(Model.)

E. T. STARR.

TRUNK LOCK.

No. 308,212. Patented Nov. 18, 1884.

Fig1.

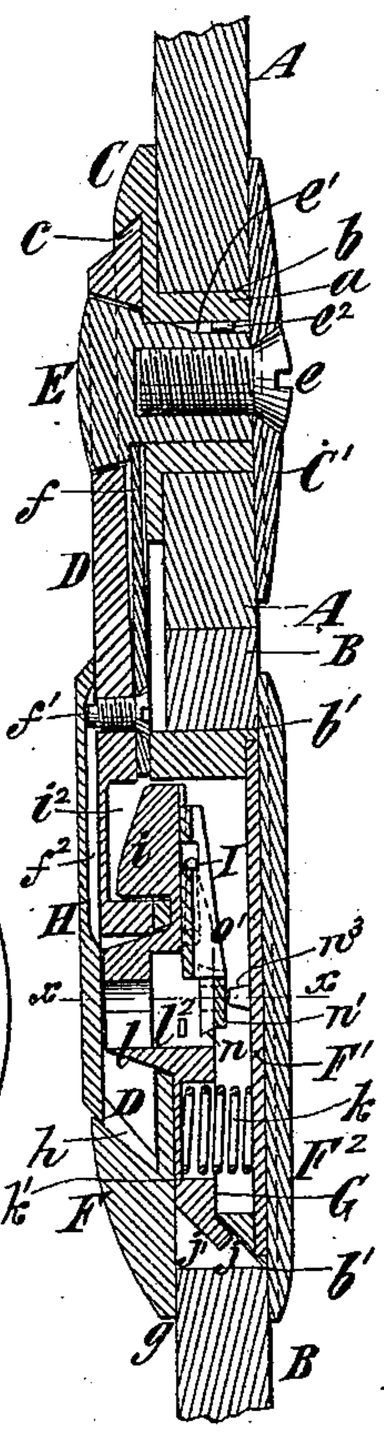


Fig2.

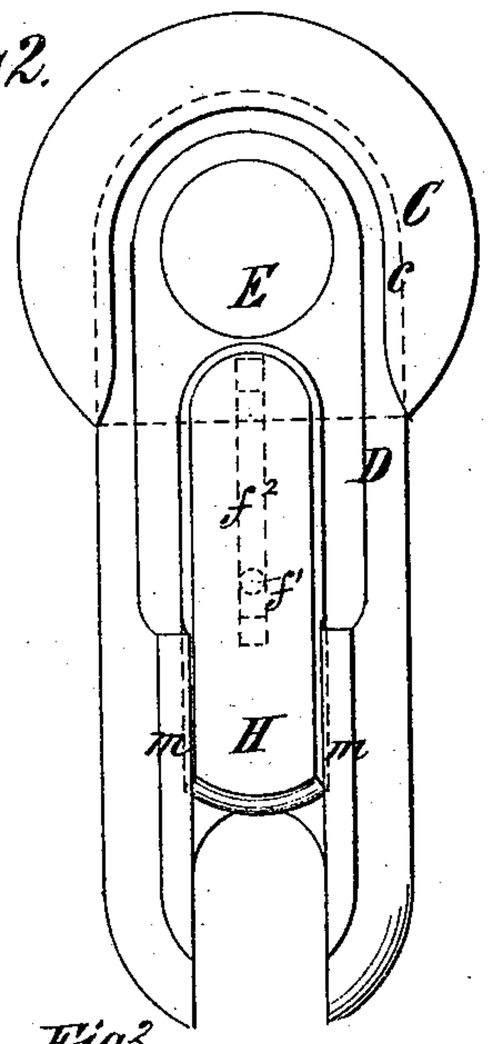


Fig4.

