

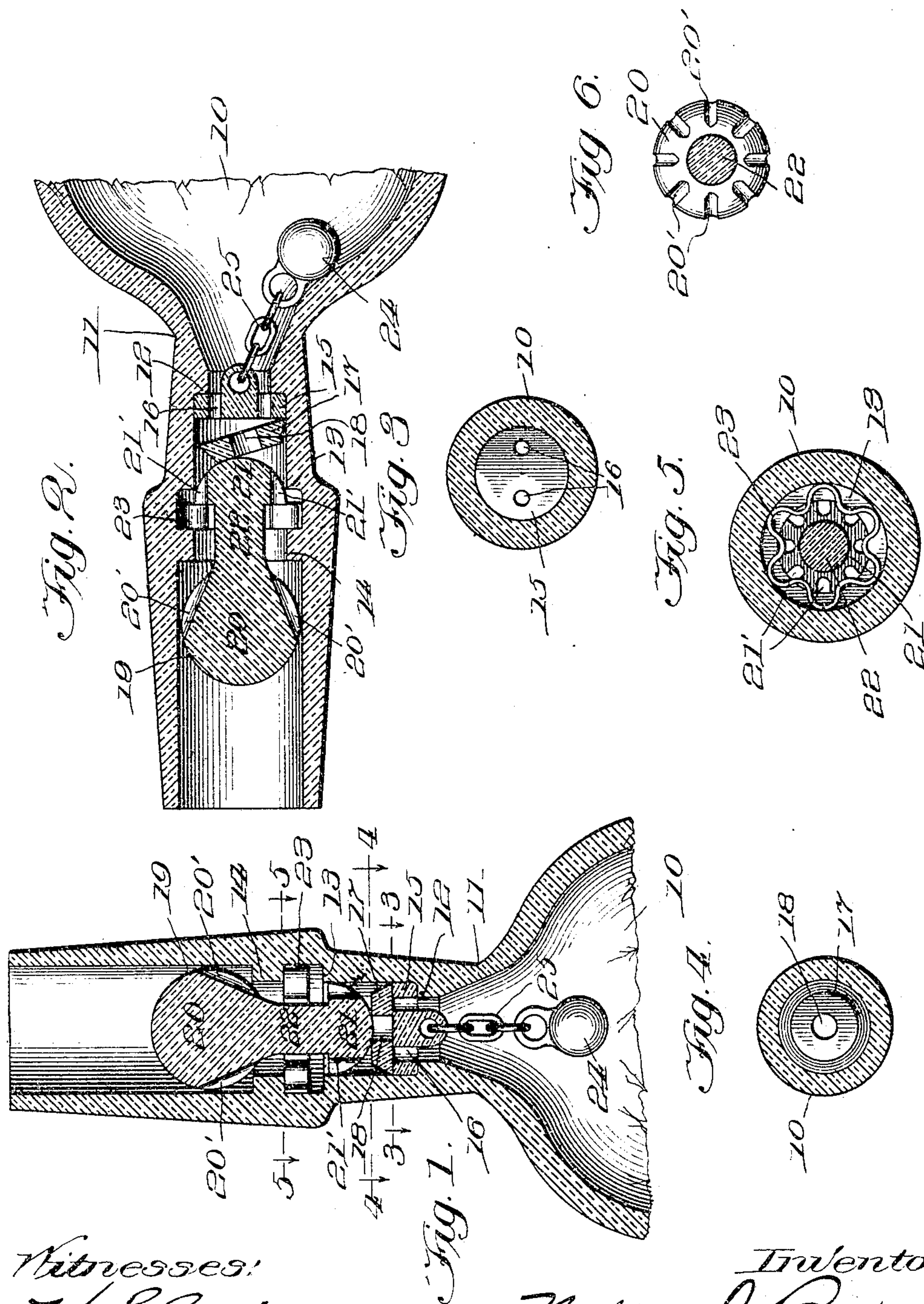
No. 793,173.

PATENTED JUNE 27, 1905.

W. L. BODMAN.
BOTTLE STOPPER.

APPLICATION FILED JULY 19, 1904.

2 SHEETS—SHEET 1.



Witnesses:
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Anna Anderson.

