(No Model.)

A. F. CHACE.

MEANS FOR PREVENTING REFILLING OF BOTTLES.

No. 592,223. Patented Oct. 19, 1897.

Fig. 2.

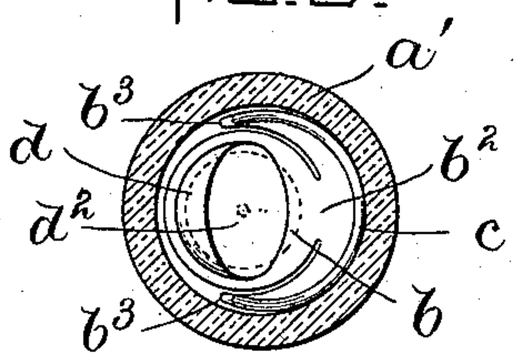

Fig. 1.

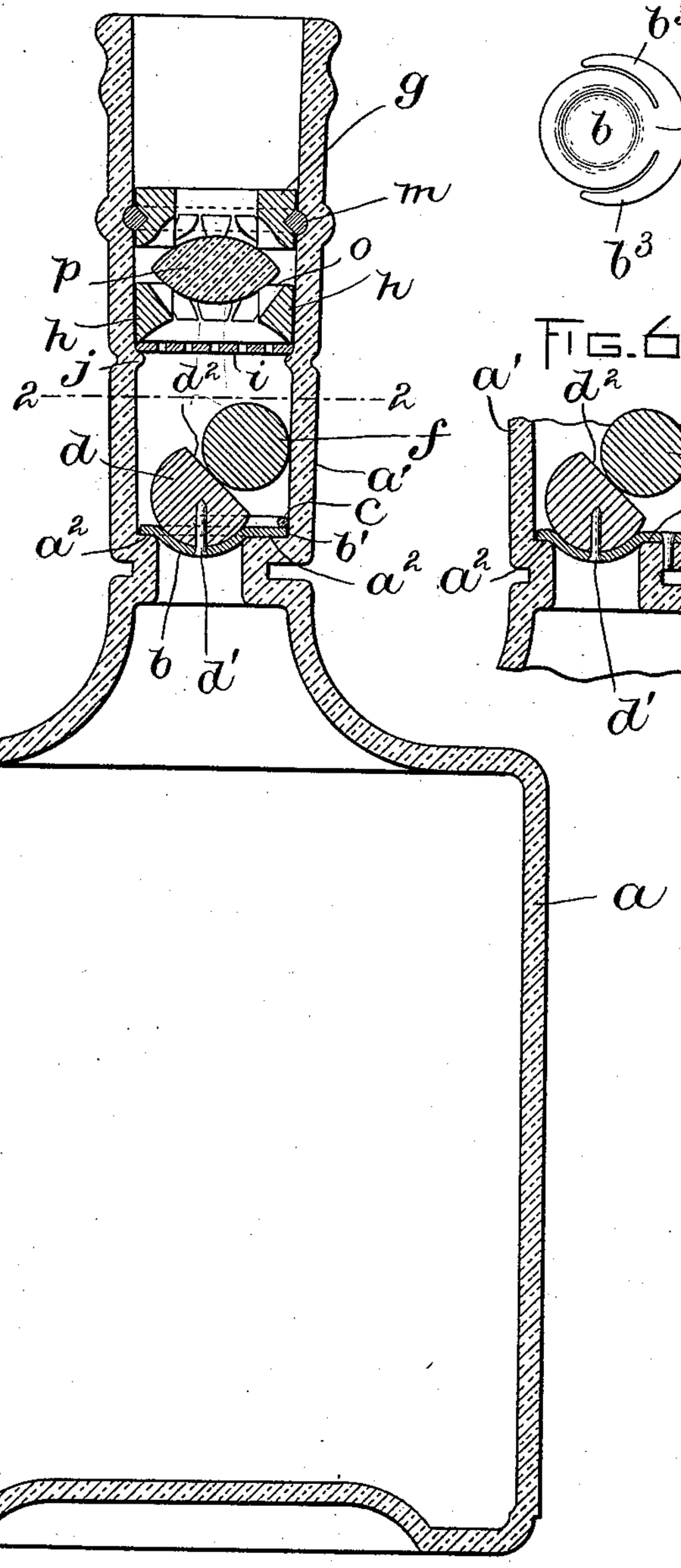

Fig. 3.

