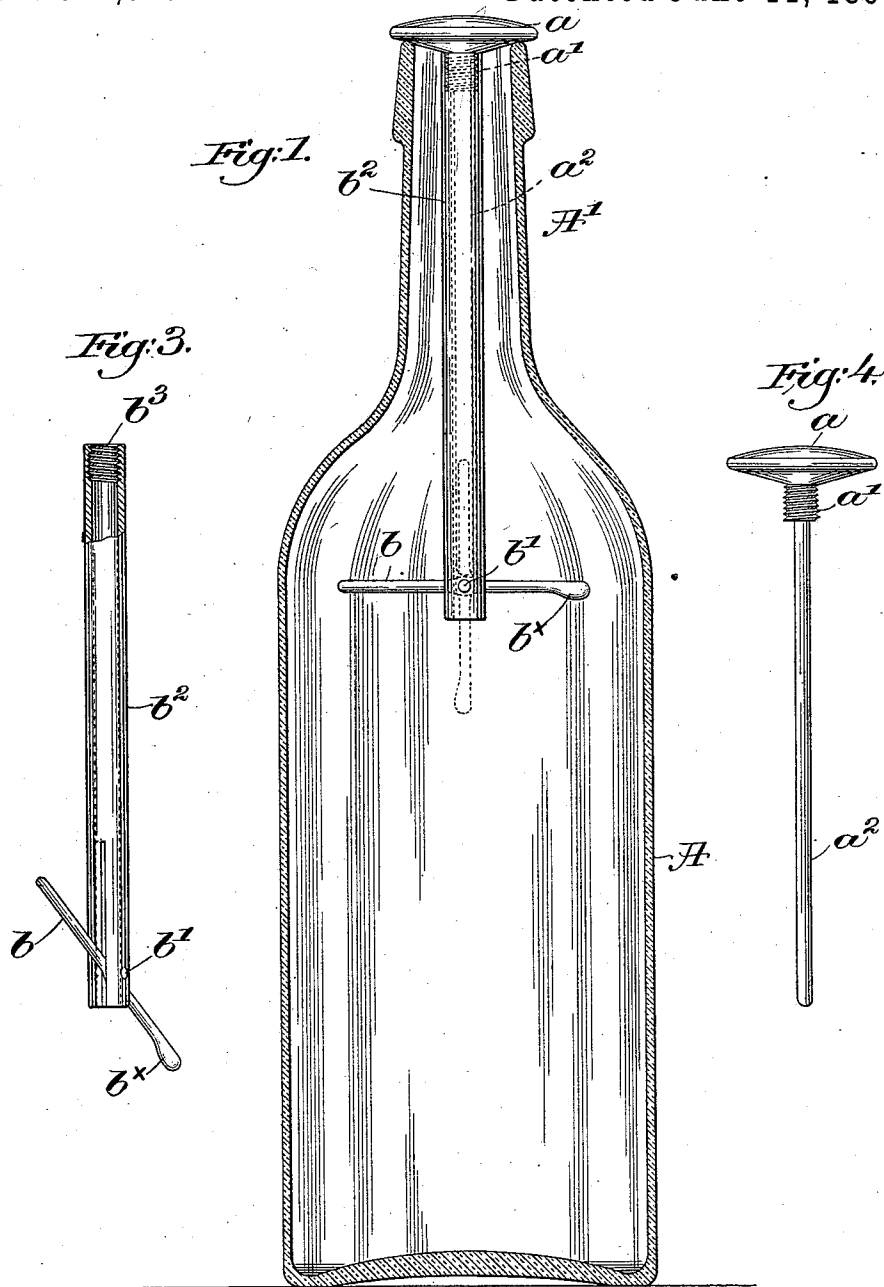


(No Model.)

W. F. O'NEILL.
RETAINING DEVICE FOR BOTTLE STOPPERS.

No. 540,921.

Patented June 11, 1895.



Witnesses,
A. C. Harmon,
Thomas J. Hammond

Fig. 2.

Inventor,
William F. O'Neill,
by Crosby & Gregory
attys.

UNITED STATES PATENT OFFICE.

