

(No Model.)

J. ROCHE.
LOCK.

No. 399,083.

Patented Mar. 5, 1889.

Fig. 1

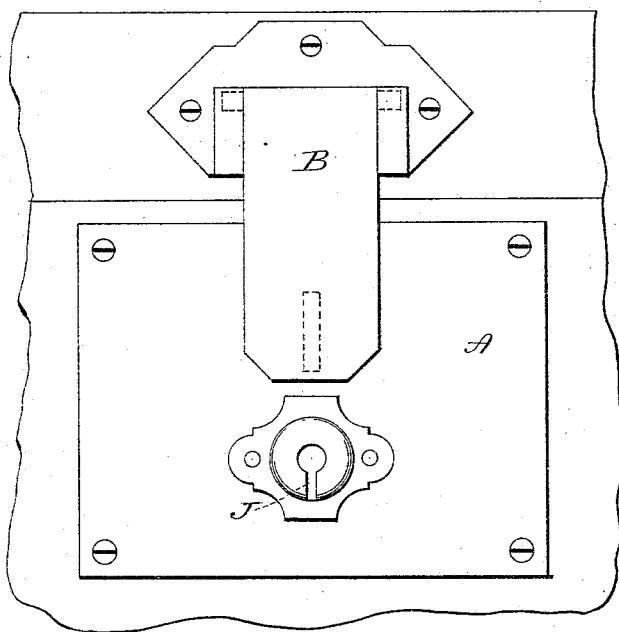


Fig. 2

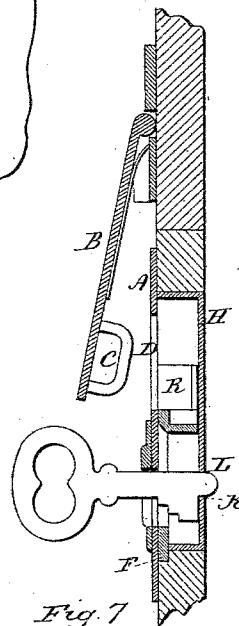


Fig. 3

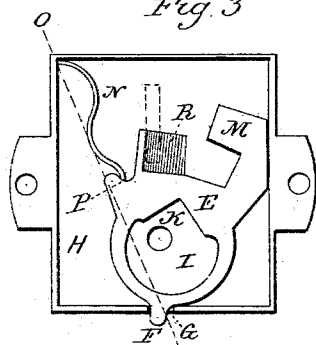


Fig. 4

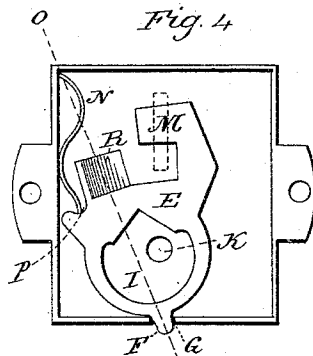


Fig. 5

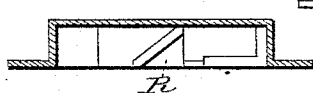


Fig. 6

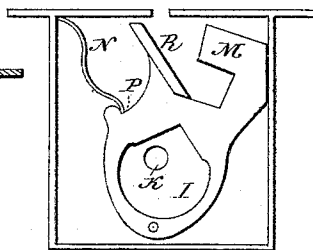
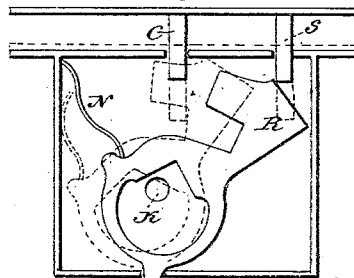


Fig. 7



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LOCK.

SPECIFICATION forming part of Letters Patent No. 399,083, dated March 5, 1889.

Application filed December 14, 1888. Serial No. 293,602. (No model.)

To all whom it may concern:

Be it known that I, JAMES ROCHE, of Terryville, in the county of Litchfield and State of Connecticut, have invented a new Improvement in Locks; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a front view of the lock and hasp as applied to a trunk; Fig. 2, a vertical central section of the same; Fig. 3, a view of the case of the lock, the face-plate removed, showing the bolt in the unlocked position; Fig. 4, the same as Fig. 3, but the bolt thrown to the locked position; Fig. 5, a horizontal section through the case, showing a top view of the bolt; Fig. 6, the invention as applied to a chest-lock; Fig. 7, a modification.

This invention relates to an improvement in that class of locks in which a loop-like staple is employed in connection with the lock, the staple being adapted to enter the lock-case and the bolt of the lock to engage therewith—such as used in trunk-locks, when the staple is a part of a hasp and arranged to enter an opening in the face of the lock, or chest-locks, where the staple is arranged to enter through an opening in one edge of the case, and particularly to those latches of this character in which the bolt swings as upon a pivot in the case, having a spring arranged which is adapted to throw the bolt to either its locked or unlocked position after the key shall have turned the bolt to one side of the center of its movement, the spring operating to complete the movement in both directions.

In the usual construction of this class of locks the key has been required to throw the bolt both to the locked and unlocked position.

