(No Model.)

J. M. LEWIN.

MANUFACTURE OF BOTTLE STOPPERS.

No. 304,740. Patented Sept. 9, 1884.

Fig. 1.

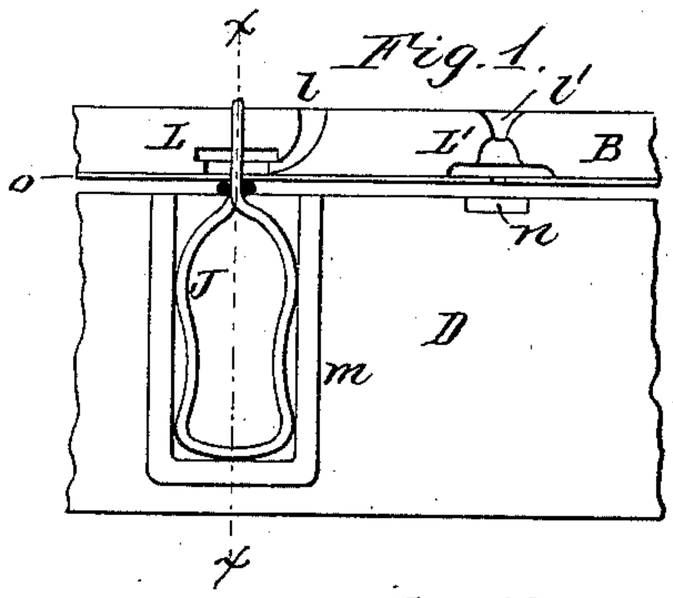


Fig. 2.

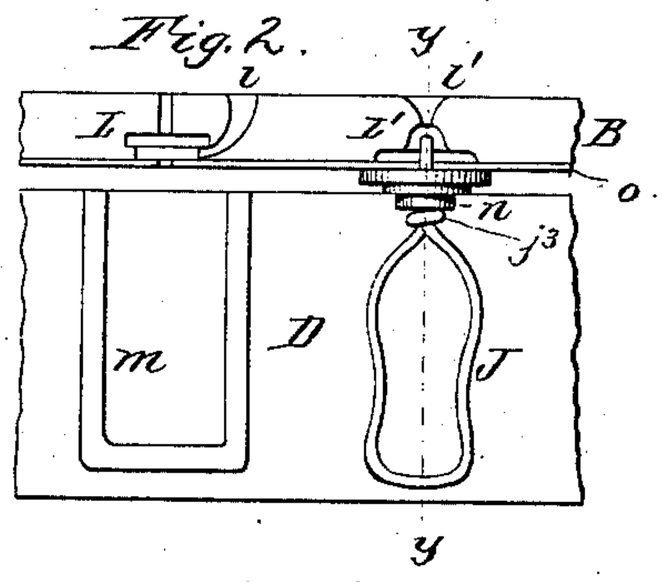


Fig. 3.

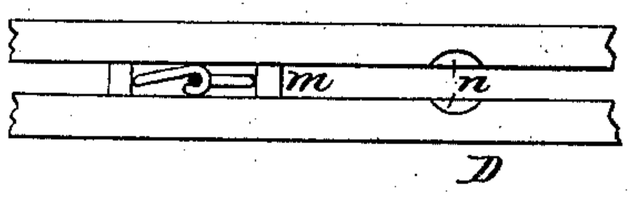


Fig. 4.

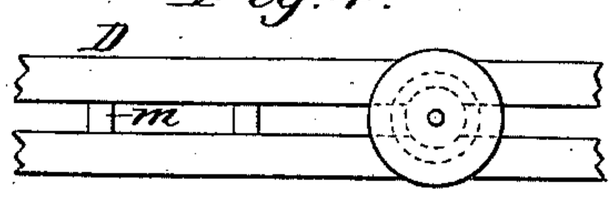


Fig. 5.

