

(No Model.)

V. BÉLANGER.  
ANTIREFILLING DEVICE FOR BOTTLES.

No. 533,629.

Patented Feb. 5, 1895.

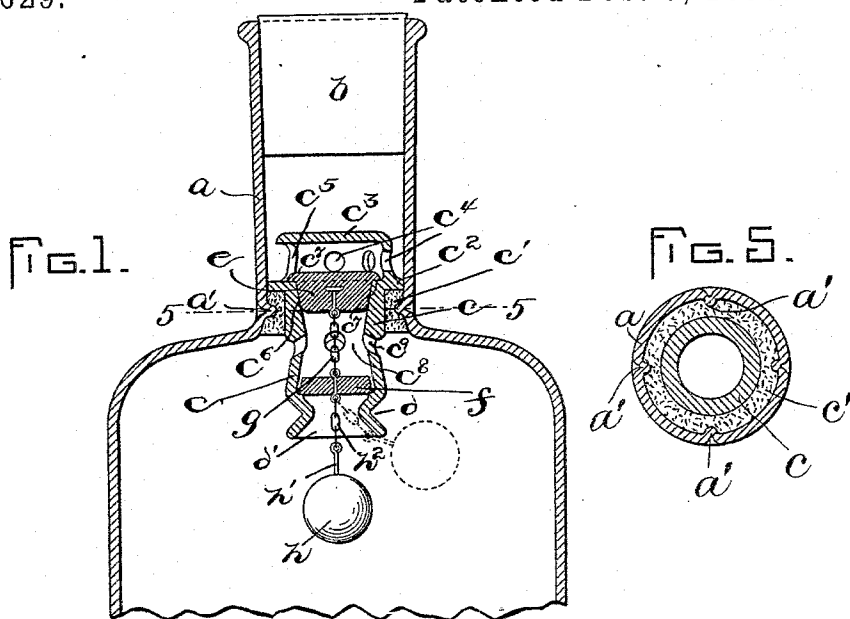
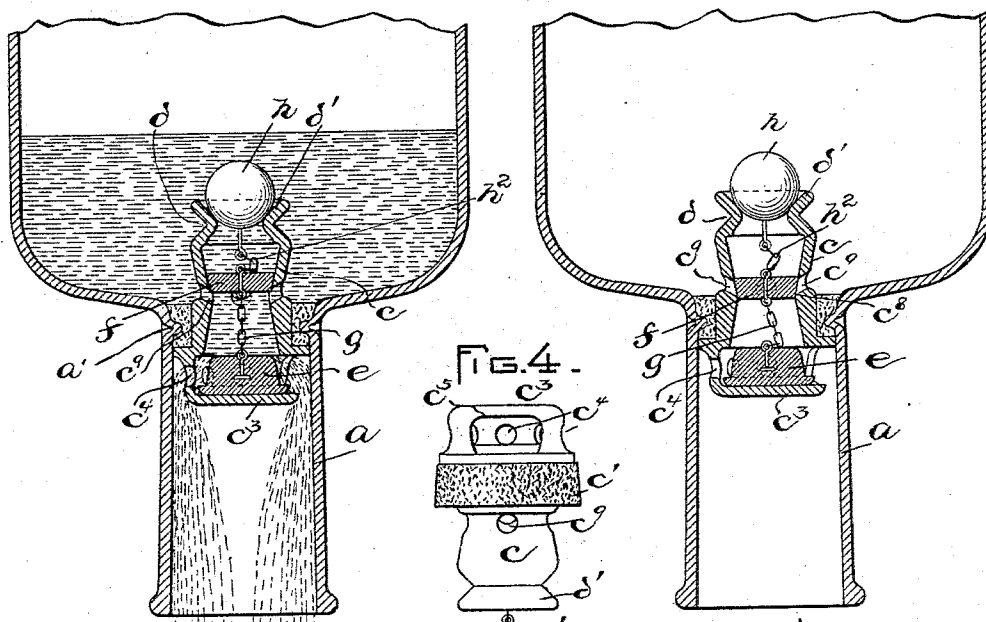


FIG. 2.

FIG. 3.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

VICTOR BÉLANGER, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF THREE-FOURTHS TO JOSIAH QUINCY, GEORGE BURWELL, AND WOOD, HARMON & CO., OF SAME PLACE.

## ANTIREFILLING DEVICE FOR BOTTLES.

SPECIFICATION forming part of Letters Patent No. 533,629, dated February 5, 1895.

Application filed November 19, 1894. Serial No. 529,220. (No model.)

*To all whom it may concern:*

Be it known that I, VICTOR BÉLANGER, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Antirefilling Devices for Bottles, of which the following is a specification.

The present invention relates to devices for preventing the refilling of bottles, the same serving as a protection for proprietors of particular brands of liquids, against the refilling of their bottles with an inferior article.

The particular object of the present invention is to prevent the refilling of a bottle by exhausting the air therefrom and submerging it in the liquid, which would of course result in the filling of the bottle with such liquid in the absence of a preventative.

In an application filed by me August 20, 1894, Serial No. 520,752, I have shown and described an anti-refilling device specially designed to prevent the refilling of the bottle by placing it on one side and moving it to and fro in liquid.

The present improvement is here shown and described as combined with the form of device disclosed in said former application.

The accompanying drawings illustrate an embodiment of the invention.

Figure 1 shows a sectional view of the device in the neck of a bottle with the bottle represented in an upright position. Fig. 2 shows a similar section with the bottle represented as inverted and containing some of the original liquid. Fig. 3 shows a similar view with the bottle empty. Fig. 4 shows the anti-refilling device detached and in side elevation. Fig. 5 shows a section on line 5-5 of Fig. 1.

