

(No Model.)

H. TRACY & H. NOBLE.
LOCK.

No. 507,188.

Patented Oct. 24, 1893.

Fig. 1.

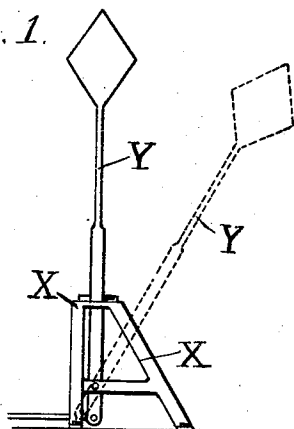


Fig. 2.

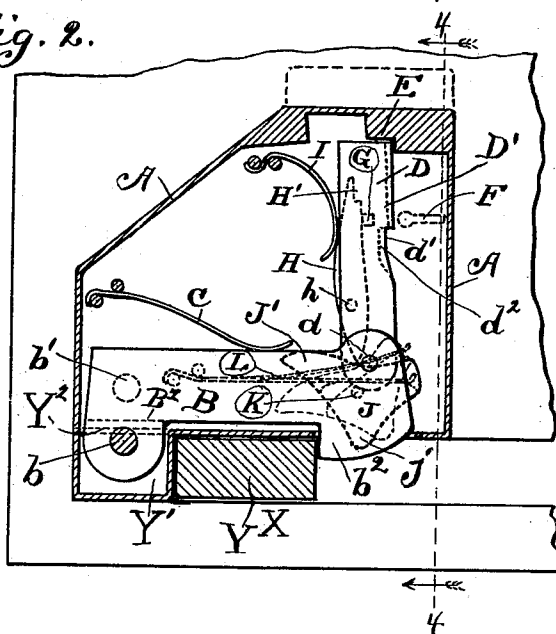


Fig. 3.

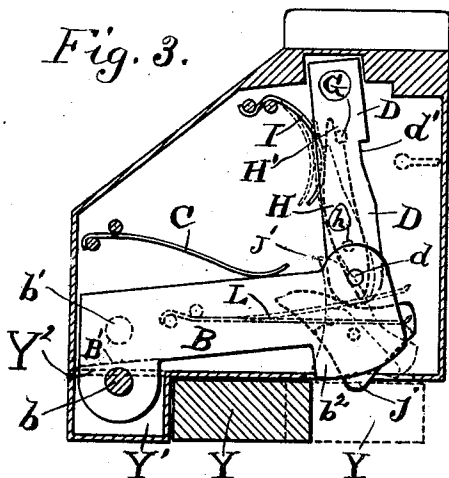


Fig. 4.

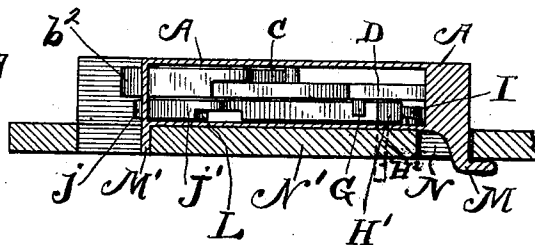
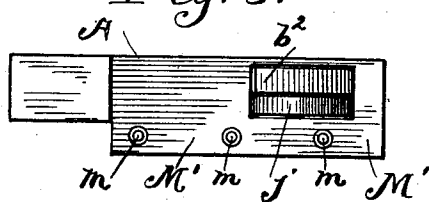


Fig. 5.



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UNITED STATES PATENT OFFICE.

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LOCK.

SPECIFICATION forming part of Letters Patent No. 507,188, dated October 24, 1893.

'Original application filed August 20, 1892, Serial No. 443,631. Divided and this application filed February 24, 1893. Serial No. 463,525. (No model.)

To all whom it may concern:

Be it known that we, HENRY TRACY, a resident of Chicago, in the county of Cook, and HIRAM NOBLE, a resident of Fulton, in the county of Whiteside, State of Illinois, have jointly invented certain new and useful Improvements in Locks, of which the following, when taken in connection with the drawings accompanying and forming a part hereof, is a full and complete specification, sufficient to enable those skilled in the art to which it appertains to understand, make, and use the same.

Our invention relates to locks adapted particularly for use with railroad switches, and is designed to be specifically employed with that class of railroad switches wherein the switch lever, after the passage of a train over the switch, automatically returns to its initial position; and the object of our invention is to obtain a lock the locking bolt whereof can be retracted by a key and in no other way; while at the same time if the thing designed to be locked by the locking bolt is brought adjacent to the lock and into its determined position in relation to the lock, it will be automatically locked by such locking bolt. In order to accomplish this object we have found it necessary to construct a lock, the locking bolt whereof will when retracted by a key, maintain such retracted position as the lock and the thing locked thereby are separated; while when such lock and the thing designed to be locked thereby are brought together such retracted locking bolt will be released automatically and will return to an extended and locking position.

