

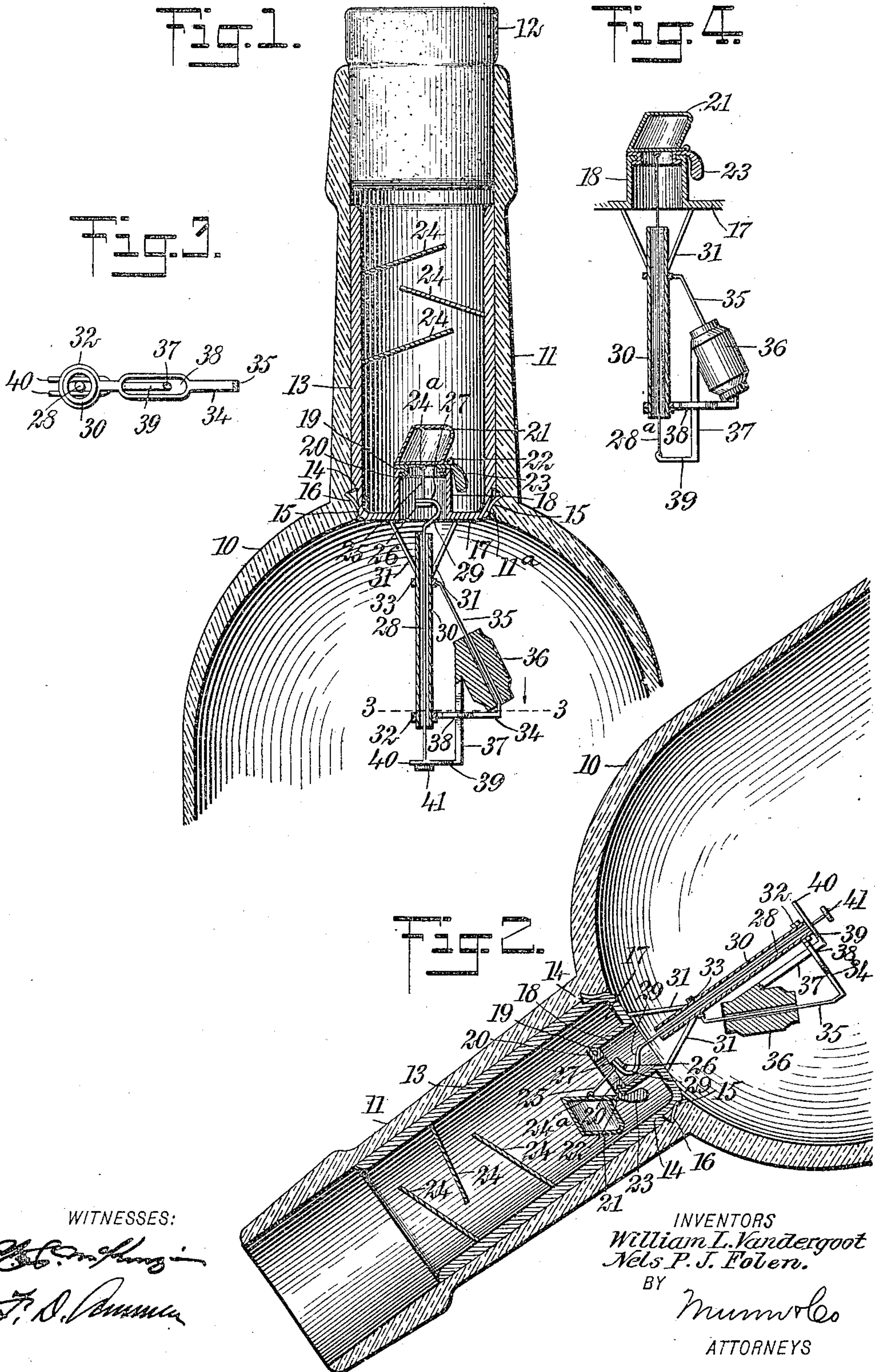
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W. L. VANDERGROOT & N. P. J. FOLEN.

