(No Model.)

G. S. NORRIS.

BOTTLE STOPPING DEVICE.

No. 281,290. Patented July 17, 1883.

Fig. 1.

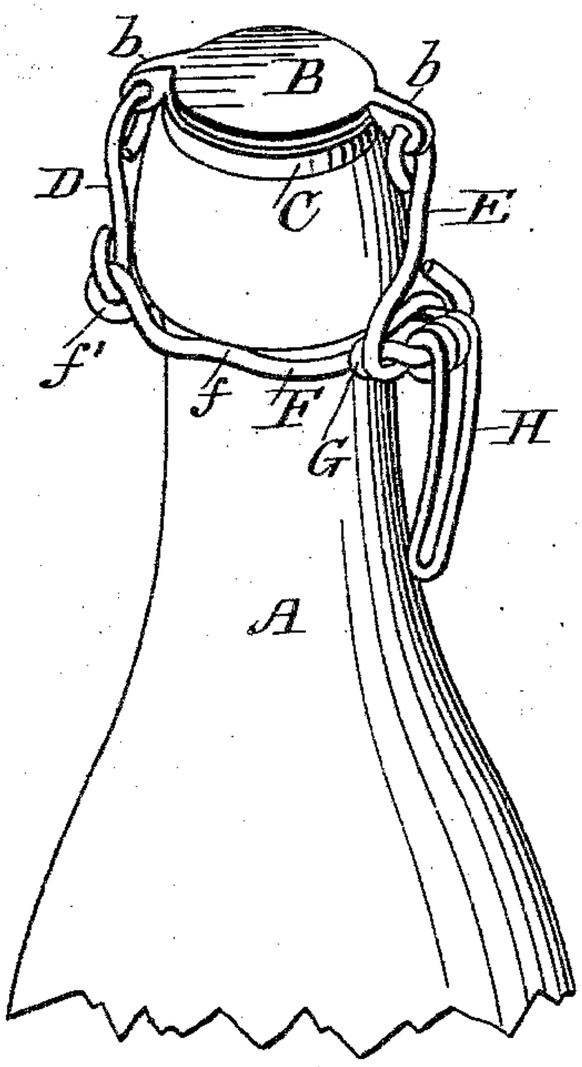

Fig. 2.

