

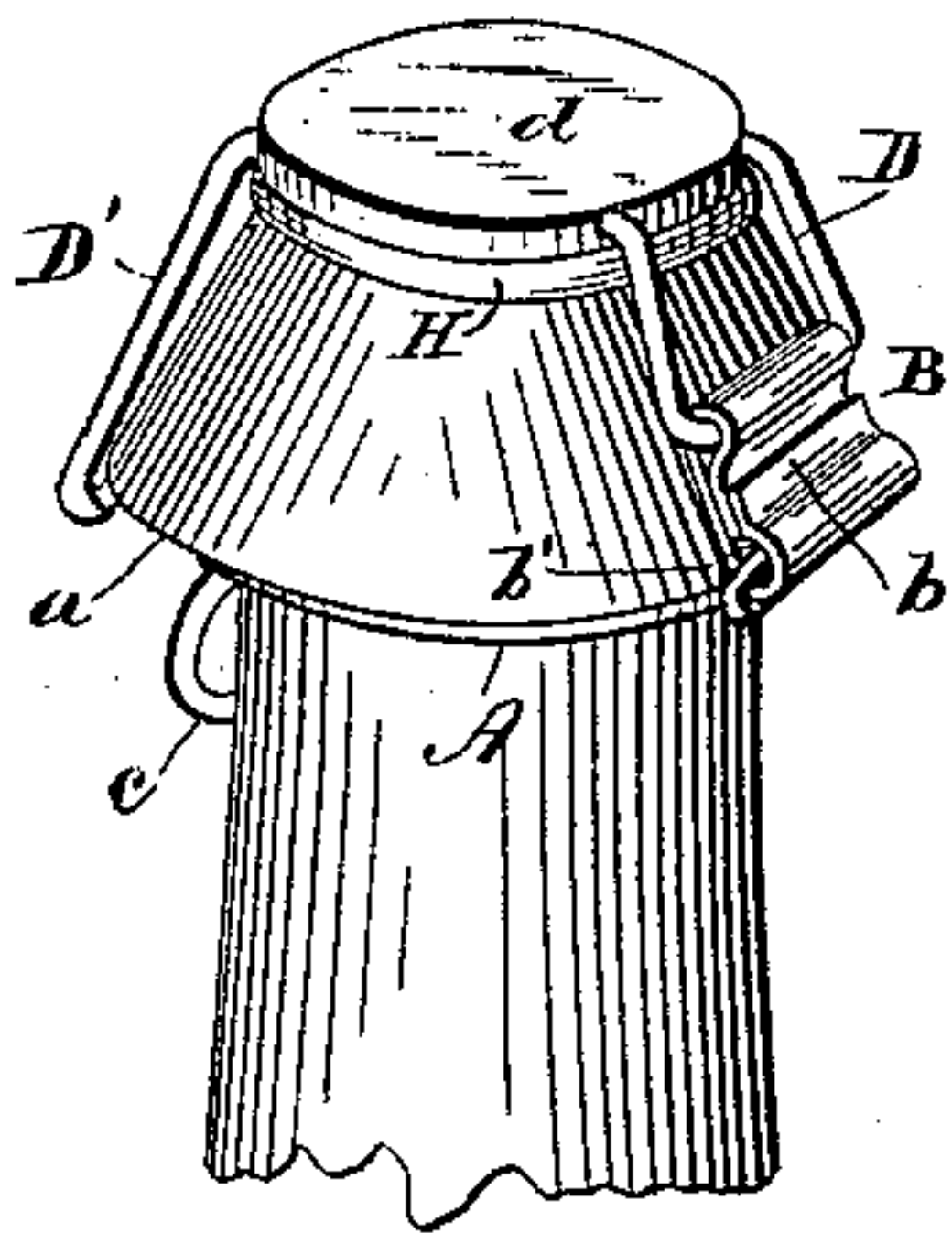
(No Model.)

