

No. 667,234.

Patented Feb. 5, 1901.

S. LEVIN.
NON-REFILLABLE BOTTLE.

(Application filed May 3, 1900.)

(No Model.)

Fig 1.

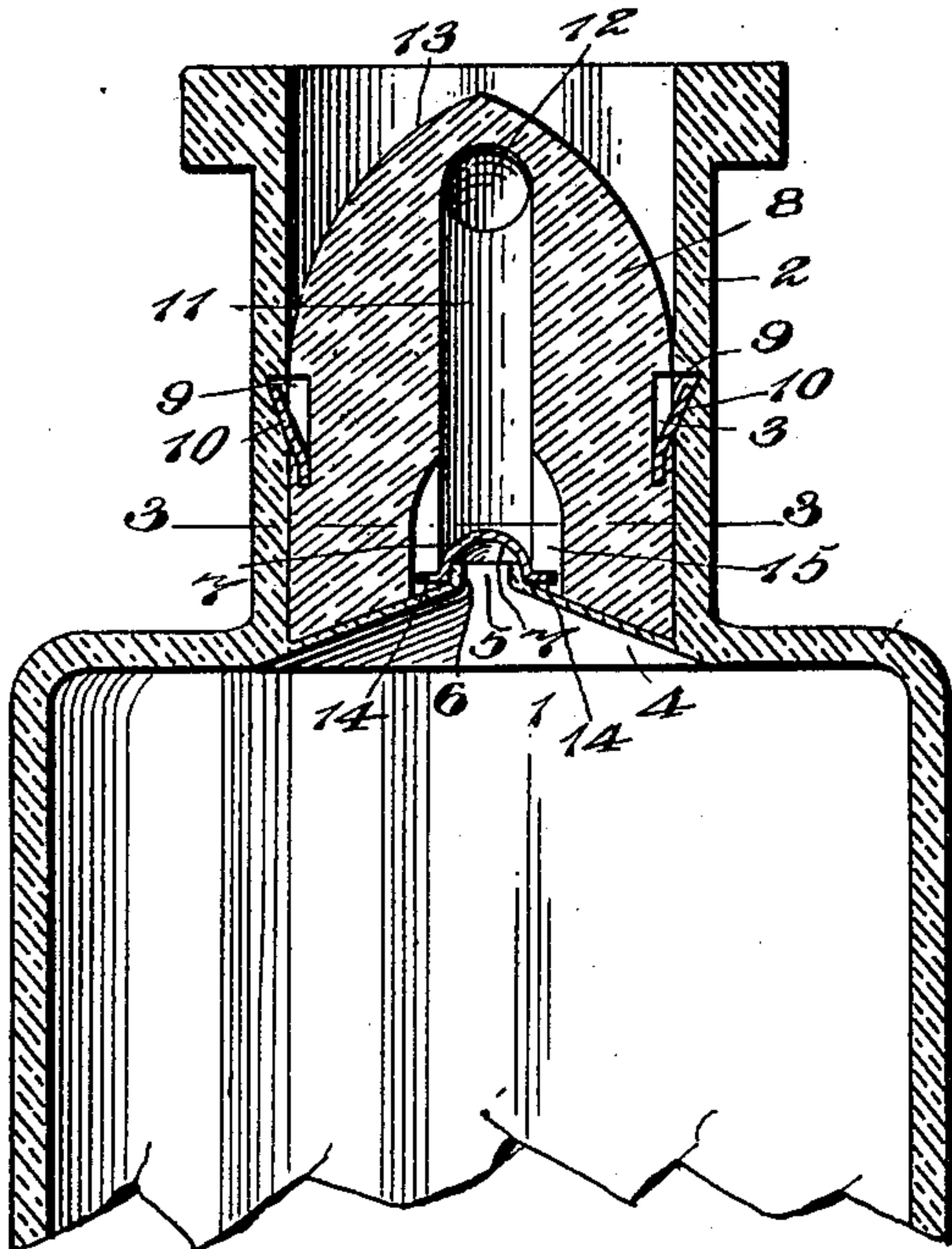


Fig 2.