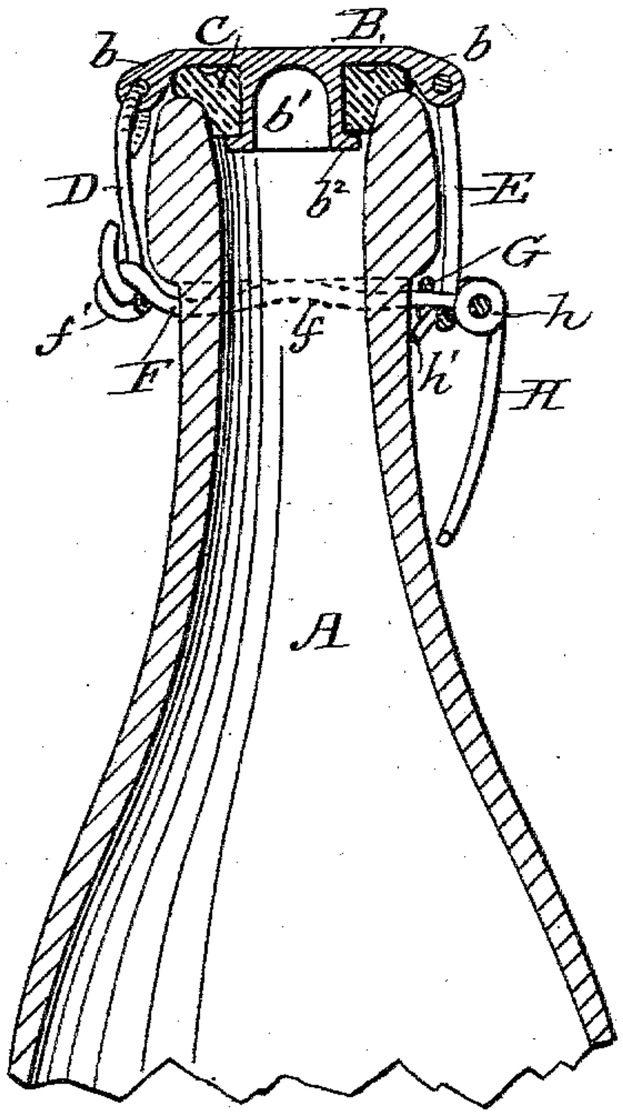

Fig. 3.

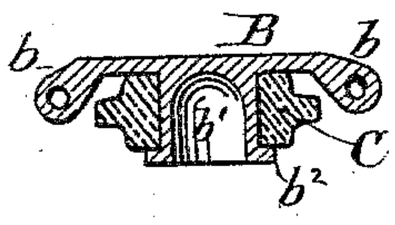

Fig. 4.

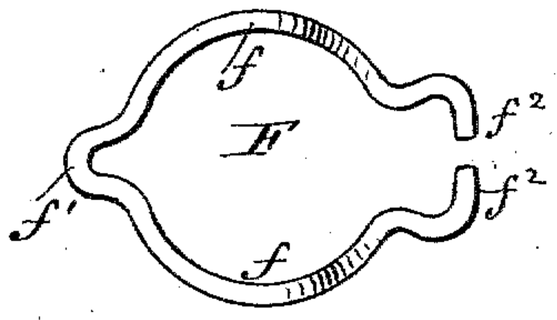

Fig. 5.

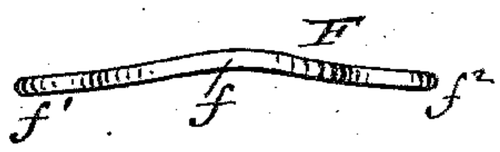

Fig. 6.

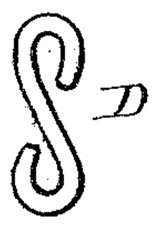

Fig. 7.

Witnesses:
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Wm. W. Pegram

Inventor:
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UNITED STATES PATENT OFFICE.

GEORGE S. NORRIS, OF BALTIMORE, MARYLAND

BOTTLE-STOPPING DEVICE.

SPECIFICATION forming part of Letters Patent No. 281,290, dated July 17, 1883.

Application filed April 9, 1883. (No model.)

To all whom it may concern:

Be it known that I, GEORGE S. NORRIS, a citizen of the United States, residing at Baltimore, in the county of Baltimore and State of Maryland, have invented certain new and useful Improvements in Bottle-Stopping Devices, of which the following is a specification.

This invention relates to that class of bottle-stopping devices in which a rubber plug is compressed over and within the mouth of a bottle by means of a combined stopper-cap and bail adapted to be connected at one end by a link and a hinged lever to a band secured to the neck of the bottle, and at the other end by an upward extension of said band, an example of said class being shown in a certain Patent No. 257,746, granted me May 9, 1882, my present invention relating to certain improvements thereon, hereinafter described, and specifically set forth in the claims.

Referring to the accompanying drawings, forming a part thereof, Figure 1 is a perspective view of a portion of a bottle provided with my improvements shown in a closed condition. Fig. 2 is a central vertical section of the same. Fig. 3 is a like section of the stopper detached; Fig. 4 a plan, and Fig. 5 a side elevation, of the neck-band in slightly modified form; and Figs. 6 and 7, details, hereinafter described.

Like letters indicate like parts in all the figures.

