

(No Model.)

J. J. McKINIRY & W. VON BOKERN.
BOTTLE.

No. 558,596.

Patented Apr. 21, 1896.

Fig. 1.

Fig. 6.

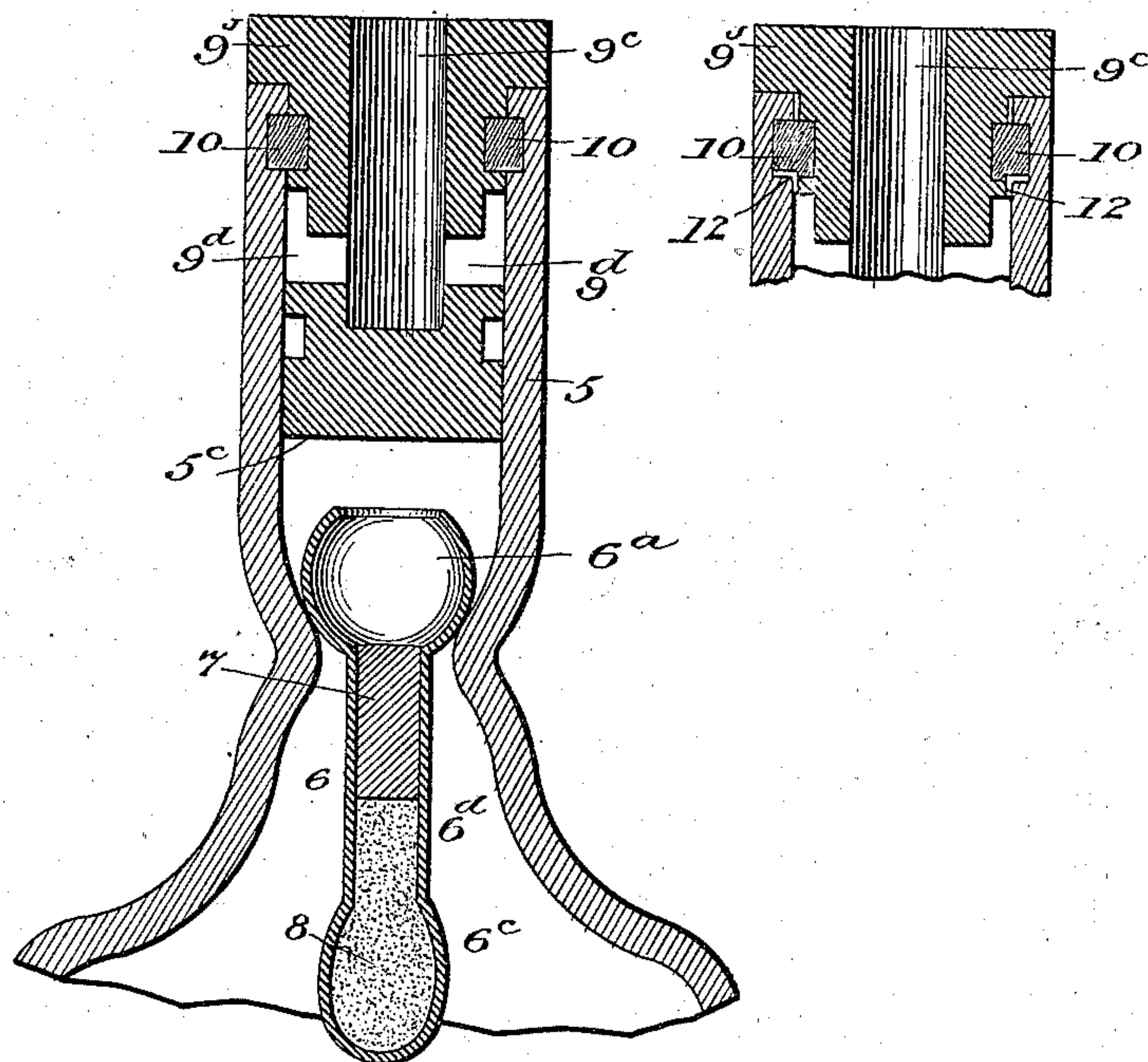


Fig. 2.

Fig. 3.