T. B. HOWE.  
BOTTLE STOPPER.

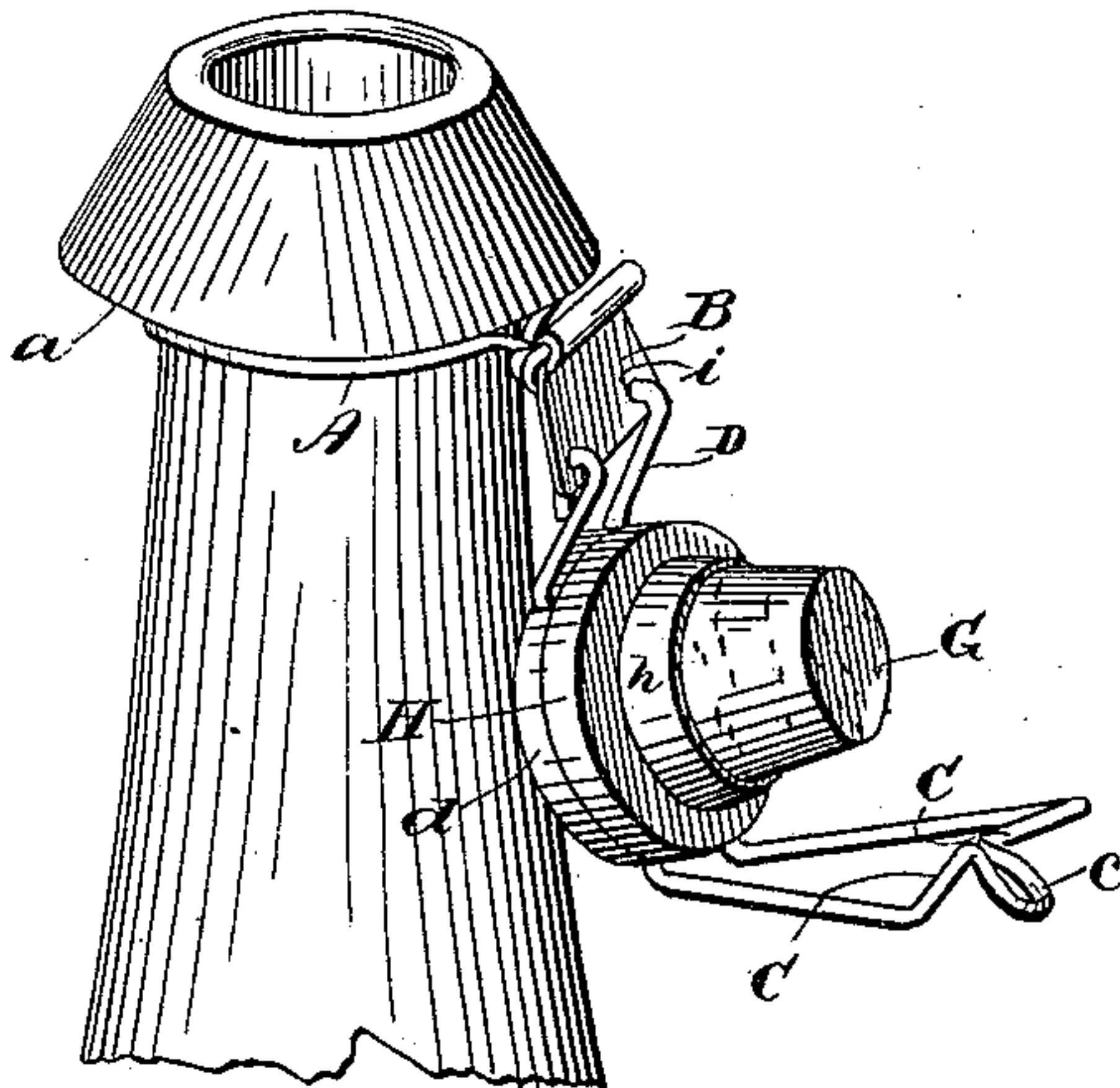
No. 405,035.

Patented June 11, 1889.