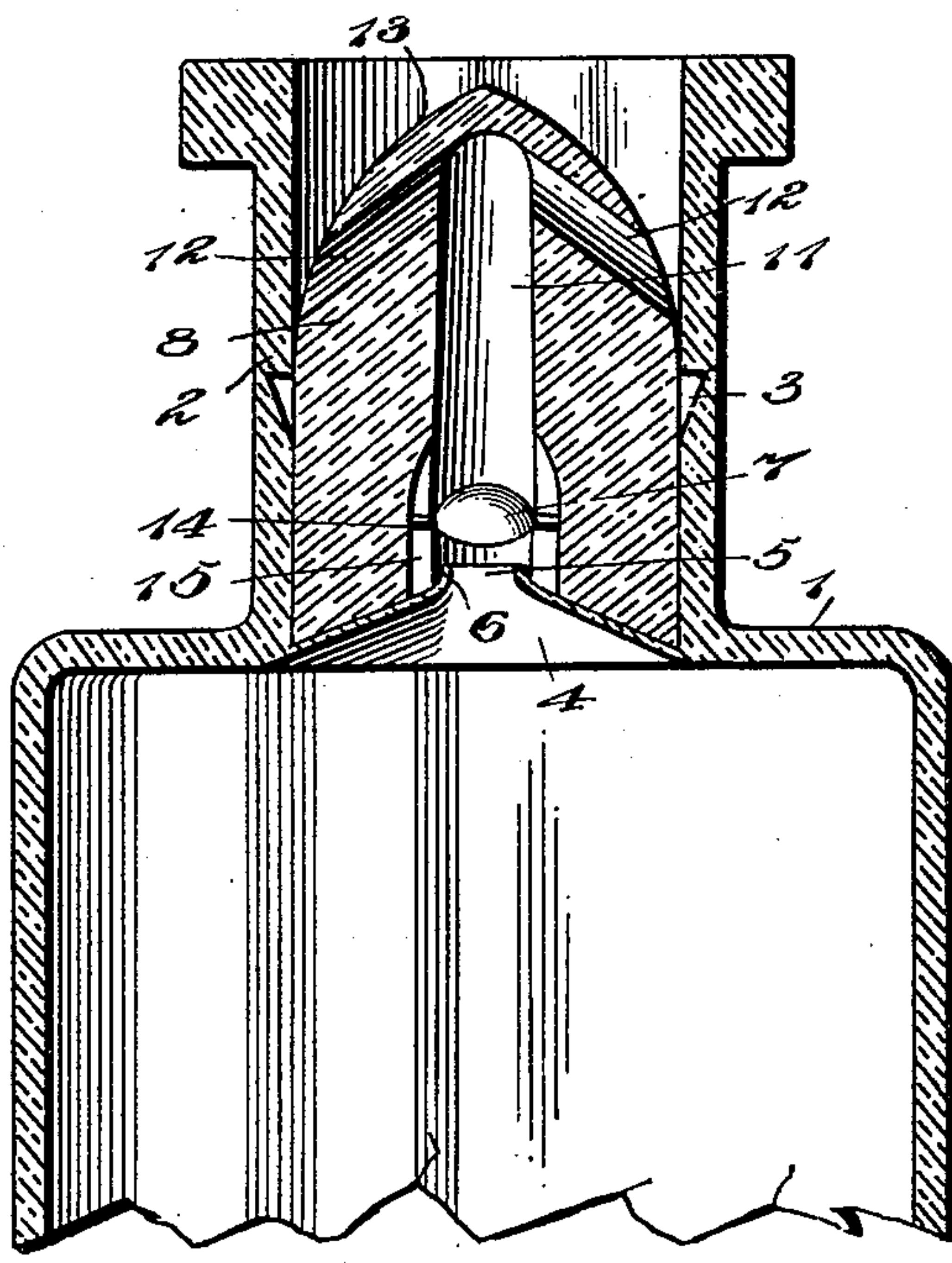


Fig 3.