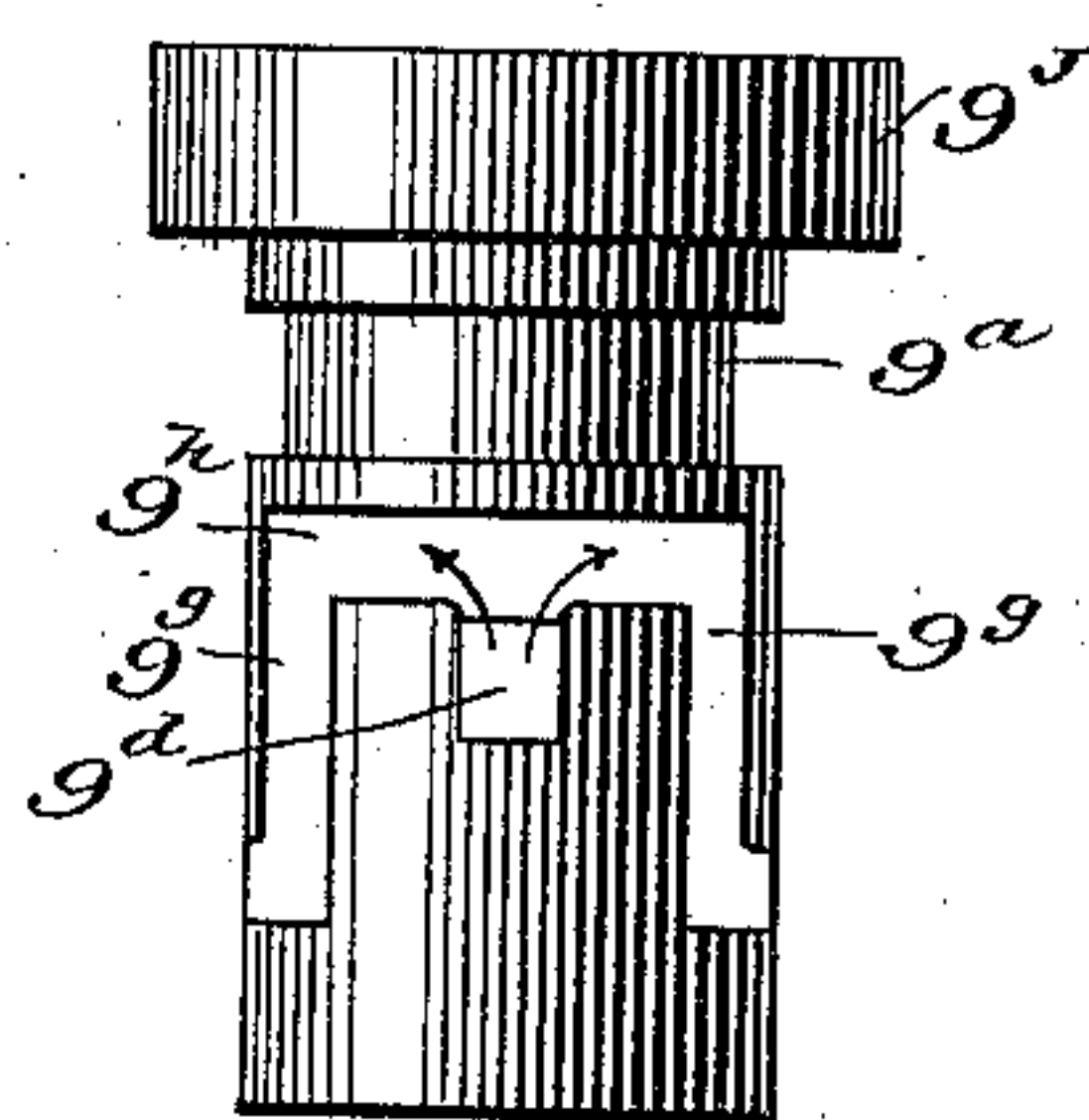