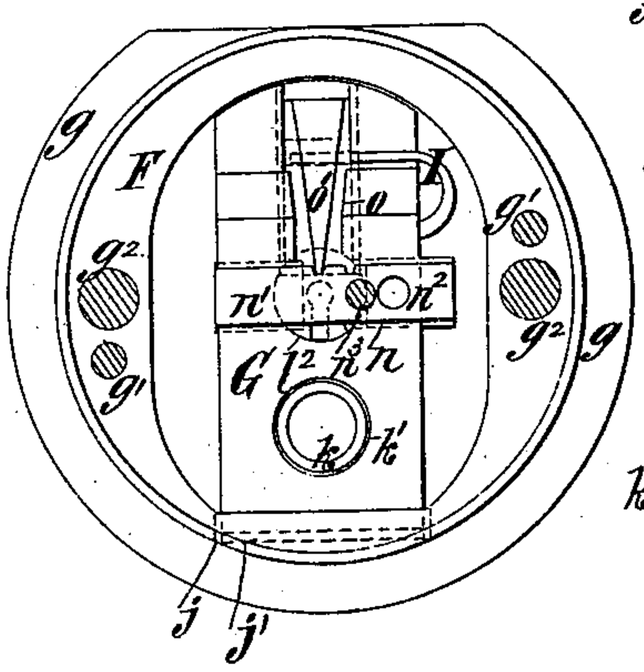


Fig3.

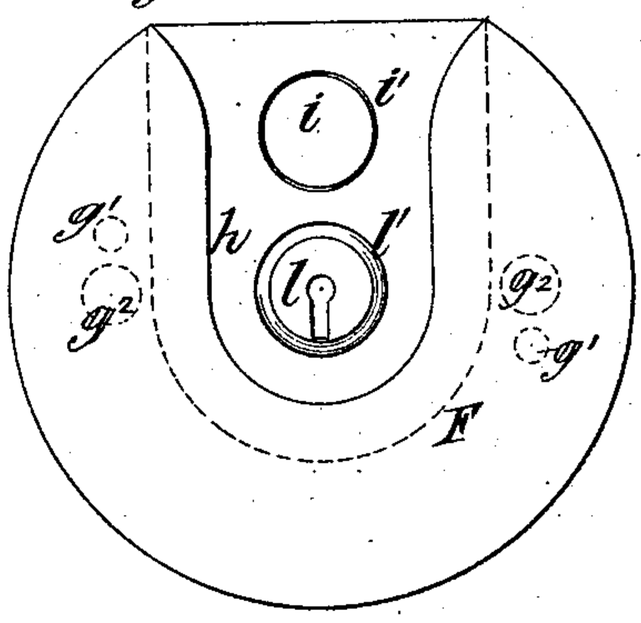
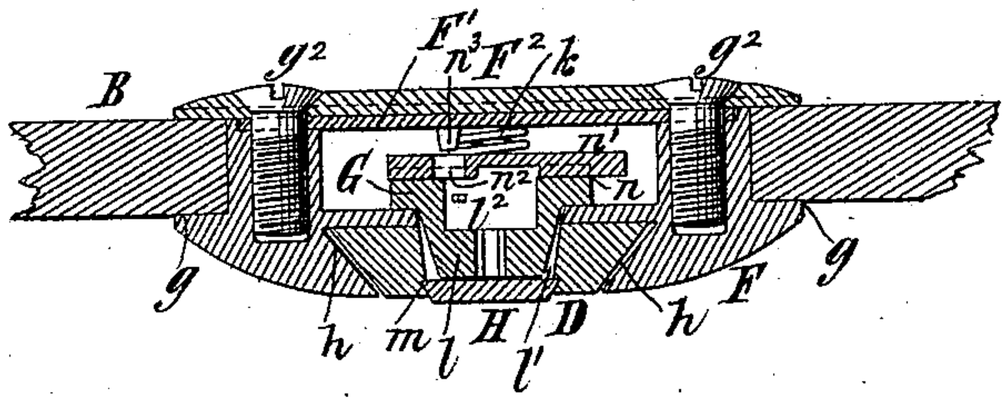


Fig5.



Witnesses:
Thos. Haynes
Ed. L. Moran

Inventor:
Edwin T. Starr
by his Attorneys
Brown & Brown

UNITED STATES PATENT OFFICE.

EBEN T. STARR, OF NEW YORK, N. Y.

TRUNK-LOCK.

SPECIFICATION forming part of Letters Patent No. 308,212, dated November 18, 1884.

Application filed July 31, 1883. (Model.)

To all whom it may concern:

Be it known that I, EBEN T. STARR, of the city and county of New York, in the State of New York, have invented a new and useful Improvement in Locks, of which the following is a specification.