A represents the bottle, and B the stopper-cap, which is of sufficient size to extend well over the mouth of the bottle, so as when drawn down to compress the rubber stopper upon the end of the bottle-neck, as shown in Fig. 2. The cap is provided with ears *b b* and a central depending hollow core, *b'*, having an annular exterior flange, b^2. The rubber stopper C is annular and provided with a central exterior flange, *c*, between two heads, *c'*, of similar size, and is therefore adapted to be reversed at will in its position upon the core *b'*, so that after becoming worn or misshaped by use in one position an opposite face thereof may, by reversing the same, be brought into use, as described in my aforementioned patent. The depending core is comparatively large in cross-section, whereby less rubber is required in the stopper, and is hollow in order that less metal shall be required in its construction, thus reducing its weight, and also that more space shall be provided above the contents of the bottle for the expansion or reception of the free gas therein. Said gas forming a cushion between the liquid and stopper, prevents breakage of the bottle.

One of the ears *b* of the stopper-cap serves as the connection of the pivotal link E, and the other as the connection of the pivotal (S) link D, which unites the cap with the neck-band F, the lower end of the link embracing an eye, *f'*, formed in the band. As shown in Figs. 1 and 2, the eye *f'* is formed by twisting the neck-band a quarter-turn; but this, however, may be omitted, as shown in Figs. 4 and 5, in which case the end loops of the link D would be disposed at right angles to each other. The neck-band in other respects is like that shown in said patent, except that in this case two sides thereof are upwardly-curved at *f* for two purposes:

First, to render the bearing of the neck-band against the under side of the usual exterior annular shoulder formed on the bottle-neck pivotal, so that when the stopper is compressed the cap may be held in a relatively-true horizontal position, thus causing an equally-distributed pressure and compression of the rubber and avoiding uneven wear of the same, as heretofore, said compression and wear being generally more at the back side, the side opposite the operating-lever, than at the front side, by reason of the longitudinally-unyielding means of connection with the neck-band at the back side, and the slight lengthening of the connecting means at the front, when the operating-lever passes over a center of motion into the usual locked position. This primary purpose is intentional and fixed, and by using sufficiently heavy or stiff material for the neck-wire it will be the only purpose attained. It will be seen that when the operating-lever is brought to a locked position the slight lengthening of the connecting means at the front side is compensated by the pivotal bearing of the neck-band, which permits the compressed rubber at the back side to expand and bring the cap into the desired horizontal position.

The second advantage results from the construction of the neck-band out of wire so bent

as to act not only pivotally, as desired, but as a spring, which, in connection with the resiliency of the rubber, further aids in the automatic disposition of the cap in a horizontal position to more evenly spread the flange of the rubber plug upon the end of the bottle and prevent unequal wear of the same.

As heretofore shown in Patent No. 272,081, granted to me February 13, 1883, the lever H is provided with a cylindrical bearing, *h*, and projecting ends *h'*, and is connected pivotally to the hooked ends f^2 of the neck-band F. I employ as a means of retaining the neck-band within the bearings *h* of the lever a double hook, G, which is of heavier and more rigid material than employed heretofore, which was of light wire tied by coiling it about the rectangular loop and twisting its ends together. The double hook G remains in place by simply compressing its ends toward each other upon the loop with any suitable instrument—such as pliers; whereas heretofore a twisting motion of the instrument employed was necessary to coil and secure the ends of the neck-band together. By my present construction less labor is involved and a firmer and more finished and practicable product is secured.

If desired, the pivotal point *f* may be a projection or bead upon instead of an upward curve on the neck-band F; but it would be more uncertain, as said bead might accidentally be slipped around the bottle neck-band.

Having described my invention and its operation, what I claim, is—

1. A neck-band provided with projections *f*, whereby it is adapted to bear pivotally against a flange of a bottle, substantially as specified.

2. The combination, with a bottle, of a stopper, connecting-links, an operating-lever, and a neck-band having a projection on its upper side against a shoulder on the bottle, substantially as specified.

3. The neck-band F bent to form two hooked ends, f^2, an eye, *f'*, and having projections *f*, substantially as shown and described, and for the purpose stated.

4. The combination of a neck-band having its ends bent to abut against each other and form a journal, and an operating-lever, H, mounted on said ends with a rigid double hook, G, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE S. NORRIS.

Witnesses:

RICHARD NORRIS,

WM. M. PEGRAM.