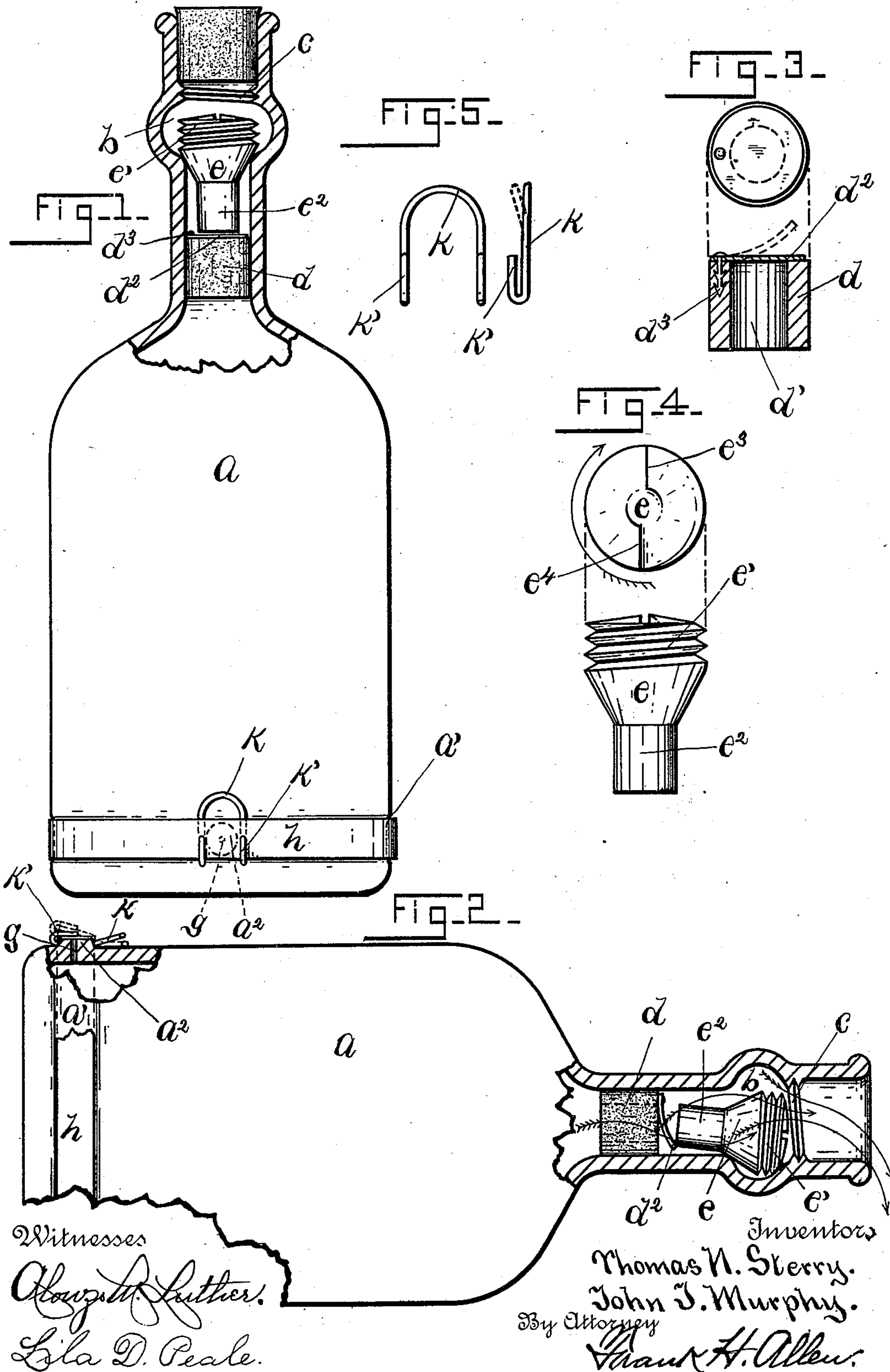


(No Model.)

T. N. STERRY & J. J. MURPHY.  
BOTTLE.

No. 557,165.

Patented Mar. 31, 1896.





# UNITED STATES PATENT OFFICE.

THOMAS N. STERRY AND JOHN J. MURPHY, OF NORWICH, CONNECTICUT;  
SAID MURPHY ASSIGNOR TO SAID STERRY.

## BOTTLE.

SPECIFICATION forming part of Letters Patent No. 557,165, dated March 31, 1896.