Fig. 4.

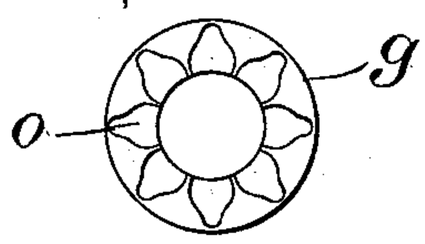

Fig. 5.

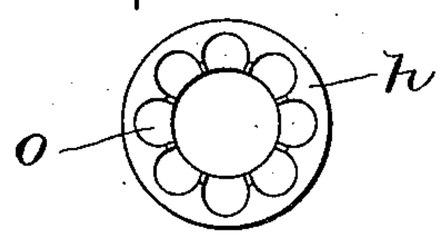

Fig. 6.

WITNESSES:

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UNITED STATES PATENT OFFICE.

ALBERT F. CHACE, OF BOSTON, MASSACHUSETTS.

MEANS FOR PREVENTING REFILLING OF BOTTLES.

SPECIFICATION forming part of Letters Patent No. 592,223, dated October 19, 1897.

Application filed October 8, 1895. Serial No. 564,994. (No model.)

To all whom it may concern:

Be it known that I, ALBERT F. CHACE, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Means for Preventing the Refilling of Bottles, of which the following is a specification.

This invention has for its object to provide an economically-constructed and efficient means for preventing the refilling of bottles; and it consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a sectional view of a bottle provided with my improvements. Fig. 2 represents a section on line 2 2 of Fig. 1, looking downwardly. Fig. 3 represents a plan view of the valve removed from the bottle. Fig. 4 represents a bottom view of the upper member of the perforated guard. Fig. 5 represents a top plan view of the bottom member of said guard. Fig. 6 represents a sectional view of a modification.

The same letters of reference indicate the same parts in all the figures.

In the drawings, a represents a bottle, the neck a' of which is provided with a valve-seat a^2, surrounding the outlet of the bottle. Said valve-seat is preferably formed by indenting the neck, as shown in Fig. 1, the seat a^2 being preferably extended at one side—namely, the right-hand side, as viewed in Figs. 1 and 2, to support the extension b' of the valve b. The said valve is composed of a piece of leather or other suitable flexible material, and is formed to close upon the seat a^2. The body of the valve is connected with the extension b' by means of a neck or hinge b^2, which permits the valve to readily rise and fall. The extension b' rests upon the widened portion of the seat a^2, and is preferably provided with ears b^3 b^3, as shown in Fig. 3, to increase the bearing of said extension upon the seat. The valve is held in place by means of a spring-clamp c, which is preferably a semicircular piece of elastic steel wire, formed to be inserted in the neck and spring outwardly against the inner surface thereof with sufficient force to hold the extension b' and its wings b^3 down upon the seat a^2.

The valve is provided with a weight d, which is preferably a hemispherical piece of stone or other suitable dense and rigid material placed upon the upper surface of the valve, the latter being concaved to fit the convex side of the weight, and secured to the weight by suitable means, such as a wooden peg d' driven through the valve into the weight. The flat side or face d^2 of the weight occupies an inclined position when the bottle is erect, and serves as a seat upon which a loose gravitating spherical weight f normally rests, said weight f being a sphere of glass or any other suitable material. The inclined face of the valve-weight d and the adjacent inner surface of the bottle-neck form a tapering recess into which the loose weight gravitates and in which it is wedged, as shown in Fig. 1, when the bottle is upright, thus holding the valve securely closed and preventing it from leaving its seat excepting when the bottle is tipped, when the loose weight f leaves said tapering recess and falls away from the valve-weight d, thus releasing the valve.

