

(No Model.)

G., J. G. & M. O. REHFUSS.
BOTTLE STOPPER.

No. 404,797.

Patented June 4, 1889.

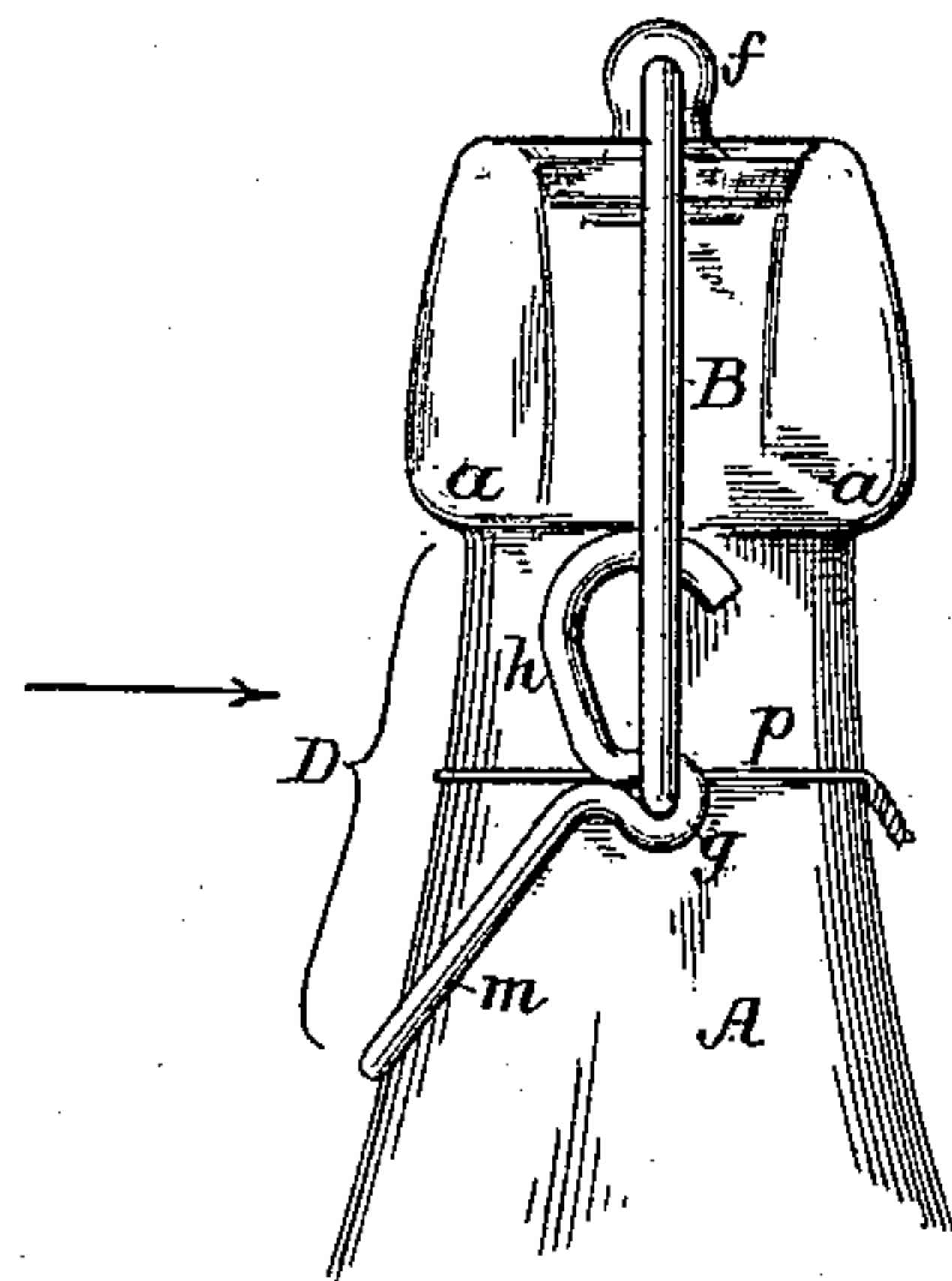


FIG. 1.

