

No. 812,804.

PATENTED FEB. 20, 1906.

A. BENNETT.
NON-REFILLABLE BOTTLE.
APPLICATION FILED MAY 15, 1905.

Fig. 1.

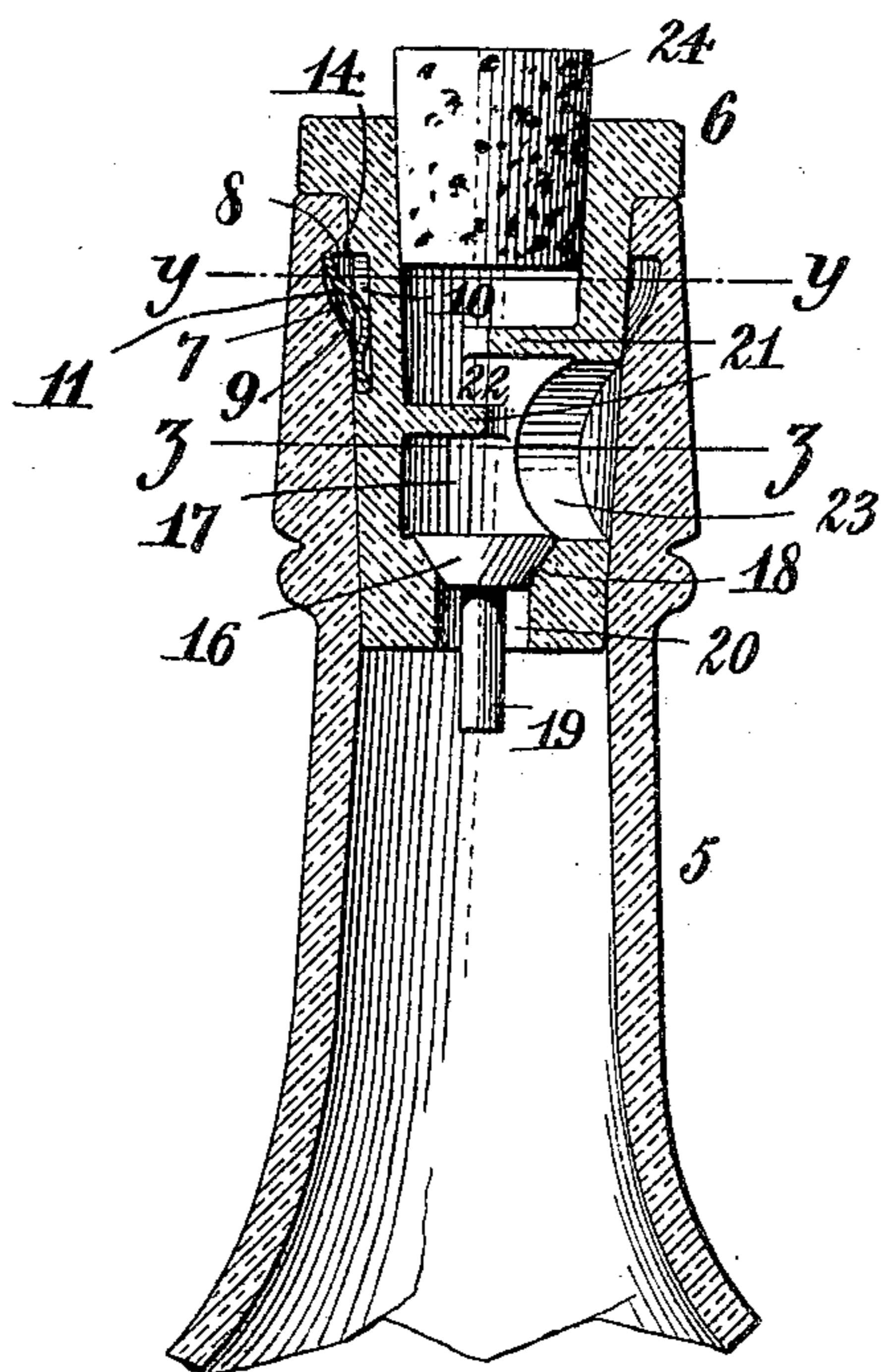


Fig. 2.

