No. 741,912. PATENTED OCT. 20, 1903.

S. C. KINDIG & T. J. SPICER.

NON-REFILLABLE BOTTLE.

APPLICATION FILED FEB. 24, 1903.

NO MODEL.

Fig. 1.

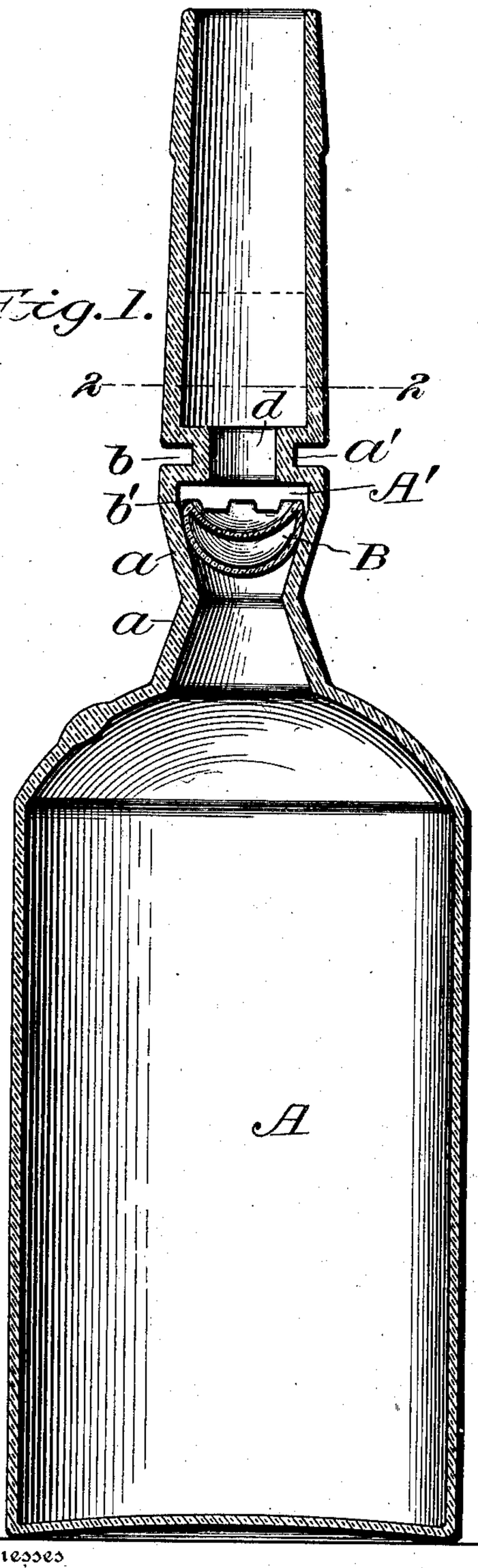


Fig. 2.

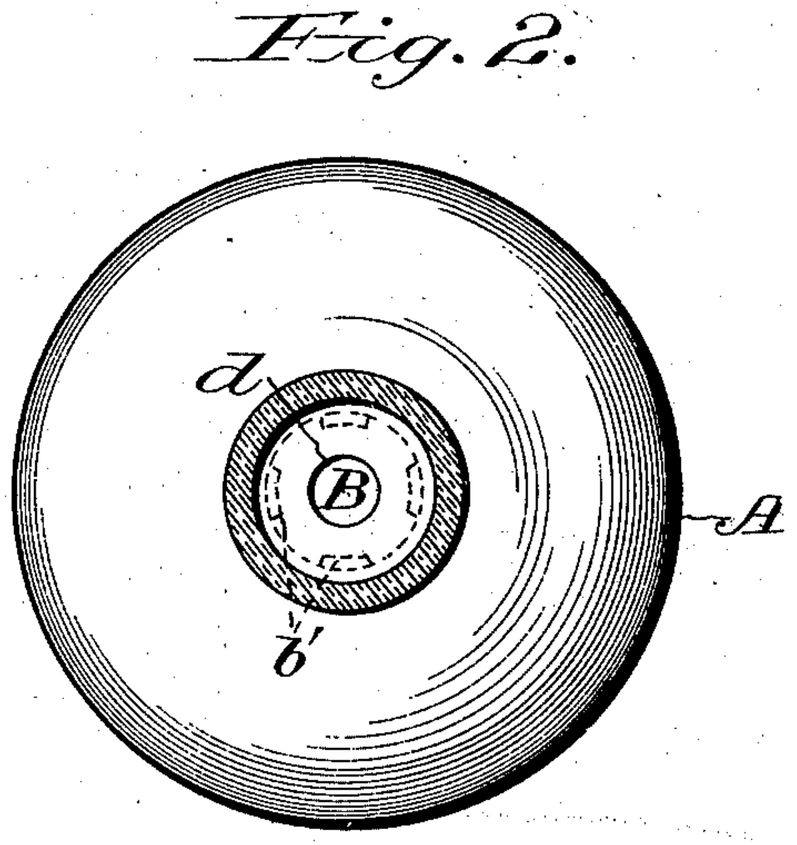


Fig. 3.

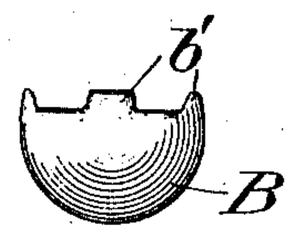


Fig. 4.