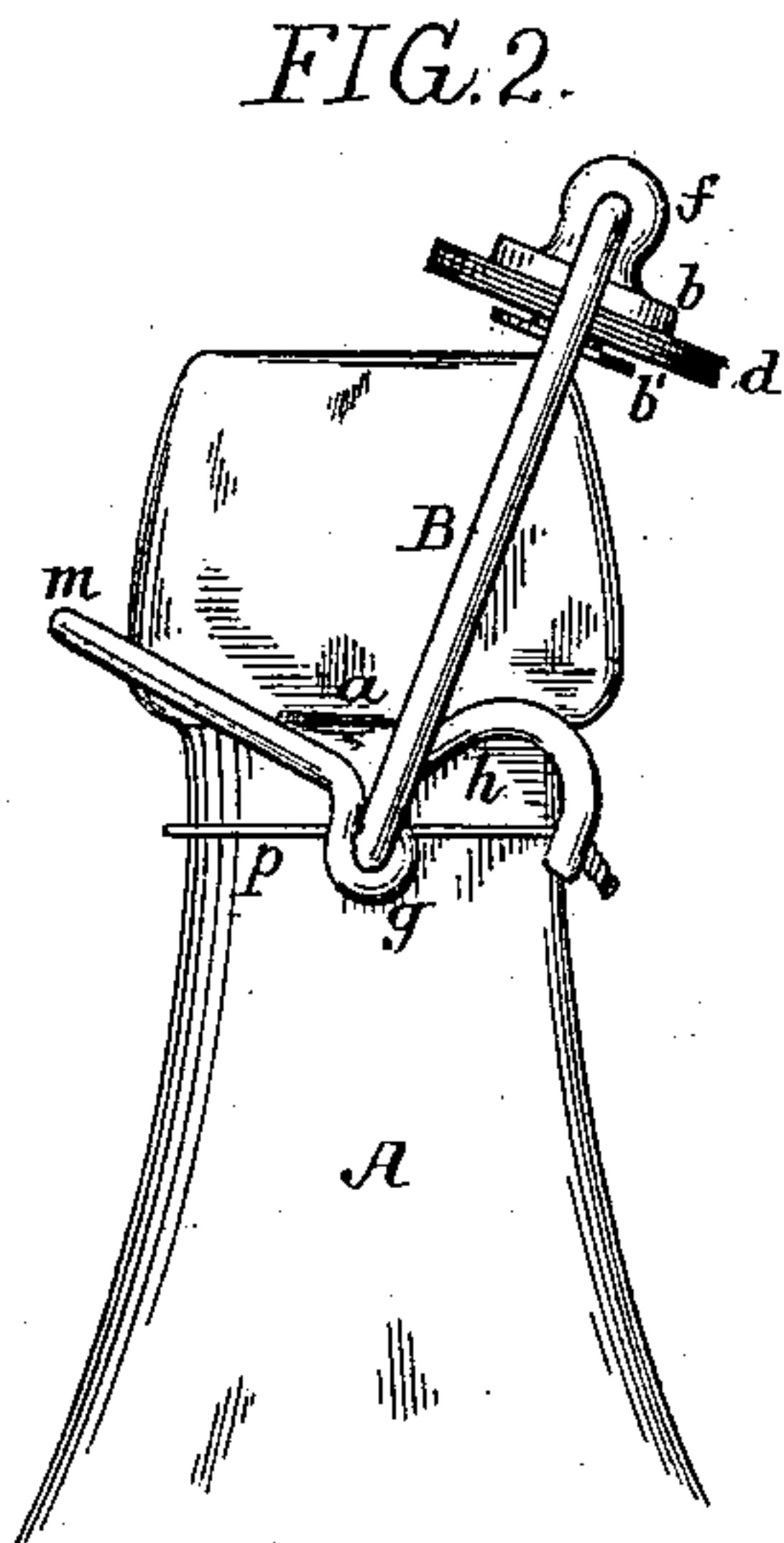


FIG. 2.

