(No Model.)

H. TOLLNER.

LOCK.

No. 345,337. Patented July 13, 1886.

Fig: 1.

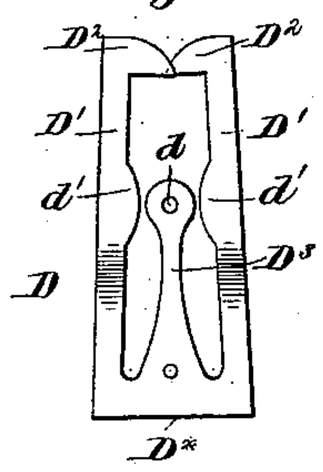


Fig: 2.

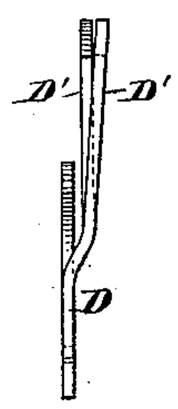


Fig: 3.

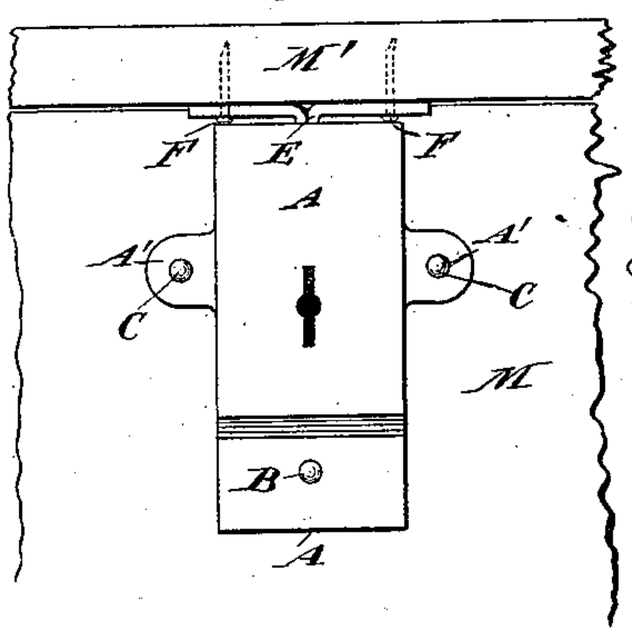


Fig: 4.

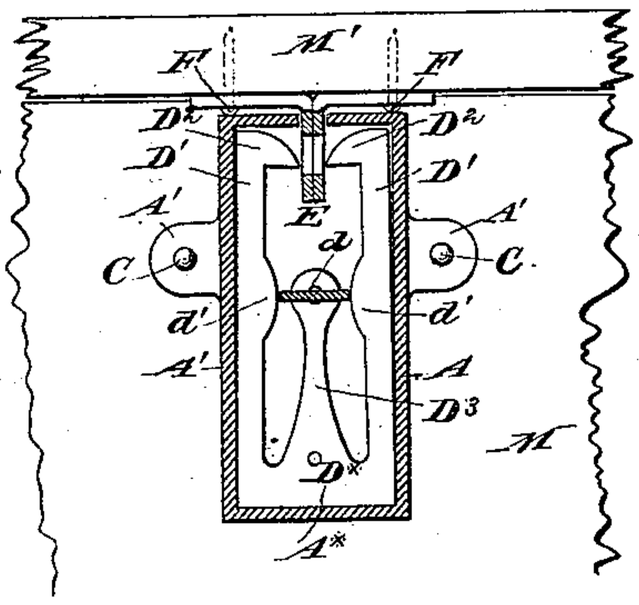
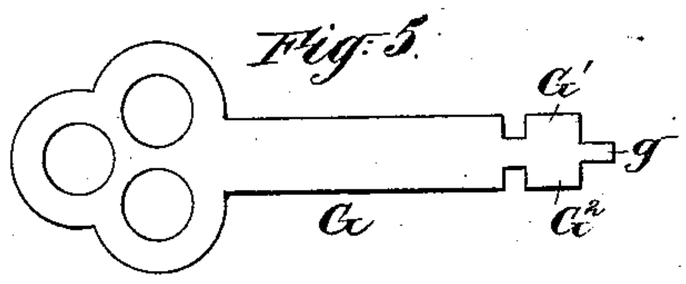


Fig: 5.



Witnesses:
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Manierre Ellison.

Inventor:
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by his attorney
Thomas Drew Stetson

UNITED STATES PATENT OFFICE.

HUGO TOLLNER, OF BROOKLYN, NEW YORK.

LOCK.

SPECIFICATION forming part of Letters Patent No. 345,337, dated July 13, 1886.

Application filed December 14, 1885. Serial No. 185,552. (No model.)

To all whom it may concern:

Be it known that I, HUGO TOLLNER, of Brooklyn, Kings county, in the State of New York, have invented certain new and useful Improvements in Locks, of which the following is a specification.

I have devised a construction of lock which is eminently cheap. It is a spring-lock adapted for toy boxes and small cases in general where great elaboration and strength are not required. The catch is in duplicate, engaging on two faces of the hasp. They are elastic and require no separate spring.