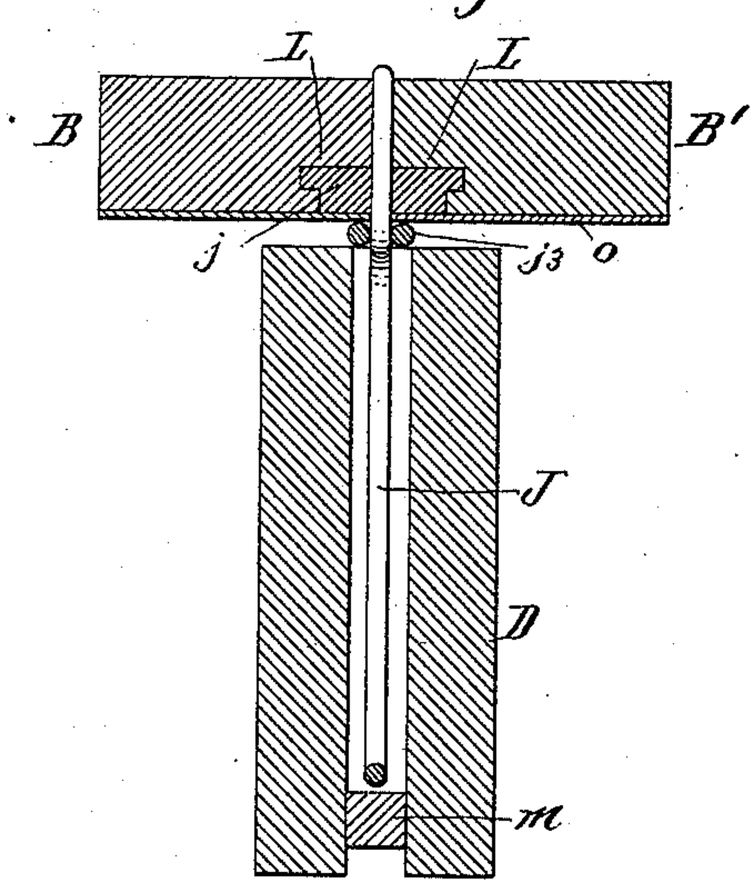
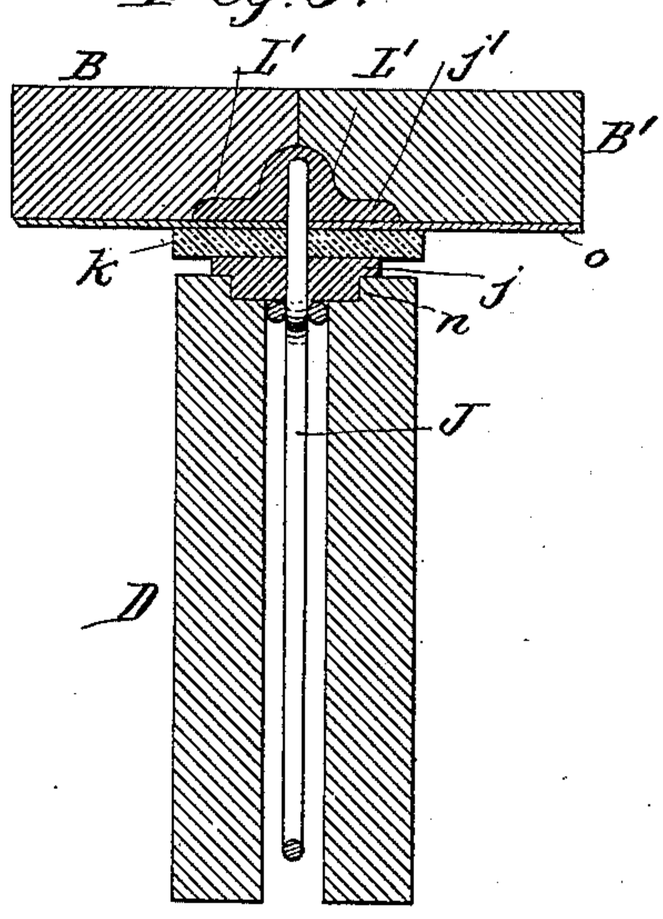


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOHN M. LEWIN, OF LOCKPORT, NEW YORK, ASSIGNOR OF ONE-HALF TO SAMUEL S. MUTTON, OF TORONTO, CANADA.

MANUFACTURE OF BOTTLE-STOPPERS.

SPECIFICATION forming part of Letters Patent No. 304,740, dated September 9, 1884.

Application filed November 20, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN M. LEWIN, of Lockport, in the county of Niagara and State of New York, have invented new and useful Improvements in the Manufacture of Bottle-Stoppers, of which the following is a specification.

This invention relates to the manufacture of bottle-stoppers in which the stopper is composed of a flexible disk constructed of rubber and secured between two metallic disks which are cast upon the end of a looped wire, which latter is designed to be seated in the neck of the bottle.