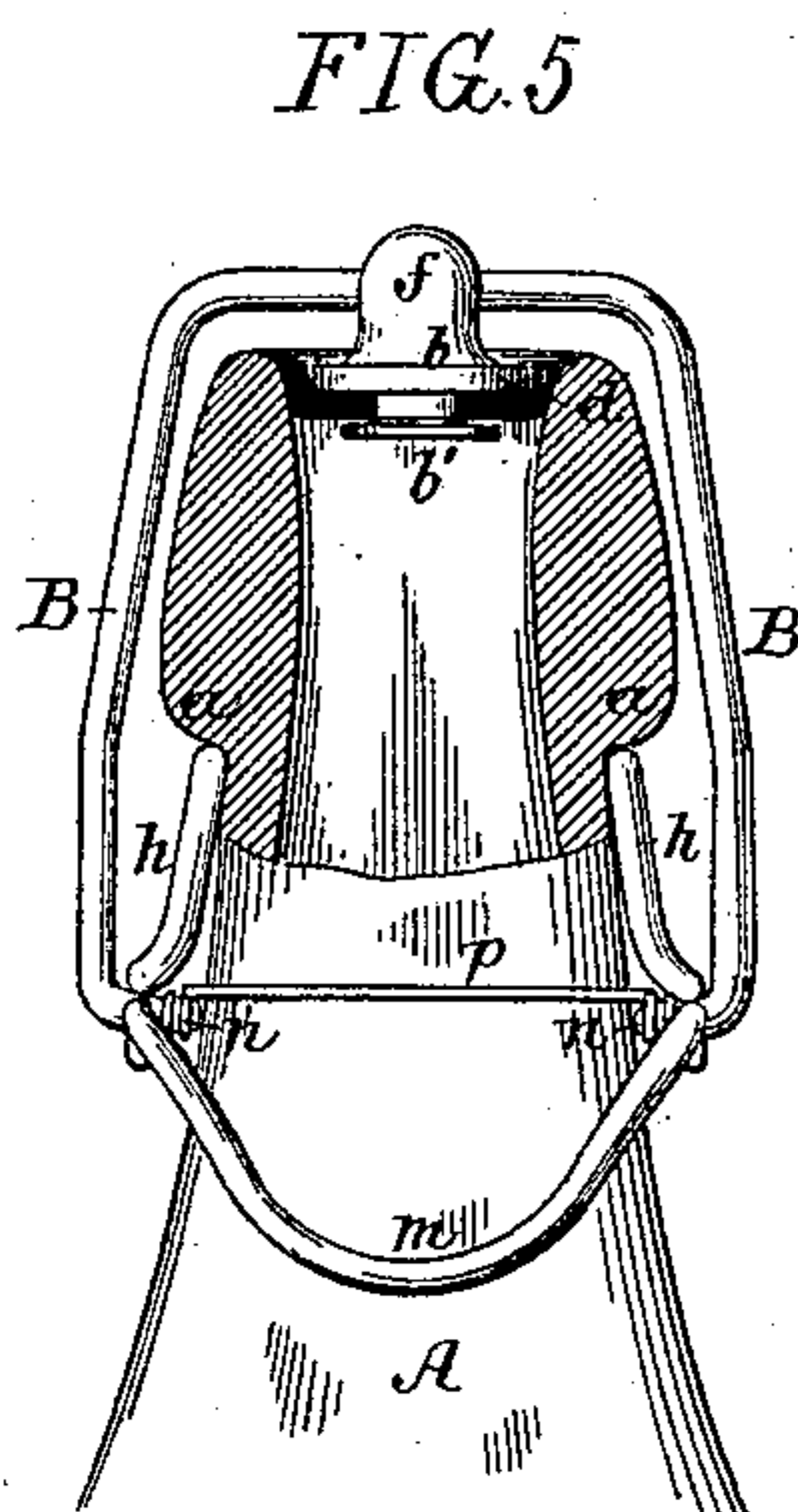


FIG. 5.

