

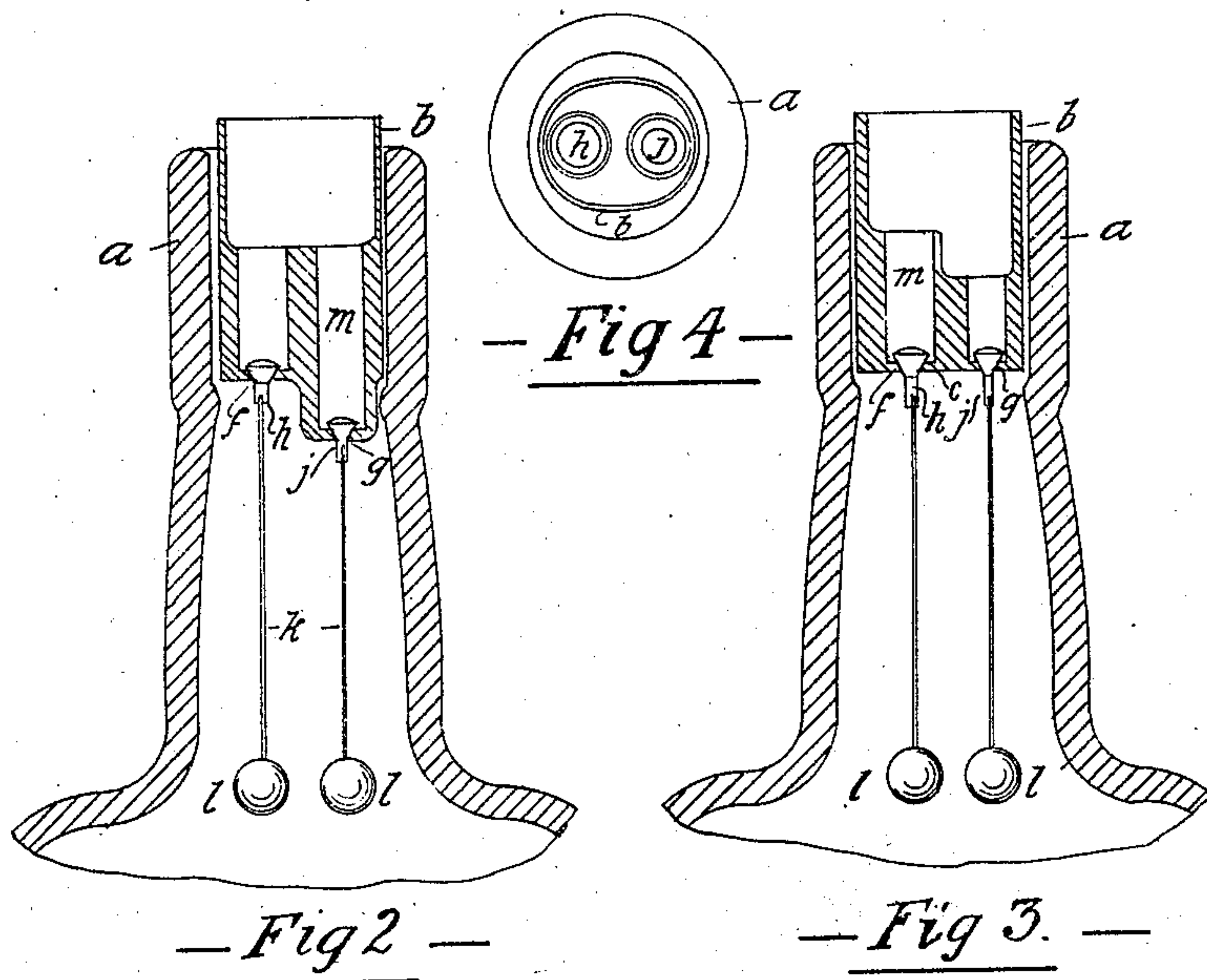
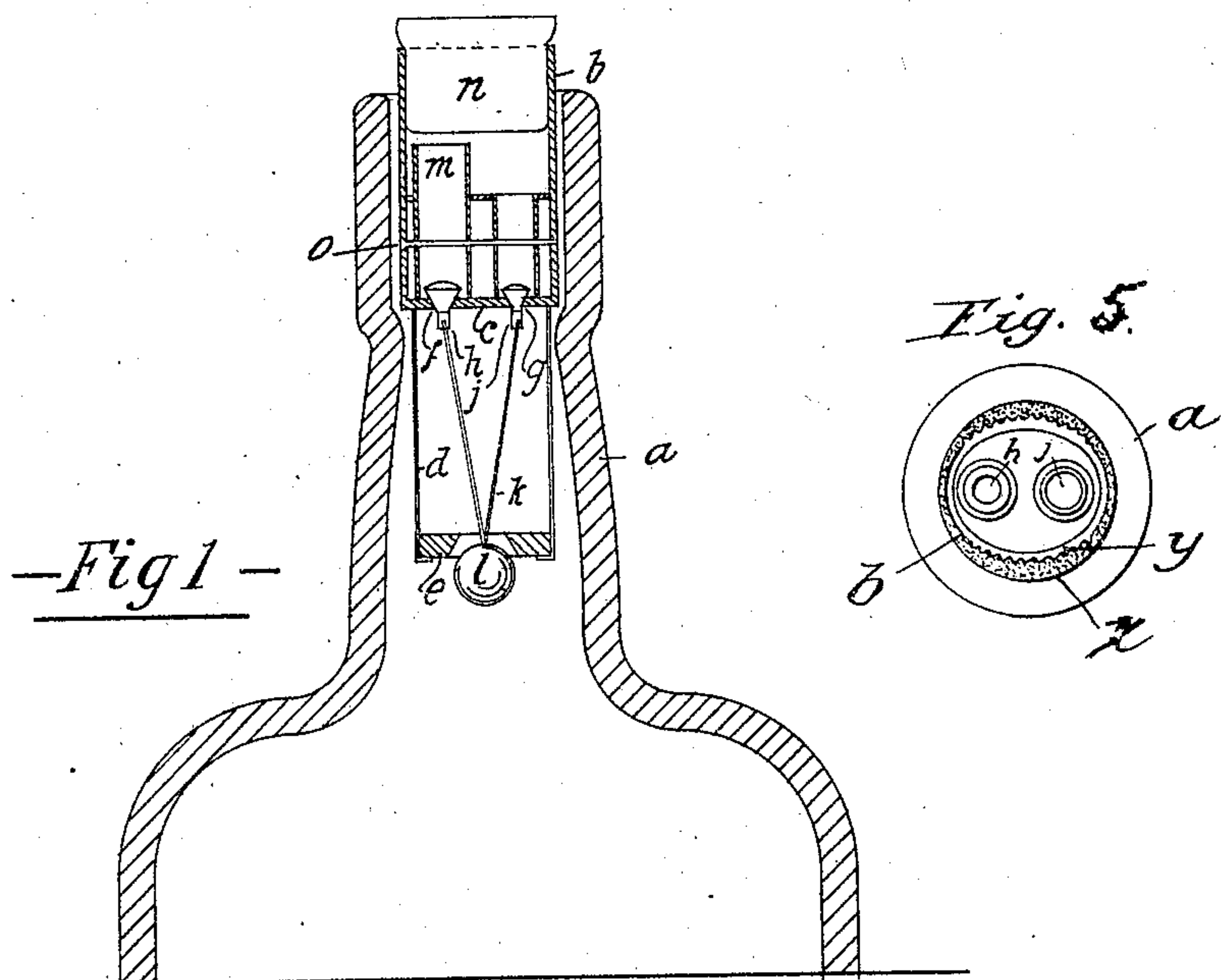
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M. R. GREEN.

