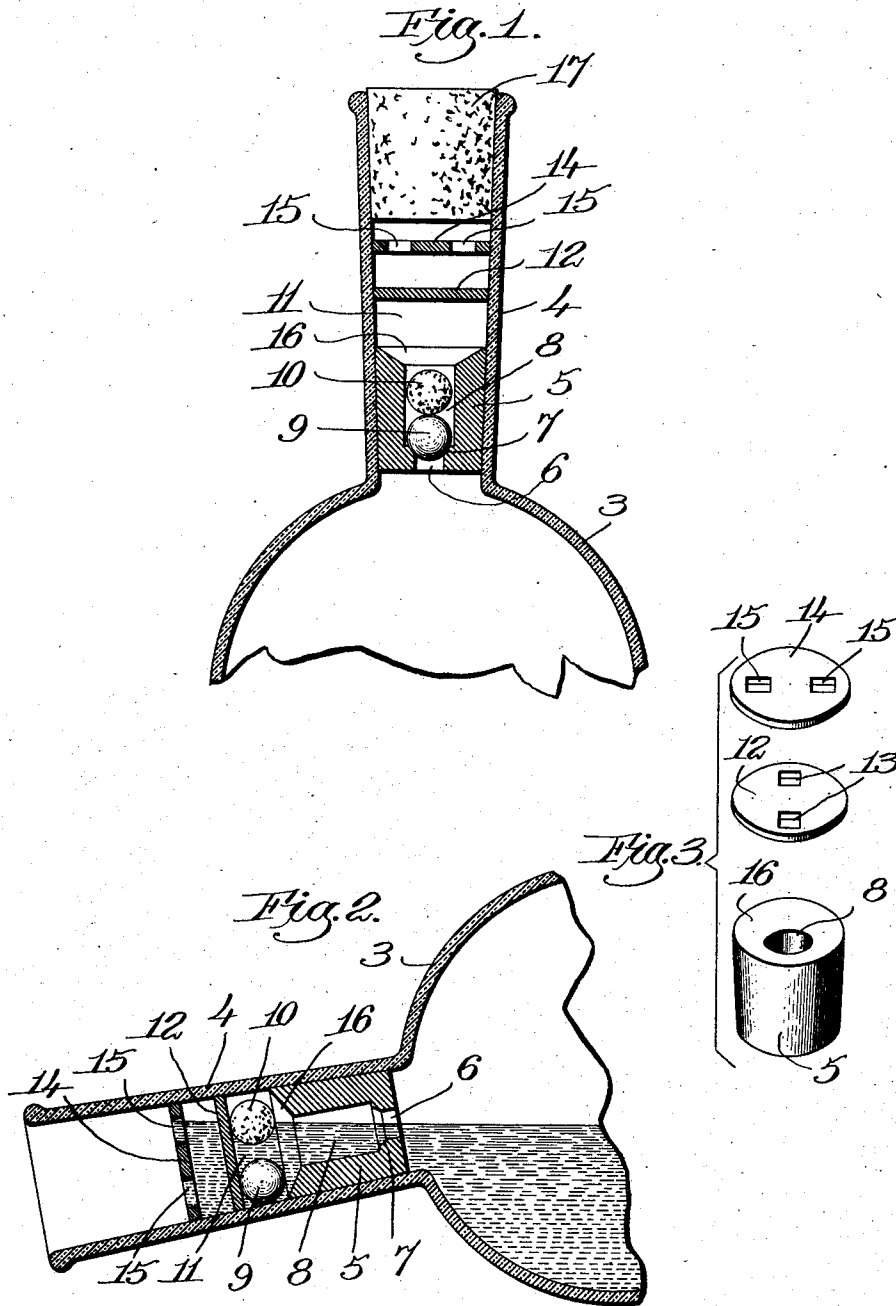


W. P. UPHAM.
NON-REFILLABLE BOTTLE.
APPLICATION FILED AUG. 17, 1911.

1,022,899.