Inventor:
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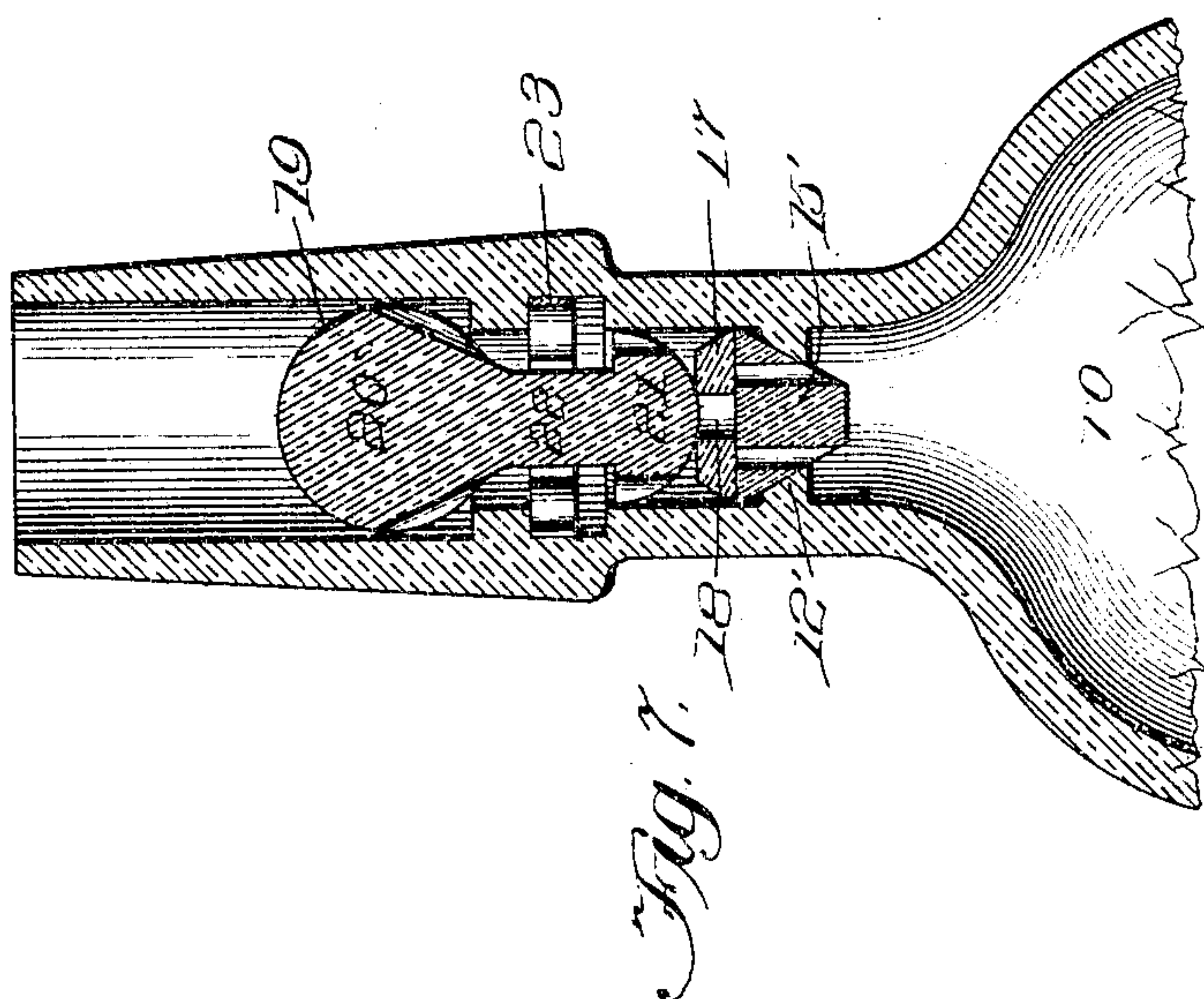
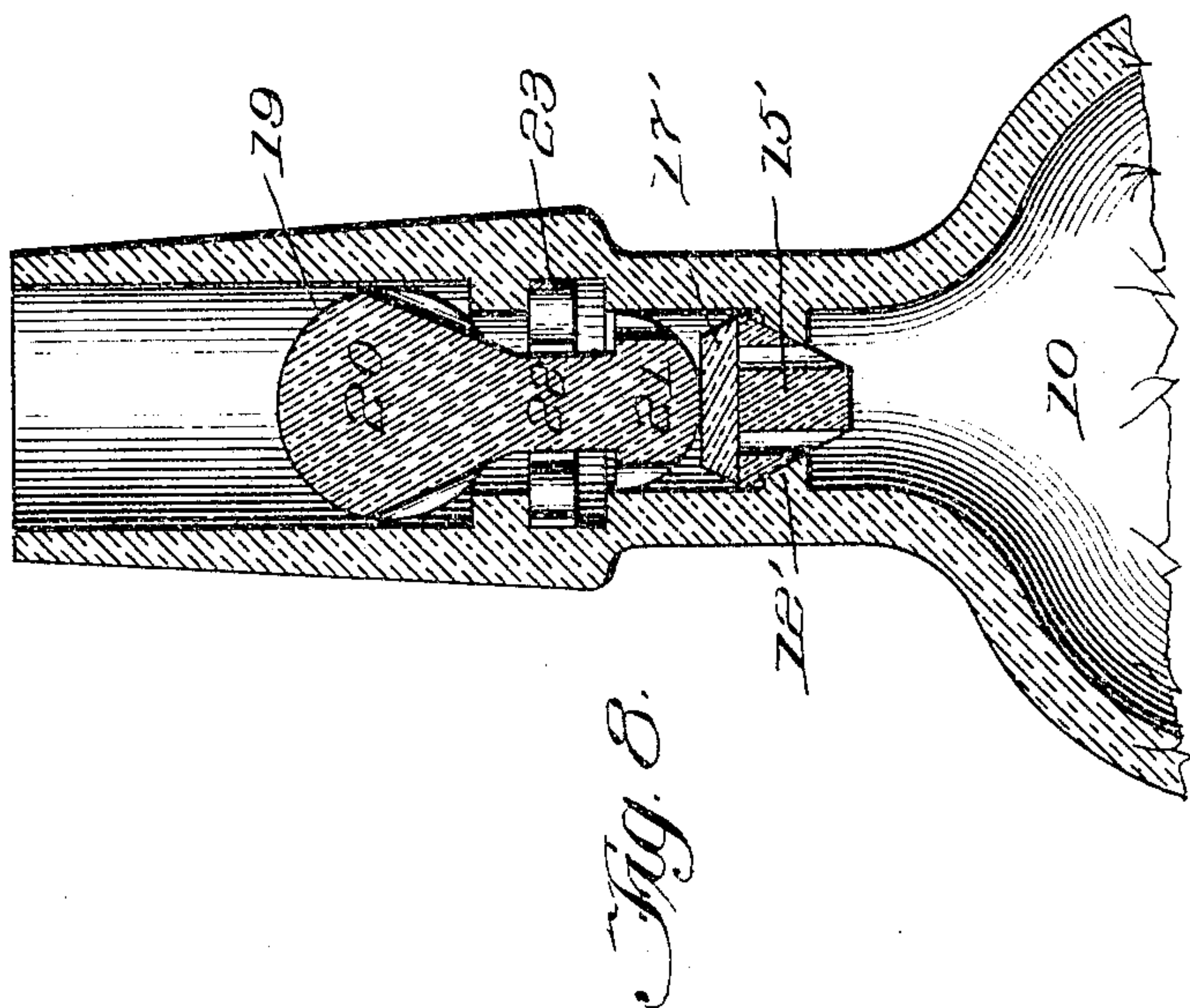
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PATENTED JUNE 27, 1905.

