

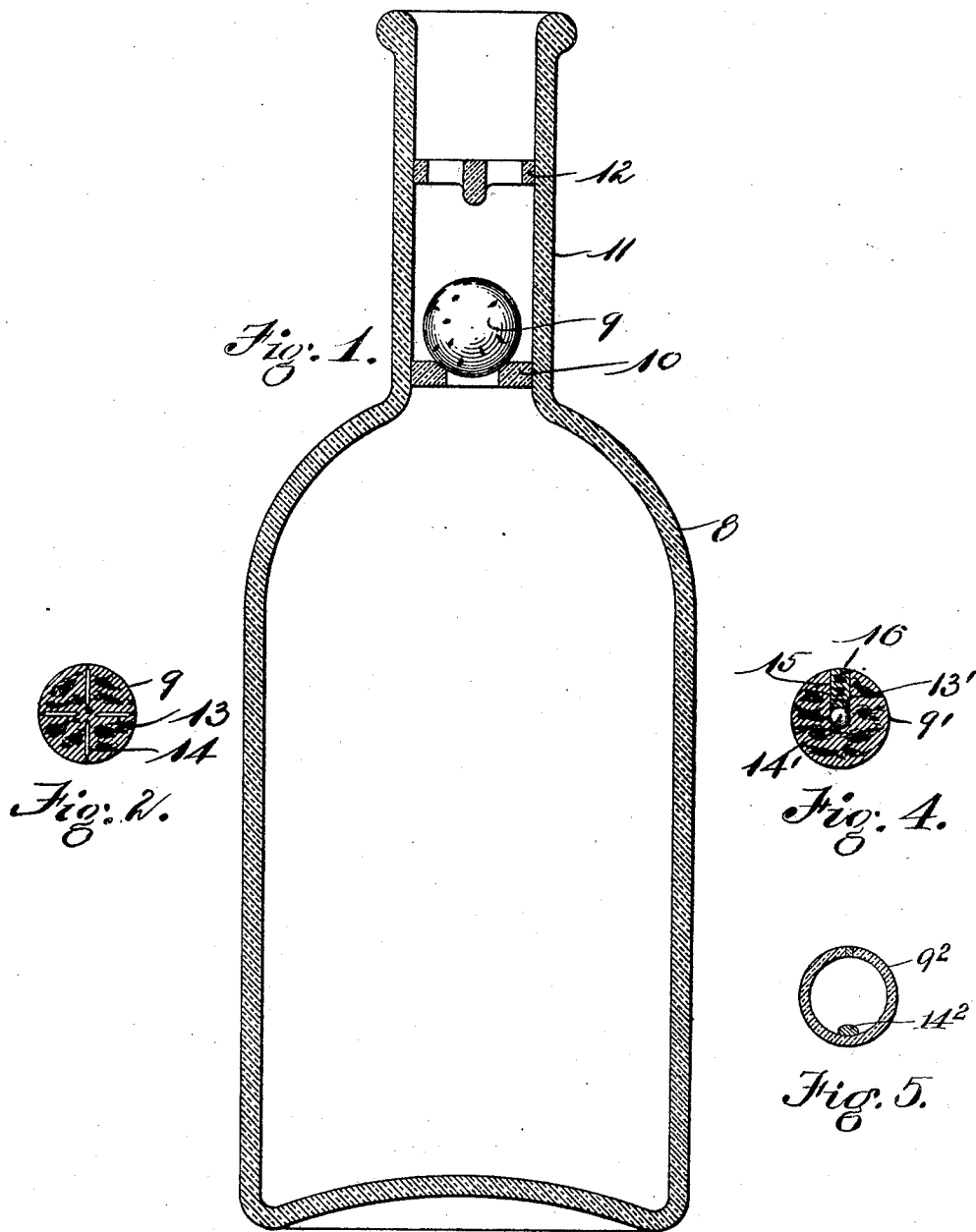
No. 794,830.

PATENTED JULY 18, 1905.

J. S. WRIGHT.

WEIGHTED BALL FOR NON-REFILLABLE BOTTLES.

APPLICATION FILED AUG. 10, 1904.



Witnesses:

Sydney C. Taft.

Charles J. Ford.

Fig. 3.