Previous to my invention the flexible disk has been secured between two metallic disks forming part of a grooved button, in which case the flexible disk is applied by drawing it over one of the metallic disks into the groove of the button. This manner of securing the flexible disk necessitates the forming of the latter with an opening of sufficient size to pass over one of the metallic disks, and the flexible disk is therefore liable to be stripped from the button. The flexible disk has also been secured by casting one of the metallic disks on the wire, then placing the flexible disk against this metallic disk, and securing the other metallic disk detachably or adjustably against the flexible disk. In this construction the two metallic disks and the flexible disk are liable to become loose or detached.

The object of my invention is to secure the flexible disk to the looped wire in a more secure and substantial manner than heretofore; and my invention consists, to that end, of the improved method of securing the flexible disk to the wire, as will be hereinafter fully set forth, and pointed out in the claim.

In the accompanying drawings, Figure 1 is a face view of the movable plate of the mold and wire-support whereby my method is carried out, the stopper being in position for casting the first or upper metallic disk. Fig. 2 is a similar view showing the stopper in position for casting the second or lower metallic disk. Fig. 3 is a top plan view of the wire-support, showing the wire in place and the stopper removed. Fig. 4 is a top plan view showing the stopper resting on the wire-support. Fig. 5 is a cross-section of the mold, wire-support, and stopper in line *x x*, Fig. 1, on an enlarged scale. Fig. 6 is a similar section in line *y y*, Fig. 2.

Like letters of reference denote like parts in the several figures.

J represents the looped wire of the stopper, and *j j'* the metallic disks cast on one end of the wire, and *k* the flexible disk secured on the wire between the metallic disks *j j'*. The metallic disk *j* is first cast on the end of the wire, the flexible disk *k* is then placed on the wire against the metallic disk *j*, and the second metallic disk, *j'*, is then cast on the wire on the opposite side of the flexible disk, whereby the latter is firmly secured to the wire. This is accomplished in the following manner: The faces of the two parts B B' of the mold are each provided with two sets of half-molds, L L', the molds L being shaped to form the first metallic disk, *j*, and the molds L' the second metallic disks, *j'*. The wire-support D is provided between the adjacent sides of its parallel parts with ribs *m*, which are adapted to support the looped wires underneath the molds L. The upper sides of the two parts of the wire-support D are provided underneath the molds L' with circular recesses *n*, which are adapted to support the first metallic disks, *j*, in casting the second metallic disks, *j'*. In order to cast the first metallic disk *j* on the wires, the mold is opened, and the wires are placed in an inverted position in the receptacle formed in the wire-support D by the ribs *m*. The wire-support is then moved toward the stationary part B of the mold until the upwardly-projecting ends of the wires are seated in the molds L in the face of the stationary part B. The movable part B' of the mold is then closed against the face of the stationary part B, and the wire-support D is raised until the bent portions of the wire *j* rest against the under sides of the thin plates *o*, which form the bottom of the mold and prevent the molten metal from coming in contact with the hook j^3, as represented in Fig. 1. The metal is then poured through channels *l*. When the first disks, *j*, have been so cast, the wire-support D is lowered and the mold is opened. The wires, with the first disks cast on the same, are then removed from the wire-support, and the flexible disks *k* are

placed on the wires against the disks *j*. The wires are then placed in the support D, with the disks *j* resting in the depressions *n*, when the mold is again closed, and the wire support D raised until the flexible disks *k* are compressed against the under sides of the thin plates *o*, which in this case prevent the molten metal from coming in contact with the flexible disks, as represented in Fig. 2, when the metal is poured through the channels *l'*, and the second disks, *j'*, are cast on the ends of the wires. This being accomplished, the mold is opened and the wire-support lowered. Upon removing the stoppers from the stationary part B in opening the mold, the compressed flexible disks *k* expand and completely fill the space between the two metallic disks *j j'*. Upon securing the flexible disks to the wires in this manner, the disks need be provided only with a small opening, just large enough to pass over the wire, and are securely held between the metallic disks and prevented from being stripped off.

I claim as my invention—

The method of securing the flexible disk to the wire which consists in casting one metallic disk onto the wire, then placing the flexible disk on the metallic disk and wire, and then casting the second metallic disk upon the wire while the flexible disk is compressed, substantially as set forth.

Witness my hand this 12th day of November, 1883.

JOHN M. LEWIN.

Witnesses:

E. COATSWORTH, Jr.,

THOS. A. EWALD.