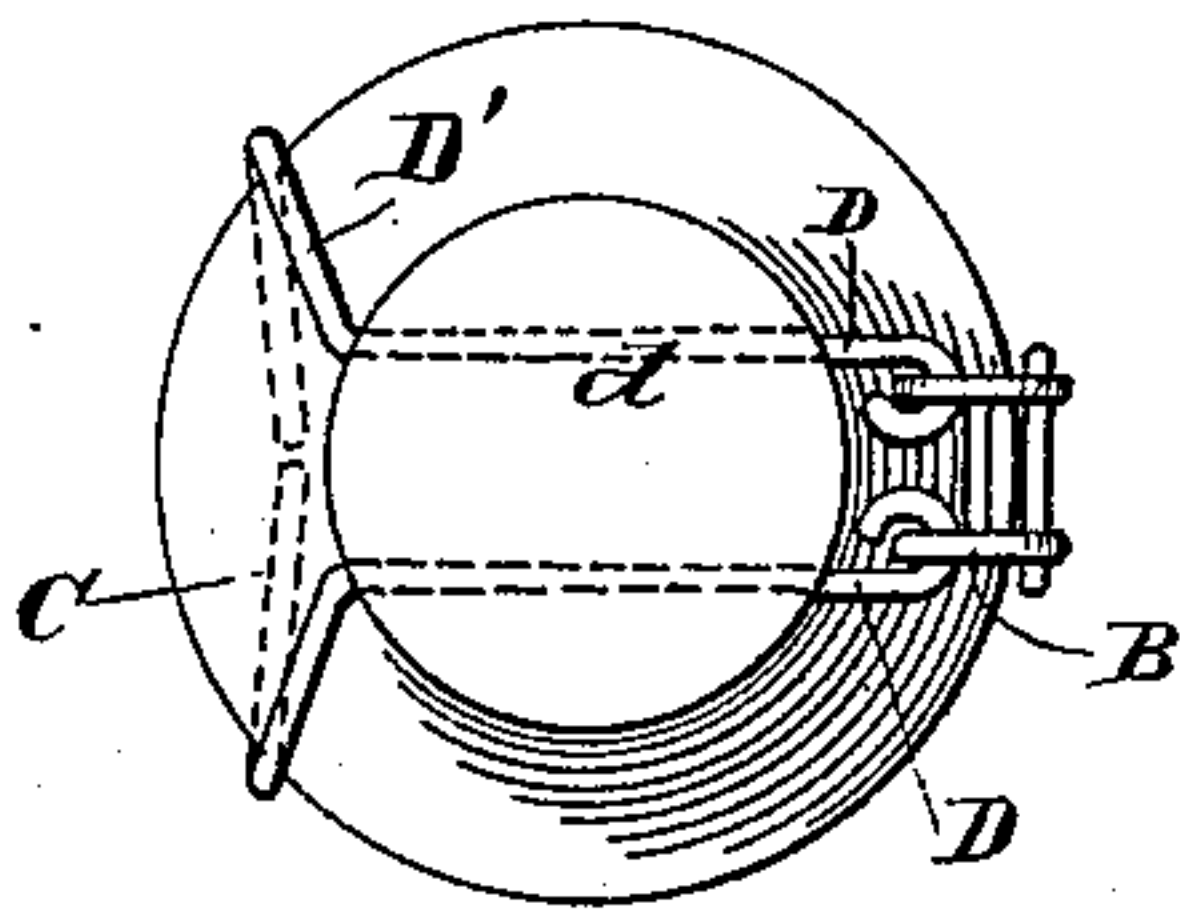
*Fig. 1.*



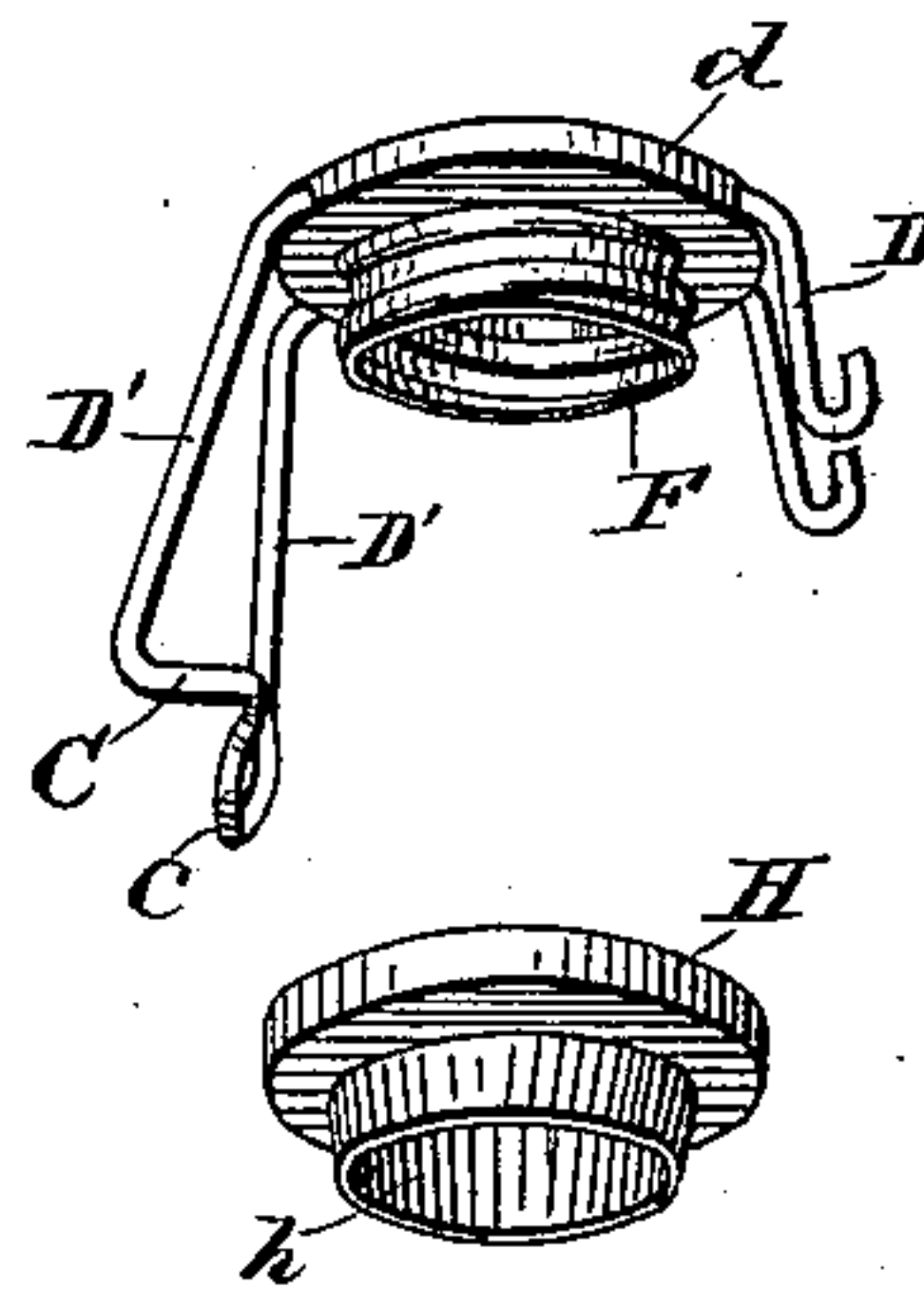
*Fig. 2.*



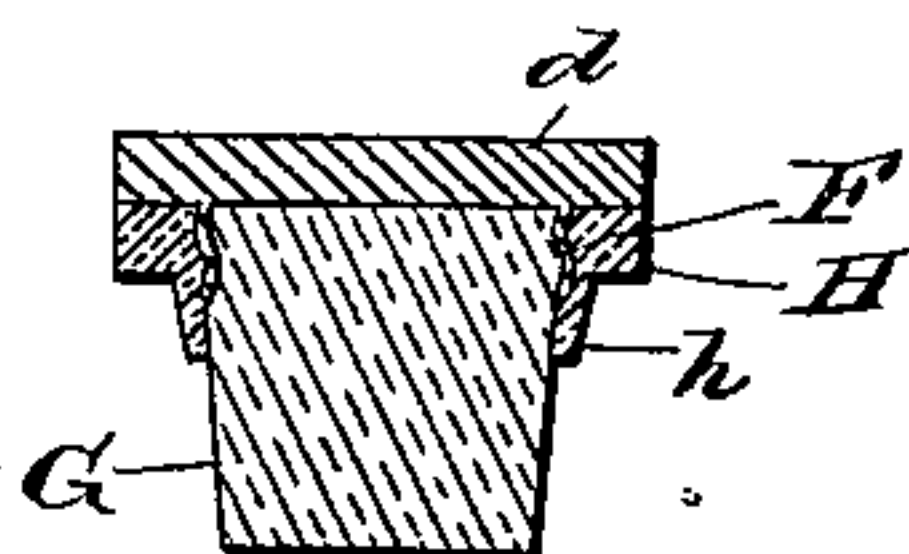
*Fig. 3.*



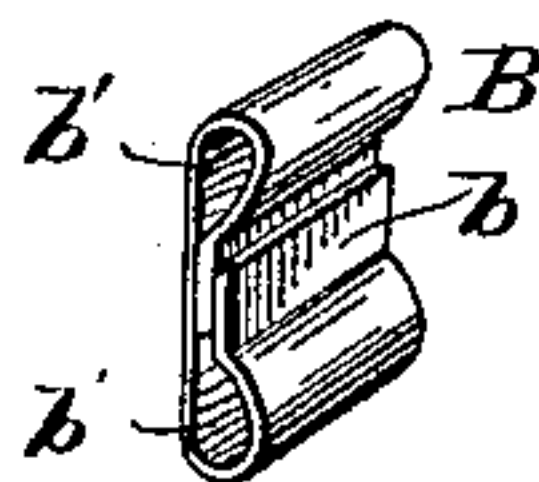
*Fig. 4.*



*Fig. 5.*



*Fig. 6.*



*Fig. 7.*



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# UNITED STATES PATENT OFFICE.

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SCRANTON JAR AND STOPPER COMPANY, OF SAME PLACE.

## BOTTLE-STOPPER.

SPECIFICATION forming part of Letters Patent No. 405,035, dated June 11, 1889.

Application filed November 30, 1888. Serial No. 292,284. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS B. HOWE, of Scranton, in the county of Lackawanna and State of Pennsylvania, have invented certain  
5 new and useful Improvements in Bottle-Stoppers; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the figures and letters of reference  
10 marked thereon.

My present invention relates to certain improvements in bottle-stoppers, particularly such as are adapted to remain attached to the  
15 bottle by fastenings which constitute the catch and bail for retaining the stopper closed, and has for its object to provide a deep stopper and a fastener therefor which will permit the same to enter and be withdrawn from the  
20 bottle-mouth without binding, and which when thrown back will lie close to one side of the bottle and not interfere with the pouring operation.