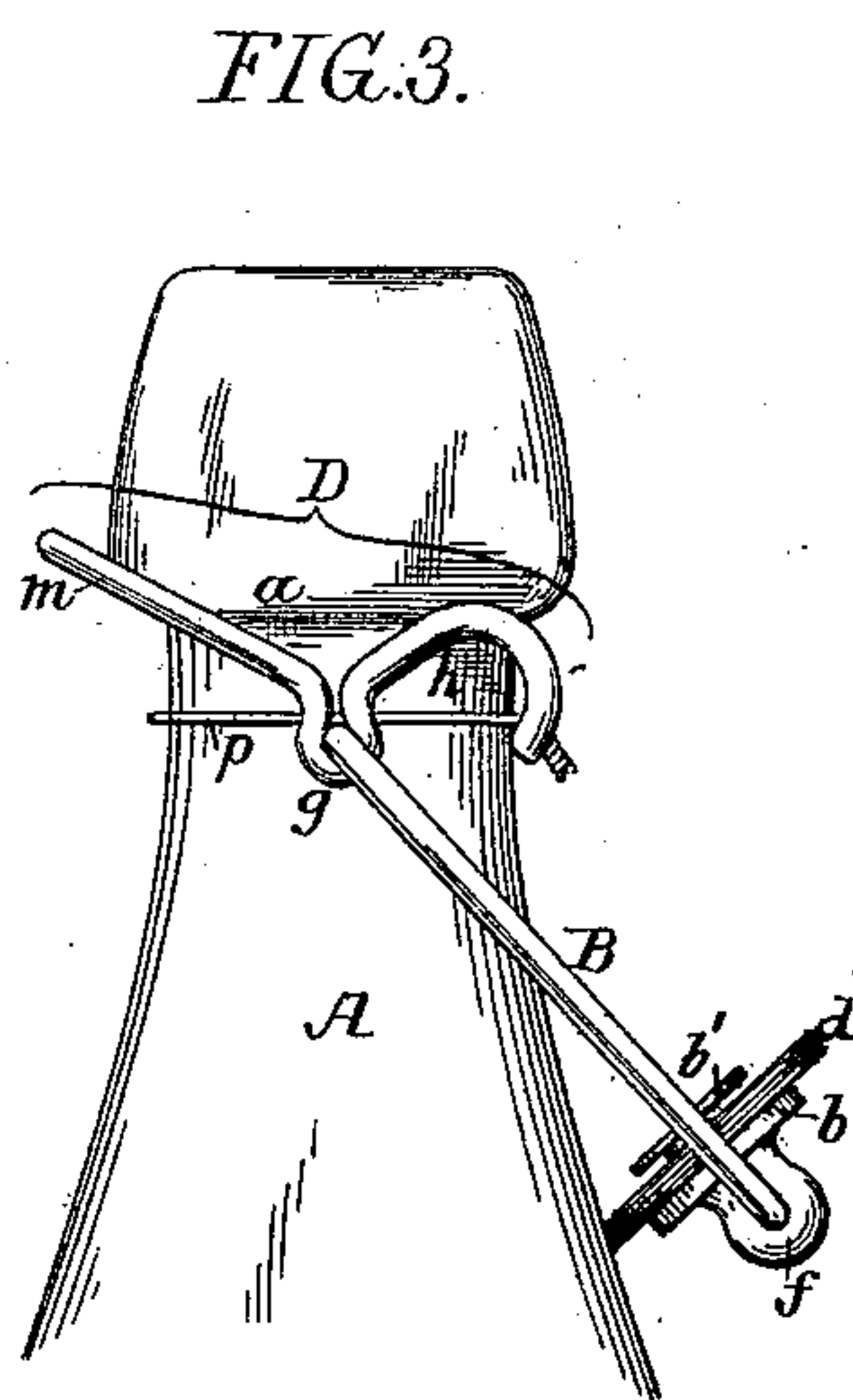


FIG. 3.

