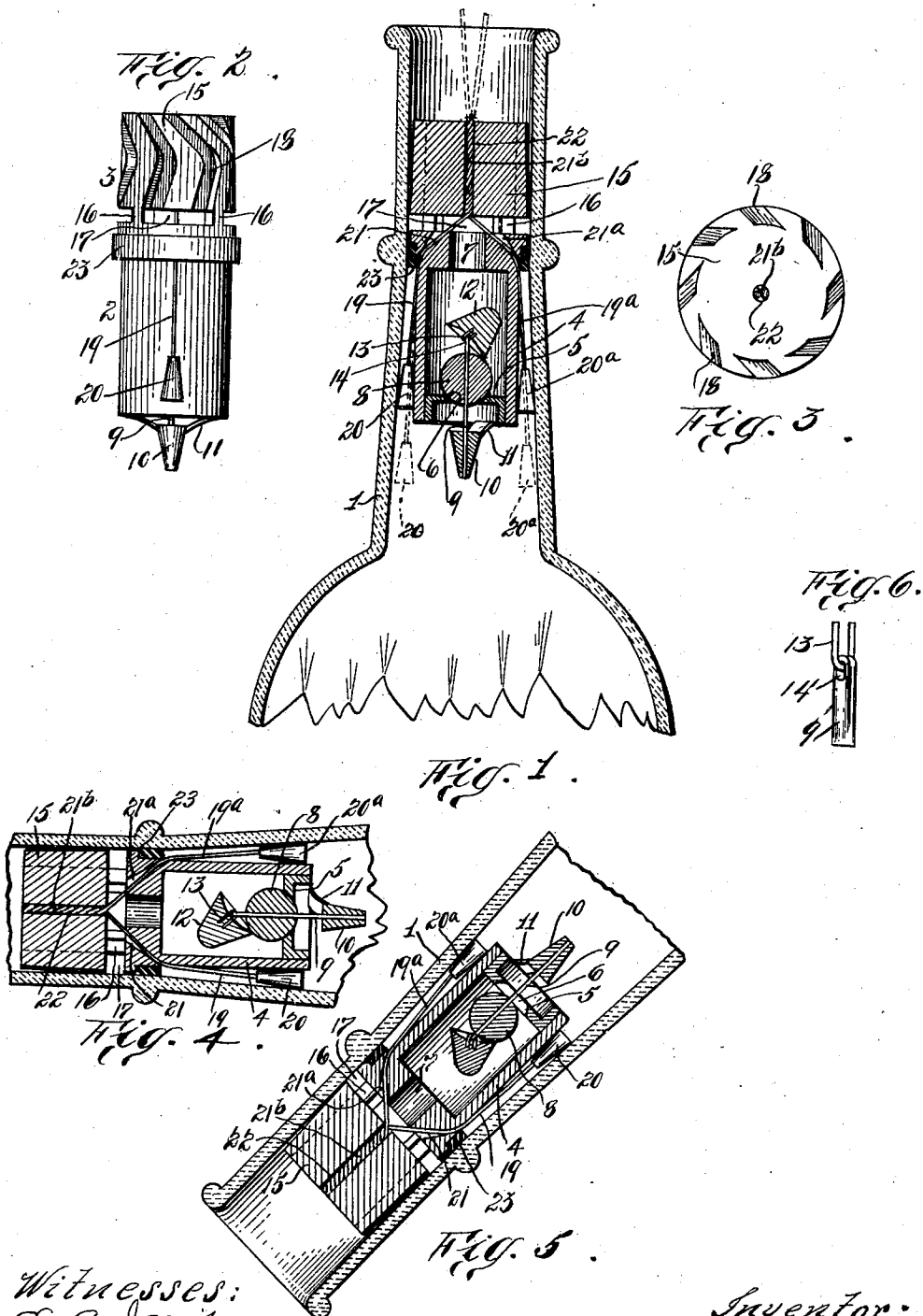


J. WIBERG.
NON-REFILLABLE BOTTLE.
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972,423.

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UNITED STATES PATENT OFFICE.