My invention is particularly applicable to trunks, boxes, valises, and the like; and the object of the invention is to provide a very strong and secure lock, which may be secured by means accessible only from the interior of the trunk, box, or valise.

The lock consists, essentially, of a hasp-plate and hasp adapted to be secured to the lid or cover of the trunk or box, or to one of the parts to be secured together, and a lock-case and lock mechanism adapted to be secured to the body of the trunk or box, or to the other of the parts to be secured together.

The invention consists in a novel manner of securing the hasp-plate and lock-case to the lid or cover and body of the trunk or box, in a novel manner of securing the hasp to the hasp-plate, in a novel construction of the hasp and lock-case, and in a novel construction and manner of combining the locking devices which secure the hasp when locked, all of which features are hereinafter described, and referred to in the claims.

In the accompanying drawings, Figure 1 is a sectional view of the entire lock and portions of the parts which are secured together by it. Fig. 2 is a front view of the hasp and hasp-plate. Fig. 3 is a front view of the lock-case with its attached bolt. Fig. 4 is a rear view of the lock-case with the back plate removed so as to expose the locking mechanism; and Fig. 5 is a transverse section on the line *x x*, Fig. 1.

Similar letters of reference designate corresponding parts in all the figures.

A B designate the two parts which are to be secured together, and which may be respectively the lid or cover and the body of a trunk, valise, or box. The hasp and hasp-plate are attached to the lid or cover A, and the lock-case is attached to the body B.

C designates the hasp-plate, which, as represented, overlaps the front of the lid or cover A, and has a hub or cylindric portion, *a*, which fits an opening, *b*, in the lid or cover. In the front of the hasp-plate C is a recess, *c*, here shown as undercut or dovetailed at the edges; and D designates the hasp, which fits in said recess and has similarly dovetailed edges. The edges of both the recess *c* and hasp D might be square instead of dovetailed.

The hasp D is secured to the hasp-plate C by a pivot bolt or pin, E, here shown as having a conical head fitting a correspondingly conical hole in the hasp, and extending through the hasp-plate. At the back or inside of the lid or cover A is a back plate, C′; and *e* designates a screw which passes through the back of the plate C′ and screws into the end of the pivot bolt or pin E. Hence it will be seen that the pivot bolt or pin E and the screw *e* secure the hasp to the hasp-plate and the latter to the lid A. This means of securing is very advantageous because of its strength, and because, the screw *e* being accessible only from the interior of the lid or cover, the hasp or hasp-plate cannot be surreptitiously removed.

When the hasp-plate is secured, the pin or bolt E bears at its inner end against the back plate C′, and as the hole in the hasp D is slightly larger than the head of the said pin or bolt, play is afforded between the two, as shown in Fig. 1, and the hasp may shift slightly in a lateral direction to engage with the lock-case. Because of the play between the hasp and the head of the pin or bolt E, the hasp would be liable to rattle, and to prevent this I may secure on the inner side of the hasp a spring, *f*, the upper end of which bears against the head of the bolt E, and is deflected inward when the screw *e* is tightened, as shown in Fig. 1. The pressure of this spring upon the bolt-head prevents the hasp from rattling.

In order to prevent the pin or bolt E from turning when the screw *e* is inserted or removed, I provide the said pin or bolt with a groove, *e′*, which engages a projection, e^2, in the hole in the hasp-plate, as shown in Fig. 1.

F designates the lock-case, which is here shown as of circular form. It fits in an opening, *b′*, in the body B, and has a flange, *g*, which overlaps the exterior of said body. It is closed at the back by a plate, F′, which may be secured by screws *g′*, and is clamped to the body by a plate, F^2, which overlaps the interior of the body, and is secured to the case by

screws g^2. Hence it will be seen that the means which secure the lock-case are accessible only from the interior of the body, and cannot be tampered with from the exterior.