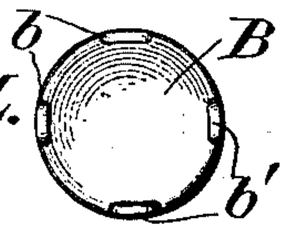
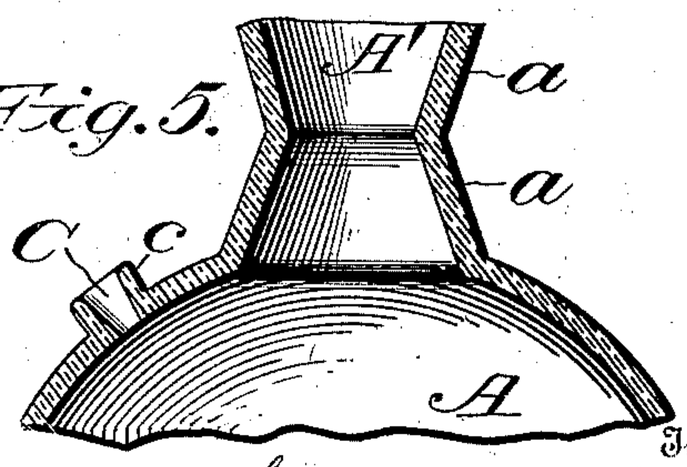


Fig. 5.



Witnesses

C. H. Walker.

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No. 741,912. Patented October 20, 1903.

UNITED STATES PATENT OFFICE.

SAMUEL C. KINDIG AND THOMAS J. SPICER, OF BALTIMORE, MARYLAND.

NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 741,912, dated October 20, 1903.

Application filed February 24, 1903. Serial No. 144,726. (No model.)

To all whom it may concern:

Be it known that we, SAMUEL C. KINDIG and THOMAS J. SPICER, citizens of the United States, residing at Baltimore, in the State of Maryland, have invented new and useful Improvements in Non-Refillable Bottles, of which the following is a specification.

This invention relates to certain new and useful improvements in non-refillable bottles, and has for its object to provide an effective and simple construction which will prevent a bottle or other container being refilled.

In carrying out the invention the bottle is constructed with the walls of the neck of substantially the same thickness throughout, and in the neck there is formed a valve-chamber for the reception of a float-valve, the valve being so constructed as to provide a concave surface on one side, the valve being convex where it engages the valve-seat, as will be hereinafter more fully set forth, and specifically pointed out in the claims.

In the accompanying drawings, Figure 1 is a vertical section of a bottle made in accordance with our invention, the valve-chamber and valve coacting to prevent refilling of the bottle. Fig. 2 is a transverse section on the line 2 2 of Fig. 1. Fig. 3 is a side elevation of the valve. Fig. 4 is a plan view of the valve, and Fig. 5 a sectional detail showing the filling-aperture through one of the side walls of the bottle before being permanently closed.

In the drawings, A indicates a bottle, flask, or other container having a neck which is shaped to provide a valve-chamber A′, in which is placed a float-valve B. In the manufacture of the bottle or flask there is formed through the body portion at any suitable point, preferably near the neck, an opening C, which is surrounded by an outwardly-extending wall *c*, and after the bottle has been filled through such opening it is closed by fusing the material which surrounds the aperture, or, if desirable, a stopper or plug can be cemented, fused, or otherwise secured to permanently close the aperture and seal the same. The neck of the bottle is made to present converging sides *a a*. Above the same there is present an inward-extending annular part *a*′, which forms a valve-guard above the chamber in which the valve is seated. The part of the neck which extends inward has exteriorly a circumferential groove or recess *b*, which may be utilized in wiring or otherwise fastening a cork in the bottle, and the neck of the bottle may be of any suitable length, the diameter of the discharge-aperture *d* determining to a great extent the length of the neck, and in practice the length of the neck will decrease with the size of the discharge-opening *d*. When the bottle has been blown or otherwise manufactured, a float-valve B is placed or formed in the valve-chamber A′, and it is within the scope of our invention to form the neck of the bottle or the valve-chamber about the valve instead of making the valve in the chamber. The float-valve B is preferably made of glass, being blown or shaped in the valve-chamber, such valve being hollow, concave on its upper surface, and convex where it engages with the valve-seat, such meniscoid-shaped valve having on its perimeter or at the junction of the concave and convex surfaces upward-projecting nibs *b*′, which in practice will engage with the side of the valve-guard and prevent the valve being seated thereon.

The hollow meniscoid-shaped float-valve B may be made of rubber or other equivalent material which can be forced into the valve-chamber through the centrally-located opening of the valve-guard or retainer.

By providing the neck of the bottle with a contracted opening *d* and a valve with a concave surface beneath such opening and a neck which extends considerably upward from the opening *d* the valve cannot be held off of its seat by a wire inserted from above, neither can the bottle be filled by a vacuum apparatus. The valve-chamber and valve bear relation to each other as to size and shape, so that the valve cannot be turned in the chamber to such an extent as to remove the convex portion thereof from the valve-seat, and when the bottle is tilted to discharge its contents the valve will be floated to the highest part of the valve-chamber and the liquid will pass around the lower side of the valve and out where it is held away from the opening by the nibs, and by such construction the bottle may be emptied by simply tilting the same, as is usual, without completely inverting it.

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

1. In a non-refillable bottle a neck having a converging portion to form a valve-seat, an inwardly-projecting portion integral with the neck having an aperture therethrough and a hollow float-valve which is crescent-shaped in cross-section, substantially as shown.

2. In a non-refillable bottle a neck therefor having formed therein a valve-chamber, a hollow valve of meniscoid shape the perimeter having thereon projecting nibs, substantially as shown.

3. The combination with the neck of a bottle having a valve-seat formed therein, an inwardly-projecting portion with an aperture therethrough above the valve-seat, a hollow concavo-convex valve located between the valve-seat and the inwardly-projecting portion of the neck such inwardly-projecting portion providing the neck exteriorly with a recess, for the purpose set forth.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

SAMUEL C. KINDIG.
THOMAS J. SPICER.

Witnesses:
GRANT BORDER,
GEORGE D. SPICER.