Above the valve, and secured to the neck of the bottle, is a perforated guard constructed to permit the ready egress of liquid from the neck and to prevent the insertion of a piece of wire or other instrument, whereby the valve may be held open to permit refilling the bottle. Said guard is here shown as comprising two annular members g h, which are formed to fit the interior of the neck and are secured thereto in any suitable way. For instance, the lower member h may rest upon a perforated plate i, which in turn rests upon the shoulder j, formed on the interior of the neck of the bottle, the periphery of said member h being preferably cemented to the neck of the bottle. The upper member g is here shown as provided with a peripheral groove, which coincides with an internal groove formed in the neck of the bottle, the two grooves forming an annular cavity to receive a filling m of cement. The two members g and h are separated from each other by a space, as shown in Fig. 1, and their adjacent

surfaces are provided with inclined grooves *o*, which communicate with the passage through the said members.

Between the members *g* and *h*, and bearing on the angles or points formed between the grooves *o*, is an intermediate member *p*, which is preferably a piece of glass, or other suitable rigid material, having the form of a double-convex lens, its diameter being less than that of the interior of the neck and greater than that of the passages through the annular members *g h*, so that the surface of the intermediate member *p* and the grooves *o* in the annular members form a plurality of angular passages through the neck, which permit the passage of liquid, but prevent the access of an instrument inserted from the outer end of the neck of the bottle to the valve. If desired, the said guard may include another member—namely, a perforated plate *i*, preferably of metal, placed below the annular member *h*, its perforations being arranged so that in case a flexible wire were to be passed through one of the angular passages above described it would be arrested by the plate *i*.

It will be seen that the above-described improvements can be applied to the bottle at a comparatively small expense, and that the improved bottle as a whole cannot be refilled.

The extension *b'* of the valve may be secured to the seat a^2 by means of a peg driven through it into a hole in the seat, as shown in Fig. 6.

I claim—

1. A bottle having in the interior of its neck a valve-seat surrounding the outlet, a valve formed to close on said seat and hinged to the seat at one side of the outlet, a weight affixed to the valve and projecting upwardly therefrom, said weight being cut away at one side to form, with the inner surface of the bottle-neck, a tapering cavity over the valve-hinge, a loose gravitating weight formed to gravitate into said cavity and thereby engage said protuberance and hold the valve closed, and a perforated guard affixed to the neck above said valve and weight.

2. A bottle having in the interior of its neck a valve-seat surrounding the outlet, a weighted valve formed to close on said seat and obstruct the outlet and provided with a curved extension connected with the body of the valve by a flexible neck or hinge and formed to rest on the seat, and a resilient U-shaped clamp formed to enter the neck and press outwardly on its inner surface, said clamp holding the valve extension against the seat to hold the valve in place.

3. A bottle having in the interior of its neck a valve-seat surrounding the outlet, a weighted valve formed to close on said seat, and a perforated guard above said valve, said guard comprising two annular members affixed to the neck, and provided with inclined orifices in their adjacent surfaces, and an interposed member clamped between said annular members and of greater diameter than the openings therein.

4. A bottle having in the interior of its neck a valve-seat surrounding the outlet, a weighted valve formed to close on said seat, and a perforated guard above said valve, said guard comprising two annular members affixed to the neck, and provided with inclined orifices in their adjacent surfaces, an interposed member clamped between said annular members, of greater diameter than the openings therein, and a perforated plate affixed to the neck below said members.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 4th day of October, A. D. 1895.

ALBERT F. CHACE.

Witnesses:
E. BATCHELDER,
A. D. HARRISON.