In the front of the lock-case F is a recess, *h*, the edges of which are preferably dovetailed, and the hasp D, with its dovetailed edges, enters this recess when the lid or cover A is closed. Even if the lock-case and the hasp are not exactly in a vertical line, the hasp will readily enter the recess *h* when the lid or cover A is closed, because the end of the hasp is taper or rounded, and because the hasp can turn slightly on its securing pin or bolt E, as before described. The hasp-plate C and lock-case F can both turn in the parts to which they are secured to adapt themselves to the position of the hasp. When the hasp enters the recess *h* in the lock-case, it has a long bearing therein, and the lid is prevented from shifting backward or forward or toward either side relative to the body. Hence the hinges which secure the lid or cover to the body are relieved of injurious strains. In the recessed back of the lock-case F is secured a locking-bolt of novel construction. It consists of a bolt-plate, G, which is hinged at one end in the lock-case, and has near the other end a bolt projection, *i*, working through a hole, *i'*, in the back of the recess *h*, and adapted to engage with a cavity, i^2, in the hasp. The plate G might be hinged in the lock-case by a pintle or rod; but as here shown the lock-case has a slot or opening, *j*, in one edge, and the end of the plate enters this slot or opening and has an angular lip, *j'*, which forms the hinge-point. In lieu of being hinged, the plate G might be so fitted in the lock-case as to be capable of a bodily sliding movement forward and backward. When hinged, the plate G can swing back at the upper end only. When not pushed back, the plate G is held in its forward position, with the projection *i* presented through the back of the recess *h*, as shown in Fig. 1, by a spring, *k*, one end of which enters a cavity, *k'*, in the plate, and the other end of which bears against the back plate F' of the lock-case.

In lieu of a spiral spring, a spring applied in any other way may be used for a like purpose.

The bolt-plate G has a hub or boss, *l*, to receive a key, and which projects through an opening, *l'*, into the recess *h*.

The hasp D is bifurcated or forked at the lower end, as shown in Fig. 2, and when it enters the recess it straddles the hub or boss *l*; hence the hasp has a longer bearing on the lock-case than it otherwise would have.

As shown in Fig. 1, the front of the bolt projection *i* is inclined, and when the hasp enters the recess *h* it pushes the projection and the plate G inward until the cavity i^2 is opposite the projection, whereupon the latter moves outward and engages with the cavity. The hasp is released by pressing the finger on the hub or boss *l* to move the bolt-plate and projection G *i* inward, and hence, when not used as a lock, the parts form a snap-catch for a valise or trunk.

H designates a guard, which slides in a dovetailed slideway, *m*, on the front of the hasp, and which may be slid up to expose the hub or boss *l*, or down to cover the same, as shown in Fig. 1. The same screw, *f'*, which secures the spring *f* to the hasp D, enters a groove, f^2, in the guard H, as shown in Figs. 1 and 2, and limits its upward and downward movements. In the back of the bolt-plate G are two dovetailed slideways, *n o*, which are at right angles to each other. The slideway *n* has fitted to it a slide or tumbler, *n'*, which works across the bolt-plate, and in the slideway *o* is fitted a stop, *o'*, which works upward and downward on said plate, so as to cause its point to engage with or withdraw from notches in the edge of the slide or tumbler *n'*. These parts are shown clearly in Fig. 4.

I designates a U-shaped spring, one end of which is fast in the bolt-plate G, and the other end of which engages with the stop *o'*, and, the slideways *n o* being dovetailed, this spring holds both the tumbler and stop *n' o'* in the plate G. In the slide or tumbler *n'* is a hole or cavity, n^2, and on the back plate F' is a pin, n^3. (Best shown in Figs. 1 and 5.) This pin is also shown in Fig. 4 to show its relation to the hole n^2 in the slide or tumbler *n'*, although in said figure the back plate, F', is removed. A key inserted through the hub or boss *l* enters the cavity l^2 in the plate G, which accommodates the wards of the key and raises the stop *o'* to disengage it from one of the notches of the slide or tumbler *n'*, and then shifts the slide or tumbler so as to bring the hole n^2 opposite to the pin n^3, or to carry the said hole away from a position opposite said pin. When the slide or tumbler *n'* is moved to bring the hole n^2 opposite the pin n^3, as shown in Fig. 5, the trunk is unlocked and the bolt-plate G may be pushed in to withdraw the bolt projection *i* from the cavity i^2 in the hasp; but when the slide or tumbler is shifted into the position shown in Fig. 4 the pin is not opposite the hole and the bolt-plate cannot be pushed inward because of the solid metal of the slide or tumbler *n'* striking against the said pin n^3; hence the said pin forms an abutment to prevent the inward movement of the bolt-plate G, and thus locks the latter against movement.