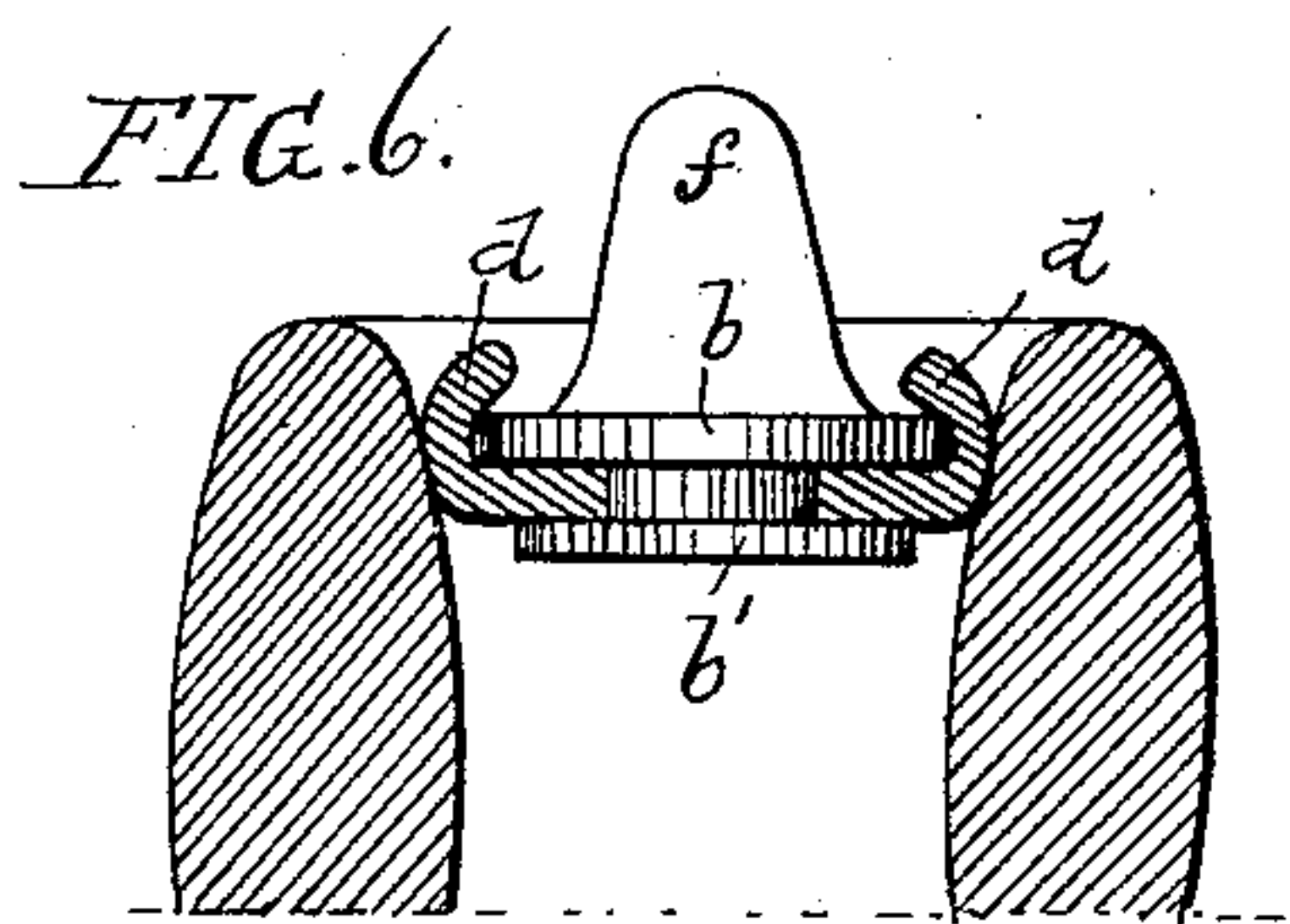


FIG. 6.