Application filed March 20, 1895. Serial No. 542,555. (No model.)

*To all whom it may concern:*

Be it known that we, THOMAS N. STERRY and JOHN J. MURPHY, citizens of the United States, and residents of Norwich, New London county, State of Connecticut, have invented certain new and useful Improvements in Bottles, which improvements are fully set forth and described in the following specification, reference being had to the accompanying sheet of drawings.

This invention is in the class of bottles the construction of which is such that they cannot be refilled after having been once emptied. Bottles of this description are especially sought after by the manufacturers or bottlers of some particular or superior brands of liquids for the reason that after the contents have been used the bottles cannot be refilled by unscrupulous persons with an article of inferior quality, the sale of which would be detrimental to the reputation of the article originally "put up" in the bottles and therefore injurious to the business of such manufacturer or bottler.

The object of our invention is to provide a bottle which shall meet the requirements of this class of devices and which shall be of simpler construction and of less cost than such devices now in use.

The following detailed description of our invention will be more readily understood when read in connection with the accompanying drawings, which serve to illustrate the same, as follows:

Figure 1 is an elevation of a bottle embodying our invention, the neck thereof being in central vertical section in order to more clearly illustrate our said device. Fig. 2 is a view similar to Fig. 1 and illustrates the manner of operation of our device. Figs. 3, 4, and 5 illustrate, enlarged, certain details (detached) embodied in our invention, the particular office of each of which is fully explained hereinafter, said details being as follows: Fig. 3 shows in plan and vertical central section a simple form of valve. Fig. 4 shows in plan and elevation what we have termed a "screw-plug." Fig. 5 shows front elevation and edge views of a U-shaped device.

Referring to the drawings, the letter *a* de-

notes an ordinary glass bottle the same in general appearance as other bottles with the exception that the neck thereof is enlarged about midway its length to form a chamber *b*, and directly above said chamber an internal rib or ring *c* is formed, having a screw-thread cut therein, also that the internal diameter of the neck above said rib is somewhat greater than below the chamber. That portion of the bottle-neck above the rib *c* receives and is closed by a cork or stopper in the usual manner, as readily understood from the drawings.

The letter *d* indicates a valve seated in the bottle-neck, the nature of which should be such that it will allow the contents of the bottle to pass therethrough during the act of pouring the same from the bottle, but will prevent (by closing) the introduction of liquid into the bottle. We have shown in the drawings a convenient and cheap form of such valve, the same consisting of an ordinary cork or like article having a longitudinal hole *d'* bored therethrough. On one end of the cork *d* and covering the hole *d'* is secured a flexible cap *d<sup>2</sup>* by means of a pin *d<sup>3</sup>*. It will be readily understood that when such a valve is in the position in the bottle-neck shown in Figs. 1 and 2 the pressure of the contents of the bottle upon the flexible cap *d<sup>2</sup>* will serve, during the act of pouring said contents from the bottle, to force open said cap and allow its escape; but when such pressure of the liquid is on the reverse side of the flexible cap, as during the act of endeavoring to fill the bottle, such pressure will but serve to the more tightly close the valve *d* and prevent the passage of liquid therethrough.

While we have shown and described a particular form of valve we do not wish to be understood as confining ourselves to the said form, as it will be apparent that other valves could be as well employed.

To protect valve *d* and to prevent the same from being drawn from the bottle-neck after having been placed in position therein, we have provided what we term a "screw-plug" *e*, formed with a headed portion *e'*, which is threaded to correspond with the thread of rib *c*, and a shank *e<sup>2</sup>*. Plug *e* is introduced



into the neck of the bottle-shank end first and is screwed down, by means of an ordinary screw-driver or similar tool, past rib *c*, after passing which it drops by gravity into the chamber *b*; but from the fact that the internal diameter of the neck below the chamber is slightly less than above rib *c* said plug will be suspended in chamber *b* in such manner as to close the entrance from the said chamber to the lower portion of the bottle-neck, as shown in Fig. 1, when in which position the shank portion *e*<sup>2</sup> of the plug *e* will be preferably just above the flexible cap of the valve. It will thus be seen that plug *e* serves to close the entrance to the valve and thus protect the same. When the bottle is turned, as in the act of "pouring" the contents therefrom, the headed portion *e*<sup>1</sup> of the plug falls by gravity into the chamber *b* in such manner that the contents of the bottle are free to flow around and by the same and out of the bottle. (See Fig. 2.)

