

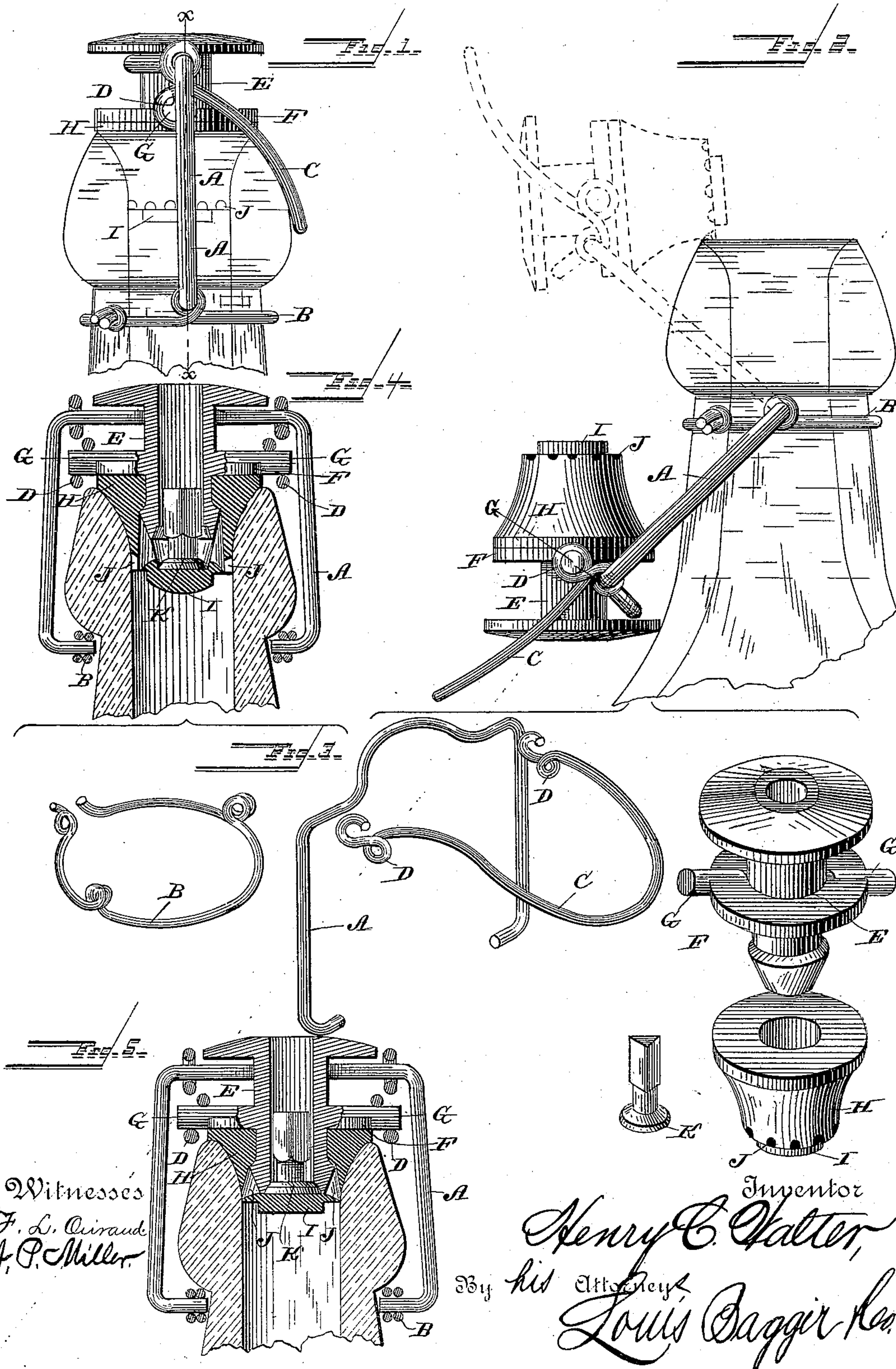
(No Model.)

H. C. WALTER.

BOTTLE STOPPER.

No. 370,291.

Patented Sept. 20, 1887.



UNITED STATES PATENT OFFICE.

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BOTTLE-STOPPER.

SPECIFICATION forming part of Letters Patent No. 370,291, dated September 20, 1887.

Application filed January 19, 1887. Serial No. 224,764. (No model.)

To all whom it may concern:

Be it known that I, HENRY C. WALTER, of Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Bottle-Stoppers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a side elevation of my improved stopper as applied. Fig. 2 is a similar view showing the stopper in full lines as thrown back on the neck of the bottle, and in dotted lines as about to enter the neck. Fig. 3 is a perspective view representing the parts of the stopper separated. Fig. 4 is a vertical axial section on the line *xx* of Fig. 1, showing the position of the valve and valve-support when the bottle is filling; and Fig. 5 is a like view showing the valve seated and bottle sealed.