WILLIAM F. O'NEILL, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF TWO-THIRDS TO JOHN J. O'NEILL AND ANNIE O'NEILL, OF SAME PLACE.

RETAINING DEVICE FOR BOTTLE-STOPPERS.

SPECIFICATION forming part of Letters Patent No. 540,921, dated June 11, 1895.

Application filed March 19, 1895. Serial No. 542,361. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. O'NEILL, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Retaining Devices for Bottle-Stoppers, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

10 This invention has for its object the production of a simple and effective device for normally preventing the complete removal of the stopper of a bottle without interfering with the withdrawal of its contents from time
15 to time, the construction of the device being such that the act of turning the bottle into pouring position automatically opens the stopper, the righting of the bottle automatically closing the stopper.

20 Figure 1 represents in vertical section a bottle provided with my invention in operative position. Fig. 2, on a smaller scale, shows the relative position of the parts when the bottle is tipped; and Figs. 3 and 4 are enlarged details
25 of the retaining device, the parts being disconnected.

The stopper *a* of suitable shape to close the mouth of the bottle *A*, Fig. 1, is provided on its inner side with a preferably threaded boss
30 *a'* and a shank *a²* of stout wire or other suitable material. If desired, the stopper may be made to fit into the mouth of the bottle, and it may be of rubber, cork, glass, &c. A detent, shown as a bail *b*, is pivotally mounted
35 at *b'* in the slotted or forked end of a support *b²*, shown as tubular to receive the shank *a²*, and threaded at its upper end at *b³* to engage the boss *a'* of the stopper, and thereby connect the parts. One end of the bail is
40 weighted, as at *b^x*, to tip it on its pivot, as shown in Fig. 3, or in dotted lines Fig. 1, while the length of the shank *a²* is great enough to permit its extremity to engage and hold the bail extended as in full lines Figs. 1
45 and 2, when the stopper and detent support *b²* are coupled tightly. The support *b²* is of such length that when inserted in a bottle, the detent *b* will engage the base of the neck *A'* if the bottle is tipped, limiting the out-
50 ward movement of the stopper *a*, but permitting the contents to flow out, while return of

the bottle to upright position automatically seats the stopper.

When the retaining device is to be inserted in a bottle the stopper *a* and support
55 *b²* are unscrewed until the detent *b* can move on its pivot sufficiently to permit its passage into the neck *A'* of the bottle, and after the detent is beyond the base of the neck the stopper and support are tightened, thus causing
60 the shank *a²* to bear upon and move the detent into operative or full line position Figs. 1 and 2. To remove the retaining device, the operation is the reverse of the foregoing, the weighted end *b^x* of the detent moving it more
65 or less into alignment with the support when the effect of the shank *a²* is removed.

My invention is not restricted to the precise construction and arrangement herein shown and described, as the same may be altered or modified without departing from the spirit and scope of my invention.

I claim—

1. A stopper to normally close the bottle, a support connected to the under side of the
75 stopper, a detent pivoted thereon to enter the bottle and limit outward movement of the stopper, and means to positively tip the detent on the support when within the bottle and to fix its angular position relative to the support,
80 substantially as described.

2. A stopper to normally close the bottle, a pivotally mounted detent to enter the bottle when in inoperative position and to limit outward movement of the stopper when in oper-
85 ative position, and longitudinally adjustable rigid connections between the stopper and detent, to support the latter and control its angular position relative to said connections, substantially as described.
90

3. A stopper to close the bottle when upright, a rigid detent support detachably connected to the inner side of the stopper, and a detent pivotally mounted at the inner end of said support, to engage the base of the bottle
95 neck and limit outward movement of the stopper when the bottle is tipped, movement of the stopper and support toward and from each other controlling the angle of the detent relative to the support, substantially as described.
100

4. A bottle stopper provided with a threaded

boss on its innerside, and an extended shank,
a tubular support to receive the shank and en-
gage said boss, and a weighted detent pivoted
to the inner end of said support, movement of
5 the shank to bear on the detent holding the
latter in operative position, substantially as
described.

In testimony whereof I have signed my
name to this specification in the presence of
two subscribing witnesses.

WILLIAM F. O'NEILL.

Witnesses:

JOHN C. EDWARDS,
AUGUSTA E. DEAN.