(No Model.) 2 Sheets—Sheet 1.

J. D. MATTISON.

STOPPER LOCK FOR BOTTLES.

No. 291,920. Patented Jan. 15, 1884.

Fig. 1.

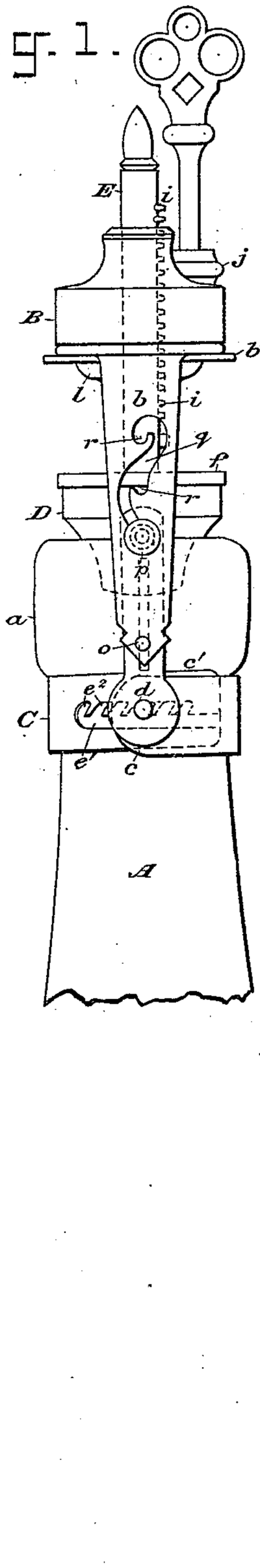


Fig. 2.

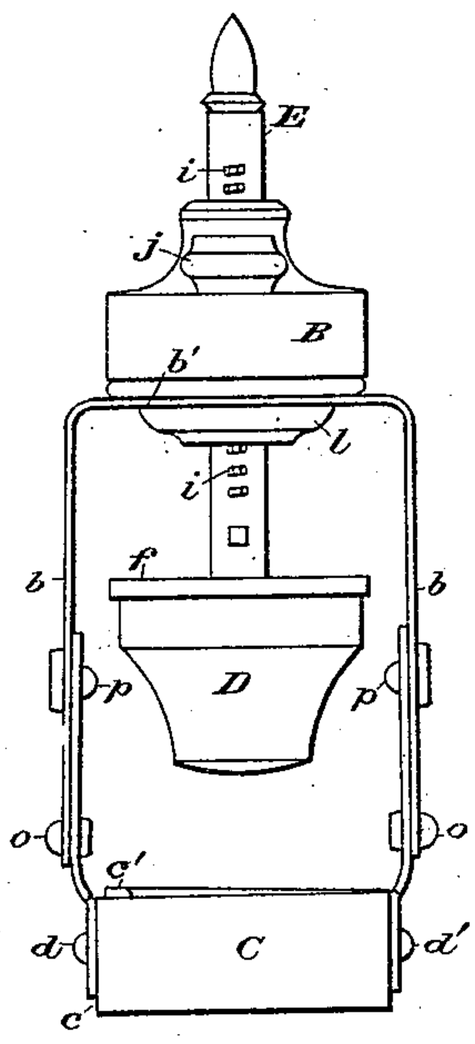


Fig. 3.

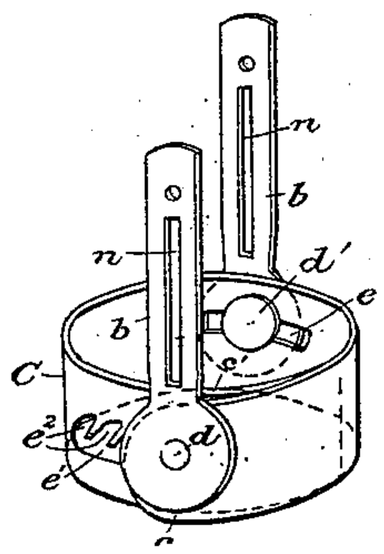


Fig. 4.