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NON-REFILLABLE BOTTLE.

972,423.

Specification of Letters Patent.

Patented Oct. 11, 1910.

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To all whom it may concern:

Be it known that I, JOHN WIBERG, a citizen of the United States, residing at the city of New York, borough of Brooklyn, and State of New York, have invented certain new and useful Improvements in Non-Refillable Bottles, of which the following is a clear, full, and exact description.

This invention relates to non-refillable bottles, and some of the objects are the provision of reliable and efficient means for closing the bottle to the admission of spurious liquids, and to generally improve the construction of such interfering means and to render the same durable and efficient. These being some of the objects of my invention, I will now describe the same with reference to the accompanying drawings showing a desirable form thereof and in which—

Figure 1 is a vertical central section of a portion of a bottle and my improved interfering means, the dotted lines in this figure showing the position of the retaining means before the interfering means is finally secured in the neck of the bottle; Fig. 2 is a side elevation of the interfering means in the form of a plug; Fig. 3 is an enlarged plan; Fig. 4 is a similar view to Fig. 1, the bottle being shown turned into horizontal position; Fig. 5 is a similar view showing the position of the parts when liquid is being poured from the bottle, and Fig. 6 is a detail view of a portion of the valve device.

Referring to the drawings, the bottle 1 is supplied within its neck with my improved interfering means, adapted to interfere with the introduction of liquid into the bottle and to permit pouring of any liquid that may be in the bottle. The interfering means is in the form of a plug comprising a valve member 2 and an interfering member 3. The valve member 2 has a valve chamber 4, preferably of cylindrical form, the lower end of which is closed by means of a disk 5 provided with a central valve seat 6, and the upper end of which is provided with a pouring outlet or orifice 7. The opening in the valve seat 6 may be closed by means of a ball valve 8, which may be of any suitable material, preferably one which will render the said valve buoyant. It is obvious that a buoyant valve will, when the bottle is inverted for pouring, float and be pressed up against the valve seat 6 to close the opening, upon any attempt to force liquid up into the

bottle. Means are provided for guiding the said ball valve 8 to and from its seat, preferably in the form of a guide stem 9, which at its lower end is secured in a central hub 10 of a cross piece 11 upon the disk 5. Means are also provided for assuring the seating of the said ball valve 8 when the bottle is in non-pouring position, so that no spurious liquid can be introduced into the bottle. Such means are preferably composed of a weight 12 so mounted upon the upper end of the guide stem 9 as to tilt over and in contact with the valve 8. The connection of the weight with the guide stem preferably consists of a staple 13 secured to the lower end of the said weight 12 in line with its longitudinal axis, said staple passing through an eye 14 in said guide stem. Preferably the weight 12 is of frusto-conical shape and is heavy enough to normally tip so that its lower edge will bear upon the valve. The described central pivoting of the weight 12 permits it to tip universally in various directions to one side of said guide stem so that said weight may bear at different points around the valve.

The interfering member 3 of the device is provided with a head 15 which is mounted upon the upper end of the valve member 2 by means of short connecting posts 16, preferably four in number, and so spaced as to provide suitable lateral openings or mouths 17. The periphery of said head 15 is provided with an annular series of pouring and interfering channels 18, said channels extending in a general longitudinal direction, but each channel is crooked or angular so as to preclude the introduction of a wire to obtain access to the interior portion of the plug 2, 3.

