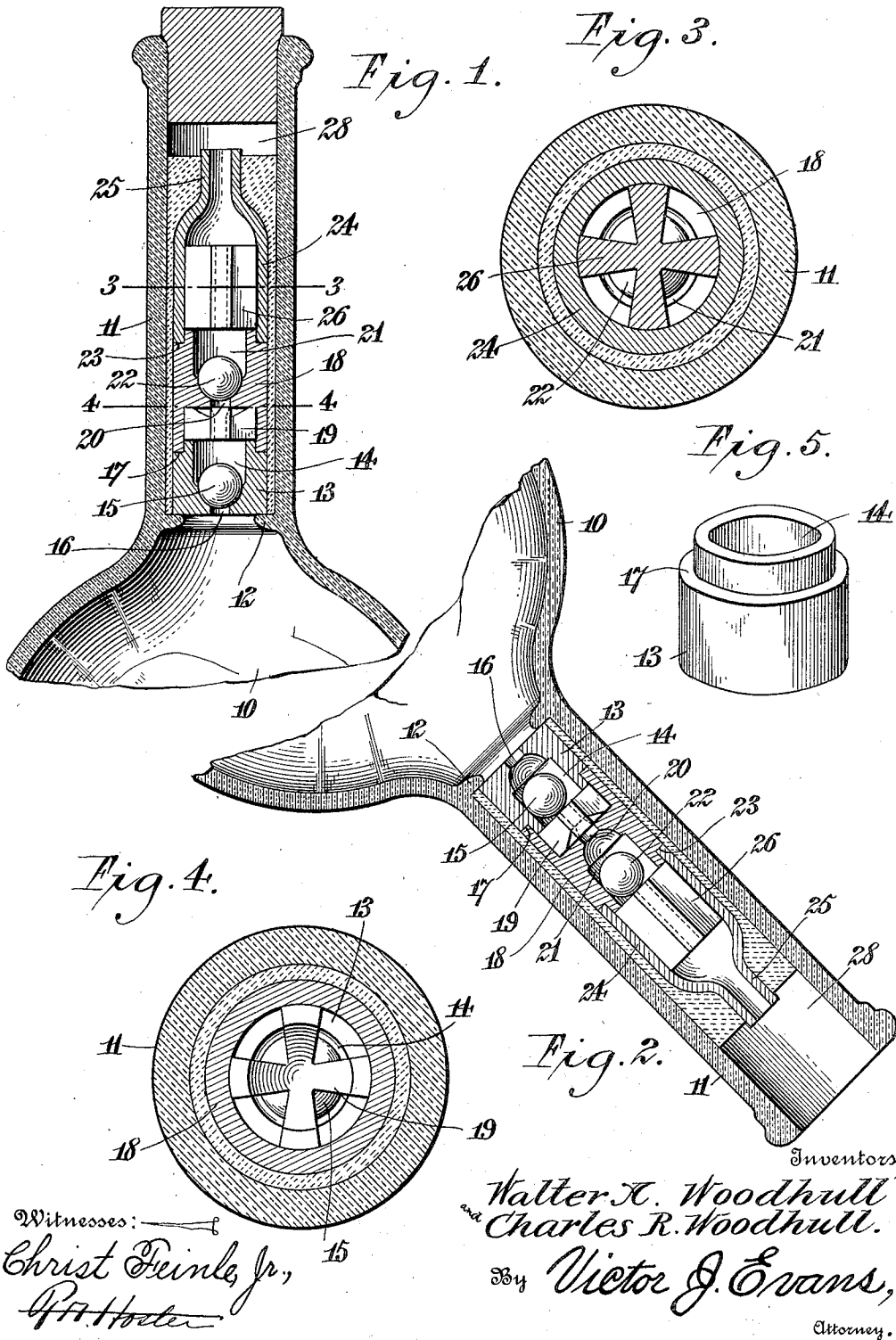


W. A. & C. R. WOODHULL.
NON-REFILLABLE BOTTLE.
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1,076,538.

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UNITED STATES PATENT OFFICE.

WALTER A. WOODHULL, OF MONROE, AND CHARLES R. WOODHULL, OF NEWBURGH,
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NON-REFILLABLE BOTTLE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, WALTER A. WOODHULL and CHARLES R. WOODHULL, citizens of the United States, residing, respectively, at Monroe and Newburgh, in the county of Orange and State of New York, have invented new and useful Improvements in Non-Refillable Bottles, of which the following is a specification.

The invention relates to bottles and has for an object to provide a bottle of the non-refillable type and in which, when the original contents of the bottle have been withdrawn therefrom, the bottle cannot be conveniently refilled.

The invention embodies, among other features, a non-refillable bottle in which the parts for preventing the ready refilling of the bottle are simple and durable in construction and can be readily assembled within the neck of the bottle to accomplish the desired result.