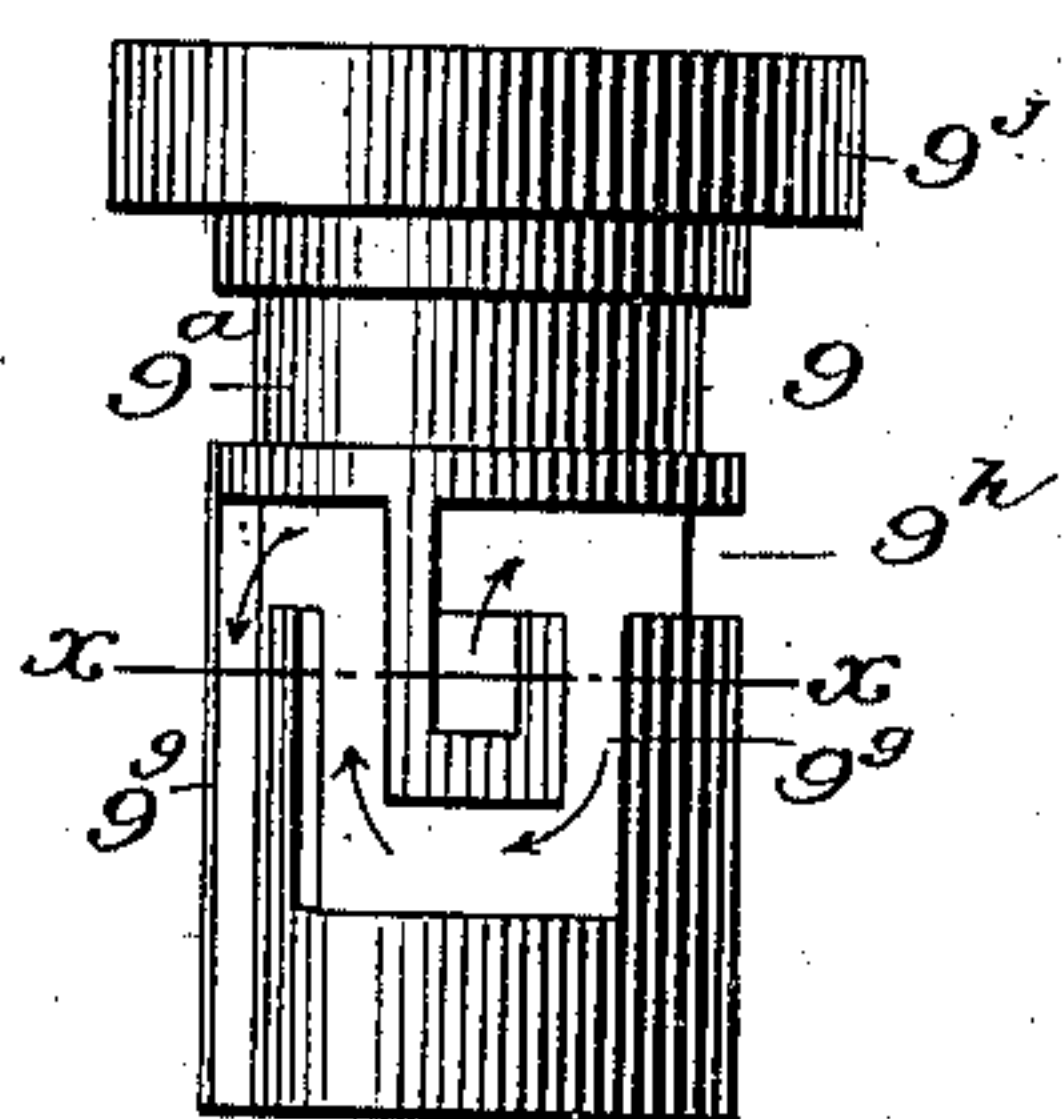
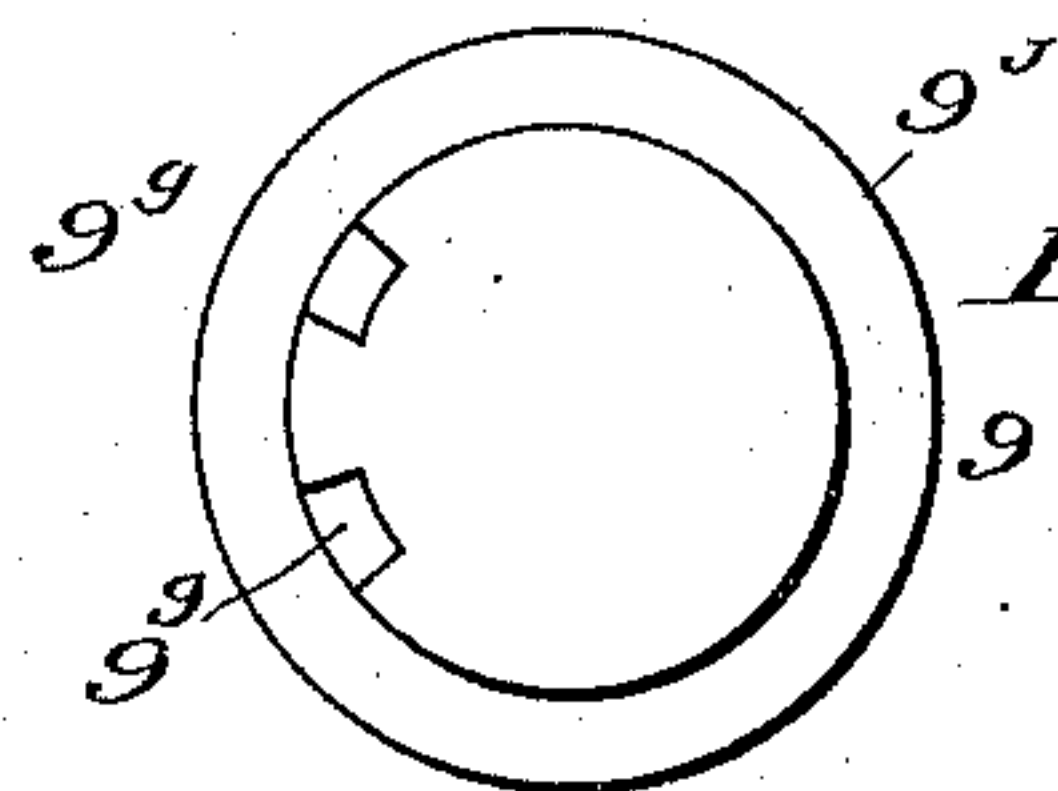
