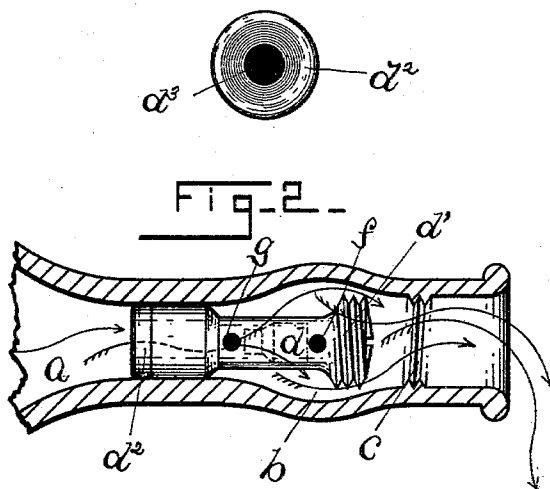
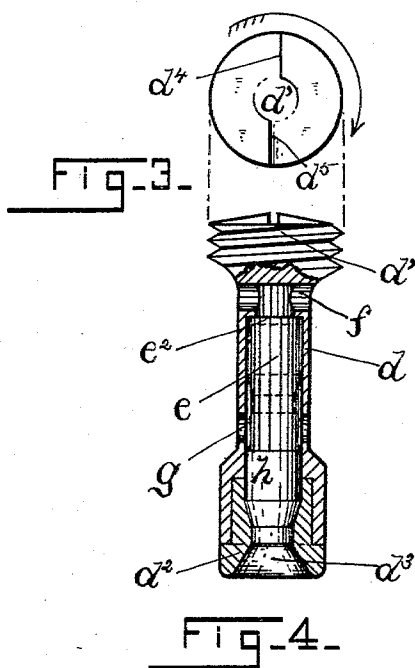
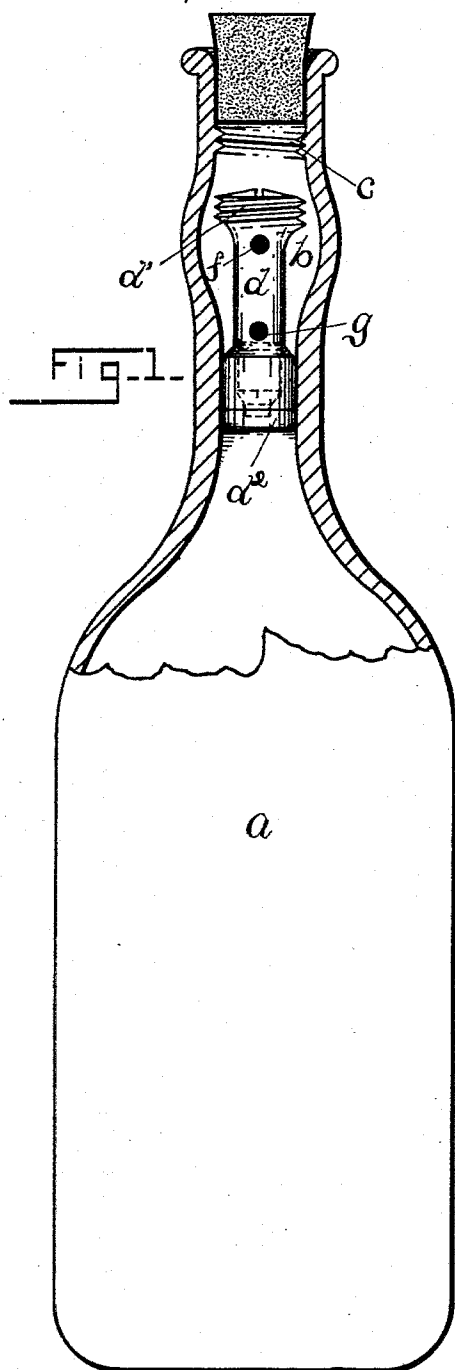


(No Model.)

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

No. 551,339.

Patented Dec. 10, 1895.



Witnesses
Alvord Luther.
Eula D. Peale.

Inventors
Thomas N. Sterry,
John J. Murphy.
By Attorney
Frank H. Allen.

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. 551,339, dated December 10, 1895.

Application filed May 6, 1895. Serial No. 548,216. (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 the refilling of the same is prevented after they have been once emptied of their original contents. 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.

To assist in the explanation of our invention we have provided the accompanying sheet of drawings, which illustrate the same as follows:

Figure 1 is an elevation of a bottle fitted up with our newly-invented device, the neck of said bottle being in central vertical section in order to more clearly illustrate our invention. Fig. 2 is a central sectional view of a bottle-neck fitted up with our invention in a manner similar to the view Fig. 1 and serves to illustrate the manner of operation of our said device. Fig. 3 shows detached a portion of our invention which we have here termed a "screw-plug," said figure embracing enlarged plan and vertical central sectional views thereof. Fig. 4 is an enlarged plan view of a cap forming a portion of said screw-plug.