In the further disclosure of the invention reference is to be had to the accompanying drawings, constituting a part of this specification, in which similar characters of reference denote corresponding parts in all the views, and in which:

Figure 1 is a fragmentary vertical sectional view of our bottle, showing the position of the various parts thereof when the bottle is in upright position; Fig. 2 is a similar view, showing the position of the parts when the bottle is in tilted position; Fig. 3 is a horizontal transverse sectional view taken on the line 3—3 in Fig. 1; Fig. 4 is a horizontal sectional view taken on the line 4—4 in Fig. 1; and Fig. 5 is a perspective view of the stop member for the lower valve.

Referring more particularly to the views, we disclose a bottle body 10 including an integral neck 11, with a circular seat 12 formed on the bottle body 10 at the point of formation of the neck 11 with the bottle body, the said seat being formed within the bottle body, as shown. Mounted to repose on the seat 12 is a lower circular valve section 13 providing a valve chamber 14 in which is loosely mounted a ball valve 15 normally closing an opening 16 connecting the bottle body with the valve chamber 14. The upper end of the valve section 13 is reduced to provide a circular seat 17 and mounted to repose thereon is an intermediate

valve section 18, a cruciform stop member 19 being interposed between the lower section 13 and the intermediate section 18, with the said stop member reposing on the upper portion of the section adjacent the seat 17 thereof, the cruciform shape of the stop member being adapted to permit the fluid, which passes from the bottle body when the same is tilted, to flow from the valve chamber 14 between the cruciform portion of the stop member and thence through an opening 20 into a valve chamber 21 formed in the intermediate valve section 18, the cruciform portions forming the stop member 19 being recessed in their upper faces and adjacent the opening 20, as shown. A ball valve 22, similar to the ball valve 15, is loosely mounted within the valve chamber 21 and adapted to normally close the opening 20, and the upper end of the valve section 18 is reduced in the same manner as the upper end of the valve section 13 to provide a circular seat 23 on which is mounted to repose an upper section 24 terminating at the upper end thereof in a reduced tubular neck 25, a cruciform stop member 26 being arranged within the lower part of the upper section 24 and reposing upon the upper portion of the valve section 18, adjacent the circular seat 23, it being understood that the cruciform shape of the stop member 26 will permit of the fluid from the chamber 21 readily flowing outwardly through the restricted end of the upper section and thence outwardly from the open end of the neck of the bottle body. As mentioned heretofore, when the bottle body is in upright position the ball valves 15 and 22 normally close the openings 16 and 20 and when the bottle body is tilted the ball valves will gravitationally advance to uncover the openings 16 and 20, and the advancing movement of the ball valves 15 and 22 will be limited by the respective stop members 19 and 26, against which the ball valves, in their forward movement, will abut.

By referring to the views, it will be seen that a space is provided between the inner wall of the neck 11 of the bottle body 10 and the peripheries of the sections 13, 18 and 24, and this space is preferably filled with a cement or cementitious material to the height of the upper end of the upper section 24, as shown, so that the enlarged space in the upper end of the neck 11 will

form a compartment 28 adapted to receive therein the usual stopper generally employed for closing the open ends of the necks of bottles, it being further seen that by interposing the cement or cementitious material 27 between the inner wall of the neck and the outer walls of the sections that the sections will be held within the neck and will also be held against relative movement, it being further seen that when the sections 13, 18 and 24 have been arranged in the neck 11 as mentioned, the stop members 19 and 26 will be held against movement in view of the manner in which the stop members are arranged with respect to the various sections which they engage and upon which they are supported.

From the foregoing description, it will, therefore, be seen that a bottle is provided which, when the original contents have been withdrawn therefrom, cannot be readily refilled, it being understood that the bottle body 10 is first filled with the desired fluid before placing the lower, intermediate and upper sections 13, 18 and 24, together with the valves 15 and 22 and the stop members 19 and 26, within the neck of the bottle body.

Having thus described our invention, we claim:

In a non-refillable bottle, the combination

with a bottle body including a neck, of a valve section supported within the neck and including a valve chamber, a valve loosely supported in the valve chamber and normally closing an opening from the bottle body to the valve chamber, an upper tubular section arranged within the said neck and terminating at its upper end in a reduced tubular spout, an intermediate section provided with a valve chamber and disposed within the neck to lie between the said upper and lower sections and engaging the same, a second valve in the valve chamber of the intermediate section and normally closing a passage connecting the first valve chamber with the second valve chamber, and a plurality of cruciform stop members, one arranged between the lower section and the said intermediate section and the other lying wholly within the upper section and supported therein by the said intermediate section.

In testimony whereof we affix our signatures in presence of two witnesses.

WALTER A. WOODHULL.
CHAS. R. WOODHULL.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."