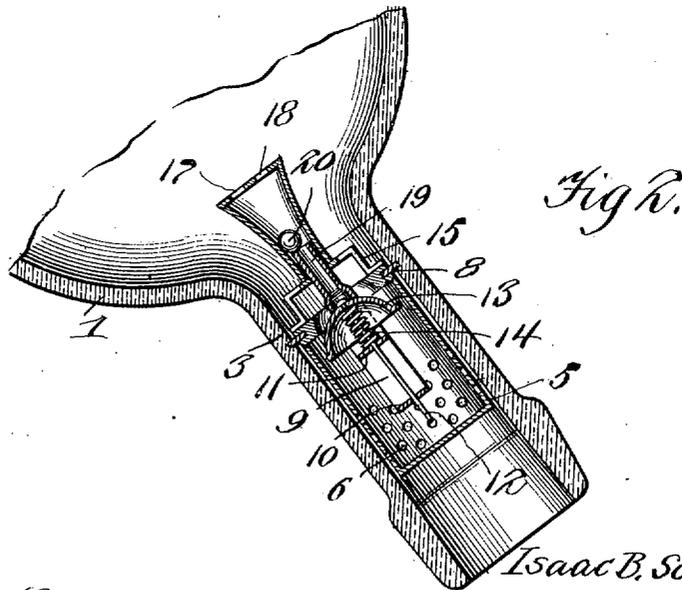
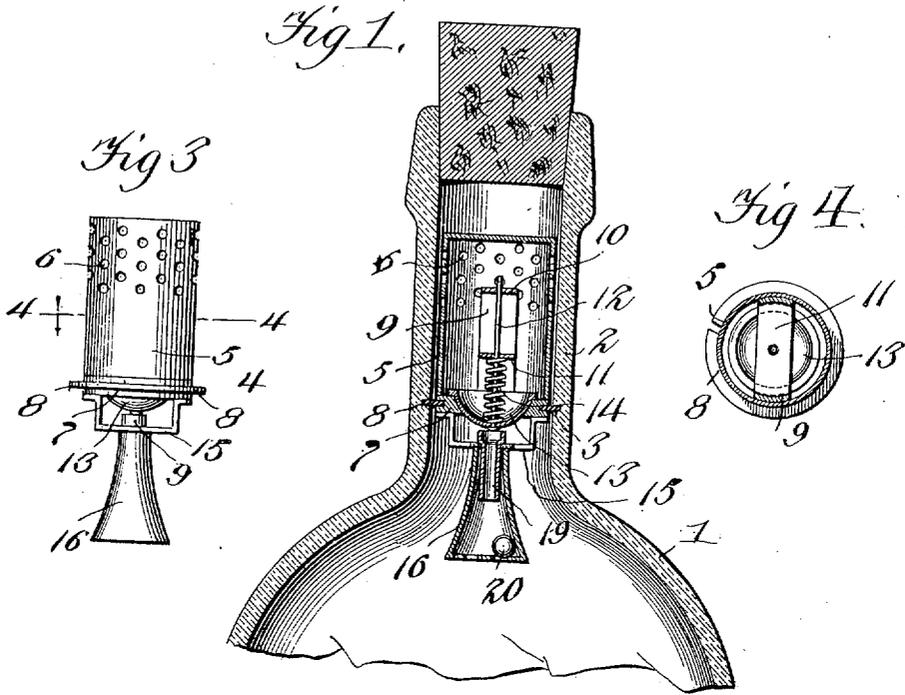


I. B. SOLOMON.
 NON-REFILLABLE BOTTLE.
 APPLICATION FILED NOV. 30, 1908.

972,780.

Patented Oct. 11, 1910.



Witnesses

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ISAAC B. SOLOMON, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO HOWARD C. RAND, OF BOSTON, MASSACHUSETTS.

NON-REFILLABLE BOTTLE.

972,780.

Specification of Letters Patent.

Patented Oct. 11, 1910.

Application filed November 30, 1908. Serial No. 465,109.

To all whom it may concern:

Be it known that I, ISAAC B. SOLOMON, a citizen of the United States, residing at Roxbury Station, Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Non-Refillable Bottles, of which the following is a specification.

This invention relates to non-refillable bottles, and the object of the invention is to provide a device of this character which is readily applicable to the neck of any ordinary bottle, the parts of which are so constructed and arranged as to provide means which will effectively prevent the refilling of the bottle with fraudulent or imitation liquids after the original contents of the bottle has been removed.

With the above object in view and other objects which will appear as the description progresses, the invention resides in the novel construction and arrangement of parts, hereinafter fully described and claimed.

In the accompanying drawing, Figure 1 is a central longitudinal sectional view of a bottle neck showing the improvement in applied position therein. Fig. 2 is a similar view showing the valve in its open position to provide an outlet for the contents of the bottle. Fig. 3 is a side elevation of the improvement. Fig. 4 is a horizontal sectional view upon the line 4-4 of Fig. 3.

In the accompanying drawing the numeral 1 designates a bottle of the ordinary construction having its neck 2 provided with an annular recess 3.