The object of my invention is to adapt the lock to be self-locking, so that when the staple is forced to place it will throw the bolt into the locked position without the presence of the key; and it consists in constructing the rocking bolt described with an inclined surface against which the staple or a projection moving with the staple is adapted to strike as

it enters the case, the staple or its projection acting on the said inclined surface as a cam, giving to the bolt a sufficient movement to carry it over the center toward the locked position, when the spring comes into action to complete the locking movement.

I will first describe the invention as applied to a trunk-lock, in which A is the front or face plate, and B the hasp hinged in the usual manner, the hasp being provided with a staple, C, which is adapted to enter an opening, D, in the face of the lock in the usual manner for this class of locks.

E represents the rocking bolt. It is supported upon a pivot in the lower part of the case, (here represented as a stud, F, standing in an opening, G, in the lower part of the case H,) the case being of the usual box-like character and secured to the front in the usual manner.

The bolt is constructed with an opening, I, through it, into which the key may enter through the key-hole J in the face of the lock, K representing the spindle-bearing in the case for the key-spindle. In the illustration this bearing is a hole in the back of the case, into which the end L of the tip of the key (see Fig. 2) enters, so as to support the inner end of the key; but for this opening there may be substituted the usual stem. The bolt is constructed with a nose, M, on one side, which is adapted to engage the staple. The rocking movement of the bolt throws it from the unlocked position, Fig. 3, to the locked position, as seen in Fig. 4; the nose M of the bolt engaging the staple in the locked position, as seen in Fig. 4; but when thrown to the unlocked position, as seen in Fig. 3, then the staple is free.

N represents a spring, preferably a flat steel spring, one end seated in a stationary point, as at O, in the case, the other end bearing upon a seat, as P, on the bolt. The spring-seat P on the bolt is in such relation to the spring-seat O in the case that in the rocking movement of the bolt the seat P passes across the central line of action of the spring—that is, a line drawn from the stationary spring-seat O to the pivot on which the bolt turns, (the said line indicated in Figs. 3 and 4,) so

that, the bolt being in the unlocked position, as seen in Fig. 3, the spring-seat is on the bolt side of the said line. Now if it be applied to throw the bolt the spring will be compressed in the movement of the bolt until the seat P has passed the said line. Then the spring comes into action to throw the bolt to its extreme position, as seen in Fig. 4, independent of the key, and the spring there holds the bolt until the key has returned to move the bolt and until the seat P shall have again passed the said line. Then the spring will operate as before and throw the bolt to the extreme open position. To permit the flat spring to thus throw the bolt, it is made of serpentine shape, whereby it is adapted to expand or be contracted longitudinally. Thus far the lock is of common construction, and for its operation it is necessary to employ the key both to throw the bolt to the locked or the unlocked position.

To make the operation of the bolt automatic or independent of the key, I construct it with a cam-like projection, R, forward of the nose of the bolt, but inclined toward the nose end of the bolt, as seen in Fig. 5. This cam projection R, when the bolt is in the unlocked position, as seen in Fig. 3, stands in the path of the entering staple, and so that the staple being pressed operates upon the said cam projection R, and causes the bolt to turn toward the locked position until the spring-seat shall have passed the said line. Then the reaction of the spring will continue the movement of the bolt until the nose has entered the staple and reached the fully-locked position. In the locking operation, therefore, it is only necessary to press the staple home, and the bolt automatically flies into its locked position, from which it may be unlocked with the key.

In the case of a chest-lock, in which the staple enters from the top, as seen in Fig. 6, the cam projection R is inclined accordingly, so that as the staple enters it will operate upon the said projection and throw the bolt as before described, it being understood that the incline of the cam projection R is oblique to the plane of the staple of the lock, and this irrespective of whether the staple enters through the face or through the edge of the lock.

I prefer to make the pivot of the lock as I have described, by constructing the bolt with a stud-like projection upon its lower end; but the construction of the pivot is immaterial, as it may be of any suitable construction—say as a stationary pivot in the case through the bolt, as seen in Fig. 6.

I prefer to arrange the cam projection on the bolt so that it will be operated directly by the entering staple; but it may be arranged so as to be operated indirectly by the entering staple, as seen in Fig. 7, where the cam projection is shown as formed in the rear of the nose of the bolt instead of in front of the nose. In this case a projection, S, is provided, which moves with the staple, and so as to enter the case in like manner as the staple, and in so entering will strike the cam projection, as seen in Fig. 7, and force the bolt toward the locked position, as indicated in broken lines; but in any case the operation is produced substantially by the entering staple. I do not therefore wish to be understood as limiting the invention to the direct action of the staple; but by the term "staple," as used in the claim, I wish to be understood as including either the direct or indirect movement of the staple, as I have described.

I claim—

In a lock in which a staple is adapted to enter the case to be engaged with the bolt, the bolt hung upon a pivot within the case, and adapted to rock on said pivot in the plane of the case, the bolt constructed with a nose arranged to engage or disengage the staple entering the case, a spring arranged between a stationary bearing in the case and a corresponding seat on the bolt, the said seat on the bolt being adapted to cross the central line of action of the spring as the bolt moves from one extreme to the other, the said bolt constructed with a cam projection in the path of the staple as it enters the case when the bolt is in the unlocked position, the said cam projection inclined to the path of the staple as it enters the case, substantially as described.

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Witnesses:

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