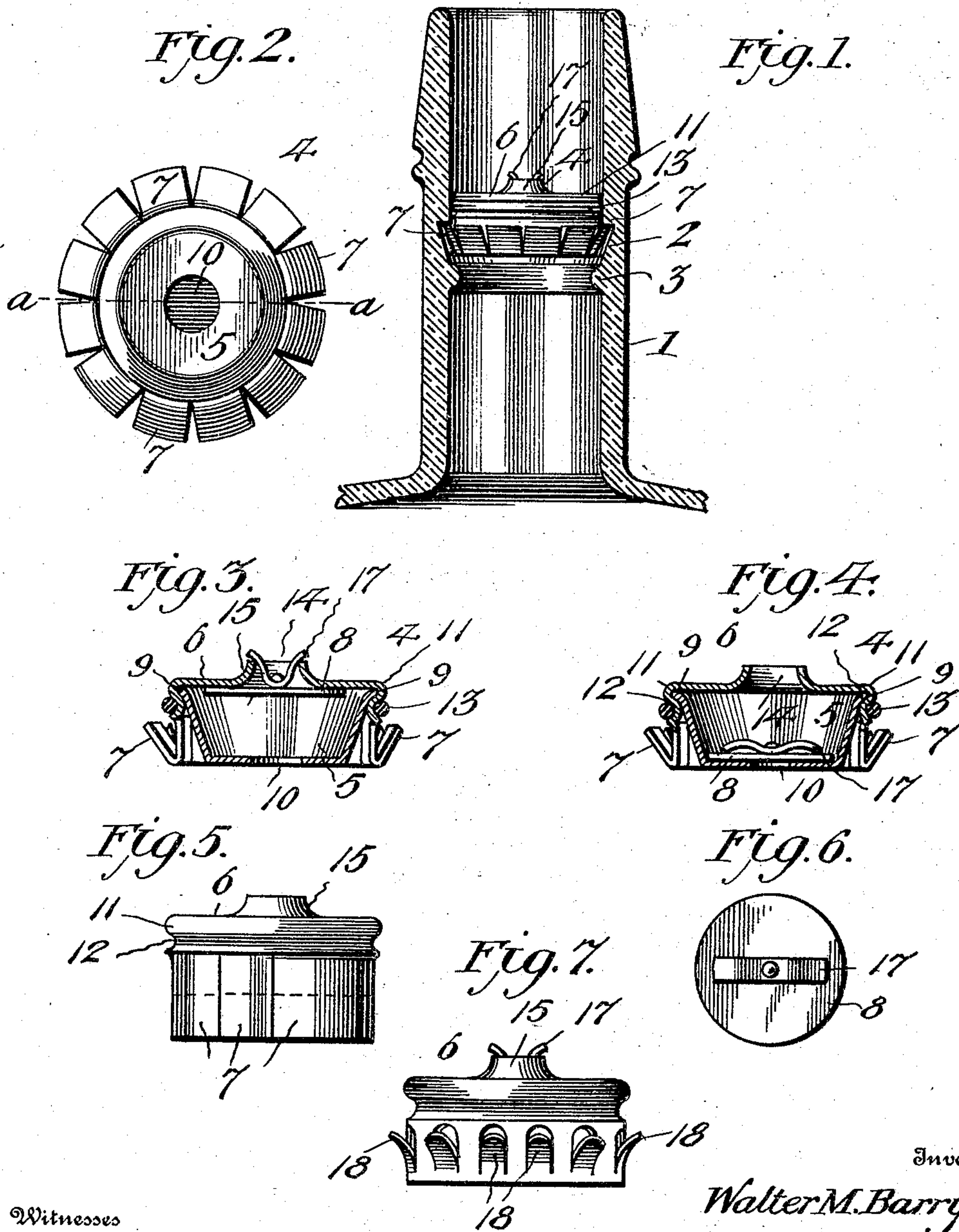


No. 782,640.

PATENTED FEB. 14, 1905.

W. M. BARRY.
NON-REFILLABLE BOTTLE.
APPLICATION FILED JUNE 7, 1904.



Witnesses

Geo. Ackman
A. P. Hollingsworth

Inventor

Walter M. Barry,

By

Victor J. Evans

Attorney

UNITED STATES PATENT OFFICE.

WALTER M. BARRY, OF ROCHESTER, NEW YORK.

NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 782,640, dated February 14, 1905.

Application filed June 7, 1904. Serial No. 211,512.

To all whom it may concern:

Be it known that I, WALTER M. BARRY, a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented new and useful Improvements in Non-Refillable Bottles, of which the following is a specification.

This invention relates to a bottle-stopper of that class in which the stopper is inserted in the neck of the bottle below its mouth and held in position by means on the stopper engaging a groove in the bottle-neck.

The object of this invention is to provide a simple, effective, and inexpensive stopper having fingers arranged to lock in a groove formed in a bottle-neck and a hollow body through which fluid passes from the bottle. A valve is provided within the body for closing the outlet from the stopper until the contents of the bottle are to be used, at which time the valve is unseated by suitable means and cannot thereafter be restored to position.