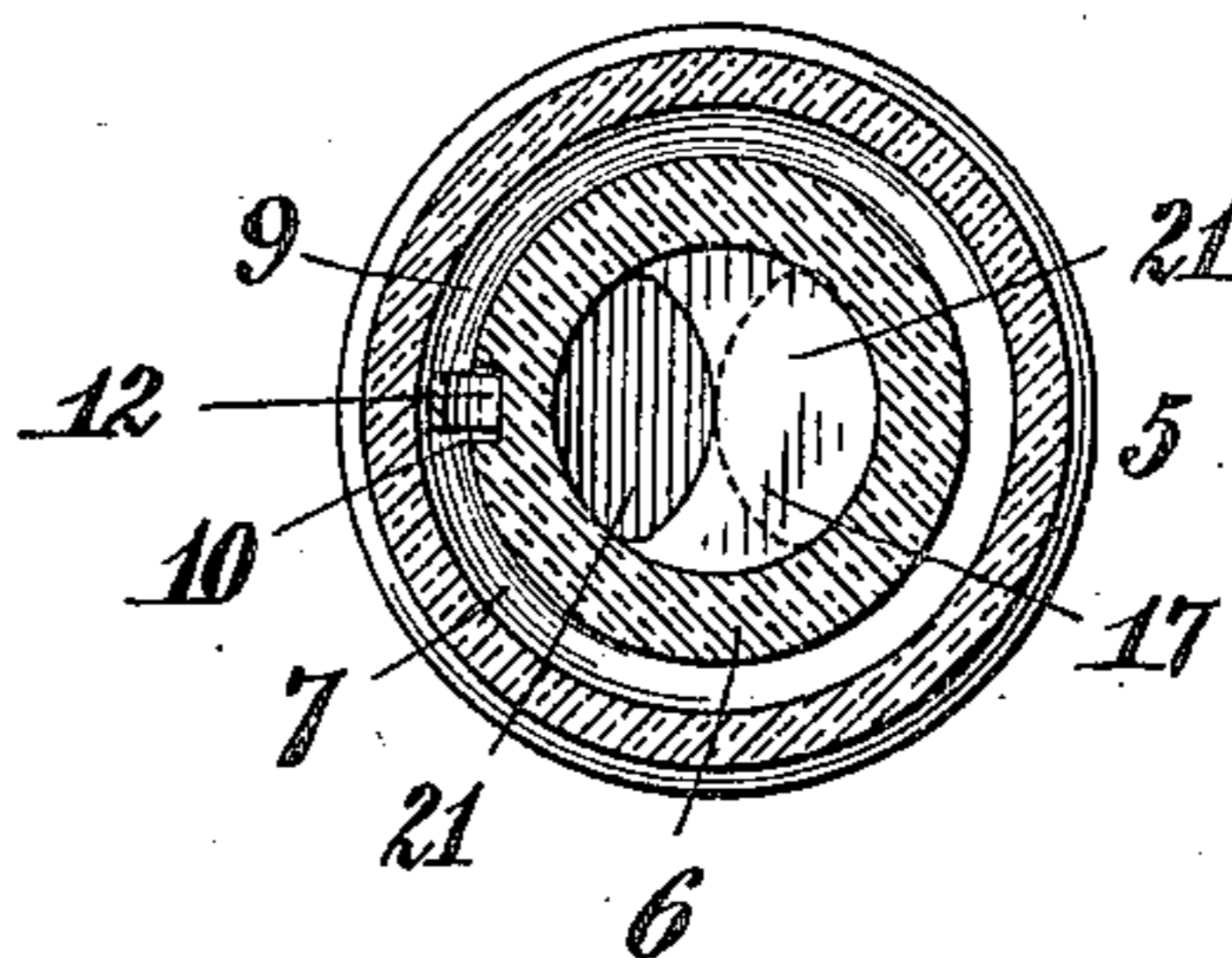


Fig. 3.