In the joint application now pending for a patent for our invention consisting of improvements in self-closing and self-locking switches, Serial No. 443,631, of which this application is a division, a switch stand of the character hereinbefore referred to, whereof the switch lever is automatically returned to its initial position after the passage of a train over the switch, is illustrated and described and the manner of attaching such lock to such a switch stand is also therein illustrated.

We have illustrated our invention by the drawings accompanying and forming a part hereof, in which—

Figure 1, is a side elevation of a switch

stand and of the switch lever thereof, such lever being locked in position by a lock embodying our present invention, with such switch lever indicated by dotted lines in an unlocked and open position; Fig. 2, a plan view of the lock embodying our invention with the top plate thereof removed so as to show the working parts of the device, and a horizontal, sectional view of a switch lever locked in place by the locking bolt of the device; Fig. 3, a plan view of the lock with the plate thereof removed showing the several parts of the lock in an unlocked position; Fig. 4, a sectional view on line 4—4 of Fig. 2, viewed in the direction indicated by the arrows, and Fig. 5, an end elevation of the lock showing the locking bolt and the pivoted lever thereunder, by means of which the locking bolt is automatically unlocked from a retracted position in the manner hereinafter described.

The same letters of reference are used to indicate similar parts where more than one view thereof is shown.

X, is a switch stand.

Y, is a switch lever.

A, is the casing of a lock embodying our invention.

B, is the locking bolt of the lock fulcrumed on pivot *b* in the casing A.

b', indicated by dotted lines, is a pivot on which locking bolt B can be fulcrumed, if desired, as when with part of the casing lettered Y' of the lock is cut away on the dotted lines Y², and the locking bolt B cut away on line B'.

*b*², is the end of the locking bolt B, serving as a lock.

C, is a spring tending to hold bolt B in a locked position, that is to say, the position illustrated in Fig. 2.

D, is a retracting bar secured to the locking bolt B by pin *d* and abutting at the other end thereof against abutment E.

F, is a key-hole in the casing A, through which a suitably constructed key is inserted to engage with notch *d'* on retracting bar D in order to move such retracting bar from engagement with abutment E and to retract it together with the locking bolt B from the position in which they are illustrated in Fig. 2 to about the position illustrated in Fig. 3, thereby retracting the locking bolt B and unlocking the switch lever Y. More than one

retracting bar D can be used, and thereby such retracting bars may perform the ordinary functions of tumblers in locks and in Fig. 2, we have indicated by the dotted line D' one edge of a second retracting bar and by the dotted line d^2 the notch in such second retracting bar.

G, is an abutment on the retracting bar D; and H, is a lever fulcrumed on pivot h in casing A, such lever H, having step H' thereon adapted to engage with abutment G, in the manner illustrated in Fig. 3, when the retracting bar D is in position, as there illustrated, to maintain the locking bar B from the locking position thereof and to hold the retracting bar D and the locking bolt B in a retracted or unlocked position.

H², Fig. 4, is a handle which may, if desired, be placed on the lever H to extend through and hold in the casing A, and thereby afford means for releasing such lever H from engagement with abutment G by hand, whenever desired. Where this lock is constructed as a switch lock we do not ordinarily place on the lever H this handle H'.

I, is a spring secured in casing A so that one end thereof shall abut against the lever H and yieldingly hold such lever against abutment G on the retracting bar D. By this means when the retracting bar D and locking bolt B are retracted, that is, when such parts B, D, are brought into an unlocked position as illustrated in Fig. 3, lever H will be automatically forced by the spring I into the position, also illustrated in Fig. 3, wherein stop H' will engage with abutment G and maintain the retracting bar D and locking bolt B in an unlocked position, that is, in the position illustrated in Fig. 3.

The switch lever Y can, when locking bolt B is in the retracted position in which it is illustrated in Fig. 3 of the drawings, be moved, as toward the right, in the locked position in which it is illustrated in Figs. 1 and 2 of the drawings.

The hereinbefore described lever H locking the retracting bar D and locking bolt B in a retracted position is designed by us to maintain such position so holding the retracting bar D and locking bolt B in an unlocked position while the switch lever Y is being moved from its initial and unlocked position to, say, the position indicated by dotted lines in Fig. 1, and to maintain such retracting bar D and locking bolt B in such unlocked position until the switch lever Y is returned to its initial position when it is by us intended that such retracting bar D shall be automatically released from its retracted position and the locking bolt B thereupon shall resume its initial and locking position as illustrated in Fig. 2 of the drawings. To accomplish this purpose we provide the movable tripping lever J, fulcrumed on pivot K to the case A of the lock.