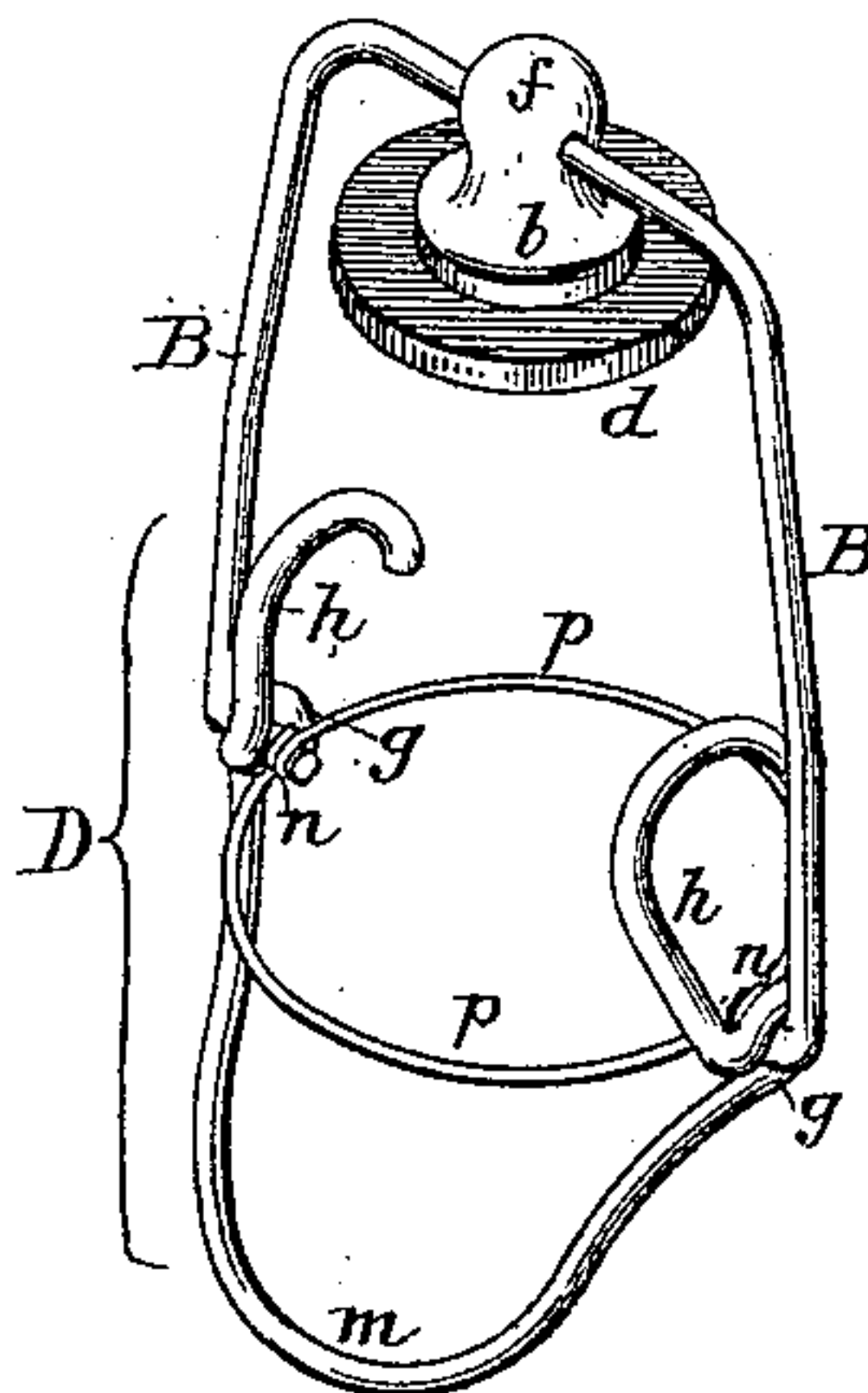


FIG. 4.

Witnesses
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Howson & Howson

UNITED STATES PATENT OFFICE.

GEORGE REHFUSS, JOHN GEORGE REHFUSS, AND MARTIN O. REHFUSS, OF
PHILADELPHIA, PENNSYLVANIA, ASSIGNORS TO THE JOLY STOPPER
COMPANY, OF SAME PLACE.

BOTTLE-STOPPER.

SPECIFICATION forming part of Letters Patent No. 404,797, dated June 4, 1889.

Application filed February 8, 1889. Serial No. 299,133. (No model.)

To all whom it may concern:

Be it known that we, GEORGE REHFUSS, JOHN GEORGE REHFUSS, and MARTIN O. REHFUSS, all citizens of the United States, and residents of Philadelphia, Pennsylvania, have invented certain Improvements in Bottle-Stoppers, of which the following is a specification.

Our invention relates to that class of bottle-stoppers in which the stopper is carried by a bail, and said bail is acted upon by a cam-lever or like external tightener on the bottle for the purpose of effecting the sealing or stoppering of said bottle, the objects of our invention being to simplify and cheapen the construction of the stopper and its operating devices and to provide for the more secure sealing of the bottle than in other devices of the class with which we are familiar. These objects we attain in the manner hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1 is a side view of a bottle provided with a stopper and operating devices therefor, constructed in accordance with our invention, the bottle being sealed. Fig. 2 is a side view illustrating the position assumed by the parts on opening the bottle. Fig. 3 is a side view showing the bottle fully opened. Fig. 4 is a perspective view of the stopper and its operating devices detached from the bottle. Fig. 5 is a view looking in the direction of the arrow, Fig. 1, with the stopper and part of the bottle-neck in section. Fig. 6 is an enlarged sectional view illustrating one of the features of our invention.

A represents part of the neck of the bottle, which has the usual enlarged head, forming a shoulder *a* some distance below the mouth.

