No. 765,193. PATENTED JULY 19, 1904.

O. REITER.

NON-REFILLABLE BOTTLE.

APPLICATION FILED FEB. 15, 1904.

NO MODEL.

Fig. 1.

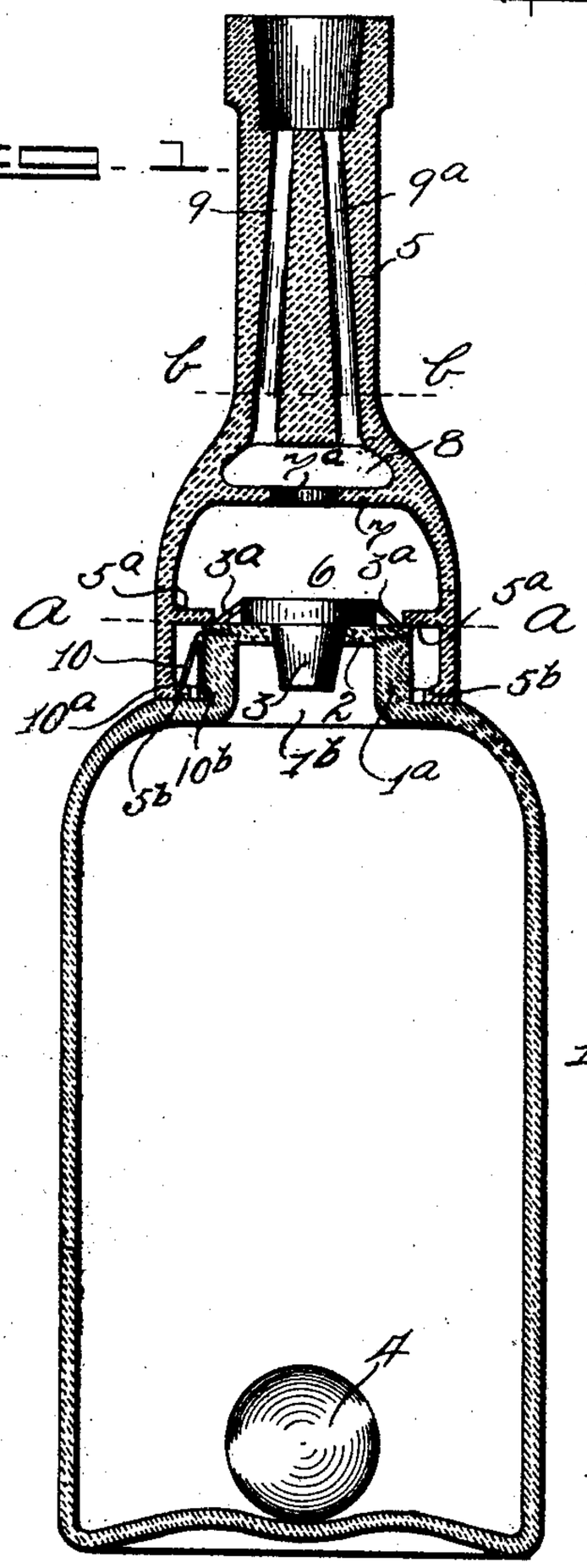


Fig. 2.

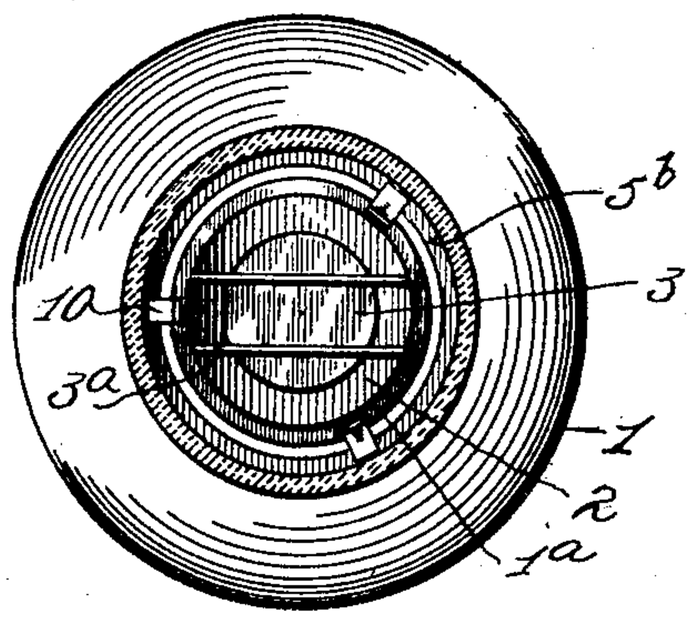


Fig. 3.