L, is a spring in casing A pressing against abutment J' on the movable tripping lever

J, and yieldingly holding such movable tripping lever in position so that the point j thereof extends through and beyond the casing of the lock, as is well illustrated in Fig. 3 of the drawings. By inspection of such tripping lever J in Figs. 2 and 3 of the drawings it will be seen that when the part or portion j thereof extending beyond the casing is moved to the right, as by the movement of the switch lever Y to the right, the end or part of such tripping lever lettered J' is moved to the left or away from the movable lever H, but when the point j of the tripping lever J is moved to the left, that is, when such tripping lever J is turned around fulcrum K in the direction in which the hands of a clock are turned, as by the switch lever I returning to its initial position, arm J' of the tripping lever J will move against the end of the lever H adjacent thereto, and will turn such lever on its fulcrum h , (see Fig. 3,) and thereby move or turn step H' away from engagement with abutment G on retracting bar D, and at such time the spring C pressing against the locking bolt B will tend to return such locking bolt, together with the retracting bar D, to its initial position: that is, the position in which such locking bolt B and retracting bar D are illustrated in Figs. 2 and 4 of the drawings. The tendency of the spring C to return locking bolt B and retracting bar D to their initial positions will be of course defeated so long as the switch lever Y is in front of the part b^2 of the locking bolt B (in the manner indicated by dotted lines in Fig. 3), but when such switch lever has regained its initial position (as illustrated by the full lines in Fig. 3), such spring C can and will return the locking bolt B and retracting bar D to their initial positions, thereby automatically locking such switch lever in place.

M is a projection on casing A extending into opening N in the top N' of the switch stand X and M' is also a projection of casing A of the lock, such projection M' having holes therein through which the bolts, screws or nails m, m, m , can be inserted to secure the lock in place on the switch stand. We do not mean, however, to confine ourselves to this manner of securing the lock to the switch stand or other object, as the lock can be inserted in a mortise in the ordinary way.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a lock, the combination of a spring actuated locking bolt, retracting bars attached thereto serving as tumblers, an abutment against which the retracting bars abut when the locking bar is in its forward position, and to one side of which they are moved by the key of the lock before the locking bar is retracted thereby in unlocking the lock, an abutment on one of the retracting bars and a spring actuated movable lever adapted to engage with the abutment on the retracting bar and maintain such retracting bar and the

locking bar in a retracted position, substantially as described.

2. In a lock, the combination of the spring actuated locking bolt, a retracting bar attached thereto, a notch in the retracting bar, such notch being adapted to receive the ward of a key inserted through the casing of the lock, as such key is turned, and to be moved to one side and to be retracted by the key, an abutment against which the retracting bar abuts when the locking bar is in its locking position, a stop on the retracting bar, a movable lever adapted to engage with the stop on the retracting bar, a spring yieldingly holding the movable lever against the stop and a tripping bar fulcrumed in the casing of the lock adapted to yieldingly extend beyond the casing of the lock and to trip the movable lever when turned in one direction, but not to trip it when turned in the other direction; substantially as described.

3. A lock consisting of a movable locking bolt fulcrumed within and adapted to extend beyond the casing of the lock or to be retracted within the same, a spring holding such locking bolt yieldingly in an engaging position, a retracting bar secured to the locking bolt, a key notch in the retracting bar and a stop on the retracting bar, an abutment against which, one end of the retracting bar abuts, a movable lever yieldingly held against the stop on the retracting bar and

adapted when such bar is retracted to engage with such stop and maintain the bar and the locking bolt in a retracted position, a tripping lever fulcrumed within the case, and a spring yieldingly holding the tripping lever so that the same extends beyond the casing of the lock, such tripping lever being adapted to actuate the movable lever connecting with the stop on the retracting bar when moved in one direction on its fulcrum and not to actuate such lever when moved in the other direction; substantially as described.

4. In a lock, the combination of a locking bolt, means for holding the locking bolt in an extended position, a removable key adapted to engage with and release the locking bolt from its locked extended position and to retract the same, means for locking the bolt in its retracted position, and a lever extending beyond the casing of the lock and adapted when moved in one direction to release the locking bolt from its locked retracted position, and when moved in the other direction not to release such locking bolt from its locked retracted position; substantially as described.

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