Obviously the pin n^3 and hole n^2 might be reversed in position, the pin being on the side or tumbler *n'*, and the hole being in the back plate F'; or an abutment of any other form might be employed to prevent the inward movement of the bolt-plate G when the slide or tumbler *n'* is moved into a locking position.

The several parts of the lock may be made of cast-iron, malleable iron, or steel, or of other metal.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with a hasp-plate hav-

ing a recess in its face and a pin or pivot extending through it and secured at the back of the plate, of a hasp fitting in said recess and receiving said pin or pivot through it, substantially as described.

2. The combination of the hasp-plate C, provided with the undercut or dovetailed recess *c* in its face, the hasp D, the edges of which are dovetailed to fit said recess, and the pivot pin or bolt E, extending through the said plate and hasp, substantially as described.

3. The combination of the lid or cover A, the hasp-plate C, overlapping said lid or cover at the front, and provided with the recess *c*, the back plate C′, overlapping said lid or cover at the back, the hasp D, fitting said recess *c*, the pin or bolt E, fitting a seat in said hasp and bearing against said back plate, and the screw *e*, securing the hasp to the hasp-plate and the hasp-plate to said lid or cover, substantially as described.

4. The combination, with a hasp-plate and hasp, of a lock-case provided on its front with a recess to receive the hasp, and a locking-bolt in said case movable toward and from the back of the hasp and engaging with a cavity therein, substantially as described.

5. The combination, with the lock-case F, having the dovetailed open recess *h* at its front, of the locking-bolt consisting of a plate, G, arranged in the back of said case and having the projection *i*, movable inward and outward through the back of the recess *h*, and the hasp D, dovetailed correspondingly to said recess *h*, and having in its back the cavity i^2, to receive said bolt projection *i*, substantially as herein described.

6. The combination of the lock-case F, having the recess *h* in its front, the bolt consisting of the plate G, provided with the projection *i*, and with the hub or boss *l*, for the reception of a key, both said projection and hub or boss extending through the back of said recess, and the hasp D, provided with the cavity i^2 to receive said projection *i*, and bifurcated at the lower end to straddle the hub or boss *l*, substantially as described.

7. The combination, with a lock-case and a bolt consisting of a plate which is provided with a projection extending through the front of the case, and which is movable backward and forward in the case to lock and unlock, of a tumbler carried by and movable in the back of said bolt-plate, and an abutment at the back of the case, which prevents the backward movement of said bolt-plate when said tumbler is moved to a locking position, substantially as herein described.

8. The combination, with the lock-case F and the bolt, consisting of the plate G, with its projection *i*, of the back plate F′ and the tumbler *n*′, one of said parts being provided with a pin or abutment and the other with a recess or cavity, which, when the tumbler is shifted to unlock, will receive said pin or abutment and permit the backward movement of said bolt-plate G, substantially as described.

9. The combination, with the lock-case F and the bolt, consisting of the plate G, with its projection *i*, of the back plate F′ and the sliding tumbler *n*′, one of said parts being provided with a pin or abutment and the other with a recess or cavity, which, when the tumbler is shifted to unlock, will receive said pin or abutment and permit the backward movement of said bolt-plate G, and the sliding stop *o*′, fitted in said bolt-plate, and serving to retain the tumbler in its locking and unlocking positions, substantially as herein described.

10. The combination, with the bolt-plate G, provided with the projection *i*, of the dovetailed tumbler *n*′, fitting a dovetailed slideway in the said bolt-plate, the dovetailed stop *o*′, fitting another dovetailed slideway in said bolt-plate, and the U-shaped spring I, one end of which is inserted in said bolt-plate and the other in said stop, and which serves to impel said stop into engagement with notches in said tumbler, substantially as herein described.

11. The combination, with a lock-case having in its front a dovetailed or rabbeted recess, of a hasp having its edges dovetailed or rabbeted to fit said recess, and a locking-bolt for said hasp, substantially as described.

EBEN T. STARR.

Witnesses:
FREDK. HAYNES,
ED. L. MORAN.