof from escaping between the bottle and plug when the latter is forced inward to expel a portion of the contents of the bottle. Between the packing-rings the stopper is provided at diametrically opposite sides with pockets or recesses 6, in which are arranged dogs 7. Each dog 7 normally extends at an outward and upward angle and is provided with a curved

or rounded lower face 8 and a straight or angular upper face 9, forming at their point of convergence an engaging point or tooth 10. The inner end of the dog is straight and normally extends parallel with the vertical in the wall of the pocket and is fixed to the free end of a plate-spring 10', the opposite end of which is fixed in the body of the stopper below the pocket and arranged at an angle thereto. The curved faces of the dogs are adapted to ride in contact with the ground or roughened inner surface of the bottle when the stopper is forced inward or downward to cause said dogs to recede into the pockets to permit such movement of the stopper to effect the discharge of the liquid contents of the bottle. Outward or upward movement of the stopper is, however, prevented, owing to the fact that when an attempt is made to draw the stopper outward the toothed or pointed ends 10 of the dogs will engage the ground or roughened inner wall of the bottle and will be forced tightly thereagainst under the drawing strain, thus preventing extraction of the stopper. The stopper is provided with a discharge-passage 11, enlarged at its lower end to form a chamber 12, having at its base a valve-seat 13. A disk valve 14 rests upon said seat and is carried by a plate-spring 15, fixed at one end in the wall of the stopper. This spring normally holds the valve to its seat, but is adapted to yield under pressure to permit the contents of the bottle to discharge through the passage when the stopper is forced inward. The stopper closes downward against its seat, so that any attempt to force liquid under pressure through the passage 11 into the bottle will be frustrated.

Arranged within the chamber 12 above the valve are arched guards or baffle-plates 16 and 17, arranged one above the other and in spaced relation, the upper guard 16 being provided on opposite sides of its center and out of alinement with the passage 11 with the ports 18, while the lower guard 17 is provided with a central port 19, located on a line between said ports 18, which arrangement of the ports permits of the ready outflow of the discharging liquid, while preventing the insertion of a wire or other implement when an attempt is made to hold the valve unseated to force a spurious liquid into the bottle. The bottom of the stopper is formed with a recess 20, of conical or frusto-conical form or of such shape as to converge from all sides toward the

opening in the valve-seat, for the purpose hereinafter described. The upper end of the stopper is formed with a threaded nipple 21, communicating with the passage 11 and adapted to be engaged by the threaded end of a combined stopper-operating and liquid-discharge tube 22, which is of greater length than the bottle, so that it will project at its free end therebeyond to enable the stopper to be forced down against the bottom of the bottle-body.

After the bottle is filled the stopper 4 is inserted to close the mouth or open end thereof, thus preventing the further introduction of liquid. When it is desired to discharge a portion of the contents of the bottle, the tube 22 is applied to the nipple 21 and pressure applied thereto to force the stopper down into the bottle. Through this action the valve 14 is unseated, and the desired quantity of liquid will flow outward past the valve and through the passage 11 and discharge-tube. The entire contents of the bottle may be discharged through repeated operations of this character, and when the stopper reaches the limit of its inward movement or abuts against the bottom 2 the valve 14 will be engaged and held open by the lug 3, so that upon inverting the bottle, as shown in Fig. 2, the remaining small quantity of the liquid which cannot be otherwise expelled will flow by gravity down the inclined walls of the recess 20 and out through the discharge-passages.

It will thus be seen that the invention provides a simple construction of bottle which after having been once filled cannot be refilled, and is thus adapted to afford protection to manufacturers and bottlers of goods of established reputation to prevent fraudulent refilling of the bottles containing the original contents by goods of an inferior or spurious nature.

Instead of employing the form of dogs shown in Figs. 1 and 2 I may employ a pivoted cam-dog 7^a, forced outward by a spring 10^a, as shown in Fig. 3, or a ball 7^b, arranged as shown in Fig. 4 and controlled by a spring 10^b, or any other suitable means for preventing outward movement of the stopper while permitting inward movement thereof. I may also close the mouth of the bottle after the insertion of the stopper 4 by an auxiliary stopper cemented or otherwise fixed in position to prevent inlet of dust and dirt and having an opening for the passage of the tube 22.

Having thus described the invention, what is claimed as new is—

1. A non-refillable bottle comprising a body of uniform dimensions throughout and having a normally open top, a follower-stopper operative within the body and provided with a valve-controlled discharge-passage, means carried by the stopper to engage the

wall of the body to prevent outward movement of said stopper while permitting inward movement thereof, and a combined operating and discharge tube detachably connected with the stopper and communicating with the passage therein.

2. A non-refillable bottle comprising a body, a follower-stopper operative therein and provided with a discharge-passage enlarged at its lower end to form a chamber having a valve-seat and arched baffle-plates disposed above said valve-seat and provided with unalining passages, a check-valve within the chamber adapted to close the end of said seat, means carried by the stopper to engage the wall of the bottle to prevent outward movement of said stopper while permitting inward movement thereof, and a combined operating and discharge tube detachably connected with the stopper and communicating with the discharge-passage.

3. A non-refillable bottle comprising a body, a follower-stopper operative therein and provided with a valve-controlled discharge-passage, and means for automatically forcing open said valve when the stopper reaches the limit of its inward movement.

4. A non-refillable bottle comprising a body provided with a projection upon the bottom thereof, a follower-stopper operative within the body and provided with a discharge-passage, and a check-valve controlling said passage and adapted to be forced open by said projection when the stopper reaches the limit of its inward movement.

5. A non-refillable bottle comprising a body, a follower-stopper operative within the body and provided with a valve-controlled discharge-passage and having pockets in the sides thereof, means for operating the stopper, and spring-dogs within said pockets provided with straight upper faces and curved lower faces converging to a point to form teeth to engage the wall of the body.

6. A non-refillable bottle comprising a bottle-body provided upon its bottom with a projection, a stopper disposed therein and provided with a discharge-passage and an outwardly-opening valve controlling the same, said stopper also being formed with a conical recess leading to the valve-seat, said valve being adapted to be opened by the lug when the stopper is adjusted to the limit of its inward movement, means for permitting inward movement of the stopper and holding it from outward movement, and an operating device adapted to be attached to the stopper.

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

JOHN E. LESUEUR.

Witnesses:

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W. M. GOODLETT.