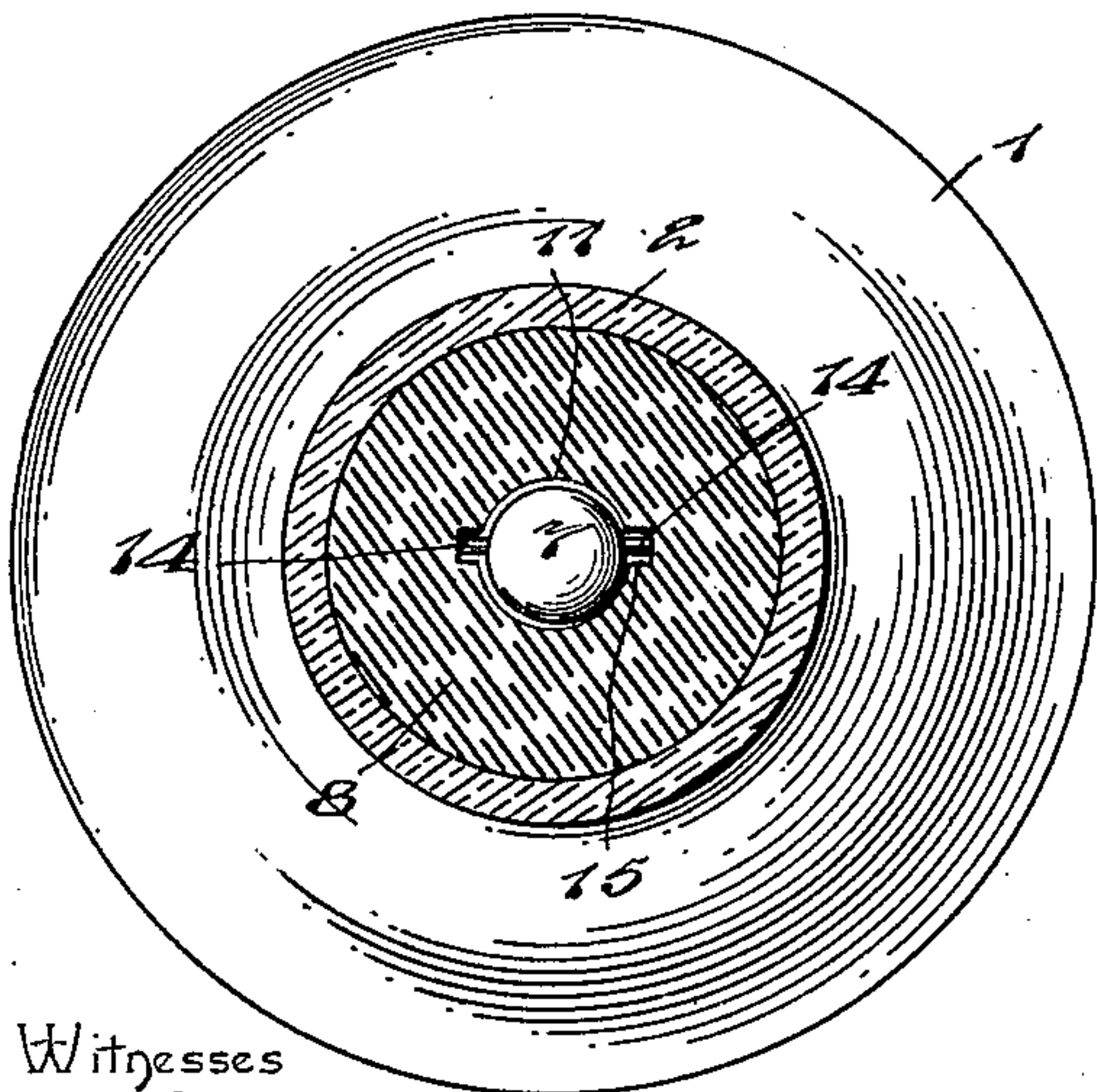
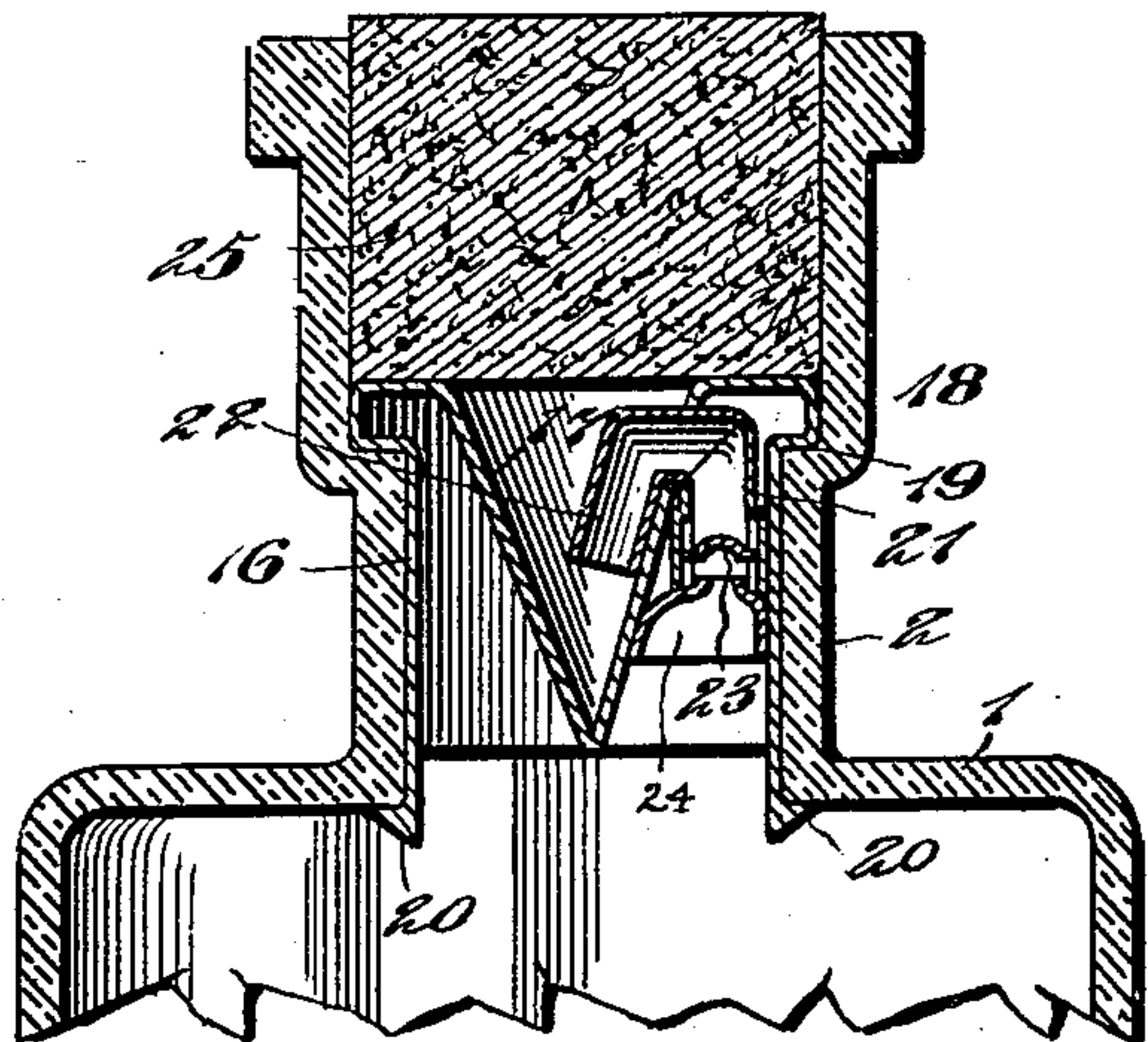