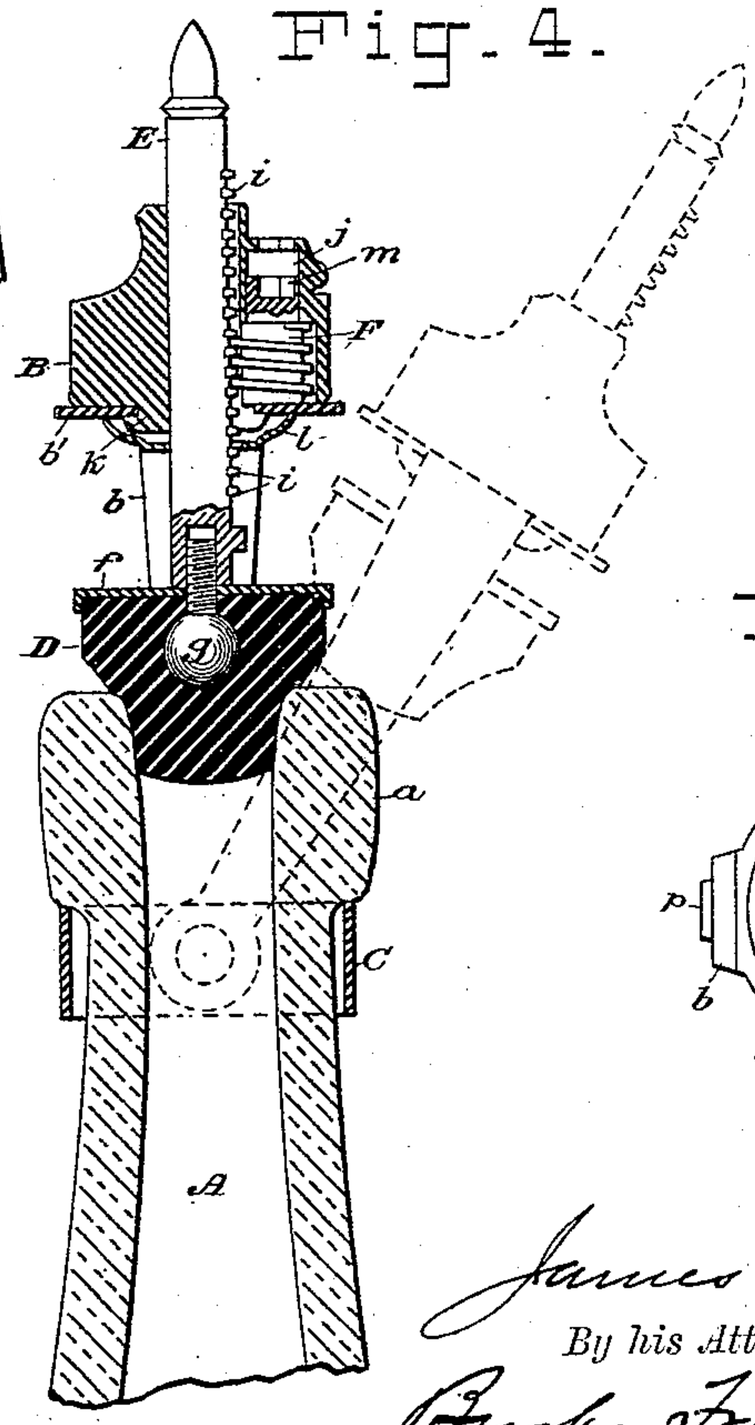
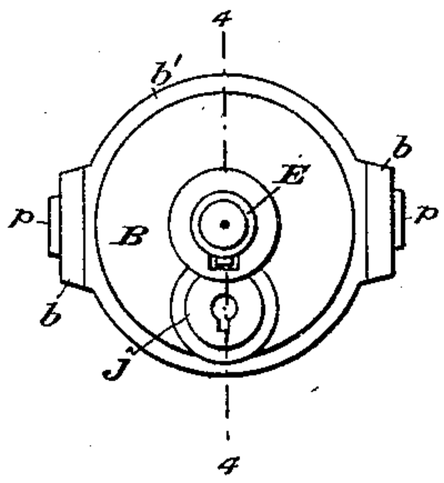


Fig. 5.



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(No Model.) 2 Sheets—Sheet 2.

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STOPPER LOCK FOR BOTTLES.

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Fig. 6.