To these ends the invention consists in certain details of construction and combinations and arrangements of parts, to be hereinafter described, and pointed out particularly in the  
25 claims at the close of this specification.

In the accompanying drawings, Figure 1 is  
30 a perspective view of a bottle-top and stopper-fastener constructed in accordance with my invention. Fig. 2 is a similar view with the stopper thrown open. Fig. 3 is a top plan view with the stopper closed. Fig. 4 is a perspective view of the detached portions of the  
35 stopper. Fig. 5 is a cross-sectional view of the stopper. Fig. 6 illustrates the preferred form of link or bail piece. Fig. 7 is a modified form of bail-piece.

40 Similar letters of reference in the several figures indicate the same parts.

The bottle to which my invention is preferably applied has an abrupt shoulder *a* around the top, immediately beneath which  
45 the neck-wire *A* is secured. This neck-wire is extended outward and upward on one side and passes through or is pivotally connected to the wire or sheet-metal link or bail piece *B*, to which the stopper and its catch are pivotally  
50 otally connected, as will be presently ex-

plained. The bail-piece *B* is preferably formed of a short strip of sheet metal having its ends *b* bent back on themselves around a suitable mandrel, forming small eyes *b'*, through one of which the neck-wire passes, 55 as shown in Figs. 1 and 5. In order to stiffen the bail-piece, and for the sake of convenience in manufacture, the ends, instead of pointing directly inward toward the body of the strip, as heretofore, are bent so as to lie parallel 60 therewith and preferably overlap each other, rendering it impossible to bend or distort the bail-piece by any ordinary usage.

The catch for locking the stopper is formed of a single piece of wire *D*, united to the cap- 65 plate *d* of the stopper and having both its ends extended out on one side and bent down to engage the link or bail piece *B*, as shown clearly in Fig. 1, the extreme ends being bent toward each other and sprung into the upper 70 eye in said bail-piece. The central portion of the wire projects on the opposite side of the plate *d*, and is bent down, the two sides *D'* diverging until the level of the abrupt shoulder is reached, where the horizontal portion *C* is formed to engage the said shoulder 75 and retain the fastener in locked position.

The thumb-piece *c* is formed in the horizontal portion *C*, preferably at the center, although it may be at the sides, and serves not 80 only as a projection against which to press in opening the bottle, but gives additional spring to the lock, as the central portion of the section *C* only will bear against the periphery of the enlarged top of the bottle, being thus 85 sprung out farther than the downwardly-extending portion during the fastening operation; but as soon as the enlarged portion of the bottle is passed it springs in under the shoulder and can only be forced out by a direct 90 push on the thumb-piece.