Fig 4.



Witnesses

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UNITED STATES PATENT OFFICE.

SAMUEL LEVIN, OF HIGHLAND PARK, ILLINOIS.

NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 667,234, dated February 5, 1901.

Application filed May 3, 1900. Serial No. 15,429. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL LEVIN, a citizen of the United States, residing at Highland Park, in the county of Lake and State of Illinois, have invented a new and useful Non-Refillable Bottle, of which the following is a specification.

This invention relates to non-refillable bottles, and has for its object to provide an improved form of stopper having means for preventing the removal thereof without destroying the bottle and permitting of the convenient pouring out of the liquid contents thereof in the usual manner, while at the same time effectually preventing the refilling of the bottle.

With this and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a central longitudinal sectional view of a bottle-neck having the improved stopper applied thereto. Fig. 2 is a similar view taken at right angles to Fig. 1. Fig. 3 is a transverse sectional view taken on the line 3 3 of Fig. 1. Fig. 4 is a central longitudinal sectional view of a modified form of stopper.

Corresponding parts in the several figures of the drawings are designated by like characters of reference.

Referring to the accompanying drawings, 1 designates the body of a bottle, having the usual neck 2, which is provided with an internal annular or marginal groove 3, located substantially midway between the opposite ends of the neck. At the base or inner end of the neck there is provided a conical wall or diaphragm 4, which projects into the neck and has a central opening 5 to form an outlet for the liquid contents of the bottle, said opening being surrounded by an upstanding or outwardly-directed flange or wall 6, which is designed to form a valve-seat for the dished

valve 7, as will be hereinafter more fully described.

The stopper 8 is preferably formed of glass and has its inner or lower end made concaved to fit snugly against the wall or diaphragm 4, to which the stopper is connected by means of any suitable cement, so as to prevent removal thereof. By this means the stopper becomes a part of the bottle and cannot be used again. In order that the stopper may be used repeatedly, it is provided with the diametrically opposite notches 9 for the reception of the respective outwardly-bowed spring-catches 10, which are designed to spring outwardly into the groove 3 in the bottle-neck, so as to prevent withdrawal of the stopper only by breaking the neck of the bottle, so that the latter must be destroyed to obtain the stopper for renewed use.

