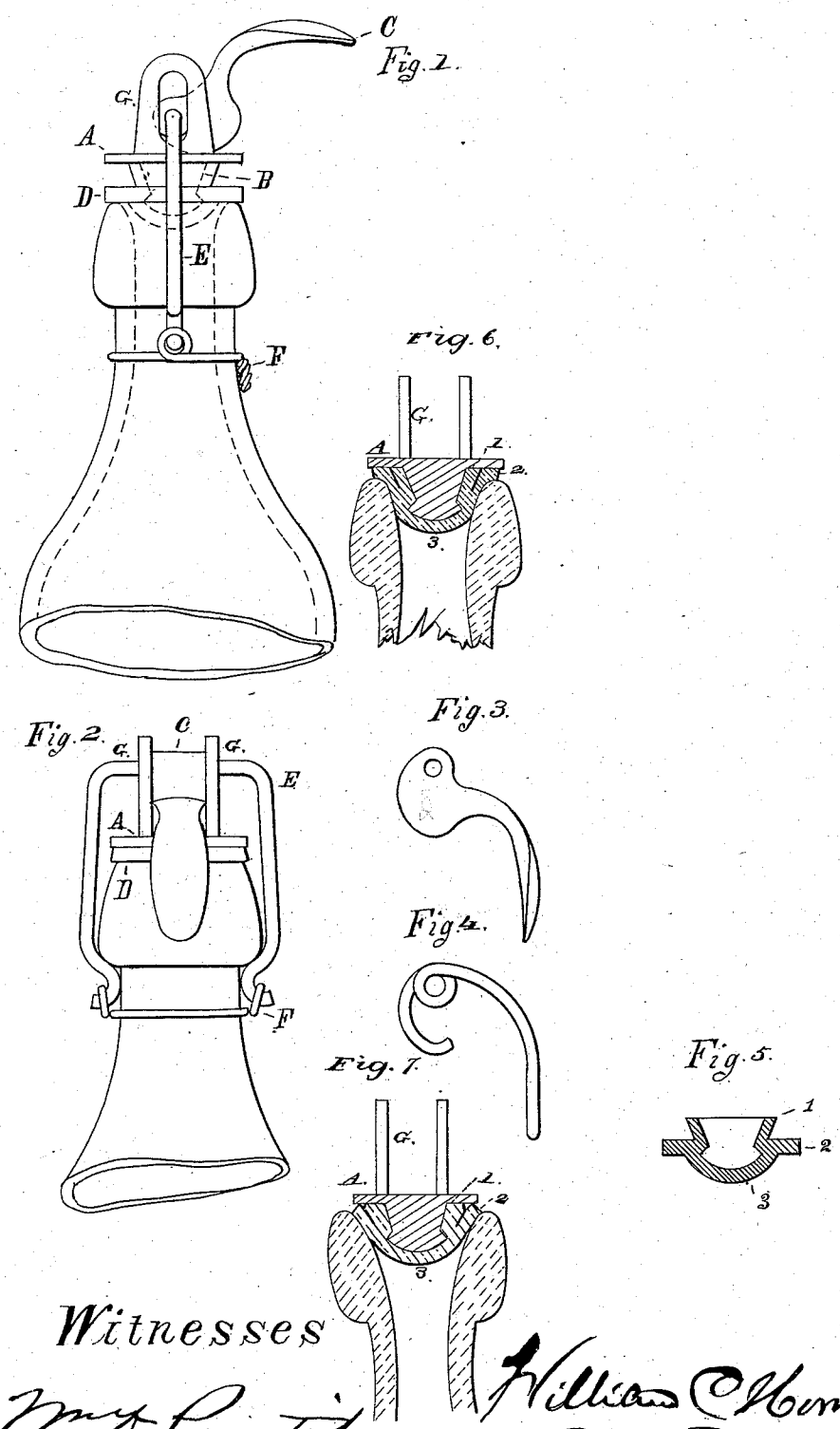
W. C. HORNFAGER.

BOTTLE-STOPPERS.

No. 194,088. Patented Aug. 14, 1877.




Witnesses

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# UNITED STATES PATENT OFFICE.

WILLIAM C. HORNFAGER, OF BROOKLYN, NEW YORK, ASSIGNOR TO HENRY W. PUTNAM, OF SAME PLACE.

## IMPROVEMENT IN BOTTLE-STOPPERS.

Specification forming part of Letters Patent No. **194,088**, dated August 14, 1877; application filed October 16, 1875.

*To all whom it may concern:*

Be it known that I, WILLIAM C. HORNFAGER, of Brooklyn, Kings county, New York, have invented an Improvement in Bottle-Stoppers, of which the following is a specification:

This improvement relates to a stopper secured to the bottle by a bail passing through a wing or wings upon the stopper, and a lever having the bail-wire as a pivot, and serving to press the stopper to the bottle.

By this construction the stopper is rendered very effective, its construction is simplified, and the lever is retained in its proper relative position to the stopper.

In the drawing, Figure 1 is a side view of the stopper in place, before the lever is moved. Fig. 2 is an elevation at right angles to Fig. 1, with the lever depressed. Fig. 3 shows the lever separately. Fig. 4 represents the lever as made of wire, and Fig. 5 is a section of the rubber upon the lower part of the stopper.

The metallic stopper A is made with an india-rubber stopper or face, B, (shown in Fig. 5,) having a conical body, 1, flange 2, and convex lower surface 3. This elastic stopper fits upon a button-shaped projection at the lower side of the stopper A. This india-rubber stopper is especially adapted to the varying sizes of bottle-necks, because where the neck is small, as in Fig. 6, the convex lower surface 3 will stretch, and the flange 2 rest upon the upper end of the neck. If the bottle-neck is large, as in Fig. 7, the flange 2 will only fold up against the conical portion 1, and hence the stopper will be tight, and it is better adapted to the varying sizes of necks than those heretofore made.

Upon the stopper A are the vertical wings G, that are slotted vertically to pass the bail-wire E of the fastening, such bail-wire having its lower ends turned outwardly, and passing through the pivot-eyes of the neck-band F, so that the bail may swing in said eyes as the stopper is turned aside to open the bottle.

The cam-lever C is made with a hole or eye, through which the bail-wire E passes, and this lever is between the slotted wings G.

When the cam-lever C is in the position shown in Fig. 1, there is little or no pressure upon the stopper; but when it is turned to the position of Fig. 2, the cam portion of the lever presses the stopper down firmly upon the mouth of the bottle, and the bearing-point of the cam passes beyond the vertical plane through the bail-wire, so that the pressure of the liquid in the bottle does not tend to move the lever, and this lever, being between the wings G, is held to its place, and the stopper rendered reliable in its action.

I claim as my invention—

1. The combination, with a swinging bail-wire, of the bottle-stopper, connected to the bail-wire by the latter passing through the slotted wing of the stopper, and the lever C, pivoted upon the bail-wire E, substantially as set forth.

2. The india-rubber, B, for the metallic stopper, having the flange 2 between the conical body 1 and the convex lower portion 3, as set forth.

WILLIAM C. HORNFAGER.

Witnesses:

WM. D. PRENTISS,

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