To prevent the necessity of diverging the downwardly-extending portions so far that they will project beyond the sides of the top, and at the same time obtain a broad bearing 95 on the shoulder, the horizontal portion is preferably bent inward at the center, as shown in dotted lines Fig. 3. The cap-plate *d* of the stopper is of metal and cast or pressed directly around the catch-wire, an annular 100



screw-threaded projection F being formed on the under side either by extending the metal of the cap itself or by uniting thereto a screw-threaded ring of sheet metal. Into this

5 annular projection or ring the cork G is forced.

The annular ring is preferably quite thin and of about the same or slightly less diameter than the cork and mouth of the bottle in order that it may not come in contact with  
10 the latter when closed, the screw-threads being formed by bending the walls so as to form screw-threads on the outside as well as the inside, or else additional threads are formed on the outside in order to facilitate the ap-  
15 plication of and hold the stopper on the inside and the gasket of rubber on the outside, as will be readily understood.

For the purpose of insuring the proper sealing of the stopper, and to give a springy base,  
20 a ring of rubber H is placed around the projection and base of the cork, said ring having a downwardly-projecting flange h, which lies close to the cork, and is adapted to enter the mouth of the bottle, as will be readily under-  
25 stood.

In Fig. 2 a modified form of link or bail piece is shown, the eye in the lower portion with which the neck-wire engages being formed as formerly described, and those in  
30 the upper portion by forming apertures *i i* in the sheet-metal piece through which the ends of the catch-wire are inserted and bent up, as shown.

From the above it will be seen that I have  
35 produced a bottle-stopper and fastening of approved and simple form, one which can, when open, swing back close to the bottle, as shown in Fig. 2, and be grasped to prevent interference with the pouring operation.

40 It will be observed particularly that by carrying the catch-wire down on both sides of the top plate it forms a spring bearing on the top at the pivotal point and at the point where the horizontal portion engages the same dur-  
45 ing the closing operation, thus relieving the stopper of unnecessary strain, which would be caused were the bail-piece extended to a level with the top of the stopper and the catch connected thereto, as in such instance the stopper  
50 would necessarily be jammed against one side of the mouth as the catch passed the shoulder.

By employing cork as the lower extension of the stopper contact of the contained liquid and the rubber employed to form the seal is  
55 prevented.

In the modification, Fig. 7, the bail-piece is formed of wire with the two side links or por-  
60 tions *y y* and the connecting cross-piece *v*. The neck-wire is passed through the eyes at one end of the links, and the ends of the catch-wire through those at the opposite end.

Having thus described my invention, what I claim as new is—

1. In a bottle-stopper fastening, the combination, with the bottle having the abrupt shoul- 65 der, the neck-wire, and the link or bail piece pivotally connected thereto, of the stopper, the catch-wire connected thereto and having both its ends bent down and pivotally connected to the link or bail piece on one side of 70 the stopper, and having the diverging downwardly-extending portion on the opposite side of the stopper, with the horizontal portion for engaging the abrupt shoulder bent inward at the center, substantially as described. 75

2. In a bottle-stopper fastening, the combination, with the bottle having the abrupt shoul- der, the neck-wire, and the link or bail piece pivotally connected thereto, of the stopper, the catch-wire connected thereto and bent down 80 and pivotally connected to the bail-piece by both its ends on one side the stopper, and the diverging downwardly-extending portions on the opposite sides of the stopper, with the horizontal portion for engaging the abrupt shoul- 85 der bent inward at the center, and the thumb-piece at the center of such inwardly-bent portion, whereby the same is permitted to spring outward while being locked, substantially as described. 90

3. The combination, with the bottle, of the metal cap-plate having the depending annular extension screw-threaded on both sides, the stopper fitting within the extension, the rubber washer around the same co-operating 95 with the bottle-mouth to make a tight joint, and the catch-wire for retaining the stopper in position, substantially as described.

4. The combination, with the bottle, of the metal cap-plate having the depending annu- 100 lar extension screw-threaded on both sides, the stopper fitting within the extension, the rubber washer around the extension and having the downwardly-projecting annular flange extending over the edge of the extension on 105 the cap-plate and adapted to fit within the mouth of the bottle to make a tight joint, and the catch-wire for retaining the stopper in position, substantially as described.

5. In a bottle-stopper fastening, the combi- 110 nation, with the catch-wire and neck-wire, of the link or bail piece connecting the neck-wire and catch-wire formed of the single piece of wire bent into the two side links with the eyes at each end forming separated bearings, 115 as described, and the connecting-piece uniting said side links, substantially as and for the purpose set forth.

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