W. L. BODMAN.
BOTTLE STOPPER.

APPLICATION FILED JULY 18, 1904.

2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

WALTER L. BODMAN, OF BROOKLYN, NEW YORK.

BOTTLE-STOPPER.

SPECIFICATION forming part of Letters Patent No. 793,173, dated June 27, 1905.

Application filed July 19, 1904. Serial No. 217,215.

To all whom it may concern:

Be it known that I, WALTER L. BODMAN, a subject of the King of England, residing at Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Bottle-Stoppers, of which the following is a specification.

The object of this invention is to provide a bottle-stopper of simple and inexpensive construction which can be easily arranged in place after the bottle is filled to prevent refilling the bottle after it is emptied by any of the means commercially employed for this purpose or in any other practical manner.

In the accompanying drawings, Figure 1 is a sectional view of a bottle-neck with my invention applied thereto. Fig. 2 shows the position of the parts when the liquid is being poured out of the bottle. Figs. 3, 4, and 5 are sectional views on the lines 3-3, 4-4, and 5-5, respectively, of Fig. 1. Fig. 6 is a detail view of the plunger, taken on or about the line 5-5 of Fig. 1 and looking up. Figs. 7 and 8 show other constructions of the invention.

Referring to the drawings, 10 designates a bottle which has its neck reduced in thickness at 11 and is provided interiorly with the shoulders 12 and 13 and an annular rib 14. A valve-plug 15 is seated against the shoulder 12 and is provided with one or more openings 16. A valve-disk 17, constituting the valve proper, is arranged loosely in the neck to seat upon the plug 15 and normally close the openings therein, and this disk is provided with an opening 18, located out of register with the openings 16 in the plug. The disk is held in place by the plunger 19, which has the heads 20 and 21 at its ends connected by a neck 22. The head 21 is constructed to pass the shoulder 14, so that the plunger can be inserted in proper position in the neck of the bottle, and the heads are provided with grooves 20' and 21' to permit the passage of liquid. The plunger is secured in place permanently by the reversely-bent spring-plate 23, which can be sufficiently contracted to pass the rib 14 when being inserted in the bottle-neck, along with the plunger, and after passing said rib the spring will expand into its permanent

location between the rib 14 and shoulder 13, overlapping both the rib and shoulder as well as the head 21, to prevent the plunger from being withdrawn from the bottle-neck and to limit its movement. The head 20 of the plunger may be made to fit closely within the upper end of the bottle-neck above the rib 14, so that no instrument can pass it to contract the spring 23 for the purpose of withdrawing the spring and plunger from the bottle-neck. The bottle-neck extends above the plunger to receive a cork. (Not shown.)