Extending axially of the stopper and opening out through the lower or inner end thereof only is a longitudinal bore 11, which terminates adjacent to the outer end of the stopper and is intersected at its outer end by a pair of diametrically opposite outlet slots or openings 12, which incline downwardly or toward the inner end of the stopper. The exterior walls of the inner portion of the stopper are straight, so as to snugly fit the inner walls of the neck, while the outer end portion of the stopper is substantially conical in shape or has the inwardly rounded or beveled walls 13, through which the outer ends of the outlet-slots 12 open, as best shown in Fig. 2, to permit of the escape of the liquid, while the entrance into the outlet is closed against the insertion of an instrument to hold the valve unseated for the purpose of refilling the bottle.

Located within the inner end of the bore of the stopper is the valve 7, which is provided with the diametrically opposite guide pins or lugs 14, which work in the opposite grooves 15 in the walls of the bore, so as to engage the outer ends of the grooves to limit the outward movement of the valve. It will thus be apparent that by tilting or inclining the bottle in the usual manner the valve will be unseated and move to its outer limit, when it will be turned or rocked upon the guide-pins by the force of the escaping liquid to permit of the pouring out of the liquid contents of the

bottle. Should an attempt be made to refill the bottle through the outlet-slots and the bore of the stopper, the liquid would reseal the valve, and thus effectually prevent the refilling of the bottle.

In the modification shown in Fig. 4 the stopper 16 is pressed from a single blank of metal and formed into a tubular stopper having an open inner end and a conical-shaped reentrant outer end 17, that is also provided with an outer marginal flange 18 to rest against an inner marginal shoulder 19 in the neck of the bottle, so as to prevent the stopper from being pushed too far into the neck. Projecting longitudinally and at diametrically opposite sides of the inner end of the stopper are the spring-catches 20 for engagement with the shoulder formed at the junction of the neck and the body of the bottle, so as to prevent withdrawal of the stopper except by breaking the bottle. This stopper is provided with a bore by means of a tube 21, which is inserted through the inner open end of the stopper and is secured to the adjacent portions of the body of the stopper and the reentrant top or outer end thereof, and an inclined outlet-opening is formed by means of an elbow-shaped tube 22, which is secured to the outside of the reentrant top and has one branch passing through an opening formed in said top and connected to the adjacent end of the tube 21, so as to form a continuous passage leading from the interior of the bottle to the outer side of the stopper. The valve 23 is then inserted into the tube 21 through the open end of the stopper and is guided by diametrically opposite pins or lugs working in grooves in the inner sides of the tube in substantially the same manner as described for the glass stopper. Finally, the wall or diaphragm 24 is fitted in place within the stopper, so that its central opening is inclosed by the adjacent end of the tube 21, whereby the only escape for the liquid is through the tube 21 and the outlet-tube 22, as the valve works the same as in the first-mentioned form of the device. As shown in Fig. 4 only, but also applicable to the other form of the stopper, a supplemental cork or other suitable stopper 25 may be inserted into the neck of the bottle at the outer side of the improved stopper, so as to protect the latter in transportation and storage.

From the foregoing description it will be seen that the present invention provides an

exceedingly simple and effective bottle-stopper to prevent refilling of the bottle and at the same time permits of the convenient pouring out of the liquid contents thereof in the usual manner. Also the outlets are so arranged that while they permit of the outflow of the liquid they are effectually closed against the insertion of an instrument to unseat the valve and permit of the introduction of a liquid into the bottle.

What is claimed is—

1. A bottle-stopper, having a bore opening through the inner end of the stopper, valve-guides within the inner end of the bore and accessible from the inner end of the stopper, a valve inserted into the bore from the open inner end thereof and having a slidable engagement with the guides, and a valve-seat applied to the inner end of the bore and closing the outer ends of the guides, to prevent loss of the valve.

2. A bottle-stopper having a bore opening through the inner end thereof, said bore having a pair of diametrically opposite longitudinal guiding-grooves opening through the inner end of the bore, a valve inserted through the open end of the bore, and having diametrically opposite guide-pins slidably received within the respective grooves, and a valve-seat applied to the inner end of the bore and closing the guiding-grooves, to prevent loss of the valve.

3. A bottle-stopper, having a bore opening through the inner end of the stopper, said bore having a pair of diametrically opposite longitudinal valve-guiding grooves formed therein and opening through the inner end thereof, an inverted-cup-shaped valve inserted into the bore through the inner open end thereof, and provided with diametrically opposite guiding pivot-pins slidably and pivotally received within the guiding-grooves, and a valve-seat applied to the inner end of the bore and closing the guiding-grooves, said seat having a central port, provided with an upstanding marginal wall or flange for the support of the cup-shaped valve.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

SAMUEL LEVIN.

Witnesses:

FRED DENMAN,
ALEX SCOTT.