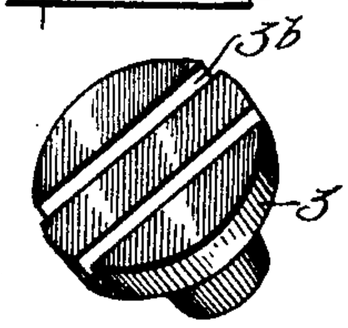


Fig. 4.

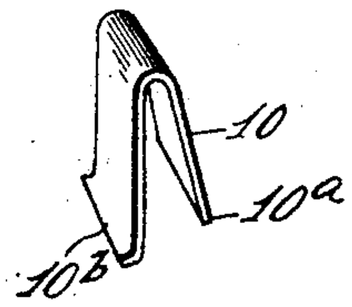


Fig. 5.

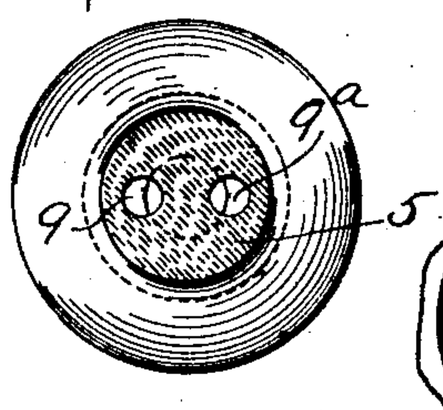


Fig. 6.

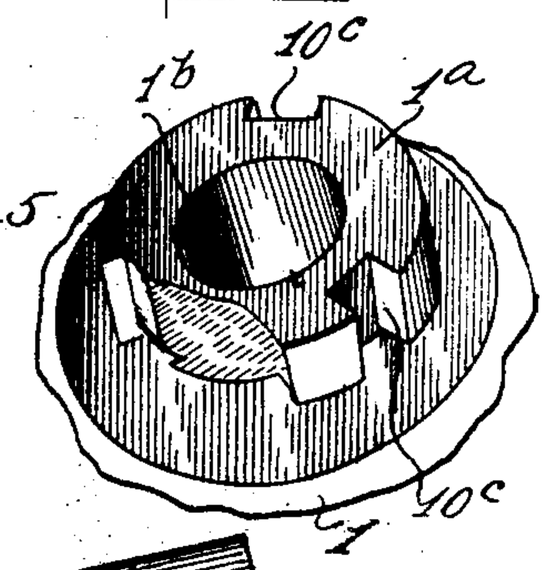
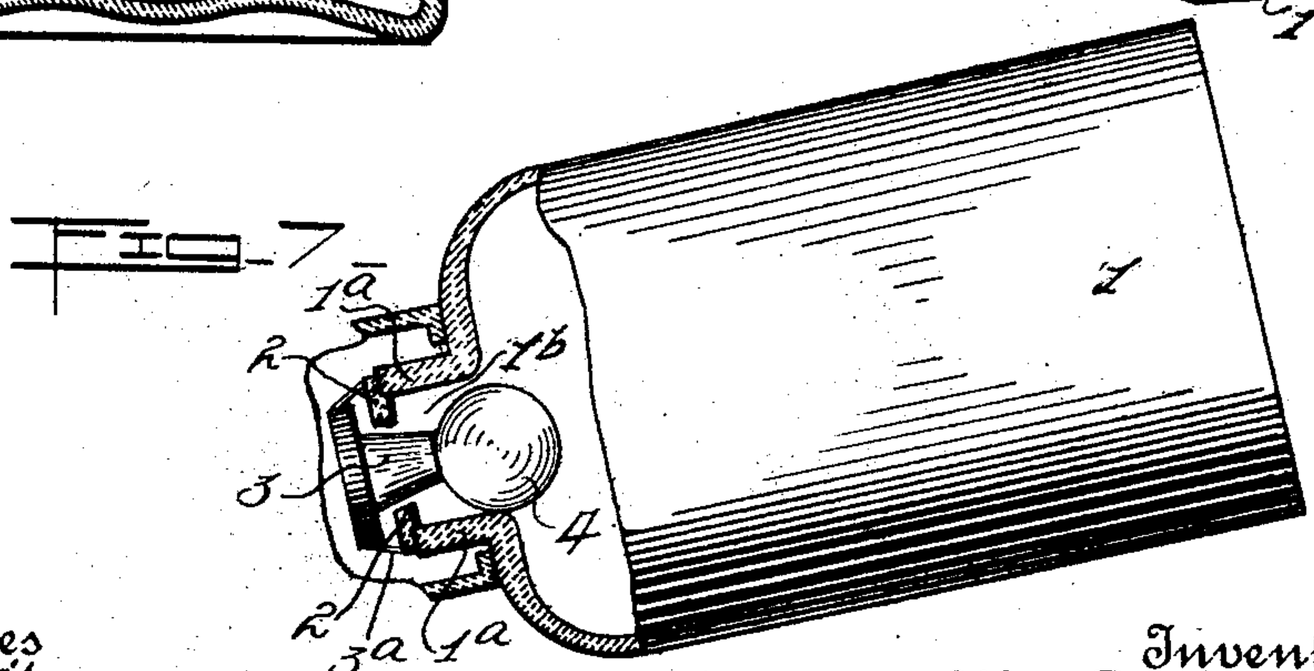


