(No Model.)

J. Q. ADAMS.

STOPPER FOR BOTTLES.

No. 263,744. Patented Sept. 5, 1882.

Fig. 1

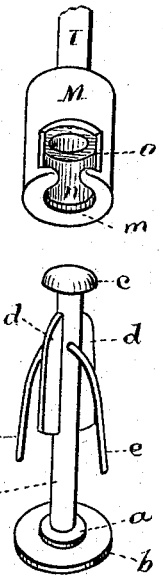


Fig. 2

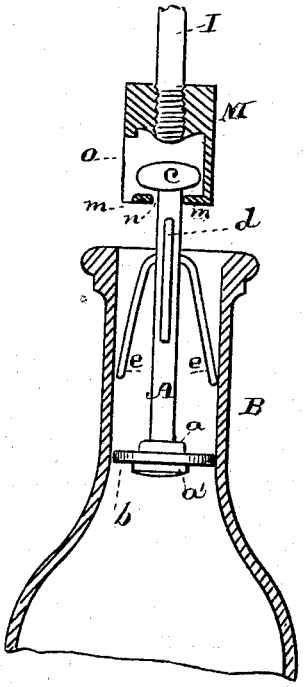
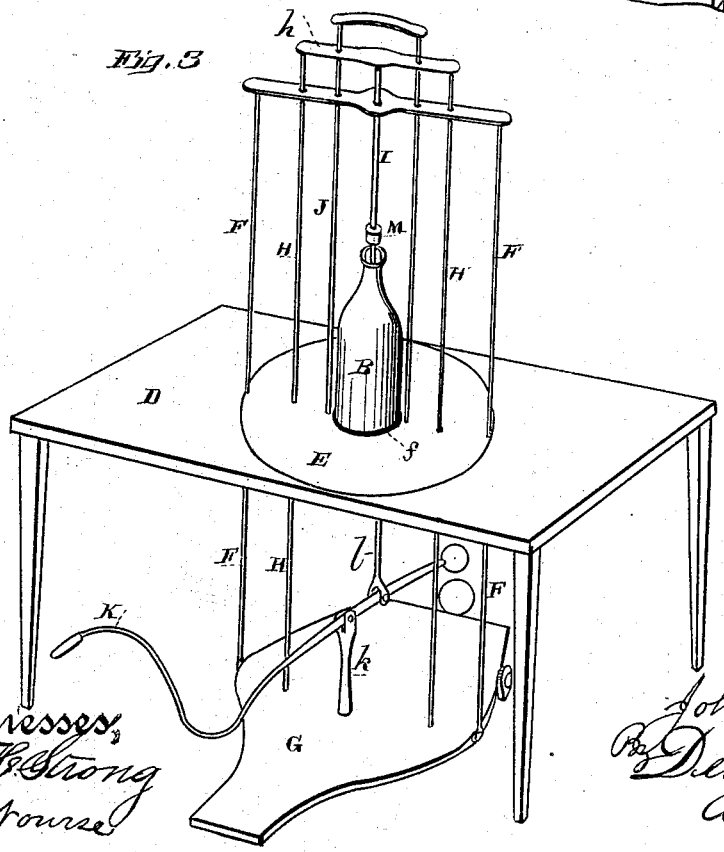


Fig. 3



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JOHN Q. ADAMS, OF SACRAMENTO, CALIFORNIA.

STOPPER FOR BOTTLES.

SPECIFICATION forming part of Letters Patent No. 263,744, dated September 5, 1882.

Application filed June 3, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHN Q. ADAMS, of Sacramento, county of Sacramento, State of California, have invented an Improved Stopper for Bottles, of which the following is a specification.

The stopper is adapted to be forced down into the bottle, and to return again to its place and wedge itself in the neck when the bottle is inverted. It consists in a metal shank having at its lower end an elastic washer and a small head at its upper end. It is provided with solid flanges or wings projecting oppositely, and with peculiar diagonal spring arms or wings which wedge the stopper in place.

The object of my invention is to provide a stopper for bottles, especially for those which contain liquids from which gas escapes, which may be readily fixed, and when in place will be wedged tighter by the gas-pressure below, and may be easily forced down to allow the liquid to be poured out.

Referring to the accompanying drawings, Figure 1 is a view of my improved stopper and a thimble adapted to draw the stopper into the neck of the bottle. Fig. 2 shows the same in connection with a bottle. Fig. 3 shows the mechanism for working the device.