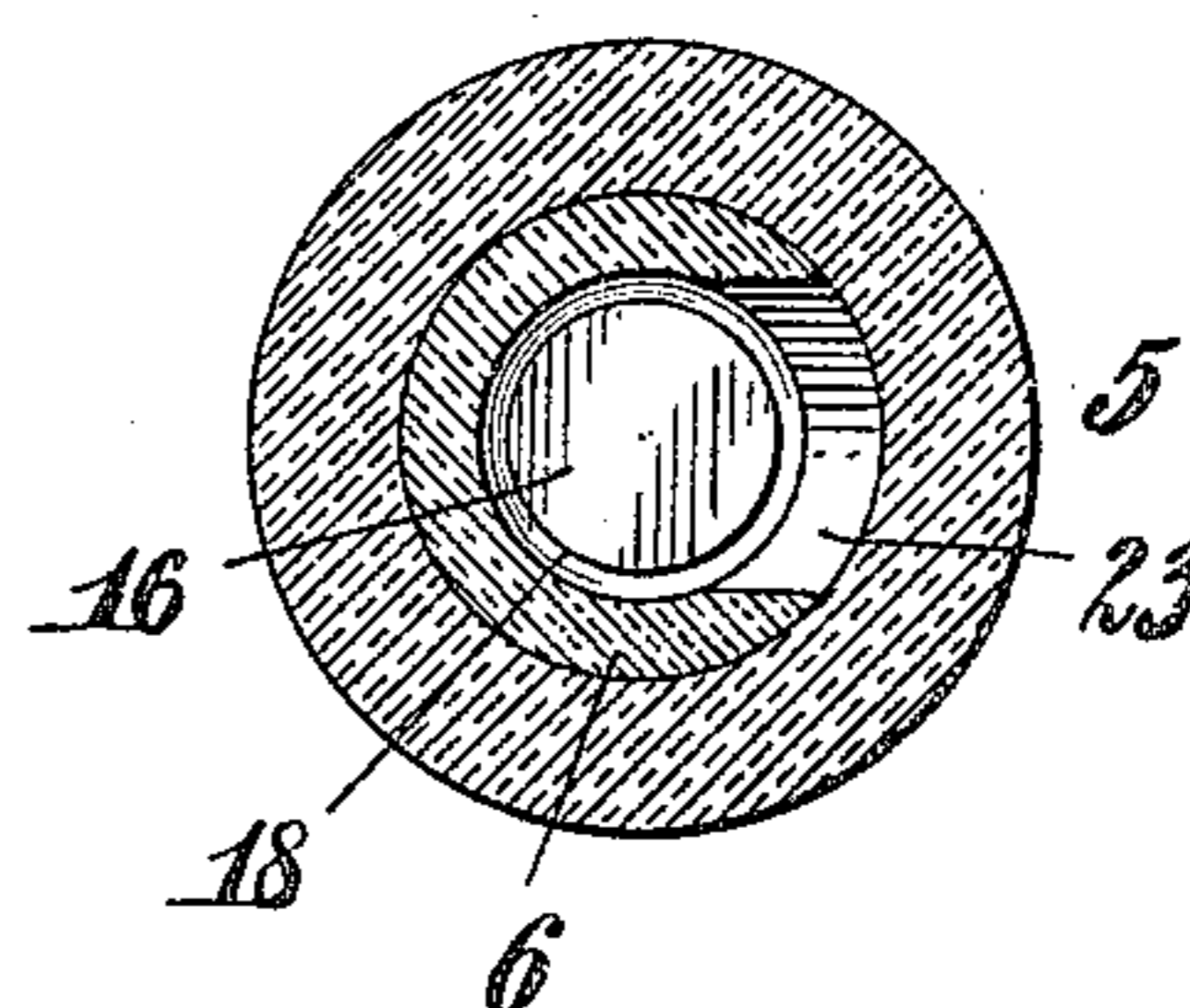


Fig. 4.