Fig. 7.



Witnesses
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No. 765,193. Patented July 19, 1904.

UNITED STATES PATENT OFFICE.

OTTO REITER, OF NEW YORK, N. Y.

NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 765,193, dated July 19, 1904.

Application filed February 15, 1904. Serial No. 193,535. (No model.)

To all whom it may concern:

Be it known that I, OTTO REITER, a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Non-Refillable Bottles, of which the following is a specification.

My invention relates to non-refillable bottles, and has for its object to provide a bottle of this character of novel construction which will effectively fulfil the requirements of such a bottle.

To these and other ends, which will hereinafter appear, my invention consists in the novel features of improvement and combination and arrangement of parts hereinafter set forth and finally summarized in the appended claims.

Reference is to be had to the accompanying drawings, forming part hereof, wherein—

Figure 1 is a vertical central section of a bottle embodying my invention. Fig. 2 is a sectional view taken on the line *a a* in Fig. 1, the valve and valve-seat being shown in plan, though extending above the plane of said section-line, and the valve-seat disk being shown of less diameter than in Fig. 1 in order that the peripheral part of the end of the neck 1^a may appear. Fig. 3 is a perspective view of the valve. Fig. 4 is a perspective view of one of the anchor pieces or clips employed in anchoring the bottle-neck to the body of the bottle. Fig. 5 is a sectional view taken on the line *b b* in Fig. 1. Fig. 6 is a perspective view, enlarged, of the slotted head or neck of the bottle, a part of the head being broken away. Fig. 7 is a part-sectional view of the bottle, showing the valve raised from its seat to permit egress of liquid.

Similar numerals of reference indicate corresponding parts in the several views.