The operation briefly is as follows: The plug 2, 3, being secured in a filled bottle and it being desired to pour the liquid in the bottle therefrom, the bottle is inverted in the usual way, say to the position shown in Fig. 5, so that the weight 12 hangs suspended in vertical position to allow the ball valve to slide down upon the guide stem 9, thus uncovering the opening at 6. The liquid in the bottle will then flow into the valve chamber, then through orifice 7 laterally out through side openings 17, and thence out of the bottle through the interfering pouring channels 18. The weight 12 permits the ball valve 8 to open more or less,

according to the degree of inclination of the bottle. The passages through the plug are of sufficient size to permit gradual pouring out of the liquid in the bottle, but are so arranged in the plug that it will be almost impossible, if not entirely impossible, to force a spurious liquid into the bottle. If the ball valve is buoyant, the same will be floated and pressed up to close the opening at 6 if a liquid is forced into the neck when the bottle is in such position as shown in Fig. 5. It is obvious that no liquid can be forced into the bottle when the same is in the position shown in Fig. 4, because the weight 14 maintains the valve in seated position.

Means are provided for reliably securing the interfering plug such as described in position in the neck of the bottle. To this end wires 19, 19^a support at their lower ends wedges 20, 20^a, and are threaded through holes 21, 21^a in the top of the valve chamber 4, the ends 21^b of said wires being brought together and threaded through a central hole 22 in the head 15, all as shown more clearly in Fig. 1. The position of the wires and wedges before the plug is secured in the neck of the bottle is indicated by dotted lines in said figure. To secure the plug the ends 22 of the wires are pulled up as far as possible through the hole in the head 15, thereby pulling the wedges 20, 20^a into the space between the valve chamber 4 and the neck, so that the wedges are jammed and held in position by friction and by the straining of the wires. The ends 22 of the wires are then twisted within the hole 21 and are cut off short at the upper end of the hole, to preclude the grasping of the extreme ends of the wires for untwisting and loosening the wires. A rubber gasket 23 placed over the plug 2, 3, supplements the action of the wedges in retaining the said plug in position.

What I claim is:

1. In a non-refillable bottle, the combination with a plug constructed with interfering pouring orifices, a plug-anchoring means adapted to coact with said plug and with the neck of the bottle, the same comprising a movable plug-engaging device, and means operable from the upper end of said plug to engage said device with the inner wall of said neck.

2. In a non-refillable bottle, the combination with a plug constructed with interfering pouring orifices, a frictional plug-anchoring means adapted to coact with said plug and with the neck of the bottle, the same comprising a movable plug-engaging device, and means operable from the upper

end of said plug to engage said device with the inner wall of said neck.

3. In a non-refillable bottle, the combination with a plug constructed with interfering pouring orifices, plug-anchoring wedges adapted to coact with said plug and with the neck of the bottle, the same comprising a movable plug-engaging device, and means operable from the upper end of said plug to engage said wedges with the inner wall of said neck.

4. In a non-refillable bottle, the combination with a plug constructed with interfering pouring orifices, a plug-anchoring means adapted to coact with said plug and with the neck of the bottle, the same comprising a movable plug-engaging device, and wires passing loosely up through said plug and adapted to be secured to secure said engaging device in engagement with the inner wall of said neck.

5. In a non-refillable bottle, the combination of a hollow interfering plug constructed with pouring orifices, a valve controlling the orificed lower end of said plug, a fixed support located in the hollow of said plug, and a universally tipping weight centrally supported in normal position of the bottle above said valve and adapted to engage said valve at various points around it to seat it.

6. In a non-refillable bottle, the combination of a hollow interfering plug constructed with pouring orifices, a valve controlling the orificed lower end of said plug, a fixed support located in the hollow of said plug and having a portion extending over said valve, and a universally tipping weight centrally supported in normal position of the bottle above said valve by said portion of said support and adapted to engage said valve at various points around it to seat it.

7. In a non-refillable bottle, the combination of a hollow interfering plug constructed with pouring orifices, a valve controlling the orificed lower end of said plug, a guide stem mounted stationary in said plug, extending into the hollow of said plug and projecting over said valve, and upon which stem said valve is slidingly mounted, and a universally tipping weight mounted in said hollow plug upon the extreme upper end of said projecting portion of said stem and adapted to engage said valve at various points around it to seat it.

Signed at New York city, N. Y., this 24th day of February 1910.

JOHN WIBERG.

Witnesses:

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