Let A represent a metal shank of suitable length, and smaller in diameter than the diameter of the neck of the bottle B. The lower end of shank A is provided with two flanges, *a a'*, between which a centrally-apertured elastic washer, *b*, is fitted. This washer fits the neck of bottle B tightly. The upper end of shank A is provided with an enlarged rounded head, *c*. Upon the shank, preferably a little nearer the top than the bottom, are formed or cast the solid metal flanges or wings *d d*, extending oppositely, the width from the edge of one to the edge of the other being a little shorter than the diameter of the neck of the bottle, so that they may readily slip therein. Through the shank is fitted a spring-rod, *e*, the ends of which hang down toward the elastic washer and diverge to their points. This rod is suitably tinned over, and is soldered tightly at its bearing end to the shank to keep it firmly fixed. Its spring sides form arms *e e* diagonal to the shank A. Now, in order to fully explain the use and advantage of this stopper, and to illustrate a thimble-screw which renders the stopper operative, I will have to briefly show and describe the old style of bottling-table with its mechanism.

In Fig. 3, let D represent a table having upon its top a plate, E, with a central socket, *f*, for the reception of the base of the bottle B. F is a stationary frame extending above and below the table. Its top has a cross-head, and its bottom is provided with a swinging treadle, G. H is a movable frame, the lower end of which is secured to treadle G. Its upper end passes loosely through the cross-head of frame F, and has a cross-head, *h*, to the center of which the plunger-rod I is secured. This plunger passes loosely down through the cross-head of frame F, and its upper end is guided in the cross-head of an inner stationary frame, J. Its lower end extends down to the cork of the bottle and forces said cork in, when by the operation of the treadle the movable frame H is drawn down. This is its use when the ordinary corks, which require forcing down to be secured, are used. To raise the plunger there is a hand-lever, K, secured to the treadle by a piece, *k*, and pivoted to a hanging support, *l*, and furnished with a weight upon its other end. The weight keeps the handle end of the lever within reach, and the lever raises the treadle to raise frame H and lift the plunger for the insertion of another bottle. For this table with its mechanism I claim nothing, as it is old; but, as before mentioned, I find it necessary for the proper use of my devices.

M is the thimble-screw. This consists of a short piece of tube or pipe, the upper end of which is provided with screw-threads, whereby it is screwed upon the end of plunger I. Its lower end is provided with an inwardly-turned flange, *m*, through which an aperture, *n*, smaller than the head of shank A, is made. Its side is provided with an aperture, *o*, wide enough to allow the head of shank A to be inserted.

The bottle B is to be filled when in an upright position.

The insertion and fixing of the stopper I shall now explain.

Taking any number of empty bottles—say soda-water bottles—I first force a stopper into each, so that it will drop down within the bottle.

I then take one of the bottles and invert it momentarily, so that the head *c* of the shank A will pass through the neck and extend beyond slightly. In this position, which is its limit without the application of more force, the washer *b* does not close the neck, but is below the base thereof, and a space is left between the wings of the shank for the passage of the liquid. The stopper is sufficiently wedged in the neck by reason of the spring-arms *e* to remain in position when the bottle is upright. This bottle I place in the central socket of plate E upon the table, and fit the head *c* of its stopper through the side aperture, *o*, in the thimble-screw M. The usual supply-pipes and the inclosing cap, which are not shown here, are employed. By pressing the treadle down the thimble-screw forces down the stopper slightly while still supporting it, and the liquid is allowed to flow in. When the bottle is filled I raise hand-lever K, which, as before explained, raises the plunger-rod I, and this, by means of the thimble-screw, draws up the stopper to wedge itself tightly in the neck of the bottle, which is then removed from the said screw. To open the bottle, power applied to the top of the stopper will readily force it down into the bottle. The stopper, being made of metal, falls to the bottom, and is heavy enough to remain there when the bottle is tilted sufficiently to pour the liquid out. The upper portion of the stopper is heavier than the lower, so that when the bottle is inverted it readily finds its place.

I make no claim whatever to the thimble shown for handling the stopper, nor do I make any claim to any device shown in the bottling-table, used for illustration merely.

I am aware that solid radial flanges applied to the shank of an internal stopper to center it are not new; hence I lay no claim to them as shown.

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

An internal bottle-stopper consisting of a shank, A, bearing on its lower end an elastic washer, *b*, and having a head, *c*, in combination with a pair of solid radial wings or flanges, *d d*, and a pair of spring-arms, *e e*, said arms and flanges being attached to the shank A between head *c* and washer *b*, as set forth.

In witness whereof I hereunto set my hand.

JOHN Q. ADAMS.

Witnesses:

CHAS. M. COGLAN,

JOS. GUTH.