No. 680,476. Patented Aug. 13, 1901.

J. H. DENMEAD.

BOTTLE STOPPER AND SEAL.

(Application filed Feb. 21, 1901.)

(No Model.)

Fig. 1.

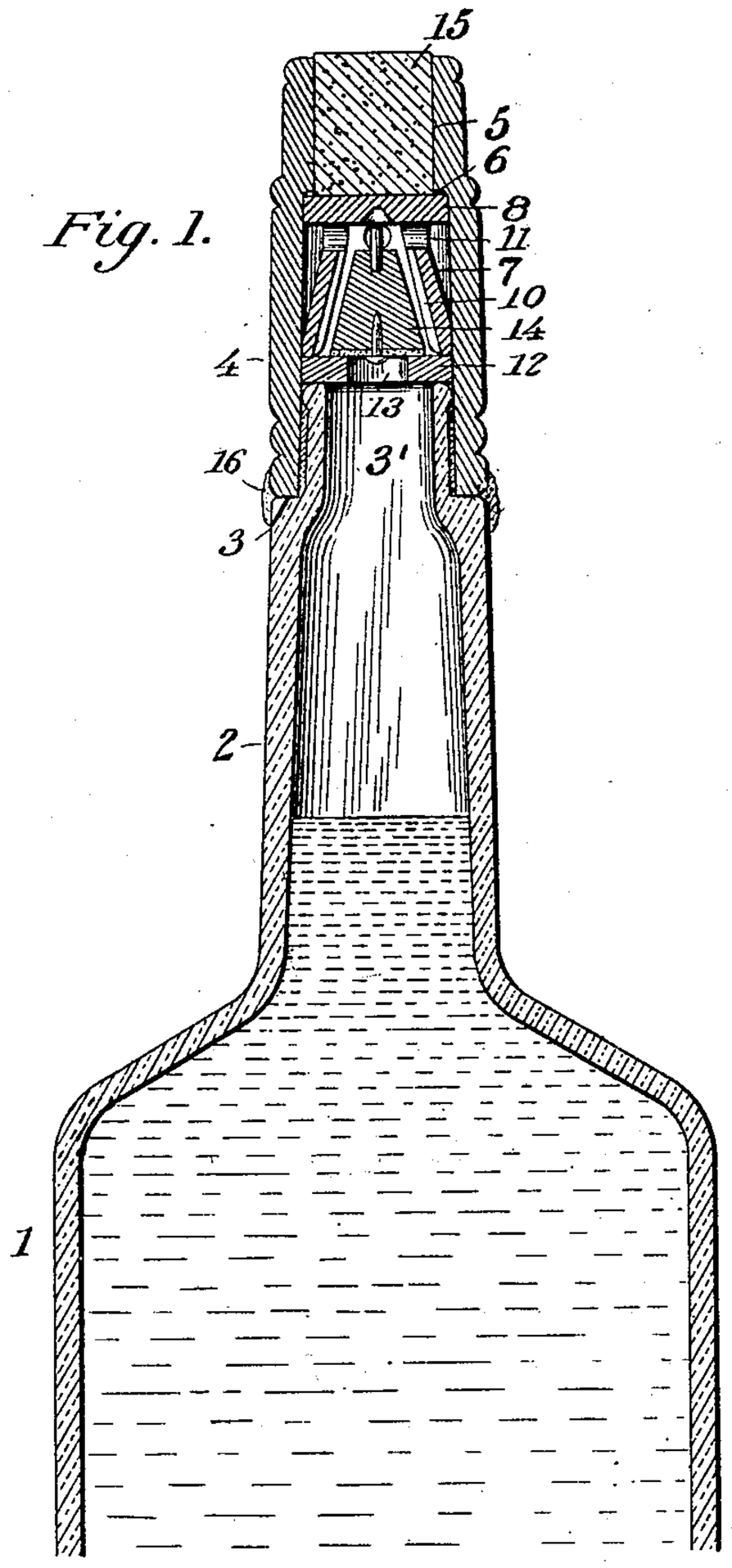


Fig. 2.

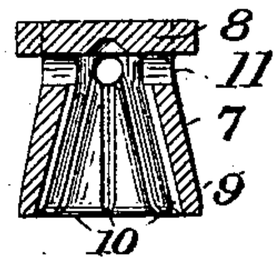


Fig. 3.

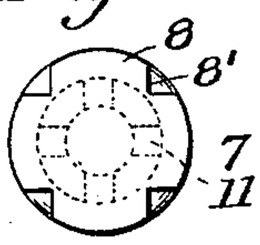


Fig. 4.