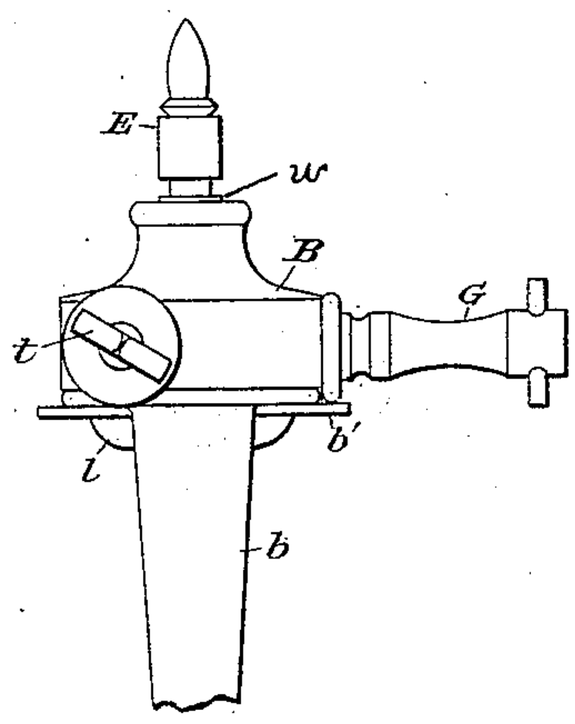


Fig. 7.

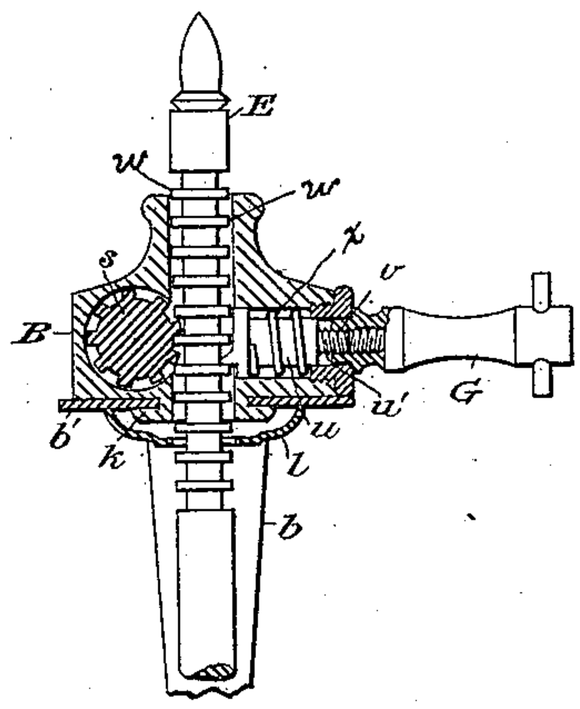
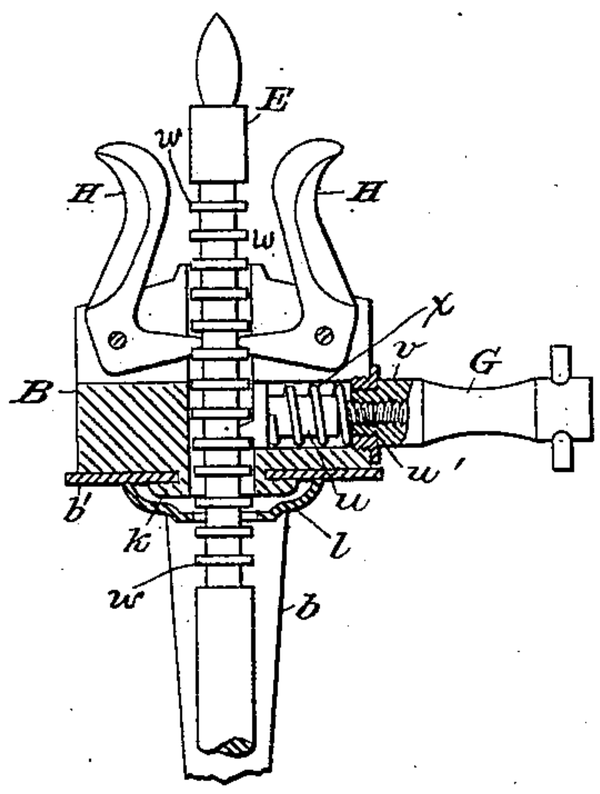


Fig. 8.



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UNITED STATES PATENT OFFICE.

JAMES D. MATTISON, OF NEW YORK, N. Y.

STOPPER-LOCK FOR BOTTLES.

SPECIFICATION forming part of Letters Patent No. 291,920, dated January 15, 1884.

Application filed June 13, 1883. (No model.)

To all whom it may concern:

Be it known that I, JAMES D. MATTISON, a citizen of the United States, and a resident of the city, county, and State of New York, have invented an Improved Stopper-Lock for Bottles, Demijohns, &c., of which the following is a specification.