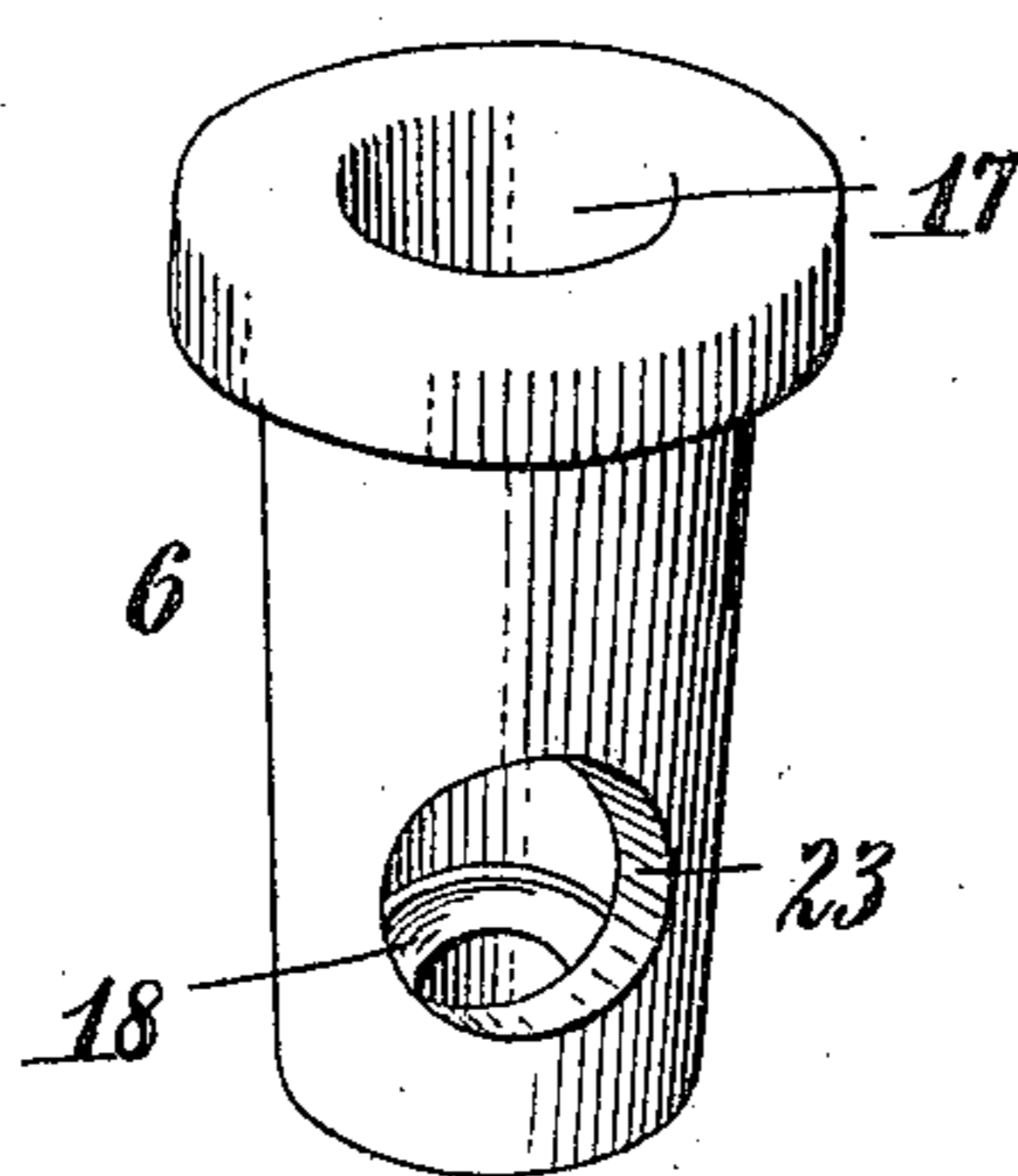


Fig. 5.