Inventor:

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UNITED STATES PATENT OFFICE.

JOHN S. WRIGHT, OF DUXBURY, MASSACHUSETTS.

WEIGHTED BALL FOR NON-REFILLABLE BOTTLES.

SPECIFICATION forming part of Letters Patent No. 794,830, dated July 18, 1905.

Application filed August 10, 1904. Serial No. 220,219.

To all whom it may concern:

Be it known that I, JOHN S. WRIGHT, a citizen of the United States, residing at Duxbury, in the county of Plymouth and State of Massachusetts, have invented new and useful Improvements in Weighted Balls for Non-Refillable Bottles, of which the following is a specification.

This invention relates to a ball adapted to be used as a valve for non-refillable bottles, the object of the invention being to provide a ball which, together with a suitable seat, will seal a bottle so that liquid cannot be introduced into said bottle even under a vacuum.

The invention consists of a ball adapted to be used as a valve for non-refillable bottles, said ball provided with a recess and a weight in said recess of greater specific gravity than the body of said ball.

The invention again consists in the combination and arrangement of parts set forth in the following specification, and particularly pointed out in the claims thereof.

Referring to the drawings, Figure 1 is a vertical central section of a bottle with my improved ball therein. Fig. 2 is a central section of said ball. Fig. 3 is a section of said weighted ball, illustrating its position with relation to the surface of a liquid in which it is immersed. Fig. 4 is a central section of a modified form of my improved ball. Fig. 5 illustrates another modified form of my invention.

Like numerals refer to like parts throughout the several views of the drawings.

In the drawings, 8 is a bottle of any desirable style. 9 is a ball constructed in accordance with my invention. 10 is a valve-seat located in the neck 11 of said bottle, and 12 is a stop also located in the neck 11 of said bottle to prevent the ball from being tampered with and also to prevent said ball from being removed from the bottle-neck. The stop 12 and valve-seat 10 may be of any desirable construction without departing from the spirit of this invention.

In Fig. 2 a cork ball 9 is illustrated with recesses 13 therein containing weights 14, said weights being of greater specific gravity than the main body of the ball.

In Fig. 4 another form of ball 9' is illustrated in which a recess 13' is provided containing a weight 14', said weight being introduced into said ball through a passage 15, which is subsequently filled by a plug 16.

In Fig. 5 a hollow ball 9² is illustrated, containing a globule of mercury 14², which serves as a weight.

In Fig. 3 the full line *a* illustrates the surface of the water with relation to the ball 9 when said ball is weighted as illustrated. The dotted line *a'* illustrates the relative position of the surface of the water to the same ball without the weights. It has been found by practical experiment that a ball constructed as hereinbefore described, in connection with a valve-seat, forms a perfect means for sealing a bottle so that liquid cannot be introduced into the interior thereof, and when a vacuum is formed in an empty bottle and said bottle then connected with a supply of liquid even under these conditions the liquid will not enter the interior of the bottle, whereas if the same ball without the weights is used and the bottle subjected to a vacuum test liquid will enter the interior of the bottle, the explanation of this result being that when the bottle is inverted, having previously had the air exhausted from the interior thereof and the bottle connected to a supply of liquid, if the ball is not weighted as the liquid rushes up through the neck the ball will be forced against the seat and immediately bounce backwardly therefrom and allow liquid to enter the bottle by repeated movements of the ball of this nature before the ball settles against the seat and closes the same against entrance of the liquid, and this is especially the case where cork is used for the main body of the ball; but where the body of the ball is of cork and is weighted it comes to a bearing upon the valve-seat 10 under the conditions hereinbefore set

forth and remains in that position, effectually sealing the bottle against the introduction of liquid to the interior thereof.

Having thus described my invention, what
5 I claim, and desire by Letters Patent to secure, is—

1. In a non-refillable bottle, a valve-seat, a ball-valve provided with a recess, and a metal weight in said recess.
- 10 2. In a non-refillable bottle a valve-seat, a

ball-valve provided with a recess, and a weight in said recess of greater specific gravity than the body of said ball-valve.

In testimony whereof I have hereunto set my hand in presence of two subscribing wit- 15
nesses.

JOHN S. WRIGHT.

Witnesses:

CHARLES S. GOODING,
A. J. DAILEY.