BOTTLE.

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WITNESSES:

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UNITED STATES PATENT OFFICE.

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BOTTLE.

No. 837,159.

Specification of Letters Patent.

Patented Nov. 27, 1906.

Application filed February 14, 1906. Serial No. 301,024.

To all whom it may concern:

Be it known that we, WILLIAM LUITJEN VANDERGoot and NELS PETER JONASON FOLEN, citizens of the United States, and residents of Portland, in the county of Multnomah and State of Oregon, have invented a new and Improved Bottle, of which the following is a full, clear, and exact description.

Our invention relates to bottles, and more especially to those of the non-refillable type.

It has for its principal objects the provision of simple and effective means for preventing the surreptitious filling of the bottle while not materially interfering with the freedom of delivery.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a central vertical section through a portion of a bottle embodying one form of our invention. Fig. 2 is a similar view with the bottle inclined for delivery. Fig. 3 is a horizontal sectional detail on the line 3-3 of Fig. 1, and Fig. 4 is a longitudinal section showing a modified construction for the mechanism of the bottle.

We have here illustrated a bottle 10, having a neck 11, adapted to receive a cork 12. Closely fitting the neck of the bottle is a sleeve 13, preferably beginning at a point below the cork and extending to the body of the bottle. The lower extremity of this sleeve rests against an annular shoulder 11^a, formed on the inner side of the neck, as shown. In the lower extremity of the sleeve recesses 14 are formed, in which springs 15 are fixed at one end and have their opposite ends projecting upwardly outside the recesses for engagement with registering recesses 16, formed in the bottle. The sleeve extends inwardly at 17, and from this extension rises a tubular portion 18, preferably concentric with the sleeve and furnishing a seat. At the outer end of this tubular portion is an inwardly-extending flange 19, fitting within a circumferential groove along the seat proper, which is furnished by a ring 20. This ring also serves as a support for a valve 21, which is hinged to it at 22. Projecting from the ring adjacent to the hinge is a weight 23, and as the ring is free to turn upon the portion 18 this holds the hinge at the under side when the bottle is

inclined from the vertical. The valve is buoyant, this being conveniently attained by making it hollow and of some thin metal. The material of the valve, as well as the other parts of the apparatus, which are also, preferably, of metal or glass, is such as to resist corrosion. Aluminium is desirable for this purpose. Outside the valve, extending from the sleeve, are oppositely - arranged baffle-plates 24, there being three of these illustrated in the present instance, they having their ends extending by one another and while permitting the free flow of liquid prevent the introduction of an instrument for the purpose of tampering with the valve.

Pivoted upon the inner side of the valve at 24^a, preferably at its center, is a section 25 of a controlling-rod, having at its opposite end a head or enlargement 26. This rod-section passes through an eye 27 in a second controlling-rod section 28, which has adjacent to the eye and head 26 an outwardly-bent portion or extension 29, leaving ample room for the head when the rod-sections move relatively to one another. The second section 28 passes through a tubular member or carrier 30, preferably arranged axially of the bottle and supported by brackets 31, extending from it to the portion 17 of the sleeve.

Rotatable about the carrier-tube are collars 32 and 33, the first of which has projecting from it a bracket 34, while the other has fixed to it a guide-rod 35, extending therefrom to the outer end of the bracket in a direction inclined to the carrier. Movable longitudinally of the guide-rod is a weight 36, which by virtue of the freedom of the collars to turn about the carrier maintains itself and its associated elements in a downward position or in the same plane as the valve-weight 23 when the bottle is inclined. Depending from the weight 36 is an arm 37, which passes through an opening 38 in the bracket 34 and has below said bracket an angular extension 39, provided at its ends with the fork 40. This fork embraces the rod-section 28, adjacent to a head or enlargement 41 upon its lower extremity, the fork and the head being substantially in contact when the valve is upon its seat.