Patented Apr. 9, 1912.



Witnesses.
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UNITED STATES PATENT OFFICE.

WILLIAM P. UPHAM, OF KEENE, NEW HAMPSHIRE.

NON-REFILLABLE BOTTLE.

1,022,899.

Specification of Letters Patent.

Patented Apr. 9, 1912.

Application filed August 17, 1911. Serial No. 644,493.

To all whom it may concern:

Be it known that I, WILLIAM P. UPHAM, a citizen of the United States, residing at Keene, county of Cheshire, State of New Hampshire, have invented an Improvement in Non-Refillable Bottles, of which the following description, in connection with the accompanying drawing, is a specification, like characters on the drawing representing like parts.

This invention relates to non-refillable bottles, and has for its principal object to provide a novel device of this nature which is simple in construction and which will prevent refilling of a bottle.

More specifically, the object of the invention is to provide a novel non-refillable bottle which is provided within its neck with means forming a valve chamber having a valve seat, in which chamber two valves of different specific gravity are located, either of which is adapted to seat on the valve seat, said means being so constructed as to provide an enlarged chamber which communicates with the valve chamber and which is of sufficient size to receive both valves at the same time and permit them to be interchanged. With this construction it will be impossible to refill the bottle because either one or the other of the valves will always be in position to close against the valve seat and thus close the port leading to the bottle.

In the drawings wherein I have shown the preferred embodiment of my invention, Figure 1 is a vertical section of a bottle made in accordance with the invention; Fig. 2 is a similar view showing the bottle tipped up; Fig. 3 is a perspective view of the valve seat member and other parts which are located within the bottle neck.

3 designates a bottle body having a neck 4. My improved valve device is situated within the neck and, as stated above, it comprises means within the neck forming a valve chamber provided with a valve seat and an enlarged chamber communicating with said valve chamber and two ball valves of different specific gravity situated within the valve chamber, and either one of which is adapted to seat against the valve seat, said enlarged chamber being of sufficient size to receive both ball valves at the same time and to permit them to be interchanged therein. The valve chamber and enlarged chamber having these properties may be made in a variety of ways without departing from my invention. The construction shown is a sim-

ple construction and one which can be readily manufactured.

Situated within the neck 4 is a valve chamber member 5 which may be of wood, metal, glass, porcelain or any other suitable material. For cheapness and ease of manufacture I prefer to make the member 5 of wood. Said member is in the form of a plug which fits the interior of the bottle neck and is formed with a port 6 which terminates in a valve seat 7 and which leads to a valve chamber 8.

9 and 10 designate two ball valves, either one of which is adapted to seat on the valve seat 7. These valves are of different specific gravity, one having a greater specific gravity than the liquid with which the bottle is to be filled and the other having a less specific gravity than said liquid. The valve 9 may conveniently be made of metal and the valve 10 of wood or cork. The valve chamber 8 has communication with an enlarged chamber 11 which is of sufficient size to receive both valves 9 and 10 at the same time, and in which said valves may be readily interchanged. This chamber may be formed in a variety of ways, one convenient way being to insert in the bottle neck 4 a disk 12 of wood, porcelain, glass, metal, or some other suitable material, which disk is positioned relative to the member 5 to provide a chamber 11 of the desired size. The disk 12 is preferably provided with one or more apertures 13 through which the liquid may escape when the bottle is emptied. In order to prevent any person from inserting a wire or other similar implement through either of the apertures 13 thereby to prevent the valves from seating, I have provided an additional disk 14 which fits into the bottle neck and which is provided with apertures 15 that are situated out of line with the apertures 13. Other additional disks similar to the disks 14 may be used if desired.