The numeral 4 designates the improved valve, which comprises essentially a valve cap or casing 5 and a sliding valve 6. The casing 5 comprises a preferably cylindrical tube having its upper portion or top closed and its side adjacent its top perforated as designated by the numeral 6. The bottom of the casing 5 is enlarged as clearly illustrated in Figs. 1 and 2 of the drawing and it is provided with a centrally disposed valve seat 7. This valve seat 7 has its wall or opening annularly arranged and slopes or curves inwardly from its top edge to its lower edge. The outer wall of the lower portion of the casing 5 is provided with an annular recess adapted for the reception of a split spring member 8, which is adapted to expand and engage the recess 3 of the bottle neck when the device is applied there-

to. The interior of the casing 5 is provided with an upstanding frame 9. This frame 9 is of a width greater than that of the valve seat 7 and is provided with a top bar 10 and a central connecting bar 11. Both of these bars 10 and 11 are either integrally formed with the vertical members of the frame 9 or otherwise securely connected therewith, and are each provided with a centrally arranged perforation adapted for the reception of a valve stem 12 connected with a cup shaped valve 13. The valve seat 7 of the casing 5 may be constructed of suitable flexible material so as to provide a perfect bearing for the cup shaped valve 13. Interposed between the inner face of the cup shaped valve 13 and the connecting bar 11 is a helical spring 14 which serves to normally force the valve 13 tightly upon its seat 7.

The lower face of the casing 4 is provided with a suitable arbor 15, which is adapted to act as a support for a downwardly extending bell shaped member 16. This member 16 has its upper reduced portion opened, as clearly illustrated in the drawing and its lower enlarged portion provided with a floor 17, and this floor is provided with a plurality of openings as indicated by the numeral 18. Positioned within the mouth of the bell shaped member 18 is a hollow valve contacting pipe 19. This pipe 19 has its upper portion enlarged and the offset provided thereby is adapted to be seated upon the reduced mouth of the bell shaped member 16, while its body or reduced portion extends downwardly within the member 16 a suitable predetermined distance. As illustrated in Figs. 1 and 2 of the drawing, it will be noted that the pipe or tube 19 has its lower portion positioned directly below the central portion of the valve 13, and that the bell shaped member 16 is provided with a ball weight 20, which is of a size greater than the diameter of the openings 18 and the reduced extending portion of the tube or pipe 19.

While the valve seat 7 has been described as being rigidly connected with the casing 5, it is to be understood that these two members are not integrally formed but that the seat and casing may be connected together through the medium of solder, threads or the like.

In drawing the liquid from the bottle, the bottle 1 is tilted as illustrated in Fig. 2 of

the drawing, and this action causes the weight 20 to contact with the tube 19 which in turn engages the cup shaped valve 13 and compresses the spring 14, unseating the valve and allowing the liquid to pass into the casing 5 and from thence outward through the perforations 6 through the neck of the bottle. It is to be understood that the liquid contained within the bottle greatly assists the weight 20 in unseating the valve 13, and that when the entire contents are withdrawn the spring 14 is of sufficient strength to overcome the weight 20 and to retain the valve in seat position. By this arrangement it will be noted that I have provided a non-refillable bottle which will effectively overcome all attempts at refilling the same, as it will be apparent that should liquid be forced through the perforations of the casing 5 the same will contact the cup shaped valve 13 and firmly seat the same.

While I have illustrated and described the preferred embodiment of the invention as it now appears to me, it is to be understood that minor details of construction within the scope of the following claim, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

Having thus fully described the invention what is claimed as new is:

In combination with a bottle having its neck interiorly provided with a circular groove; of a cylindrical casing considerably less in diameter than the diameter of the neck and arranged within the neck and having a closed top and provided on its side and at a point below the top with a plurality of outlet openings, the casing being fur-

ther interiorly provided with an annular flange the inner surface of which is concaved, and still further provided on its exterior with a circular recess, a split resilient member having its inner peripheral portions insertible into the recess of the casing and its outer peripheral portion insertible into the groove of the neck, a hollow inverted hemispherical-shaped valve having its upper edge provided with a circular flange bearing on the upper side of the first-named flange and its outer surface bearing on the concaved inner surface of the said first-named flange, a stem rising from the center of the valve, upstanding arms supported upon the lower end of the casing, and members connecting said arms and provided with alining openings to receive the said stem, a helical spring encircling the rod and bearing on the lower connecting member and concaved surface of the valve, an arbor connected to the casing below the valve, a bell-shaped hollow member connected to the arbor, said bell-shaped member having its reduced portion open and its enlarged portion closed and provided with a plurality of perforations, a weighted ball member within the bell member, and a tube provided with an enlarged mouth having one end portion arranged within the bell member and its opposite end portion widened and bearing on the arbor and engaging the convexed surface of said valve.

In testimony whereof I affix my signature in presence of two witnesses.

ISAAC B. SOLOMON.

Witnesses:

ARTHUR BEREINER,
ROSE DARESON.