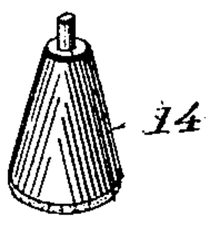
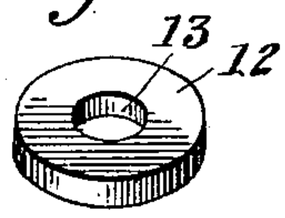


Fig. 5.



Witnesses,
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UNITED STATES PATENT OFFICE.

JAMES H. DENMEAD, OF WESTPOINT, VIRGINIA, ASSIGNOR OF ONE-HALF TO HAROLD E. STANFORD, OF NEW YORK, N. Y.

BOTTLE STOPPER AND SEAL.

SPECIFICATION forming part of Letters Patent No. 680,476, dated August 13, 1901.

Application filed February 21, 1901. Serial No. 48,257. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. DENMEAD, a citizen of the United States, residing at Westpoint, in the county of King William and State of Virginia, have invented a new and useful Bottle Stopper and Seal, of which the following is a specification.

This invention relates to bottle-stoppers in which openings are formed through which the contents of the bottle may flow outward, but which by its novel construction will effectually prevent the refilling of the bottle until the seal has been broken and the entire device removed.

A further object of the invention is to provide a structure which is simple, durable, and effectual, in that it prevents subsequent adulteration of the liquid with which the bottle may have originally been filled; and with these objects in view my invention consists in the novel construction illustrated in the accompanying drawings, in which—

Figure 1 shows the invention in cross-section applied to a bottle. Fig. 2 is a cross-sectional view of the valve-chamber. Fig. 3 is a plan view of same. Fig. 4 is a perspective view of the valve, and Fig. 5 is a perspective view of the valve-seat.

Similar numerals of reference indicate similar parts throughout the several views.

1 indicates a bottle having a neck 2, which is provided with a shoulder 3, on which rests the stopper-chamber 4. This stopper-chamber 4 is cylindrical in shape and is provided with a longitudinal opening through its entire length, thereby forming an open-ended tubular cap. The upper portion 5 of said opening being diminished in diameter forms an annular shoulder 6, against which rests the head of a valve-chamber 7. This valve-chamber 7 has a head or crown portion 8 and a conical hollow recessed portion 9, the crown portion 8 being provided with a series of channels 8′, through which fluid may pass in its outward flow from the bottle. The conical recessed portion 9 is provided with a series of internal grooves 10 and a series of outlet-ports 11. Seated on the upper extremity of the neck of the bottle is a valve-seat 12, provided with a central opening 13, and on this valve-seat 12 rests the valve 14, and this valve is loosely housed in the valve-chamber 7, as clearly shown in Fig. 1. The upper portion 5 of the stopper-chamber is positively closed by an ordinary cork or other equivalent stopper 15.

When a bottle has been filled with any desired liquid, the cork 15, valve-chamber 7, valve 14, and valve-seat 12 are placed in the stopper-chamber 4, as shown, and then the lower hollow portion of said stopper-chamber is fitted over the upper neck portion 3 and a seal formed with a suitable adhesive plastic material, as indicated at 16, thus uniting the stopper-chamber with the bottle. Now upon removing the cork or equivalent stopper 15 a portion or all of the contents of the bottle may be poured out through the opening 13, grooves 10, ports 11, and channels 8′; but the valve 14, resting on valve-seat 12, prevents any other fluid being put into the bottle, which can only be refilled by removing the stopper-chamber from the neck portion 3′.

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

1. A bottle-stopper, comprising an open-ended tubular cap, the outer end portion of which has an inner marginal shoulder, a hollow substantially conical valve-chamber inserted from the inner end of the cap, and having its smaller end closed and provided with a laterally-enlarged head fitted against the annular shoulder, there being lateral perforations formed through the sides of the chamber adjacent to the inner side of the head, and the latter having perforations formed through the projected portion thereof and between the exterior of the valve-chamber and the outer edge of the marginal flange, a valve-seat inserted through the inner end of the cap and lying against the inner end of the valve-chamber, and a gravity-valve freely movable within the valve-chamber and normally supported upon and closing the seat.

2. A bottle, having an external marginal shoulder upon the neck thereof, an open-ended tubular cap embracing the bottle-neck and supported upon the marginal shoulder, a frangible seal connecting the cap to the bottle, an inner marginal shoulder within the cap and adjacent to the outer end thereof, a substantially conical and hollow valve-cham-

ber inserted from the inner end of the cap, and having an enlarged head lying against the inner shoulder, and provided with marginal notches extending beyond the shoulder, the inner side of the chamber being grooved longitudinally, and having lateral discharge-openings formed through the sides thereof adjacent to the inner side of the head, a substantially conical gravity-valve within the valve-chamber, and a disk-like valve-seat having a central opening and supported upon the outer end of the bottle-neck.

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

JAMES H. DENMEAD.

Witnesses:
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R. A. BALDERSON.