BOTTLE FOR PREVENTING THE FRAUDULENT REFILLING OF SAME.

APPLICATION FILED DEC. 7, 1903.



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UNITED STATES PATENT OFFICE.

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BOTTLE FOR PREVENTING THE FRAUDULENT REFILLING OF SAME.

SPECIFICATION forming part of Letters Patent No. 785,357, dated March 21, 1905.

Application filed December 7, 1903. Serial No. 184,237.

To all whom it may concern:

Be it known that I, MEREDITH ROBERTS GREEN, a subject of His Britannic Majesty Edward VII, residing at Kensington Park, in the State of South Australia, Australia, (whose post-office address is as above,) have invented certain new and useful Improvements in Bottles to Prevent the Fraudulent Refilling of the Same; and I do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in bottles to prevent the fraudulent refilling of the same, the special object of the invention being to provide a means whereby fraudulent refilling can be prevented; but the valve-gear and other parts arranged for this purpose, while opposing the inflow of the liquid, will nevertheless enable the contents of the bottle to be readily poured out.

The use of a weighted valve in bottles for the purpose indicated is already well known and has been repeatedly specified; but according to my invention two separate and distinct weighted valves are used, and it is important that the valves shall be provided with a tube or its equivalent, so that the ultimate point of flow or exposure to the air either upward or downward is effectively on a different level to that of the opposite valve.

Instead of using separate tubes in the manufacture of my invention the parts containing the valve-seats may be formed from a solid casting, and the equivalents of the tubes can be cored or bored out.

I will now proceed to describe my invention by aid of the accompanying illustrative drawings, in which—

Figures 1, 2, and 3 illustrate the neck portion of the bottle with my improvements applied thereto, the several figures showing alternative devices for achieving the object of the invention. Fig. 4 is a plan showing position of the valves. Fig. 5 is a plan view showing the ribbed or roughened surface of the thimble and the cementitious material disposed around the same.

In the drawings, *a* is the neck of the bottle, into which the thimble or body *b* is fitted, the bottom of the thimble being closed in by the floor or plate *c*, as in Figs. 1 and 3, or alternatively the body of the thimble may be cored out, as in Fig. 2.

d is an extension-frame which supports a ring *e*, as shown in Fig. 1, said ring being made of wood, metal, or non-corrosive material. The ring is preferably beveled inward toward the top.

At *f* and *g* valve-seats are formed for the accommodation, respectively, of the valves *h* and *j*. These valves may be of any convenient design; but a simple valve having a short extension, as shown, will give good results for the purpose of my invention. The valves are respectively for the passage of liquid and air, and the area of the latter may be much smaller than that of the former.

In Fig. 1, *k* is a flexible wire or cord the upper ends of which are attached to the valve extensions, while the lower portion supports the weight *l*, which is fastened thereto. Above the valve *h*, which is used for the delivery of the liquid, an extension-tube *m* or its equivalent is arranged, thereby isolating the said valve from the valve *j*, above mentioned. In Fig. 3 the extension-frame is dispensed with and two separate weights are used and in their normal position lie opposite to the curved edge of the base of the neck.

In Fig. 2 the bottom part of the thimble is formed solid, and passages for the liquid and air are bored or cored out. It will, however, be noted that although the relative positions of the inlet and outlet are reversed they are nevertheless on different levels.

The thimble, which is preferably oval in shape, as shown in Figs. 4 and 5, is inserted in the neck of the bottle together with the parts above described and is secured in place by cement, sealing-wax, or other means *x*, for which purpose it may be ribbed or roughened, as at *y*, to afford a firmer holding. The cork of the bottle is inserted in the upper portion of the thimble, as shown at *n*, but in such a manner as not to interfere with the valves, and is sealed and capsuled or other-

wise prevented from being tampered with. If so desired, the thimble can be made to project slightly above the neck of the bottle, and for convenience of pouring the liquid a small lip may be formed thereon. A pin *o* is passed through the thimble, as shown, and serves as a guard to prevent the valves from being tampered with.

From Fig. 1 it will be noted that the position of the weight connected with the valves is such that it lies a little below the beveled ring *e*; but it will readily be understood that when the bottle is in an absolutely inverted position this weight by falling into the ring allows the valves to open; but while the bottle is on its side the slope of the bevel assists in causing the weight to draw the valves downward, thereby retaining them in a closed position. I find that if the weights are so positioned that they come into contact with the neck of the bottle at its curved base, as indicated in Figs. 2 and 3, the ring may be dispensed with; but it will be obvious that if the ring *e* and extension-frame *d* are made to a standard size much trouble may be saved by enabling a corresponding standard length of wire or cord to be used throughout for supporting the weight instead of rendering it necessary for cords to be adjusted, so that the weights will be positioned according to the many and differing sizes of bottles in commercial use.

