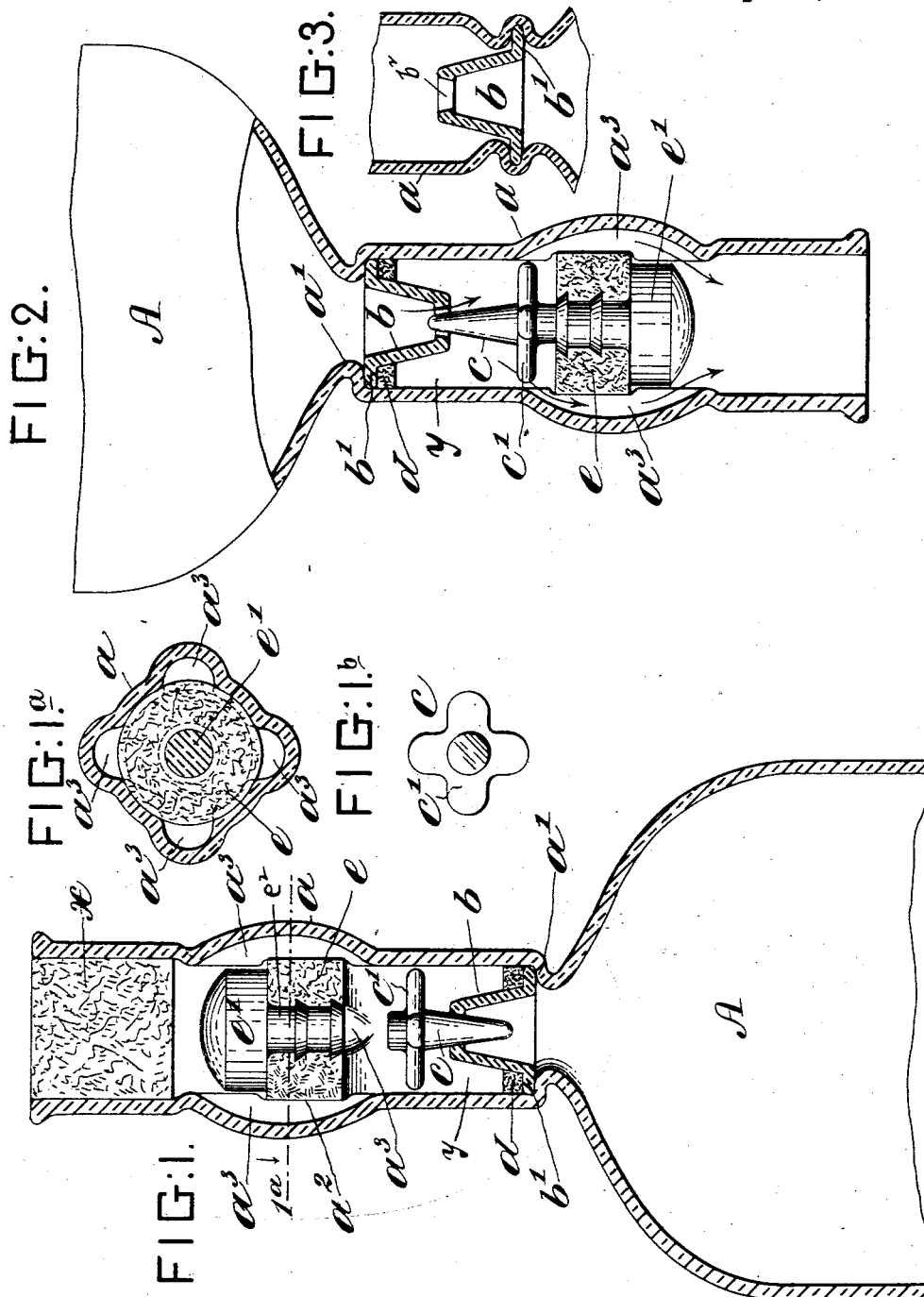


(No Model.)

H. A. HAYDEN.
BOTTLE.

No. 525,543.

Patented Sept. 4, 1894.



Witnesses:
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UNITED STATES PATENT OFFICE.

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BOTTLE.

SPECIFICATION forming part of Letters Patent No. 525,543, dated September 4, 1894.

Application filed July 5, 1894. Serial No. 516,579. (No model.)

To all whom it may concern:

Be it known that I, HENRY A. HAYDEN, a citizen of the United States, and a resident of Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Bottles, of which the following is a specification.

My invention relates to the class of devices designed to prevent the re-filling of bottles, or to render the re-filling so difficult that it cannot be profitably practiced; and the object of the invention is to produce a simple, inexpensive and practical device for the purpose.

The invention will be fully described hereinafter and its novel features carefully defined in the claims.