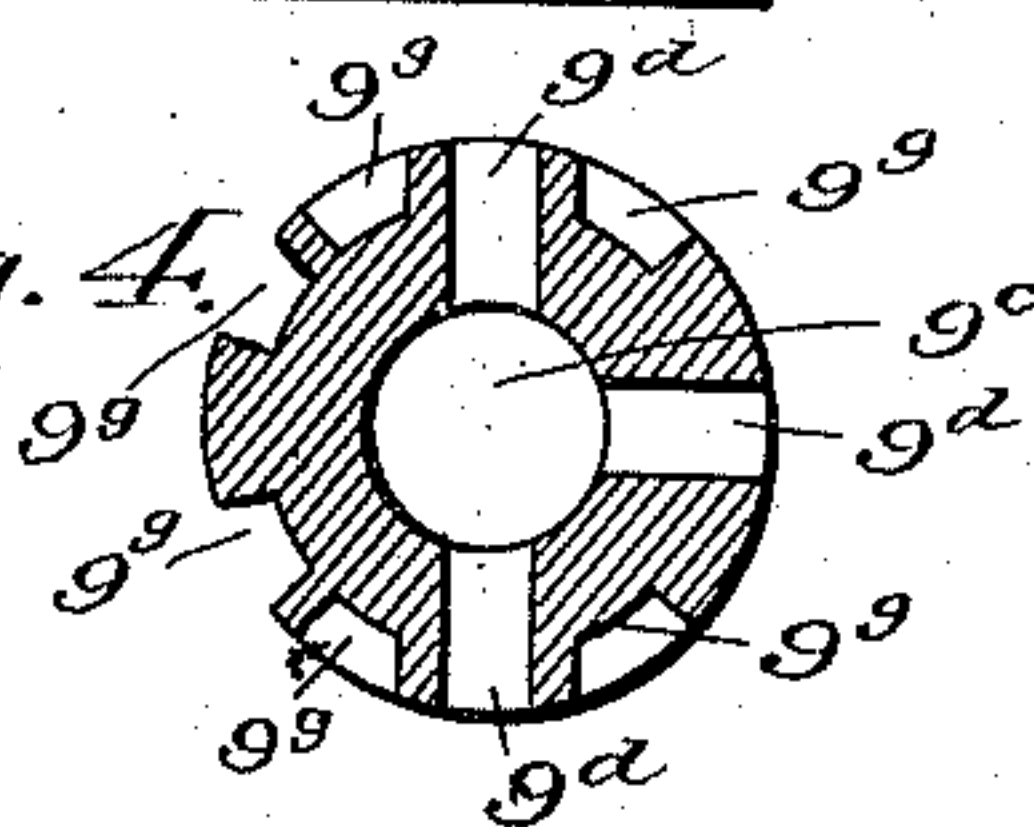