The action of my appliance is as follows: When the bottle is in its normal position, the weight shown in Fig. 1 causes the valves to remain closed, and until the bottle is absolutely inverted, or at least until the bottle is sufficiently inverted to allow the weight to rest in the upper portion of the inverted ring, the valves will prevent the outflow of the liquid; but as soon as the valves have been released by the weight the liquid will freely flow out through the valve *n*, while the air will pass through the opposite valve *j* and prevent a vacuum from being formed in the bottle.

I have already specially emphasized the fact in the preamble of this specification that the use of a weighted valve is not new; but the use of two valves acting in conjunction with each other, one for the flow of the liquid and the other for the passage of the air, (the level of the inlet and the outlet being different,) does not appear to have hitherto been adopted in the manner indicated, and I would have it understood that the arrangement of a tube or its equivalent in connection with the valve, whereby the difference of levels is obtained, is a very important feature for securing success in this invention; but a somewhat satisfactory result may be obtained by separating the valves with a division-plate.

Having now particularly described and ascertained the nature of my said invention

and in what manner the same is to be performed, I declare that what I claim is—

1. In a device of the character described a thimble, comprising a body portion, a plurality of openings therethrough, a valve disposed in each opening, a retaining-plate for said valves and a weight on each valve, and means for securing the thimble in a bottle.

2. In a device of the character described, a thimble comprising a body portion, a plurality of longitudinal openings therethrough, terminating in different planes, a valve disposed in each opening, a retaining-plate for said valves and a weight on each valve, and means for securing the thimble in a bottle.

3. In a device of the character described, a thimble comprising a body portion, a plurality of longitudinal openings of different diameters therethrough, a valve disposed in each opening, a retaining-plate for each valve, and a weight on each valve, and means for securing the thimble in a bottle.

4. In a device of the character described, a thimble, comprising a body portion, a plurality of openings therethrough, a valve disposed in each opening, a retaining-plate for said valves, a weight for each valve, and means disposed adjacent to said valves to prevent tampering therewith, and means for securing the thimble in a bottle.

5. In a device of the character described, a thimble, comprising a body portion, a plurality of openings therethrough, a valve disposed in each opening, a retaining-plate for said valves, a weight for each valve, and a pin passed transversely above the valves, and means for securing the thimble in a bottle.

6. In a device of the character described, a thimble comprising a body portion, a plurality of openings therein terminating in different planes, a valve disposed in each opening, a perforated retaining-plate for the valves, a weight, an extension on the body portion of the thimble having an opening therethrough, a flexible connection to the valves passing through the latter opening and connected to the said weight, and means for securing the thimble to a bottle.

7. In a device of the character described, a thimble, comprising a body portion, a plurality of openings therein terminating in different planes, a valve disposed in each opening, a perforated retaining-plate for the valves, a weight, an extension on said body portion of the thimble having a beveled opening therethrough, a flexible connection to the valves passing through said latter opening and connected to the weight, whereby said weight will be seated in the latter opening, and means for securing the thimble in a bottle.

8. In a device of the character described, a thimble, comprising a body portion, an extension thereon adapted to receive a stopper, a plurality of openings in the thimble ter-

minating in different planes, a valve disposed in each opening, a perforated retaining-plate for the valves, a weight, an extension on the lower body portion of the thimble
5 having an opening therethrough, a flexible connection to the valves passing through the latter opening and connected to the weight, and means for securing the thimble in a bottle.

9. In a device of the character described,
10 an oval-shaped thimble, comprising a body portion, a plurality of openings therethrough terminating in different planes, a valve disposed in each opening, a perforated retaining-plate for the valves, a weight, an extension

sion on said body portion of the thimble having an opening therethrough, a flexible connection to the valves passing through said latter opening and connected to the weight, and means for securing the thimble in a bottle, comprising corrugations on the upper
20 portion of the thimble and a body of cementitious material surrounding the same.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

MEREDITH ROBERTS GREEN.

Witnesses:

CHARLES ANDREW MURPHY,
ROY. CAMERON LAWTON.