In the accompanying drawings, Figure 1 represents a sectional elevation of the neck of a bottle with my improved stopper shown in place therein. Fig. 2 is a bottom plan view of the stopper removed from the bottle. Fig. 3 is a central cross-sectional view of my stopper with valve in closed position on line *a a*, Fig. 2. Fig. 4 is a similar view of the stopper in open position. Fig. 5 is a view of my stopper in side elevation before the securing-fingers are turned up. Fig. 6 is a detail plan view of the valve used with my stopper. Fig. 7 illustrates a modified form of stopper.

Similar numerals of reference are employed to indicate corresponding parts in the several views.

The numeral 1 indicates the neck of a bottle, within which is formed a circular horizontal groove 2 and a rib 3 below the groove.

The stopper as a whole (represented by 4) comprises an inner body 5, an outer or cap piece 6, having fingers 7, and a valve-disk 8. The body 5 is cup-shaped, flat on the bottom, with sides flaring outwardly toward the top, the upper edge 9 of which has a slight outward roll, as shown, while through its bottom a perforation 10 is formed. The body 5 is covered by the cap-piece 6 and connected there-

to by beading it around the outwardly-rolled edge 9, as indicated by 11. Beneath the bead 11 is a circular groove 12, forming a seat for an annular rubber packing-ring 13. Below the groove 12 the cylindrical side wall of the cap-piece 6 is slitted to form a series of depending fingers 7, (see Fig. 5,) which are bent upwardly and outwardly about midway of their length that their ends may engage with the groove 2 in the bottle-neck when the stopper is inserted. (See Fig. 1.) The top of the cap-piece 6 is flat and has an opening 14 through its center, surrounded by a flange 15.

Within the body 5 is placed a circular valve-disk 8, (see Fig. 6,) having a plate-spring 17 centrally riveted to its upper side. When the valve-disk 8 is in place, it bears against the inner side of the flat top of the cap-piece 6 and closes the opening 14, through which fluid escapes from the bottle, while the ends of the spring 17 are bent upwardly and project through said opening 14 and rest on the flange 15, thereby holding the valve-disk 8 substantially fluid-tight against the cap-piece.

By means of a suitable tool introduced into the bottle-neck the valve-disk 8 may be unseated by pressing thereon with the tool. This causes the spring to yield and permits the valve-disk to fall to the bottom of the body and close the opening 10. The ends of the spring 17 after passing through the opening 14 tend to straighten out, as in Fig. 4. If the bottle be now inverted, the contents will flow out through the openings 10 and 14. Although the valve-disk may gravitate toward the opening 14, the bowed ends of the spring 17 will contact with the top of the cap-piece 6 and prevent the opening being sealed by the valve-disk.

In the modified structure illustrated in Fig. 7 instead of slitting the cylindrical wall of the cap-piece 6 to form the fingers 7 tongues 18, pointing upwardly, are cut therefrom and bent outwardly, as shown.

The stopper 4 is fixed in the bottle against removal by placing it on the bottle-mouth and pressing it into the neck. The fingers 7 or tongues 18 yield under the pressure until the groove 2 is reached, when they spring thereinto and effectually hold the stopper against

any attempt at withdrawal. The bead 3 prevents the stopper from being pushed into the bottle. The packing-ring 13 forms a tight joint between the bottle and the stopper, so
5 that the liquid cannot pass out of the bottle around the stopper nor air into the bottle.

Having thus described the invention, what is claimed as new is—

1. In a bottle-stopper, the combination of a
10 hollow body having an opening in its bottom, a cap-piece for said body having an opening in its top and fingers on its side projecting upwardly and outwardly, and a valve-disk having a spring thereon, the ends of said spring
15 being adapted to engage the opening in said top and cause said valve-disk to seal said opening.

2. In a bottle-stopper, the combination of a
20 hollow body having an opening through its bottom, a cap-piece therefor having a flanged opening in its top and a vertically-slitted side wall turned upwardly and outwardly to form spring-fingers, a valve in said body adapted to seal the opening in said top, and a spring

fastened to said valve, the ends of which spring 25 pass through said opening in the top and hold the valve against its seat.

3. In a bottle-stopper, the combination of a hollow body, a cap-piece therefor, having a flat top with a flanged central opening and a 30 cylindrical vertical wall, and upwardly and outwardly turned fingers formed by cutting said wall and bending the cut portions.

4. In a bottle-stopper, the combination of a hollow body having an opening, a cap-piece 35 therefor having a flanged opening in its top and a vertically-slitted side wall provided with a groove above the slits, fingers formed by bending upwardly the slitted side wall, and a valve within said hollow body for closing the 40 opening in said cap-piece.

In testimony whereof I affix my signature in presence of two witnesses.

WALTER M. BARRY.

Witnesses:

THOMAS B. BARRY,
ART. SIEFERT.