Fig. 4.

Fig. 5.



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UNITED STATES PATENT OFFICE.

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BOTTLE.

SPECIFICATION forming part of Letters Patent No. 558,596, dated April 21, 1896.

Application filed February 11, 1895. Serial No. 538,050. (No model.)

To all whom it may concern:

Be it known that we, JOHN J. McKINIRY, residing at New York, in the county of New York and State of New York, and WILLIAM VON BOKERN, residing at Denver, county of Arapahoe, State of Colorado, citizens of the United States of America, have invented certain new and useful Improvements in Bottles; and we do 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

Our invention relates to improvements in bottles; and our object is to provide a bottle which when once emptied cannot be refilled; and to this end the invention consists of the features hereinafter described and claimed, all of which will be fully understood by reference to the accompanying drawings, in which is illustrated an embodiment thereof.

In the drawings, Figure 1 is a vertical section taken through the neck of a bottle provided with our improvements. Figs. 2 and 3 illustrate the stopper in detail, different sides thereof being shown in the two views. Fig. 4 is a horizontal section taken on the line xx , Fig. 2. Fig. 5 is a bottom view of the stopper.

Similar reference-characters indicate corresponding parts in the views.

Let the numeral 5 designate the neck of a bottle having its opening or passage-way contracted, as shown at 5^a, to form a seat for a hollow valve 6, having enlarged extremities 6^a and 6^c, connected by a reduced elongated stem 6^d. The top 6^a of the valve engages the seat 5^a of the neck and is open to receive some suitable material, as lead, with which the bottom or lower part of the valve is filled, whereby the specific gravity of the lower part of the valve is much greater than the upper part thereof. As shown in the drawings, the filling for the hollow valve is composed of small metal balls or shot 8 of such size as to pass readily through the stem of the valve. This

filling for the hollow valve may of course be in any other convenient form adapted to subserve the function stated. The upper part of the stem of the valve is provided with a plug 7, preferably composed of cork or some other material of small specific gravity adapted to prevent the filling 8 from moving out of place when the bottle is tipped.

The construction of the valve and the neck of the bottle is such that the valve cannot be unseated until the bottle is tipped to such an inclination that liquid cannot be made to enter it. Inserted in the neck of the bottle, above the valve, is the stopper 9, having a circumferential groove 9^a, formed near its top and adapted to coincide with a counterpart groove formed in the neck of the bottle. The depth of the groove in the stopper is a little greater than the distance from the groove to the top of the neck. The object of this construction is to permit the pouring of liquid cement into the groove of the neck around the stopper when the latter is held in the proper position—that is to say, after the stopper has been inserted nearly to its full extent in the neck of the bottle. The stopper being allowed to remain in this position, the groove 9^a must be of sufficient depth to project above the top of the neck while communicating with the groove in the neck. This arrangement will permit the filling of both grooves with liquid cement. The stopper is then forced down to position (see Fig. 1) and the cement allowed to harden or “set.” The stopper is thus locked securely in place. This stopper, which is preferably composed of glass, is provided with a central recess 9^c, which is open at the top and closed at the bottom. The stopper is provided with lateral apertures 9^d, which lead from the recess 9^c to the tortuous, zigzag, or winding channels or passages 9^e, (see Fig. 2,) which lead to the space 5^c between the stopper and the valve.

As shown in the drawings, (see Fig. 4,) the stopper is provided with three apertures 9^d. There are, however, only two of the tortuous channels 9^e. These channels surround two of the openings 9^d. The third opening (see

Fig. 3) is connected with the channels 9^s by passages 9^h, leading in opposite directions from the top of the opening. It must be understood, however, that the number and size of the openings 9^d must be so regulated as to allow a perfect flow from the bottle, while the tortuosity of the channels 9^h may be as complicated as may be found necessary in order to subserve the function of perfect safety against tampering with the valve from the outside when the stopper is in place. As shown in the drawings, the stopper is provided with a shoulder 9^j, engaging the top of the bottle's neck and affording additional security against the possibility of gaining access to the cement ring 10 from the outside.