Like letters of reference indicate corresponding parts throughout all the figures.

My invention has relation to bottle-stoppers; and it consists in the improved construction and combination of parts constituting the same, as will be hereinafter fully described.

The object of my invention is to make special improvements upon that class of bottle stoppers and fasteners which are used in bottling aerated liquids or drinks—such as the various sodas, tonics, or any other liquids—in connection with whose manufacture gas is used. Under this class my improvements also extend to that particular style of stopper through which the liquid is passed in the process of filling the bottles, and in connection with which a rubber valve is used to automatically close the perforation through said stopper when the bottle is filled.

To this end I construct the fastener and stopper as illustrated in the accompanying drawings, in which—

A represents the bail formed of a single wire, bent as shown, the upper transverse portion being provided with a semicircular bend at its middle, and the ends of said bail being turned inwardly to form trunnions, which are

supported and retained below the swelling of the bottle's neck by being inserted in double coils formed at the sides of the wire collar B.

To the end of the transverse portion of the bail is hinged by its ends a U-shaped lever, C. Each end of this lever is bent into an S, thereby forming two eyes, the line of whose centers is at an angle to the main part of the lever, and it is by the outer pair of these eyes that said lever is hinged to the bail, the inner pair, D, being the ones in which the stopper is pivoted or journaled. Said stopper consists of a centrally-perforated stem, E, provided with the common enlargement upon its lower end, with a flange, F, about its middle and a similar flange about its upper end. Upon the lower flange, F, at opposite sides, are cast the cylindrical lugs G, by which the stopper is journaled to the lever. About the lower end of the stopper, and bearing against the lower flange, rests a common form of plug, H, to the lower end of which is attached a flexible valve, I. This valve is held to the plug by means of strands formed integral with the plug and valve. Between these strands are interspaces or ports J, through which the liquid forced down the central perforation passes into the bottle. This valve, if left unsupported, would be forced up into the perforation of the stopper after the bottle was filled, and in consequence thereof be ruined in a short time. To avoid this difficulty I provide a valve-support, which consists of a disk, K, having a beveled edge, and a stem arising from the center of said disk, the lower end of said stem being cylindrical, while its upper end is triangularly prismatic. The stopper to accommodate this support has its central perforation counterbored for a short distance at its lower end, the beveled edge of the disk fitting into said counterbore. The object of the prismatic portion of the stem of the support is to provide a sure means for vertically guiding said support to its seat at the close of the filling operation, and at the same time to provide ample room for the passage of the liquids through the stopper, the cylindrical portion providing for an even lateral distribution of said liquid to the parts in the plug as it descends through the stopper down at the sides of the prismatic portion.

In the process of filling, the supply-tube is inserted in the central perforation of the stopper, and as the liquid under pressure enters the stopper it forces the valve-support down 5 against the valve and presses the latter downward sufficiently to allow a free passage of the liquid through the port of the plug into the bottle. When the bottle is filled and the exterior pressure upon the valve removed, the 10 pressure of the liquid in the bottle immediately forces the valve up against the lower end of the stopper-stem and against the valve-support, the disk of which takes its seat in the counterbore provided for it; and while it prevents the valve from being forced up into the 15 perforation of the stopper, it also aids it in making the bottle perfectly air-tight. The stopper is extended beyond the lower flange, F, to provide a rest for the curved portion of the upper end of the bail when the fastener is 20 locked, the lower end of the lever bearing at the same time against the neck of the bottle, and being retained there in consequence of its hinge-joints with the bail being slightly in advance of the pivotal points of the stopper 25 with the lever, as seen in Fig. 1.

The upper flange of the stopper, while serving as a convenience in the filling operation, also serves, in connection with the lower flange 30 and the transverse portion of the bail, in keeping the stopper, when thrown back, in a fixed position in relation to the bail and lever,

as seen in the two positions thereof represented in Fig. 2. This is an important feature, because in consequence thereof the stopper 35 is always ready to enter straight into the neck of the bottle when the lever is pulled forward, and in consequence of the stopper being journaled to the lever in the inner pair of eyes, whose centers and the centers of the 40 outer pair are in lines which stand at an angle to the main portion of the lever, the strain upon the stopper is a straight downward strain into the neck of the bottle, thereby causing an even seating of the stopper and a 45 perfect sealing of the bottle.

Having thus fully described my invention, I claim—

The combination, with the stopper, provided with a flange about its upper end and 50 another about its middle, furnished with lugs at opposite sides, of a bail whose transverse portion is bent at its middle in a semicircle, and a lever pivoted on the lugs and hinged to the ends of the bail, substantially as and for 55 the purpose set forth.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

HENRY C. WALTER.

Witnesses:

WILLIAM E. HATHEWAY,
EDWARD P. WALTER.