In order to facilitate the assembling of the parts and the proper positioning of them, I prefer to make the interior of the bottle neck tapering with the diameter thereof the smallest at the point where it meets the bottle and largest at the mouth. With this construction the member 5 may be forced into the bottle neck until it fits the taper thereof and then the disks 12 and 14 may be similarly forced into position, it being understood that the disk 12 is of proper size to fit the interior walls of the bottle

neck at the proper position and the disk 14 is slightly larger so as to be seated against the walls of the neck at a suitable distance from the disk 12. All of these parts will preferably be secured in place by cement and the cement may be applied to the parts before they are forced into the bottle neck or may be applied to the interior of the bottle neck before the parts are forced into position.

The assembling of the parts merely involves crowding them down into the bottle neck and by making the parts of the proper size and providing the bottle neck with the taper as described, the said parts will be properly positioned relative to each other without the exercise of any special care on the part of the operator.

I prefer to make the valve chamber member 5 with the tapered portion 16 which forms a flaring mouth for the valve chamber 8.

In using the device the bottle will be filled in usual manner and then the valve seat member 5 with the valves therein will be inserted and the disks 12 and 14 will be afterward inserted, as above described. The bottle neck will preferably be long enough so as to permit it to receive a cork 17 and the bottle will thus have the general appearance of an ordinary bottle. The bottle can be readily decanted by merely withdrawing the cork 17 and tipping the bottle into an inclined position, as shown in Fig. 2. Under normal conditions when the bottle is upright the heavy valve 9 will seat on the valve seat 7 and thus prevent the bottle from being refilled. On the other hand, if it is attempted to fill the bottle while it is on its side or bottom side up the liquid entering the chamber 11 will float the valve 10 to the valve seat 12 and thus prevent the bottle from being refilled.

I regard it as of importance that the chamber 11 should be large enough to contain both valves at one time and of such a shape and size as to permit them to readily exchange places while in the chamber, for this construction will permit either one of the valves to come into play according to the way in which it is attempted to refill the bottle.

While I have shown herein the preferred embodiment of my invention, I do not wish to be limited to the constructional details illustrated.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. The combination with a bottle body having a neck, of means within the neck forming a valve chamber provided with a valve seat and an enlarged chamber com-

municating with the valve chamber, two ball valves of different specific gravity situated within the valve chamber and either one adapted to seat on the valve seat, said enlarged chamber being of sufficient size to receive both ball valves at the same time and permit them to be interchanged therein.

2. The combination with a bottle body having a neck provided with a tapered passage which is largest at its mouth, of a valve chamber member situated within said passage and provided with a port terminating at a valve seat and also provided with a valve chamber, two ball valves either one of which is adapted to seat on the valve seat, and a perforated disk or partition situated within said neck sufficiently above the valve chamber member to constitute an enlarged chamber between said member and disk which chamber is of sufficient size to receive both ball valves at the same time and to permit them to be interchanged therein.

3. The combination with a bottle body having a neck, of a valve chamber member situated within said neck and provided with a port terminating at a valve seat and also provided with a valve chamber, two ball valves either one of which is adapted to seat on the valve seat, and a perforated disk or partition situated within said neck sufficiently above the valve chamber member to constitute an enlarged chamber between said member and disk, which chamber is of sufficient size to receive both ball valves at the same time and to permit them to be interchanged therein.

4. The combination with a bottle body having a passage of progressively decreasing diameter from the mouth to the bottle body, of a valve seat member fitting said passage at its portion of smaller diameter, said member having a port and a valve chamber communicating with each other and provided with a valve seat, two ball valves of different specific gravity occupying said chamber and either one of which is adapted to seat on the valve seat, a perforated disk 12 of a size to fit the passage and be positioned by the walls thereof at a distance above the valve seat member to constitute a chamber 11 of sufficient size to receive both valves at the same time and to permit said valves to be interchanged therein, and a second perforated disk 15 situated in and positioned by the walls of the passage above the first-named disk.

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

WILLIAM P. UPHAM.

Witnesses:

LOUIS C. SMITH,
THOMAS J. DRUMMOND.