In using the bottle it is first filled in the ordinary way. The valve is then placed in position, after which the stopper is inserted and cemented in the manner heretofore described. After the cement has set or become hard, it is evident that the stopper cannot be removed without breaking the neck of the bottle. The recess 9^c may be temporarily closed by an ordinary cork, (not shown,) which may be removed in the ordinary way when it is desired to pour liquid from the bottle.

The space 5^c between the stopper and the valve must be sufficient to allow the valve to unseat when the bottle is properly tipped. The style of neck shown in the drawings and adapted to form a seat for the valve is ordinarily termed a "choke-neck." In our construction, however, the "choke" in the neck is located somewhat lower than in the ordinary choke-neck bottle in order to give the lower part of the valve as wide a range of movement as practicable before the valve unseats, since this feature is important as a safeguard against refilling. It is evident that instead of a complete cement ring 10 for locking the stopper in place a part ring may be employed. In other words, the counterpart grooves formed in the neck and stopper need not extend entirely around the respective parts in order to make the locking means efficient.

The stopper is supposed to fit so tightly into the neck of the bottle that there will be no room for the liquid cement to pass below the groove in the neck. If, however, there is danger that the cement may pass downward, a thin washer 12 of cork or some other suitable packing material may be placed in the groove of the neck before the stopper is inserted, said washer being wide enough to project into the path of the entering stopper, whereby its inner edge may be bent downward between the stopper and the neck, thus effectually preventing the downward passage of the cement.

Having thus described our invention, what we claim is—

1. In a bottle of the character described, the combination with the neck having the in-

tegral valve-seat, of the hollow loaded valve engaging said seat, the integral safety-stopper having a groove near its upper extremity adapted to communicate with a counterpart groove formed in the neck of the bottle, and a cement ring engaging said grooves, the stopper being provided with a central recess or cavity 9^c open at the top and closed at the bottom, lateral apertures 9^d leading from said central cavity and communicating with the exterior tortuous, zigzag or winding channels also formed in said stopper and leading to the space in the neck of the bottle below the stopper, as and for the purpose set forth.

2. In an antifilling attachment for bottles, the combination with a bottle having the opening in its neck contracted, of the hollow loaded valve engaging the choke in the neck which forms its seat, and an integral, safety-stopper having a central recess or cavity open at the top and closed at the bottom, and horizontal apertures 9^d leading from the central cavity to the tortuous, zigzag or winding channels formed in the exterior part of the stopper adjacent the neck of the bottle and leading to the space below the stopper, the stopper being grooved to correspond with a groove in the neck of the bottle, and a cement ring, or part ring, engaging the counterpart grooves in the neck and stopper, substantially as described.

3. In a bottle of the character described, the combination with the neck having the integral valve-seat, of the hollow loaded valve engaging said seat, the integral safety-stopper having a groove near its upper extremity adapted to communicate with a counterpart groove formed in the neck of the bottle, a thin, flexible washer engaging said groove in the neck of the bottle and projecting into the path of the stopper, and a cement ring engaging said grooves, the stopper being provided with a central recess or cavity communicating with the space below the stopper by way of tortuous channels or passages, as and for the purpose set forth.

4. In a bottle having a choke-neck, the combination with a suitable valve engaging the choke which forms its seat, of the integral stopper having a recess or cavity open at the top and closed at the bottom, and provided with a horizontal aperture leading from said recess to a tortuous, zigzag or winding channel formed in the exterior portion of said stopper and leading to the space in the neck of the bottle below the stopper, and a cement ring, or part ring, engaging counterpart grooves formed in the neck and stopper, substantially as described.

5. The combination with a bottle, of a safety-stopper having a circumferential shoulder at the top adapted to overlap and engage the top of the neck of the bottle, a central recess or cavity open at the top and closed at the bottom, horizontal apertures leading from said

cavity to tortuous, zigzag or winding channels formed in the exterior portion of said stopper, the stopper being provided with a circumferential groove near its neck, and a
5 cement ring, or part ring, engaging said groove and a counterpart groove formed in the neck of the bottle, substantially as described.

In testimony whereof we affix our signatures in the presence of two witnesses.

JOHN J. McKINIRY.

WILLIAM VON BOKERN.

Witnesses:

CHAS. E. DAWSON,
BERT C. DAWSON.