My invention has for its object a means for locking the stopper in a bottle, so that it cannot be removed and the contents of the bottle abstracted by unauthorized persons. The essential features are the stopper and its stem, a lock through which the stopper-stem passes, and a bail and collar for securing the lock to the bottle.

In the drawings, which serve to illustrate my invention, Figure 1 is a side elevation of my stopper-lock, shown as applied to a bottle. Fig. 2 is a front elevation of the lock when not applied. Fig. 3 is a perspective view of the adjustable clamping-collar. Fig. 4 is a vertical mid-section on line 4 4 in Fig. 3, and Fig. 5 is a plan view. Figs. 6, 7, and 8 illustrate modifications, which will be hereinafter described.

A shows the neck of a bottle, and *a* the usual fillet at the mouth.

B represents the lock-case, to which are secured branches *b b*. Between the free ends of these is mounted an adjustable collar, C, preferably made from thin sheet-steel. One end, *c*, of this collar is pivotally secured to one of the branches *b* by a rivet or pin, *d*. A rivet or pin, *d'*, secures the collar to the other branch by passing through a slot, *e*, (see Fig. 3,) in same. The free end *c'* of the collar is provided with a long slot, *e'*, with numerous lateral recesses, e^2, in its upper side, some one of which is engaged by the rivet or pin *d* when the collar clasps the neck of the bottle, as in Fig. 1. The collar may be made larger or smaller, to suit the circumstances of the particular case, by causing *d* to engage different recesses e^2. The head of rivet *d* prevents the slotted end of the band from freeing itself entirely.

D is the stopper, which I prefer to make of rubber or other elastic material, and of the form best shown in Fig. 2. This stopper is provided with a cap-washer, *f*, and is secured to the end of a stem, E. I prefer to employ as an attachment for the stopper to the stem the means shown in Fig. 4—that is to say, I form a hollow or cavity in the stopper to receive a spherical or other enlargement, *g*, on the stem E. The elasticity of the rubber causes it to tightly embrace the said enlargement *g*, and the stopper can only be removed by the exercise of considerable force. In stoppers as ordinarily constructed of rubber and metal combined, the metal is generally exposed to the corrosive action of the contents of the bottle. My construction avoids this entirely. The enlarged part *g* may be made separate from the stem, and screwed or soldered into the latter after the washer *f* is in place. The stem E is provided with a row of cogs or teeth, *i i*, somewhat in the form of a rack, and with these teeth mesh the teeth of a screw, F, which rotates in a socket in the lock-case B. I construct the lock-case, by preference, as follows—that is to say, I cast it from metal and bore it out to receive the stem E and screw F, the latter recess opening out at the bottom of B. A key-socket or escutcheon, *j*, is formed at the top of B in the axis of the socket for screw F. Around the bore for the stem E, at the bottom of B, is formed a raised ring, *k*, and the plate *b'*, which connects the branches *b b*, has an aperture that embraces this ring. When *b'* is in place, the ring or fillet *k* is riveted down on it, so as to secure B and *b'* firmly together. *b'* thus forms a bottom for the socket, which receives screw F and keeps the latter in place. A cap, *l*, may be soldered on to cover all and form a finish, as shown. The screw F then simply fits snugly but rotatively in its socket, and it is provided with a suitable key-socket, *m*, to receive a key, G, for rotating it.

The operation is as follows: The collar C is relaxed or enlarged until it will pass over the fillet *a*, where it is reduced to fit and embrace the neck, as in Fig. 1. The key G is inserted into its socket and the screw F turned thereby. The engagement of the screw-threads with teeth *i* on stem E runs the latter down until the stopper D is firmly seated in the mouth of the bottle. The key is then removed, and the stopper can only be lifted by employing the key to turn screw F the opposite way.

When it is desired to get at the contents of the bottle, it is not necessary to remove the collar C. The stopper may be lifted high enough to clear the bottle, and then turned over to one side on the rivets or pins *d d'* as

pivots. This is indicated by dotted lines in Fig. 4.