The stopper consists of upper and lower disks *b b'*, connected by a central shank, and between these two disks is the sealing-washer *d* of rubber or equivalent material, the upper disk *b* being of such diameter that it can be drawn down through the mouth of the bottle, and on depression it indents the washer and causes the same to bind over the upper edge of the said disk, the sealing of the bottle being effected by the compression of the projecting edges of the washer *d* between the

periphery of said disk *b* and the inner wall of the bottle-mouth some distance below the top of the same, as shown in Fig. 5. By this means the sealing of the bottle is effected at a point which is not liable to be accidentally chipped or marred by the rough handling of the bottle; hence the stopper is more effective in producing a perfectly tight joint than when the sealing is effected upon the upper edge or top of the mouth of the bottle, as is usual in stoppers of this class. Moreover, although a cap completely inclosing the disk *b'* may be used as a sealing device, if desired, the simple washer *d*, which we are enabled to use, is to be preferred, as it is much less expensive than the molded rubber caps ordinarily employed in connection with stoppers sealing on the top edge of the mouth.

The upper disk *b* of the stopper has a projecting stud *f*, to which is secured the upper or transverse bar of the bail *B*, the stud then serving as a means for depressing the stopper, the opposite legs of the bail being bent inward at their lower ends, and these bent ends being adapted to eyes *g*, formed upon the opposite side bars *h* of the operating-lever *D*, the upper rounded ends of these bars *h* being adapted to engage with the shoulder *a* of the bottle and the lower ends of the arms being connected by a yoke *m*, passing around one side of the bottle-neck. The lower bent ends of the stopper-carrying bail are also adapted to eyes *n* on the wire *p*, which passes around the bottle-neck, but is free to move vertically thereon, the function of this wire being simply to retain the stopper in position laterally on the bottle-neck without interfering with its vertical movement thereon. On depressing the yoke *m* of the operating-lever *D* the upper rounded ends of the opposite bars *h* of the lever will engage with the shoulder *a* of the bottle, thus causing the depression of the eyes *g* and neck-wire *p*, and pulling down the bail *B* so as to force the stopper firmly into the mouth of the bottle, as shown in Figs. 1 and 5. If the neck is small, the thin disk *b* will indent the washer, as shown in Fig. 6, so as to prevent jamming of the stopper in the neck and insure a perfect seal. The lifting of the yoke *m*, however,

permits the upper rounded ends of the side bars *h* of the lever *D* to pass from beneath the shoulder *a*, so that said lever, with the neck-wire and stopper-carrying bail, is free to rise until the stopper is above the mouth of the bottle, as shown in Fig. 2, and is at liberty to move outward and downward to the position shown in Fig. 3, so as to leave the mouth of the bottle entirely unobstructed.

10 The special form of stopper shown and described forms the main feature of our invention, and may, as will be evident, be used in connection with other forms of external tightening devices—for instance, with those shown in a separate application filed by us and bearing even date herewith, and numbered 299,134, or with other known forms of fastener.

We are aware that bottle-stoppers have been made with rubber sealing-washers forced down into the bottle-neck by the plug-like heads or tops of the stoppers; but one of the main features of our stopper is the thin disk *b*, located above the washer and serving as the means whereby pressure is imparted to the washer as the stopper is drawn down into the neck. Such a disk, owing to the thin edge which it presents, will readily indent the inner face of the upturned portion of the washer in case extra pressure is exerted upon the upper portion of said washer by reason of local irregularity in the bottle-neck, and hence there will be no material difficulty in drawing the stopper properly down into the neck and forming a perfect seal, whereas a plug-like head or top on the stopper will not so easily indent the washer, and hence will cause the stopper to jam in the neck or form an imperfect seal.

Having thus described our invention, we claim and desire to secure by Letters Patent— 40

1. The combination of the bottle, the stopper-carrying bail, and external tightening devices for the latter, with a stopper having a sealing-washer and a depression-stud connected to the bail and having a thin disk located above the washer and of such diameter that it can be drawn down through the mouth of the bottle, the disk on depression indenting the washer and causing the same to bind over its upper edge, substantially as specified. 45 50

2. The combination of the shouldered bottle, the stopper, and its bail, with the operating-lever hung to the bail and having arms engaging with the shoulder of the bottle, and a neck-wire free to move vertically on the bottle-neck and preventing lateral displacement of the lever thereon, substantially as specified. 55

3. The combination of the shouldered bottle, the stopper, and its bail, the vertically-sliding neck-wire, and the operating-lever hung to the bail and having arms with rounded ends which engage with the shoulder of the bottle, as set forth. 60

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses. 65

GEORGE REHFUSS.
JOHN GEORGE REHFUSS.
MARTIN O. REHFUSS.

Witnesses:

WILLIAM D. CONNER,
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