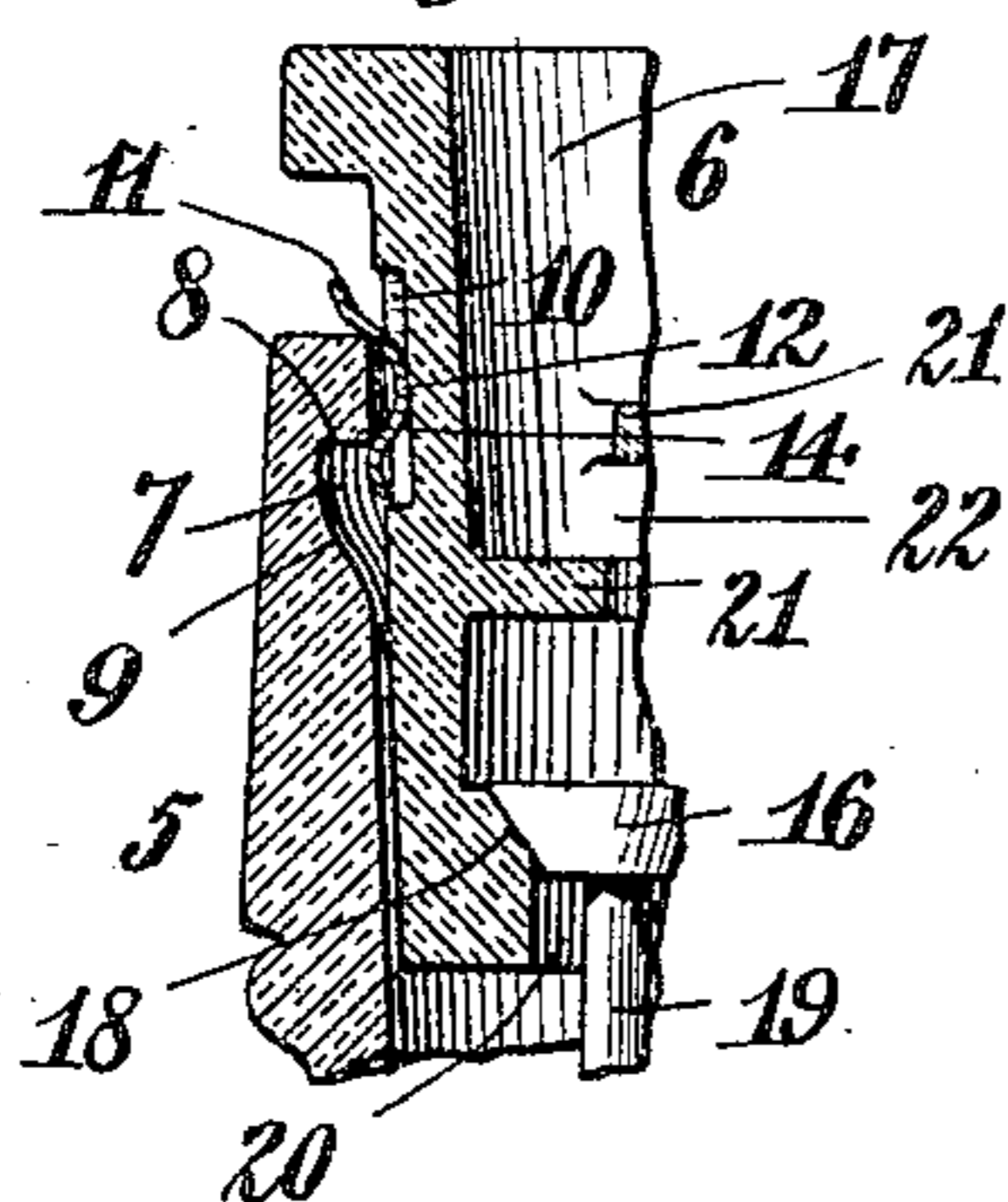


Fig. 6.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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NON-REFILLABLE BOTTLE.

No. 812,804.

Specification of Letters Patent.

Patented Feb. 20, 1906.

Application filed May 15, 1905. Serial No. 260,450.

To all whom it may concern:

Be it known that I, ALEXANDER BENNETT, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Non-Refillable Bottles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in non-refillable bottles, but more particularly to the stopper, which controls the passage of liquid through the neck of the bottle.

The primary object of my invention is to provide an effective device of simple construction that will prevent the fraudulent refilling of bottles, jugs, and similar receptacles for liquids when partially or entirely emptied.

Further objects are to provide a one-piece stopper containing a liquid-passage, a valve-seat in said passage, opposite protecting-lugs also in said passage, and an opening closed by the neck of the bottle for the insertion into the stopper of a valve that forms the second member of the device, and to otherwise improve and simplify devices of this character.

With these objects in view my invention consists in the novel construction, arrangement, and combination of parts to be hereinafter described, and particularly pointed out in the appended claim.

In the drawings, Figure 1 is a vertical section through the neck of a bottle having my invention applied thereto. Figs. 2 and 3 are transverse sections of the bottle-neck and stopper therein, taken in the respective planes indicated by lines $y y$ and $z z$, Fig. 1. Fig. 4 is a detached perspective view of the stopper, the valve being removed therefrom. Fig. 5 is a sectional view of the upper end of the bottle-neck, showing the position of the lock-spring when the stopper is being inserted. Fig. 6 is an enlarged detached perspective view of the lock-spring.