I have simply referred to *b b* as branches that connect the case B with the collar C. In order to make these extensible, so as to suit bottles wherein the fillets *a* are of different widths, I prefer to make these each of two pieces, as best shown in Figs. 1 and 2, and connect them as represented—that is to say, the lower portion of the branch has a longitudinal slot, *n*, in which plays a rivet, *o*, in the upper portion, and a rivet, *p*, in the upper end of the lower portion engages a serpentine slot, *q*, in the upper portion, which has recessed bearings *r r* at intervals to engage *p*. When it is desired to vary the length of *b*, the rivet on pin *p* is made to engage one or the other of the recesses *r*. Fig. 1 shows *b* extended to its full length.

In Figs. 6 and 7, I have shown a modification, in which the stem E has a series of circumferential rings or ribs, W, divided by grooves, and in the case B is a pinion, *s*, which engages these ribs as the teeth of a rack. By rotating pinion *s* through crank or thumb-piece *t*, Fig. 6, the stopper is forced down. To lock it in place, I employ a spring-latch, *u*, which has a screw-threaded shank or tail, *u'*. This latch acts as a pawl in its engagement with the ribs on E, permitting the latter to be pushed down freely, but opposing any upward movement. To release E so that it may be lifted, I employ a key, G, with screw-threaded socket, and a shoulder, *v*. When this key is screwed on the shank of the latch until shoulder *v* engages case B, another turn or two will withdraw the latch and free it from E, when the latter may be lifted. A spring, *x*, embraces the shank of latch *u*, and tends normally to press its tip into engagement with the ribs or teeth *w* on E. The socket in which the latch plays may have a groove or keyway cut in its side to engage a projection or pin on the latch-head. This will prevent the latch from rotating. Other similar means may also be employed for this purpose.

Fig. 6 is an elevation, and Fig. 7 a vertical mid-section. All the lower parts are omitted in these views, as they may be constructed the same as the corresponding parts in the principal figures.

Fig. 8 is a sectional view illustrating another modification, in which two levers, H H, pivoted in the case B, take the place of the pinion *s* in some degree—that is to say, when these levers are thrown out or back, the rod E may be pushed down with the fingers until the stopper seats itself, and then the levers are brought into the position shown in the figure, their tips engaging the notches in E. By forcibly bringing together the upwardly-projecting ends of the levers the stem E may be depressed still farther until the latch engages the next rib. This will serve to close the stopper firmly in the mouth of the bottle. The levers H are only employed to apply the terminal pressure on the stopper.

I do not wish to limit myself to the precise construction shown, as this may be departed from to some extent without materially affecting my invention—as, for example, the screw F might be a conical worm with its axis set oblique to the axis of stem E, and the enlargement *g* might be formed on the stem E.

Having thus described my invention, I claim—

1. A stopper-lock for bottles, &c., comprising a collar to clasp the neck of the bottle and take under the fillet thereon, a lock-case connected with said collar, a stopper provided with a stem arranged to play through the lock-case, and means, substantially as described, located in the lock-case, for locking the said stem fast in the case, substantially as set forth.

2. A stopper-lock for bottles, &c., comprising a lock-case capable of being secured to the bottle, a stopper for closing the bottle, a stem secured to said stopper and arranged to play through the said lock-case, and means located in the lock-case for locking the stem in the said case when the stopper is seated, substantially as set forth.

3. A stopper-lock comprising a lock-case, substantially as shown and described, means, substantially as shown and described, for securing said case to the bottle or other receptacle, a stopper provided with a stem arranged to play through the lock-case, and means located in said case, substantially as described and shown, for locking the said stem fast in the case, substantially as set forth.

4. The combination, to form a stopper-lock, of a lock-case, B, provided with a screw, F, adapted to be rotated by a key, a collar to embrace the neck of the bottle or other receptacle, branches to connect the collar and the lock-case, and a stopper, D, provided with a stem, E, having teeth *i*, to engage the screw F, substantially as set forth.

5. The combination, with the lock-case and its screw F and branches *b*, of the adjustable collar C, constructed substantially as shown and described, and the stopper and its stem, all constructed and arranged to operate substantially as set forth.

6. The collar C of a stopper-lock, comprising a thin metal band with a slot, *e*, at its middle, and a slot, *e'*, with lateral recesses e^2, in combination with the branches *b b*, provided with pins or rivets *d* and *d'*, substantially as set forth.

7. The means for lengthening the branches *b*, which comprise the lower portion of *b*, provided with a slot, *n*, and rivet *p*, and the upper portion of *b*, provided with a slot, *q q*, with recessed bearings *r* and a rivet, *o*, substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JAMES D. MATTISON.

Witnesses:
HENRY CONNETT,
ARTHUR C. FRASER.