In the accompanying drawings the numeral 1 indicates the body portion of the bottle, which is provided at its top with a comparatively short neck or head portion 1^a, providing a mouth or opening 1^b, as shown in Figs. 1 and 2. Resting upon the neck 1^a is a disk 2, of hard rubber or other suitable material, to constitute a seat for a spring-pressed valve 3, passing through a central opening in the valve-seat 2, the valve 3 being normally held to its seat by elastic bands 3^a, suitably secured to the valve-seat disk and passing in grooves or channels 3^b in the head of the valve 3. Before the valve and its seat are applied to the bottle the same is filled with the desired liquid and a ball or marble of sufficient weight is introduced into the interior of the bottle for the purpose hereinafter to be explained. The valve and valve-seat being applied, as before explained, I now provide the bottle with what I term its "auxiliary" neck 5, which is constructed and attached to the neck 1^a of the bottle as follows: The lower portion of the neck 5 is provided with a chamber 6 and with a diaphragm 7, having an opening 7^a communicating with a chamber 8, and leading from the latter are passages 9 9^a, which converge outwardly and communicate with the open end of the neck, as shown. 5^a indicates a circumferential shoulder or flange adapted to rest upon and retain the valve-seat 2 against the neck or head 1^a, and the lower end of the neck 5 is also provided with an inner circumferential rim or ridge 5^b. In order that the neck 5 may be irremovably anchored or secured to the bottle, I interpose an anchor-piece or the like 10 between the neck 5 and head 1^a, as shown in Figs. 1 and 4, one leaf or wing 10^a thereof resting against the rim 5^b and the angular end 10^b of the other leaf or wing thereof being passed into and engaged by a slit or recess in the head or neck 1^a, as shown, several of these anchoring devices being employed, if desired, and suitable slots or spaces 10^c being provided in the head or neck 1^a (see Fig. 6) for the utilization of a plurality thereof. These anchoring-pieces are preferably made of spring metal, and when the bottle-neck 5 is pushed down upon the same the wing 10^a thereof will spread outwardly, as shown in Fig. 1, and the angular end of its other wing being firmly engaged by the bottle head or neck 1^a the neck 5 will be securely attached to the bottle, so that the same cannot be pulled out without destroying the same; but, if desired, the neck 5 may be secured to the bottle in some other manner after the bottle has been filled. The flange 5^a protects the anchors 10 against liquid which might flow down on them from chamber 6 to rust them.

It will of course be understood that certain of the details of construction hereinbefore de-

scribed may be varied without departing from the spirit of the invention—such, for instance, as substituting other spring devices in place of the bands 3^a to normally yieldingly hold the valve 3 upon its seat.

It will be seen from the foregoing description that no liquid can be forced into the bottle even by pressure, as the act of forcing any fluid into the neck or entrance to the bottle will act against the valve 3 and more firmly hold same against its seat, thus closing the entrance to the bottle. On the other hand, when it is desired to pour out liquid from the bottle (see Fig. 7) the ball 4 will roll against and exert pressure upon the valve 3 and force the same away from its seat, allowing liquid to pass into chamber 6 through the opening 7^a, into chamber 8, and thence through passages 9 9^a to the atmosphere. As soon as the bottle is stood upright again the ball 4, releasing its pressure against the valve 3, causes the same to resume its normal closed position, as hereinabove explained.

It will be evident that instead of utilizing the ball 4 for opening the valve 3 said ball may be dispensed with and the valve 3 made sufficiently heavy so as to open by gravity when the bottle is inclined downwardly or inverted to pour liquid therefrom and forced back to its seat by a spring when placed upright again.

The valve and valve-disk are removable together and may be kept together for storage and shipment, being so held by the elastic cords or bands 3^a, fitting in the grooves 3^b; but said bands allow the motion of said valve independent of said disk when said valve is forced out by the liquid in pouring, and said bands automatically restore it to its seat when the pressure is removed.

Having now described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In combination with a bottle, a valve-seat disk fitting on the mouth thereof and provided with an opening, a valve fitting in the said opening and grooved on its top, and elastic bands extending across the said valve in said grooves and attached to the said seat, in order that the said valve and disk may be conveniently removed together and kept together, although the said valve is capable of independent motion for opening and closing, the latter action being automatically effected by the said bands substantially as set forth.

2. In combination with a bottle, a valve and valve-seat disk on the mouth thereof, a neck fitting on said bottle and covering disk and valve and means for anchoring the lower end of said neck to said bottle, the said neck being provided with an annular flange 5^a, that holds the said disk in place, and also serving to cover and protect the said means for anchoring substantially as set forth.

3. A bottle of the character described, provided with a normally closed spring-pressed valve and a neck inclosing the said valve and provided with a chamber, an apertered diaphragm and a plurality of converging passages, the said diaphragm and the walls of said chamber and passages being integral with the said neck substantially as set forth.

4. A bottle of the character described, provided with a normally closed, spring-pressed valve and a neck inclosing the said valve, the said neck being constructed with a chamber immediately above the said valve, a diaphragm having an opening above the said chamber, another chamber above said diaphragm, and passages converging to the mouth of the neck from this latter chamber, the said diaphragm and the walls of the said chambers and passages being integral with the said neck substantially as set forth.

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