

UNITED STATES PATENT OFFICE.

THOMAS HIPWELL, OF BRIDGETON, NEW JERSEY, ASSIGNOR TO COHANSEY
GLASS MANUFACTURING COMPANY, OF SAME PLACE.

IMPROVEMENT IN BOTTLE-STOPPERS.

Specification forming part of Letters Patent No. **188,135**, dated March 6, 1877; application filed
February 13, 1877.

To all whom it may concern :

Be it known that I, THOMAS HIPWELL, of Bridgeton, in the county of Cumberland and State of New Jersey, have invented certain new and useful Improvements in Bottle-Stoppers; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon, which form a part of this specification.

Figure 1 is a side view of my improved stopper. Fig. 2 is a perspective view. Fig. 3 is a similar view showing a modification of the device for adjusting the bail relative to the neck-band. Fig. 4 is a detached view of the neck-band shown in Fig. 1. Fig. 5 is a top view of the plate which carries the elastic washer.

In the drawing, A represents the neck of an ordinary bottle, such as is used for ale, lager-beer, or mineral-water. B B', Fig. 1, is my improved neck-band, the part B consisting of a flat band of metal provided near each end with a row of holes, *b b'*, (see particularly Fig. 3) arranged upon inclined lines, and provided also at its extreme ends with holes *b''*. B' is a clamping or binding wire or band passing through the holes *b''*, whereby the band is secured to the bottle. That portion of the band which receives the holes *b b'* is thrown outward from the neck of the bottle by means of offsets or shoulders *b''*, leaving an annular space between this portion of the band and the bottle, in order that the legs of the bail C, which are properly bent inward, may pass a short distance through the holes *b b'*, or they may be arranged between the bottle and the band, with their ends bent outward. The locking-lever D D' is mounted upon the upper part of the bail C, and is in its construction substantially like the corresponding one in my patent of earlier date, but other constructions may be used with this band. E is a metal plate, to the lower part of which an elastic washer, F, is attached. This plate has upwardly-projecting ears, provided with eyes *e* in them to receive the arms *d* of the locking-

lever D D'. *e' e'* are stops projecting outwardly from opposite sides of plate E. These stops may be either formed in one piece with the plate, or they may be made separately and attached to the plate in any manner; in practice, however, I prefer the former method.

It will be seen, from an examination of Fig. 1 or 2, that the free end D' of the locking-lever is not in contact with either the bottle or the plate E when the stopper is locked, but that the further backward movement of the swinging bail is prevented by the bail striking against the stops *e' e'* of plate E; and it will be apparent that this construction enables me to regulate with great precision the distance which the bail and the locking-lever shall swing past the dead-center of the pivotal points, that is, past a line drawn perpendicularly through these pivotal points, thus overcoming a serious obstacle which has heretofore been met with in this class of stopper, it having been found very difficult to secure the desired uniformity of pressure upon all parts of the mouth of the bottle when the locking point has been determined, by the end of the lever striking the bottle below the plate, and stopping the end of the lever upon one edge of the cap-plate tending to depress that side of the stopper and tilt up the opposite side. I believe that in consequence of the inclined position of the bail C, and of its contact with the stops *e' e'*, a downward pressure upon the plate E, either directly or through the part D of the locking-lever, will tend to press the plate toward the side of the bottle-neck which is opposite to these stops, and thus equalize the pressure. The bottle may be opened and closed in the usual manner.

Referring to Fig. 1, it will be readily seen that the height of the top of the bail C above the mouth of the bottle, or above the neck-band, may be regulated by changing the legs of the bail from one to another of the holes *b b'* upon opposite sides of the bottle, and that the diameter of the band may be increased or diminished by means of the binding-wire B'. Through these adjustments the stopper can be made to fit with great accuracy bottles of different sizes.

In Fig. 3 I have shown a modification of the

means employed for adjusting the height of the bail relative to the neck-band, in which G is the neck-band of an ordinary construction, having projecting pivots *g*, one upon each side of the bottle-neck. H is a segmental plate pivoted upon the neck-band, and provided with a series of holes, *h*, arranged at different distances from the pivotal point.

The legs of the bail C are bent inward or outward to enter holes *h*, and by this construction the height of the bail can be easily adjusted.

I do not wish to be limited by or to the specific construction of either of these adjusting devices, as many other modifications might be made without departing from the spirit of this part of my invention, which consists essentially in making the swinging bail vertically adjustable relative to the neck-band. Nor do I wish to be limited to the peculiar form of stops shown at *e' e'*, as I believe I am the first to employ stops of any form, or under any arrangement, to engage with the swinging bail to limit the throw of the locking device.

What I claim is—

1. The combination, in a bottle-stopper, of the following elements, namely: a swinging bail pivoted to a neck-band, a stopper pivoted to and vibrating upon the swinging bail, and a stop projecting from the stopper-plate to limit the throw of the swinging bail, substantially as set forth.

2. The plate E, provided with the stops *e' e'*, substantially as set forth.

3. In a bottle-stopper, a swinging bail, which is adjustably attached to the neck-band by means of pivots which engage alternately with different holes formed in or connected with the neck-band, substantially as set forth.

4. The neck-band B B', provided with holes *b b'* for the reception of the legs of the bail, substantially as set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

THOMAS HIPWELL.

Witnesses:

JOHN BAYLIS, Jr.,
J. RICHD. BROCKSON.