The letter, *a*, designates the neck of a bottle of ordinary shape, except that on the interior of the neck near its inner end there are formed a number of small protuberances, *a'*, by indenting the soft glass in the process of manufacture. An ordinary cork, *b*, is used in the outer end of the neck, as usual.

The casing, *c*, of the anti-refilling device is substantially tubular in form and fits tightly within the neck of the bottle, the said casing carrying a cork packing-ring, *c'*, below a

flange, *c<sup>2</sup>*, and the said ring being crowded over the protuberances, *a'*, so that the casing cannot be pulled out of the neck. The flange, *c<sup>2</sup>*, projects over the protuberances, *a'*, so as to effectually prevent pushing the casing into the bottle. Beyond the flange, *c<sup>2</sup>*, there is a head, *c<sup>3</sup>*, smaller in diameter than the neck of the bottle, and formed in its sides with orifices, *c<sup>4</sup>*, and a large opening, *c<sup>5</sup>*. The top of the head is closed over as shown. The interior diameter of the tube lessens as it recedes from the head, *c<sup>3</sup>*, and the tapering surface, *c<sup>6</sup>*, together with the inside bottom-face, *c<sup>7</sup>*, of the head, *c<sup>3</sup>*, forms a valve-seat which it is to be noted faces outwardly.

It is to be observed that a considerable portion of the casing, *c*, projects inward beyond the ring, *c'*, and into the body of the bottle. This portion of the casing increases in diameter as it extends inward and its interior surface, *c<sup>8</sup>*, constitutes a valve-seat which it is to be noted faces inward, and hence in the opposite direction to the valve-seat, *c<sup>6</sup>-c<sup>7</sup>*. Orifices, *c<sup>9</sup>*, are made through the casing at the valve-seat, *c<sup>8</sup>*, and they provide means of communication between the bottle and the interior of the tube.

At some distance beyond the valve-seat, *c<sup>8</sup>*, the tubular casing is considerably contracted as shown at *d*, and beyond this contracted part or neck there is formed a flaring cup, *d'*. A flanged frusto-conical valve, *e*, preferably made of rubber occupies the outer portion of the tubular casing, and by inward movement comes to bear on the seat, *c<sup>6</sup>-c<sup>7</sup>*, thereby closing communication between the tubular casing, *c*, and the bottle-neck. When moved outward against the top of the head, *c<sup>3</sup>*, said valve opens communication between the tube and the neck. This valve is introduced into the head, *c<sup>3</sup>*, through the opening, *c<sup>5</sup>*. Another valve, *f*, in the form of a disk or cork, occupies the inner portion of the tube, *c*, and by outward movement comes to bear on the seat, *c<sup>8</sup>*, and closes communication between the bottle and the tube through the orifices, *c<sup>9</sup>*. A chain, *g*, connects the two valves, *e* and *f*, and is of sufficient length to permit the valve, *f*, to stand back of the orifices, *c<sup>9</sup>*, while the valve, *e*, is fully open. (See Fig. 2.) A ball-

weight, *h*, having a rigid arm, *h'*, is connected by a chain, *h<sup>2</sup>*, with the valve, *f*, and the said ball normally hangs below the cup, *d'*, (see Figs. 1 and 4,) but may lodge in the same.

5 (See Figs. 2 and 3.)

When the bottle stands upright the parts appear as in Fig. 1, the valve, *e*, being seated and the valve, *f*, unseated. It is apparent that under this condition no liquid can be introduced into the bottle. Nor can this be accomplished by turning the bottle on one side, for then the arm, *h'*, would find a fulcrum in the edge of the cup, *d'*, as indicated by dotted lines in Fig. 1, and the weight would act

15 through a leverage to hold the valve, *e*, tightly closed. A to-and-fro movement of the bottle while on its side would not destroy this function of the ball-weight.

When the bottle is inverted the ball can

20 lodge in the cup, *d'*, and then the valve, *e*, opens and the liquid in the bottle can be poured out. As long as any liquid remains in the bottle the cork-valve, *f*, will float above the orifices, *c<sup>3</sup>*, so as not to obstruct the flow

25 of the liquid. When the bottle is empty this valve, *f*, drops to its seat, *c<sup>3</sup>*, and closes the orifices, *c<sup>3</sup>*, and air-exhausting means applied to the neck cannot draw air from the bottle but will only tend to more tightly seat the

30 valve.

It will be understood that the original liquid is introduced before the anti-refilling device is inserted.

What I claim as my invention is as follows:

35 1. An anti-refilling device for bottles com-

prising a casing fitting in the neck of the bottle and formed with interior valve-seats facing in opposite directions; a weighted valve adapted to seat inwardly against the outer valve-seat; and a float-valve adapted to seat

40 outwardly against the inner valve-seat.

2. An anti-refilling device for bottles comprising a casing fitting in the neck of the bottle and formed with interior valve-seats facing in opposite directions; a valve adapted to

45 seat inwardly against the outer valve-seat; a float-valve adapted to seat outwardly against the inner valve-seat, a flexible connection between the two valves; and a weight joined to them by a flexible connection.

3. An anti-refilling device for bottles, the same comprising a casing fitting in the bottle-neck and having a flaring end-portion or cup projecting into the body of the bottle, the said casing being formed with two interior valve-

50 seats facing in opposite directions; a valve for the outer seat; a float-valve for the inner seat; a flexible connection between the valves; and a ball-weight joined by a flexible connection with the float-valve and having an arm adapted to find a fulcrum in the edge of the cup, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of

two subscribing witnesses, this 13th day of No-

55 vember, A. D. 1894.

VICTOR BÉLANGER.

Witnesses:

F. P. DAVIS,

A. D. HARRISON.