In what I esteem the most complete form of the invention the entire lock is in only two pieces of metal, the case being one, and the two catches and their operating-levers, as also a central arm which centers and steadies the key, being another single piece adapted to be formed by a single operation of suitable dies. There is no back plate required for the case. The fastening of the spring-catches to the case and to the box may be effected by one of the nails which secures said case to the box.

The accompanying drawings form a part of this specification, and represent what I consider the best means of carrying out the invention.

Figure 1 is a face view, and Fig. 2 an edge view, of a single piece of hard brass which constitutes the whole mechanism of the lock. Fig. 3 is a face view of the lock complete. Fig. 4 is a view of the interior with the key turned to effect the unlocking, and Fig. 5 represents the key detached.

Similar letters of reference indicate like or corresponding parts in all the figures where they occur.

M is a portion of the box on which the improved lock is applied.

A is the casing of the lock, certain portions being designated, when necessary, by additional marks, as A′. The main body of the casing is stamped so as to stand sufficiently off from the box. Fastening-nails C C are inserted through ears A′. All the operations of cutting and stamping may be effected at a single blow of a pair of suitable dies. The material should be soft iron or soft brass. I have in my experiments used the latter. The exterior may be nickel-plated or otherwise decorated. The other portion, which constitutes the levers, catches, and springs, must be of hard iron or steel or of a hard brass. I have in my experiments used the latter of a thickness about No. 24, Birmingham gage. I will designate this part entire by the letter D, appending additional marks, as D′ D^2, when necessary, to designate special parts thereof. The levers are spring-arms D′ D′, each having a good bearing-surface, *d′ d′*, on its inner edge, to receive the action of the key, as will presently appear. Each arm D′ is provided at its upper end with a hook or catch, D^2. The extreme top is beveled, as shown. The lower edge or base of the entire part D is straight, and matches firmly against a corresponding straight inner ledge or offset in the case A. These abutting surfaces are marked, respectively, A* and D*. They serve by their firm bearing one against the other to hold the entire part D against being tilted or inclined to the right or left. A central arm, D^3, formed of a portion of the metal lying between the levers D′ D′, performs an important function. It is punched to receive the nib or central pivot of the key, and to form a reliable center on which it may turn to effect the forcible springing apart of the levers D′ D′ to effect the unlocking.

E is the hasp, which may be a single piece of soft brass properly cut and bent and secured to the lid M′ of the box in the obvious manner by nails F. On closing the box the hasp acts on the beveled upper ends of D^2 to force them open. So soon as the hasp E is fully down the hooks D^2 engage in the hole formed therein, and the box is locked and remains locked until the key is introduced and partially turned.

G is the key, certain portions being designated, when necessary, by additional marks, G′ G^2. A pivot or nib, *g*, on the center of the end is received in the hole *d* in the central arm, D^3. There is a properly-shaped hole in the case A to receive the wings G′ G^2 of the key. So soon as the key is fully inserted and turned one-fourth of a revolution, the levers D′ D′ are forced apart by the action of the wings G′ G^2 on the surfaces *d′ d′*, and the hooks D^2 being thus disengaged, the lock is unlocked and the lid may be lifted. A nail, B, driven through a suita-

ble hole in the center of the base of the part D and through a corresponding hole in the casing A, secures the entire part D and also aids to secure said casing A to the box. The bending of the part D may be effected in the same dies which perform the cutting. It is important to bend the levers D′ D′ about as shown in Fig. 2, so as to allow the wings G′ G² of the key to engage these levers as they are turned.

Modifications may be made in the forms and proportions without departing from the principle or sacrificing the advantages of the invention.

Parts of the invention can be used without the whole.

I can rivet the part D to the part A instead of using the nail B, and depend upon the nails at C C to hold the whole to the box M. Such may be preferable in some cases; but I prefer as a superior economy utilizing a nail, B, to perform the double function described.

If the central arm, D³, is omitted, a hole in the box M may serve to steady the nib of the key; or the key may serve without any steadying other than its bearing in the key-hole in the casing A; but the bearing in the arm D³ may be obtained without any additional cost, and the arms or levers D′ D′ being bent forward, as shown, the central bearing contributes to very efficient and smooth working.

I have in my experiments made the lock about one inch long and a half-inch wide.

I claim as my invention—

1. The central bearing, D³ *d*, spring-levers D′ D′, with their bevel ends and hooks D² D² formed of a single piece or plate, and the levers being bent forward out of the plane of central bearing, so as to be operated by a key pivoted in the latter, as herein specified.

2. In a lock, the casing A, having an interior offset, A*, in combination with a single interior part, D, having a corresponding edge, D*, and with a fastening, B, adapted to secure the casing and spring together and both to the box, substantially as and for the purposes herein specified.

In testimony whereof I have hereunto set my hand, at New York city, New York, this 10th day of December, 1885, in the presence of two subscribing witnesses.

HUGO TOLLNER.

Witnesses:

THOMAS DREW STETSON,

CHARLES R. SEARLE.