In use the bottle is filled and then the sleeve with the mechanism which it supports is inserted in the neck until the springs enter the recesses 16, this engagement holding

it against displacement. As the bottle is inverted the valve will remain in coöperation with its seat until the guide-rod is downwardly inclined to some angle below the horizontal. The weight 36 may then shift along this rod, carrying the fork away from the head 41. This frees the controlling-rod and the valve opens under the pressure of the contained liquid, permitting its discharge. It should be noted that immediately upon tipping the bottle both the weight 36 and the valve-ring with the valve position themselves at the lower side of the axis, thus being arranged for proper operation.

With the bottle empty the closure of the opening in the sleeve by the valve prevents the introduction of liquid, the buoyancy of said valve being counteracted by the weight 36, acting upon the head 41 of the controlling-rod. The valve is thus governed by the weight until the guide-rod passes the horizontal. At this time, the weight having slid along the rod, its fork is without effect upon the controlling-rod; but if one attempts to force liquid upwardly into the neck the valve rises with it and closes the opening. Moreover, as the air within the bottle must be withdrawn to permit the liquid to enter atmospheric pressure in itself will promptly seat the valve.

The invention may take the form shown in Fig. 4, in which a flexible thread or cord 28^a is substituted for the controlling-rod of the first form. This cord is attached at its lower end directly to the extension 39. Evidently with this cord connection leading to valve 21 substantially the same mode of operation as before will result. The fluid leaves the bottle when the latter is held at an incline. When the air passes out, the valve would not close unless lifted in a vertical direction. The fluid of course retains its level, and when the valve leans—that is, when it is inclined from the vertical—it will acquire more buoyancy and when floating close before the fluid can enter the tubular portion 18, as it comes sooner in contact with the fluid.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. A bottle comprising a seat portion, a support rotatable about the seat portion, and a valve pivoted upon the support.

2. A bottle comprising a seat portion, a support rotatable about the seat portion, a valve pivoted upon the support, and a weight fixed to the support adjacent to the pivotal point.

3. A bottle comprising a seat portion, a buoyant and hinged valve coöperating with the seat portion, and also mounted to rotate

relative thereto, and a weight connected with the valve for rotating the same to bring the hinge of the valve to the lower side of said seat portion when the bottle is inclined from the vertical.

4. A bottle comprising a seat portion, a valve coöperating therewith, a carrier extending into the bottle from the seat portion, a guide mounted upon the carrier, a weight movable upon the guide, and connections between the weight and valve.

5. A bottle comprising a seat portion, a valve coöperating therewith, a carrier extending into the bottle from the seat portion, a guide mounted and rotatable upon the carrier, a weight movable upon the guide, and connections between the weight and valve.

6. A bottle comprising a seat portion, a valve coöperating therewith, a carrier extending into the bottle from the seat portion, a guide mounted upon the carrier, a weight movable upon the guide, a rod connected with the valve and having a head, and a member projecting from the weight for engagement with the head.

7. A bottle comprising a seat portion, a valve coöperating therewith, a carrier extending into the bottle from the seat portion, a guide mounted upon the carrier, a weight movable upon the guide, a rod connected with the valve and having a plurality of sections one of which is provided with a head, and a member projecting from the weight for engagement with the head.

8. A bottle comprising a seat portion, a valve, a rod pivoted to the valve and having an enlargement, a rod provided with an eye through which the valve-rod passes and with the lateral extension adjacent to the enlargement, and a weight connected with the rod having the eye.

9. A bottle having a seat portion, a support rotatable about the seat portion, and a valve pivoted upon the support and coöperating with the seat portion, the said valve being inclined from the vertical.

10. A bottle having a tubular portion provided with a seat, a ring rotatable about the said tubular portion, and a hollow valve hinged to the said ring and coöperating with the seat, the said valve being inclined from the vertical in the direction of its hinged side.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

WILLIAM LUITJEN VANDERGROOT.
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Witnesses:

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