The pin *d*<sup>3</sup>, which secures the flexible cap *d*<sup>2</sup> to cork *d*, is preferably barbed or similarly constructed to prevent withdrawal of the latter from the cork should it be found possible to reach the same by means of a special tool when the plug *e* was in position to allow the escape of the contents of the bottle.

To prevent the withdrawal of plug *e* from the bottle-neck by screwing the same back through the rib *c*, we have so constructed said plug that it is possible to drive the same only in the direction proper to screw it into the bottle-neck. This we accomplish by providing two angular projections *e*<sup>3</sup> *e*<sup>4</sup> on the head *e*<sup>1</sup>, against which the screw-driver may bear. These projections are located on opposite sides of the center of said head, the surface of which consists of two circular inclined planes extending, respectively, from the bottom of projection *e*<sup>4</sup> to the top of projection *e*<sup>3</sup>, and vice versa. The construction of this feature will be best understood by reference to Fig. 4, from which it will be seen that a screw-driver bearing against the projections *d*<sup>3</sup> and *d*<sup>4</sup> will serve when turned in the direction of the arrow of said figure to correspondingly turn the complete plug; but should said driver be turned in the opposite direction it will be turned directly away from the projections and ride idly upon the inclined planes.

Assuming now that a bottle with a neck of the described form has been provided, also the valve and plug auxiliary thereto, and that it is desired to use the complete device, the bottle is first filled in the ordinary manner, the valve *d* and plug *e* are then successively placed in position, as already described, and the neck may receive and be closed by an ordinary cork or stopper. When it is desired to pour the contents from the bottle, the last-named stopper is removed, after which the contents are free to pass through the valve *d* and around and by the plug *e* and thence out of the bottle, as indicated by ar-

rows in Fig. 2. Any attempt to refill the bottle is prevented, as already explained, for should the liquid be introduced it will but result in closing the valve *d*, the removal or tampering with which latter is prevented by the screw-plug *e*.

In order that the contents of the bottle may flow very freely therefrom, we have provided a device which, in the case of small-size bottles, where the opening in valve *d* is necessarily small, forms an important feature of our invention. This device permits of the introduction of air into the bottle proper, and, as a result, the contents thereof flow off through valve *d* much more freely than it would otherwise do. To accomplish this result, a small hole *g* is provided at some suitable point in the body of the bottle, to cover which an elastic band *h* encircles the bottle and to prevent the displacement of said band a groove *a*<sup>1</sup> may be provided for the reception thereof, or it will be seen that ribs could be formed on the bottle-surface to perform the same office. Band *h* bears upon opening *g* sufficiently tight to prevent leakage there-through. When, however, it is desired to pour the contents from the bottle, said band is raised sufficiently to permit of the passage of air into the bottle, which act causes the contents to flow freely through the valve, as will be readily understood. So soon as band *h* is released it at once snaps back into position over opening *g*.

The letter *k* denotes a convenient device for the operation of the band *h*, the same having the appearance in Fig. 5 of an inverted letter **U**, the ends of which are turned up to form hooks *k*<sup>1</sup>, within which the band *h* lies. A boss *a*<sup>2</sup> is preferably provided on the bottle at the point at which opening *g* is made, which boss is straddled by the device *k*, the latter being prevented thereby from holding band *h* away from the opening *g*. Device *k* is formed preferably of pliable wire, and when it is desired to use the same an angle is bent therein midway its length, as clearly shown in edge view of Fig. 5, dotted lines. When the device is in its normal position, it is caused by band *h* to rest against the bottle; but after being bent as described it will be seen that by pressing downward on the bow portion of the device *k* the same will be caused to rock on the angle formed therein, and thus lift band *h* from the opening *g*.

Having thus described our invention, we claim—

1. A bottle-neck having an enlarged portion, as set forth, with a screw-threaded portion above and a valve below said enlargement, in combination with a plug having its upper end screw-threaded and provided on the top with inclined projections *e*<sup>3</sup>, having also on its lower end a shank *e*<sup>2</sup>, and an intermediate cone-shaped portion engaging with the neck of the bottle below the said enlargement, all substantially as specified.



2. The combination, with a bottle, the bottom of which is provided with a perforated boss, of an elastic band around the bottle and over the perforation, a substantially U-shaped  
5 device, the ends of which straddle the boss, and are each bent intermediate its ends and provided with a hook for engaging with the band, and a valve and a non-removable plug

within the neck of the bottle, substantially as set forth.

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