No. 713,816. Patented Nov. 18, 1902.

W. F. THOMPSON.

NON-REFILLABLE BOTTLE.

(Application filed June 15, 1901.)

(No Model.)

Fig. 5,

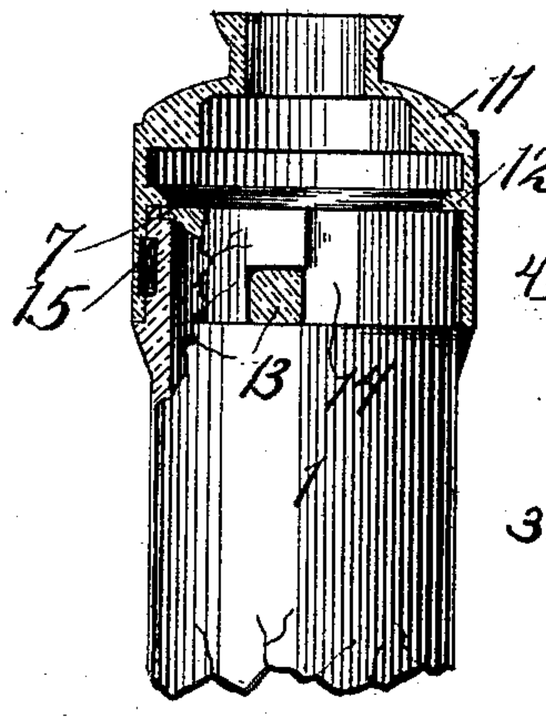

Fig. 1

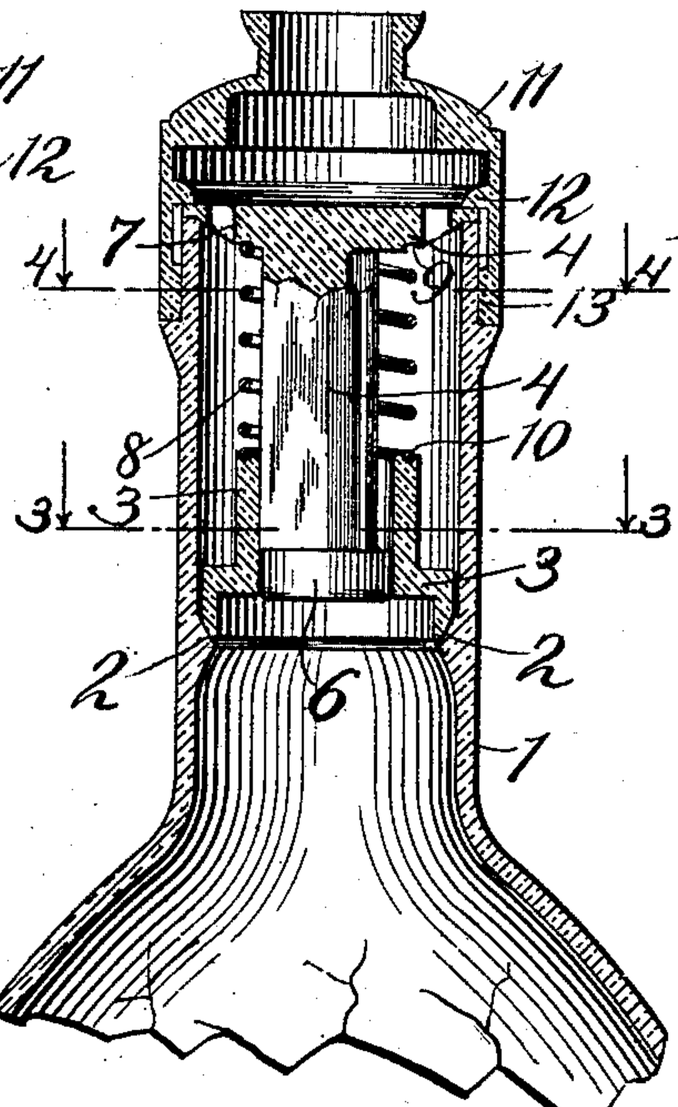

Fig. 3,

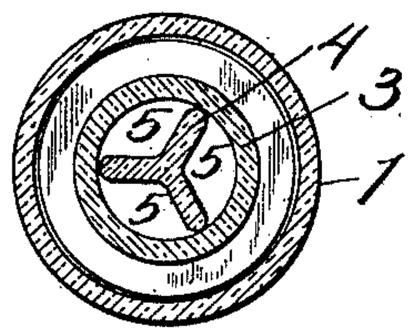

Fig. 2

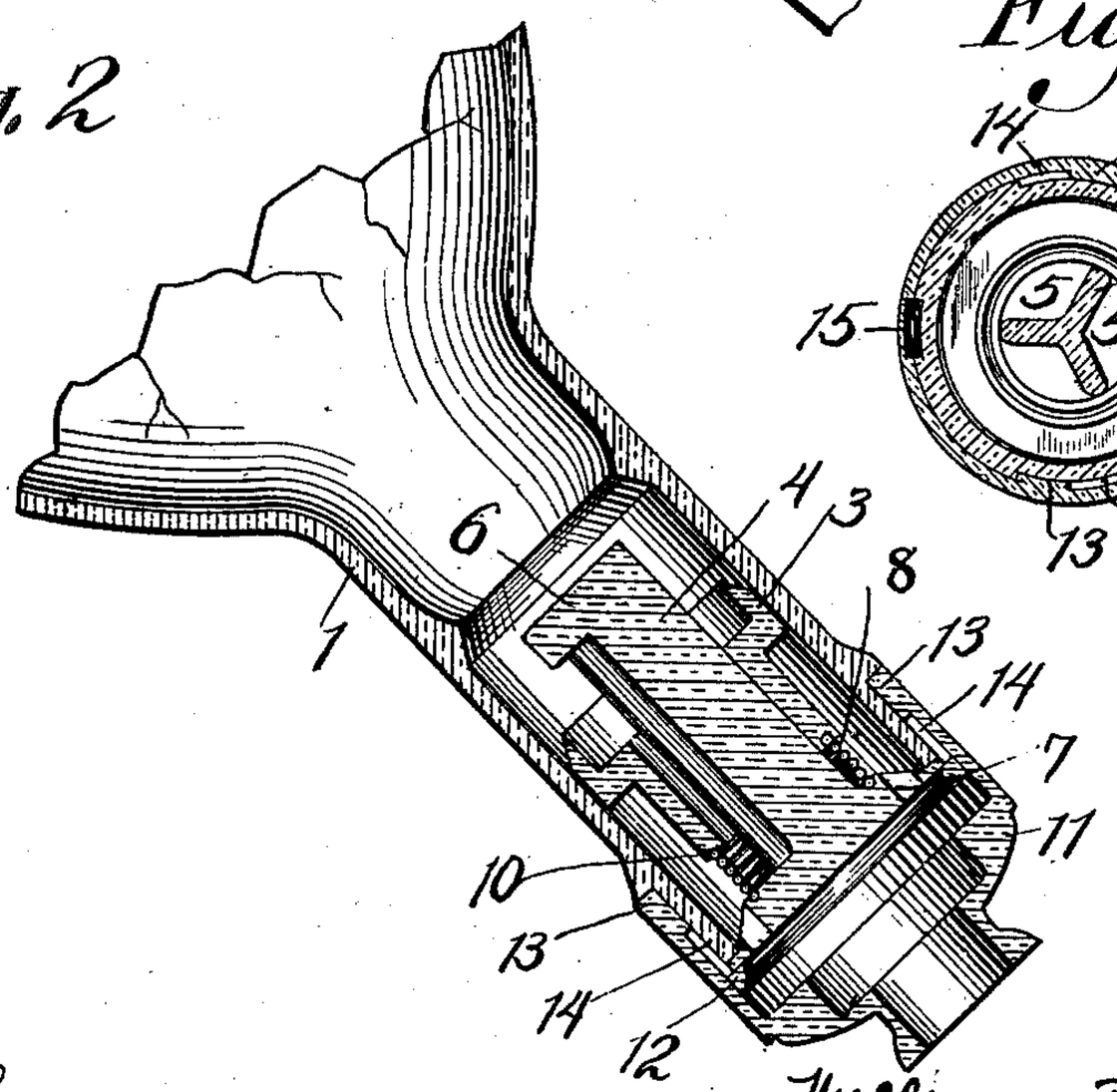

Fig. 4

WITNESSES:

Harry A. Goss.

Emma L. Carmichael.

INVENTOR

William F. Thompson

BY

Nicholas M. Goodlett Jr.

ATTORNEY

UNITED STATES PATENT OFFICE.

WILLIAM F. THOMPSON, OF NEW YORK, N. Y.

NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 713,816, dated November 18, 1902.

Application filed June 15, 1901. Serial No. 64,643. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. THOMPSON, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented Improvements in Non-Refillable Bottles, of which the following is a specification.

This invention relates to non-refillable bottles, and has for its object to provide a simple construction that may be made at comparatively low cost and that will be efficient to prevent the refilling of the bottle after being once emptied of its contents.

