No. 676,613. Patented June 18, 1901.

E. ADER.

BOTTLE.

(Application filed July 13, 1900.)

(No Model.)

Fig. 1,

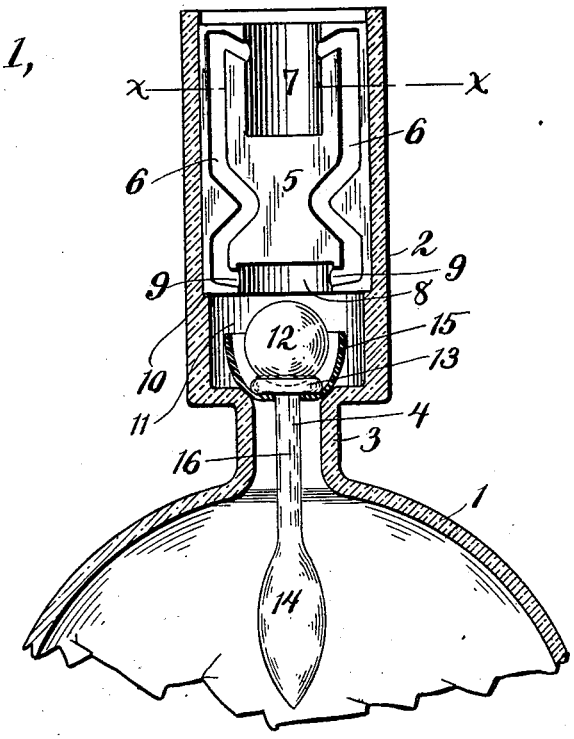


Fig. 3,

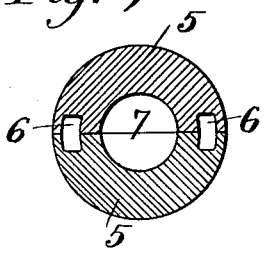
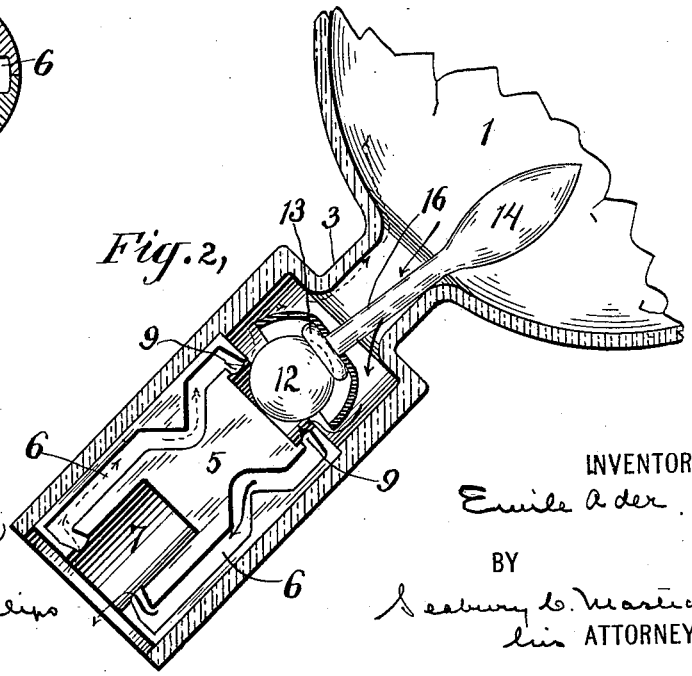


Fig. 2,



WITNESSES:

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EMILE ADER, OF NEW YORK, N. Y.

BOTTLE.

SPECIFICATION forming part of Letters Patent No. 676,613, dated June 18, 1901.

Application filed July 13, 1900. Serial No. 23,440. (No model.)

To all whom it may concern:

Be it known that I, EMILE ADER, a citizen of the United States, residing at New York city, State of New York, have invented a new and useful Improvement in Bottles, of which the following is a full, clear, and exact specification.

My invention relates to a new and useful improvement in that class of bottles termed "non-refillable," and is designed to provide a simple, cheap, and effective construction which will resist all efforts to refill the bottle and at the same time be capable of practical use. The chief objections to bottles of this class heretofore produced are that if effective they have been too complex in construction, and this objection gives rise to the other that they are too costly to admit of practical use. These defects I have endeavored to overcome by the means herein illustrated and described.

I shall first refer to the drawings and then describe the construction and operation of the parts therein illustrated.

Figure 1 is a view, partly in section, of a bottle provided with my improvement, the body of the bottle being broken away. Fig. 2 is a view similar to Fig. 1, the bottle being turned downward and the valve shown off its seat, so that the contents of the bottle may escape. Fig. 3 is a sectional view of the neck of the bottle, having the plug in place along the line x x, as shown in Fig. 1.

Similar numbers refer to similar parts throughout the several views.

1 is the body of the bottle, which may be of any shape desired.

2 is the neck, which is contracted at its lower end to form a throat 3, which acts as a seat for the valve 4.