In the accompanying drawings, which illustrate an embodiment of the invention—Figure 1 is a vertical, axial section of a bottle provided with my improvements. Fig. 1^a is a transverse section of the bottle-neck at line 1^a in Fig. 1, and Fig. 1^b is a plan or end view of the plug-valve. Fig. 2 shows the bottle inverted and the valve off from its seat. Fig. 3 illustrates one mode of securing the valve-seat in the bottle-neck.

A represents the body of a bottle and *a*, its neck. At the base of the neck, near where it joins the body, is formed an internal ledge, *a'*. Within the bottle-neck, and supported on this ledge, is a thimble-like valve-seat, *b*, which has a marginal base-flange, *b'*, and an aperture, *b²*, in its crown or top to receive the valve, *c*. The valve-seat will be secured firmly in place on the ledge *a'*, and this I effect, preferably, by forcing a ring or annulus of cork, *d*, down upon the base-flange, at the bottom of the space, *y*, about the elevated valve-seat. The latter may be secured by cement, or by cement in addition to the cork *d*. Or, if the seat be placed at the time the bottle is made, the bottle-neck may be heated and pressed in about the base-flange of the seat, as seen in Fig. 3.

The plug-valve *c*,—seen detached in Fig. 1^b,—has a long, tapered shank and a crown, *c'*, formed of several radiating branches. The diameter of this crown will be such that it

will slip down loosely into the neck of the bottle. Above the valve *c*, is a stop-plug, *e*, of cork, provided with a protecting crown, *e'*, of glass, to prevent tampering with the plug *e*. The plug *e* will have a bore in its axis, and the crown *e'* will have a stem, *e²*, which is forced down into said bore, said stem being ridged circumferentially to prevent it from being readily withdrawn. The top of the crown will be rounded, as shown, so as to prevent it from being grasped by nippers. At the point where the plug *e* is to be lodged and fixed, there is a slight enlargement, *a²*, in the neck of the bottle into which the cork expands when forced down into the neck, after which it cannot be withdrawn. About the plug *e* I form in the bottle-neck grooves or passages, *a³*, for the liquid to flow out at.

The bottle may be first filled, the valve-seat *b* placed, the cork packing *d* forced down in place, the valve *c* inserted, and the plug *e* forced down to its seat. The usual cork stopper, *x*, is then placed. When the stopper *x* is removed, the contents may be poured out by tilting the bottle until the valve *c* falls away from its seat. The valve will be of such length that its crown will strike the stop-plug *e* before its stem leaves the valve-seat *b*. Thus it cannot escape entirely from the seat.

It will not be possible to re-fill the bottle by any means ordinarily at command, if at all, mainly owing to the fact that the valve-seat *b* rises in the axis of the neck *a*, leaving the clear baffling space *y* around it into which the entering liquid will flow and form reverberatory currents. The valve also offers an obstruction when it is off from its seat, as it must be to permit liquid to enter the bottle.

It will be noted that the construction described requires no difficult or expensive work in molding the bottle, as the only features required are the ledge *a'*, the recesses *a²*, and passages *a³*, all of which can be made without adding appreciably to the cost of the bottle.

The protecting crown *e'*, the valve *c*, and the seat *b*, are all easily molded and will cost but little. No grinding of the valve and seat will be needed if the parts be carefully molded.

The cork *d* may be in one piece or in several pieces.

It will be understood that the valve-seat *b*, valve *c* and crown *e'* may be of glazed ware or porcelain as well as glass.

Having thus described my invention, I claim—

1. The combination with a bottle having a supporting ledge in its neck to receive a valve-seat, a cork-and-glass stop-plug fixed in its neck above said ledge, by being expanded laterally into a recess in the neck and passages for the liquid in the bottle neck about said stop-plug, of the elevated thimble-shaped valve-seat fixed in position on said ledge and having an annular space *y*, around it, and the valve, having a tapered stem or shank which occupies the aperture in the valve-seat, and a branched crown which fits loosely in the bottle-neck below the stop-plug, as set forth.

2. The combination with the bottle having a ledge in its neck to support the valve-seat, a cork and glass stop-plug expanded into a recess in the neck above said seat, and a plug-valve as described, of the thimble-shaped valve-seat, provided with a base-flange to rest

on said ledge, and the cork packing *d*, which holds said valve-seat in place, as set forth.

3. The combination with the bottle, having in its neck the annular recess *a*² and passages *a*³, of the cork stop-plug *e*, expanded laterally into said annular recess, the glass crown, *e'*, secured to said stop-plug, and a valve and valve-seat in the bottle-neck below said stop-plug, substantially as set forth.

4. The combination with the bottle having a stop-plug secured in its neck, with passages about said plug and formed in the neck for the liquid, and a valve-seat fixed in the neck below said plug, of the plug-valve *c*, arranged between the stop-plug and seat, said valve having a branched crown *c'*, to hold it in proper position in the neck, substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

HENRY A. HAYDEN.

Witnesses:

HENRY CONNETT,
JAS. KING DUFFY.