Referring now to the drawings in detail, corresponding numerals of reference refer to corresponding parts in the several figures.

The reference-numeral 5 designates the neck of the bottle or other liquid-receptacle into which my improved stopper 6 is to be secured. This neck is provided with a depres-

sion 7 of any form, but herein shown as annular and having a horizontal or substantially horizontal upper wall 8 and an inclined inner wall 9. The stopper is provided with a groove 10, which registers with the depression in the neck of the bottle, and located in said groove is a lock-spring 11, which is designed to engage the horizontal wall of said depression and prevent withdrawal of the stopper from the bottle. Said spring is formed with an inwardly-curved center portion 12, that bears against the inner wall of the groove 10 and serves as a fulcrum for the same. When inserting the stopper into the neck of the bottle, the lower end of the spring is forced into the groove 10 to permit the ready insertion of the stopper, and when the lower end of said spring reaches a point below the horizontal wall of the depression in the neck the upper end thereof, which projects from the groove, is brought into contact with the end of the bottle-neck and forced into the groove, thereby causing the lower end to move into the depression in the neck, when on further movement of the stopper the said lower end is brought into contact with the inclined wall of the depression and the spring placed under tension until the upper end of the spring rides over the shoulder 14, formed by the horizontal wall of the depression, and locks against the same. The curved center portion of the spring permits the spring to rock, so as to gradually enter the depression, and thus avoid the chipping of the glass as it rides over the shoulder 14. It is to be noted that when the stopper is thus locked into the neck of the bottle the spring is not under tension, the curved center portion thereof having served its purpose to permit the spring to assume its normal condition. By means of this construction the curved portion of the spring moves freely around that portion of the bottle-neck between the shoulder 14 and the upper end of said neck when inserting the stopper. It is therefore provided that the stopper while designed to be freely inserted cannot be removed, except under difficulties and destruction of the bottle-neck and at an expense greater than the financial gain resulting therefrom, and in any event the fraudulent refilling could under any conditions be easily detected.

I have provided in the construction of this invention for the reduction of the number of

parts to a minimum, and in addition to the stopper and the lock-spring a valve 16 is provided, no other parts being necessary.

5 The stopper is preferably cylindrical and formed in one integral piece, it being provided with a center bore 17, reduced at its lower end to provide a valve-seat 18, against which the valve is seated when the bottle is upright. Said valve is provided with a de-
10 pending stem 19 to prevent dislodgment thereof, the stem being free and separated from the wall of the stopper by an intervening space 20, so as to restrict the opening as little as possible.

15 Extending from the wall of the stopper into the bore thereof are two integral ribs 21, arranged at diametrically opposite points and in different horizontal planes, said ribs overlapping to provide a passage 22 between
20 the two for the escape of the liquid. In the stopper directly beneath the upper rib and opposite the lower rib is an opening 23 to permit the valve to be inserted therein, the space between the edge of the lower rib and
25 the valve-seat being just sufficient to permit the insertion of the valve when tilted and gradually brought into a vertical position while forced against its seat. By this construction dislodgment of the valve is impos-
30 sible by merely inverting the bottle to discharge the liquid. These ribs serve as protectors to prevent manipulation of the valve by insertion of a tool into the stopper, and the lower rib also serves as a stop for the

valve, so that it cannot move outward to an extent sufficient to bring the lower end of the stem out of the reduced lower portion of the bore. The opening 23 in the stopper is closed by the neck of the bottle, and leakage through the same is therefore impossible. 40 The bottle may be closed by an ordinary cork 24, if desired.

From the foregoing it is apparent that my invention can be cheaply produced, the stopper and valve being molded ready for inser- 45 tion into the receptacle. If desired, the valve and its seat may be ground, and for the purpose of grinding the valve-seat a tool may be inserted through the opening 23.

Having thus described my invention, what I claim is— 50

The combination with the receptacle having a neck provided internally with a depression, of a hollow stopper having a groove arranged lengthwise thereof, a spring having a curved center portion lying in contact with the inner wall of said groove and its upper end engaging the upper wall of said depression in the neck, and an outwardly-opening valve in said stopper. 55 60

In testimony whereof I have affixed my signature in the presence of two subscribing witnesses.

ALEXANDER BENNETT.

Witnesses:

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