The invention consists of the construction hereinafter set forth.

In the accompanying drawings, forming part of this specification, and in which like numerals of reference designate corresponding parts, Figure 1 is a vertical sectional elevation of the upright upper end of a bottle embodying the invention. Fig. 2 is a similar view showing the bottle tilted and the valve open, the section-plane cutting the central plug within the neck. Figs. 3 and 4 are sectional plan views on the lines 3 3 and 4 4, respectively; and Fig. 5 is an elevation, partly in section, showing the bottle-cap and the means for sealing it in place.

The neck 1 of the bottle is provided with an interior valve-seat 2 for the hollow valve 3. A separate plug 4, having channels 5 along its length, is stationed within the neck. At its lower end the plug 4 has a valve-head 6, and at its upper end it is provided with a perforated flange 7, which rests upon the top of the neck. The valve 3 surrounds the plug 4 and is arranged to move freely to and fro thereon. The head of the valve 3, which nearly fills the neck of the bottle, is beveled, as shown, and the seat 2 is correspondingly formed, so that when the valve is on its seat the neck will be closed. When the valve is on its seat, its bore is entirely closed by the head 6 of the plug 4. When the valve moves from its seat along the plug, it uncovers the head 6 and permits the liquid to pass along the channels 5 and through the perforations in the flange 7. A spring 8 is arranged to act upon the valve 3 and tends to force it to its seat. The spring in its best arrangement consists of a coiled wire surrounding the plug 4 and having one end seated in a groove 9, formed in the flange 7, and its other end seated in a groove 10, formed in the valve 3. This spring may be made of German silver or other non-corroding metal and is carefully tempered, so as to exert the required pressure upon the valve. When the bottle is in upright position, of course the valve rests on its seat. When the bottle is turned upside down or nearly so, as shown in Fig. 2, the valve moves down the plug, compressing the spring. When the bottle is in a horizontal position or nearly so, the spring forces the valve to its seat, so that the bottle cannot be filled by immersion while in a horizontal position. The fluid-passage through the neck is sufficiently ample and free from obstructions to permit a copious and even outflow when the bottle is turned up and enables the entire contents to be poured out.

The plug 4 and valve 3 are inserted in the neck together and are confined by the sealed cap 11. This cap is open at the top, as shown, and is provided with a shoulder 12, resting upon the flange 7 and holding the plug in place. For the purpose of sealing the cap it is provided with two projections 13 on its inner wall, which fit in recesses 14 on the outer wall of the neck and form a bayonet-joint. The neck and cap are also provided with corresponding recesses for the reception of a sealing-spring 15. When the cap is fitted on the neck, but not pushed quite home, the spring 15 is then inserted and the cap pushed home and turned so as to lock the bayonet-joint, whereupon it will be securely sealed.

Although I have shown the invention in the drawings in the best form now known to me and have so described it, I do not wish to be confined to the precise details shown and described, as they could be variously modified without departing from the scope of the invention.

What I claim, and desire to secure by Letters Patent, is—

1. In a non-refillable bottle, the combination with the neck; of a valve-seat; a stationary channeled plug located within the neck and having a valve-head at its lower end; and a hollow valve adapted to slide to and fro on the plug and rest on said valve-seat,

the bore of the valve being closed by the valve-head of the plug when the valve is on its seat.

2. In a non-refillable bottle, the combination with the neck; of a valve-seat; a separate stationary channeled plug located within the neck and having a valve-head at its lower end; a hollow valve adapted to slide to and fro on the plug and rest on said valve-seat; the bore of the valve being closed by the valve-head of the plug when the valve is on its seat; and an open cap sealed to the neck and holding the plug in place.

3. In a non-refillable bottle, the combination with the neck; of a valve-seat; a stationary channeled plug located within the neck and having a valve-head at its lower end; a hollow valve adapted to slide to and fro on the plug and rest on said valve-seat, the bore of the valve being closed by the valve-head of the plug when the valve is on its seat; and a spring tending to force the valve to its seat.

4. In a non-refillable bottle, the combination with the neck; of a valve-seat; a separate stationary channeled plug located within the neck and having a valve-head at its lower end; a hollow valve adapted to slide to and fro on the plug and rest on said valve-seat, the bore of the valve being closed by the valve-head of the plug when the valve is on its seat; an open cap sealed to the neck and holding the plug in place; and a spring tending to force the valve to its seat.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM F. THOMPSON.

Witnesses:

NICHOLAS M. GOODLETT, Jr.,

EMMA L. CARMICHAEL.