5 is a plug adapted to fit in the neck, provided with channels 6 6 to permit the contents of the bottle to escape, a recess 7 to act as an outlet for the channels 6 6, and a recess 8, which forms a portion of the chamber, whence the liquid escapes into the inlet-ports 9 9 of the channels 6 6. The plug 5 rests upon a shoulder 10, formed in the neck of the bottle, and is preferably made in halves, as shown in Fig. 3. The channels 6 6 are plural in number, preferably two, and are of such shape that a wire or other obstruction cannot easily be passed into them, while at the same time they effectually permit the contents of the bottle to escape. The space between the throat and the bottom of the plug forms a chamber 11, within which the valve plays and through which the liquid escapes into inlet-ports 9 9.

The valve 4 is provided with a rounded head 12, a collar 13, and a weight 14, the latter for keeping the valve in place. A cup 15, of some elastic material, partly surrounds the head 12, is caused to flare outwardly by collar 13, and is adapted to slide on the rod 16, connecting the head and the weight.

The operation of my device is as follows: The bottle having been filled, the valve is dropped to its seat through neck 2 and the plug is cemented in place. A stopper may be placed in recess 7, or other means of stopping the bottle may be used. To empty the bottle, it is necessary only to remove the stopper and invert the bottle, when the contents readily flow out, the parts taking the position shown in Fig. 2, the liquid flowing out one channel and the air entering by the other. Should it now be attempted to refill the bottle while in an approximately upright position, the weight of the valve will cause the latter to settle upon its seat and prevent the entrance of any liquid. Should it be attempted to fill the bottle by floating it or by turning it downward and forcing the liquid in, in either case the valve being off the seat in throat 3, the liquid will first fill the cup 15, spreading it and causing it to slide on rod 16 until it reaches the throat 3, where it will effectually seal the bottle. The more force that is applied the tighter will the bottle be sealed. The weight 14 assists the action of the valve by causing the latter to settle into its seat whenever the force of gravity has an opportunity to act.

I do not desire to restrict myself to any particular shape of channels in the plug nor to any particular construction of the valve, as it is obvious that both may be varied without departing from the spirit of my invention; but

What I do desire to claim and secure by Letters Patent of the United States is—

1. A non-refillable bottle having its neck contracted toward its base to form a throat, a valve provided with an enlarged head hav-

ing a cup partially surrounding said head and flaring out from the same, said valve being located in said throat and playing against a plug adapted to fit into the neck and provided with channels communicating with the valve forming an outlet for the contents of the bottle when the valve is unseated, substantially as described.

2. A non-refillable bottle having its neck contracted toward its base to form a throat, a valve having an elastic cup partially surrounding its head, said valve being located in said throat and playing against a plug adapted to fit into the neck and provided with channels communicating with the valve forming an outlet for the contents of the bottle when the valve is unseated, substantially as described.

3. A non-refillable bottle having its neck contracted toward its base to form a throat, a valve having an elastic flaring cup partially surrounding its head, said valve being located in said throat and playing against a plug adapted to fit into the neck and form a chamber between the throat and the bottom of the plug, said plug being provided with channels communicating with said chamber and forming an outlet for the contents of the bottle when the valve is unseated, substantially as described.

4. A non-refillable bottle having its neck contracted toward its base to form a throat, a valve having an elastic cup partially surrounding its head, said valve being located in said throat and playing against a plug adapted to fit into the neck, means for permanently uniting the plug to the neck and channels provided in said plug communicating with the valve forming an outlet for the contents of the bottle when the valve is unseated, substantially as described.

5. A non-refillable bottle having its neck contracted toward its base to form a throat, a valve having a pendent weight and a cup partially surrounding its head and adapted to move on the rod connecting the valve and the weight, said valve being located in said throat and playing against a plug adapted to fit into the neck and provided with channels communicating with the valve forming an outlet for the contents of the bottle when the valve is unseated, substantially as described.

6. A non-refillable bottle having its neck contracted toward its base to form a throat, a valve provided with an elastic cup partially surrounding its head, said valve being located in said throat and playing against a plug adapted to fit into the neck and provided with zigzag channels communicating with the valve forming an outlet for the contents of the bottle when the valve is unseated, substantially as described.

7. A non-refillable bottle having its neck contracted toward its base to form a throat, a weighted valve having an elastic cup partially surrounding its head adapted to move toward and away from said head, said valve being located in said throat and playing against a plug adapted to fit into the neck and provided with irregular channels communicating with the valve forming an outlet for the contents of the bottle when the valve is unseated, substantially as described.

8. A non-refillable bottle having its neck contracted toward its base to form a throat, a valve having a flaring cup partially surrounding its head adapted to move toward and away from said head, said valve being located in said throat and playing against a plug adapted to fit into the neck and provided with irregular channels communicating with the valve forming an outlet for the contents of the bottle when the valve is unseated, substantially as described.

In witness whereof I have hereunto signed my name in the presence of two witnesses.

EMILE ADER.

Witnesses:
SEABURY C. MASTICK,
WM. F. BROTHERS.