If desired, a weight 24 may be attached to the valve-plug 15 by a flexible connection 25 to hold the plug in its normal position when the bottle is tipped, as shown in Fig. 2, or I may make the plug in form of a cone, as 15' in Figs. 7 and 8, and shape the shoulder 12' correspondingly to make a nice fit with the cone-shaped plug.

The valve-disk 17 with a central opening 18 fits within the bottle-neck with sufficient accuracy to maintain its position covering the openings in the valve-plug, but at the same time it is capable of tilting, as shown in Fig. 2, to uncover said openings. Instead of providing a perforated valve-disk, as 17, I may provide a solid disk 17', Fig. 8, of somewhat less diameter than the interior diameter of that portion of the bottle-neck in which said disk works, so that the liquid may flow over the edge of said disk when tilted in the manner shown in Fig. 2.

While it may be possible under some conditions to introduce liquid into the bottle provided with my improved stopper, I think that this cannot be done in accordance with any of the practical methods or with any of the practical machines commercially employed for filling bottles, and so far as I am aware the liquid can only be introduced into the bottle drop by drop by immersing and violently agitating the bottle in the liquid. The stopper can be very easily made at nominal cost, and a bottle provided with a stopper construction of this character becomes to all intents and purposes non-refillable in any commercial manner. The grooves 20' extend just beyond the point at which the head 20 of the plunger will engage the inner wall of the bottle-neck, so that the

liquid may flow by the head 20, while at the same time said head fits so closely in the bottle-neck that an instrument cannot pass thereby to contract the locking-spring 23. The rib 5 14 will also prevent the entrance of an instrument to tamper with the locking-spring, and the neck of the bottle is so weakened at 11 that it will break under any sufficient pressure which might be applied to break the plunger, 10 valve-disk, or plug; but it is not essential that the bottle-neck should be weakened, and in Figs. 7 and 8 I have not so shown it.

When the bottle is tilted to pour liquid therefrom, the plunger will move by gravity from the position shown in Fig. 1 to the position 15 shown in Fig. 2, and the valve-disk will tilt, as shown in Fig. 2, to uncover the openings 16 in the plug. The liquid can then flow out of the body of the bottle through the openings 20 16 and through or around the valve-disk and through the grooves 21' and 20' in the plunger. Pressure of any kind upon the plunger will return the valve-disk to its seat on the plug, and if the bottle is shaken while immersed in an endeavor to refill it the valve-disk 25 will be seated so often that the liquid will flow into the bottle only drop by drop. When the bottle is in upright position, the plunger will rest upon the valve-disk and hold it in place seated on the plug to close the openings 30 therein. Instead of inserting the spring and plunger together into the bottle-neck the spring can be first inserted and the plunger afterward forced past the spring into its proper position. 35

Without limiting myself to the exact construction and arrangement of parts herein

shown and described, what I claim, and desire to secure by Letters Patent, is—

1. The combination of a bottle, a valve 40 loosely arranged in the bottle-neck to close the neck, a double-headed plunger arranged in the bottle-neck to seat the valve and having a limited play in said neck, a shoulder and a rib within the bottle-neck, and means surrounding 45 said plunger and engaging said shoulder and rib to secure the plunger permanently in the bottle-neck.

2. The combination of a bottle, a valve-plug seated in the neck of the bottle and provided 50 with openings, a plunger permanently secured in the neck above said plug, and a valve-disk loosely arranged between the plunger and said plug to close the openings in the plug.

3. The combination of a bottle, a shoulder 55 in the neck of the bottle, a plug seated against said shoulder and provided with openings, a valve-disk arranged to seat on said plug to close the openings therein, a double-headed plunger arranged above the valve-disk, and 60 means on said plunger between its heads to secure the plunger permanently in the bottle.

4. The combination of a bottle, a plug seated in the neck of the bottle and provided with openings, a valve-disk for closing said open- 65 ings, a plunger permanently secured in the bottle-neck for seating said valve-disk, and a weight arranged within the bottle and flexibly connected to the plug.

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