Referring to the drawings, the letter *a* denotes 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 ring is somewhat greater than below the chamber. That portion of the bottle-neck above the rib or ring *c* receives and is closed by a cork or stopper in the usual manner, as readily understood from the drawings.

The letter *d* denotes as a whole what we have termed a "screw-plug." Plug *d* is cylindrical in shape and is provided at one end with a headed portion *d'*, which latter is of somewhat greater diameter than the screw-plug proper and is threaded to correspond to the threaded rib *c*. In assembling our device the plug *d* is introduced into the bottle-shank end first and is screwed down by means of an ordinary screw-driver or similar tool past the threaded rib *c*, the shank end thereof entering that portion of the bottle-neck beneath the chamber *b*, after which the complete plug is crowded down and its shank end made to fit tightly in the bottle-neck with its headed portion *d'* extending into the chamber *b*, as readily understood by reference to Figs. 1 and 2 of the drawings.

Screw-plug *d* is chambered as denoted by the letter *e*, said chamber extending from its shank end nearly throughout the length thereof. The inner end of chamber *e* is provided with openings *f* leading from said chamber through the cylindrical walls thereof and midway the length of said chamber are similar openings *g*. Chamber *e* is provided for the reception of a valve *h*, which is adapted to travel therein, the preferred form of such valve being shown in Fig. 3. To retain said valve within the chamber *e* a cap *d²* is provided, adapted to fit tightly on the shank end of the screw-plug, Fig. 3, or, if desired, may be screwed thereon. Cap *d²* has an opening *d³* extending therethrough and in the same is provided a seat for the valve *h*, said seat conforming in shape to the shape of the end of valve *h* with which it is designed to operate and being formed by decreasing the diameter of the opening *d³*, as readily understood by reference to Fig. 3. It will now be seen

that after valve h has been placed in the chamber e and the cap d^2 secured to the open end thereof, said valve may reciprocate within said chamber but is prevented from leaving the same by reason of the cap d^2 . It will also be understood that when the screw-plug is in the position in the bottle-neck shown in the drawings, valve h is caused by gravity to rest in its seat, but should said bottle be "tipped up," as in the act of pouring the contents therefrom, such action will cause the liquid to enter the hole d^3 and the pressure of said liquid upon the valve will force the latter from its seat and drive the same before it in the chamber e until it has passed the openings g , (the position shown in dotted lines in Fig. 3,) when the liquid at once passes out through the openings g and into the chamber b and thence out through the bottle-neck in the ordinary manner as indicated by the arrows of Fig. 2.

When the bottle is again returned to an upright position, the valve h at once returns to its position in the valve-seat. When in the last-named position, any attempt to introduce liquid into the bottle would be unavailing for the reason that such liquid must first enter the chamber e by means of openings g and f above said valve, and such liquid would therefore result in but forcing the same the more tightly into its seat. Should any attempt be made to force liquid into the bottle when in a horizontal or inverted position it will be seen that such liquid must first enter the openings f (the chamber e being shouldered at e^2 to prevent the valve h closing said openings) and thus serves to drive said valve before it into its seat. It will now be seen that any attempt to refill a bottle fitted up with our device would be unsuccessful.

To prevent the withdrawal of the screw-plug d 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 $d^4 d^5$ on the head d' 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 d^4 to the top of projection d^5 , and vice versa. The construction of this feature will be best understood by reference to the view Fig. 3, from which it will be seen that a screwdriver bearing against the

projections $d^4 d^5$ will serve when turned in the direction of the arrow of said figure to correspondingly turn the complete screw-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 screw-plug auxiliary thereto—and it is desired to use the complete device, the bottle is first filled in the ordinary manner, after which the screw-plug is placed in position in its neck as already explained, said bottle-neck being closed by an ordinary cork or stopper in the usual manner. 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 screw-plug d in the manner already described and thence out of the bottle, as indicated by the arrows of Fig. 2. Any attempt to refill the bottle is prevented, as already explained, for should liquid be introduced into the neck thereof it will but result in closing the valve tightly, the latter being extremely light so that it is readily floated by said liquid.

Our device as a whole is very simple in its construction and may be very readily assembled, is not expensive to produce, and performs in a very satisfactory manner the office for which it is designed.

Having thus described our invention, we claim—

1. In combination with a bottle, a portion of the neck of which is internally threaded, a plug having an enlarged threaded upper portion adapted to be screwed through the threaded neck, and having its lower end enlarged to fit tightly in said neck; all substantially as specified.

2. In combination with a bottle, a portion of the neck of which is internally threaded, a plug having an enlarged threaded upper portion adapted to be screwed through the threaded neck and an enlarged lower end that may fit tightly in said neck; said plug being formed as a hollow section open at its lower end and with lateral openings as set forth, and having loosely fitted within said tube a float valve, all substantially as specified.

THOMAS N. STERRY.
JOHN J. MURPHY.

Witnesses:

FRANK H. ALLEN,
LILA D. PEALE.