

E. F. HOTCHKISS.
Seal-Locks.

No. 217,874.

Patented July 29, 1879.

Fig. 1.

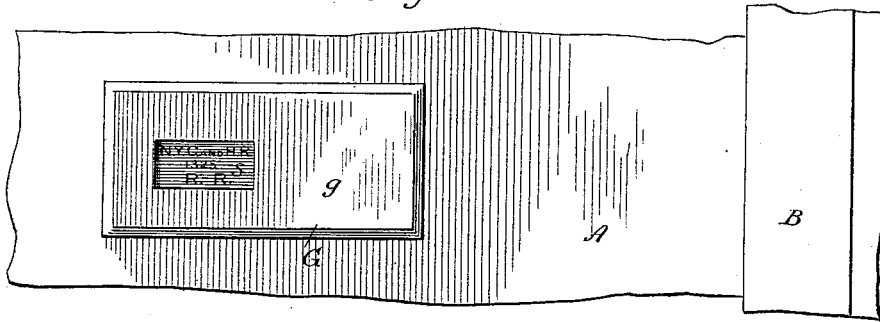


Fig. 2.

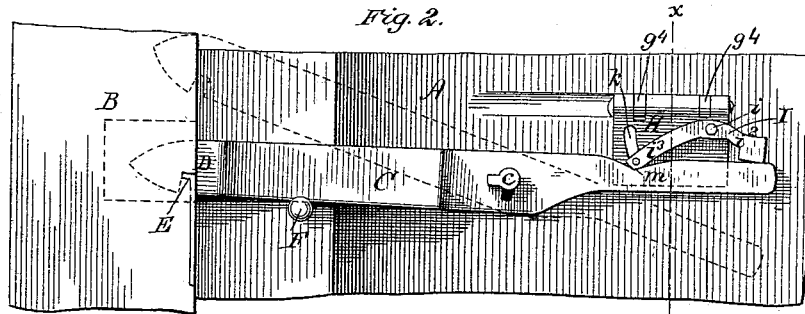


Fig. 3.

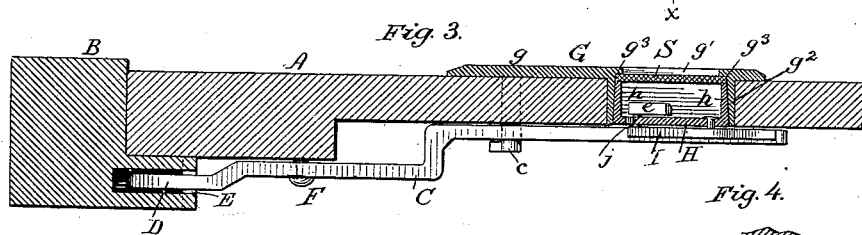


Fig. 4.

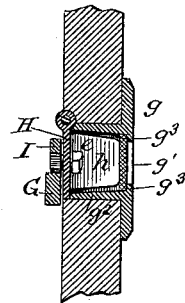


Fig. 5.

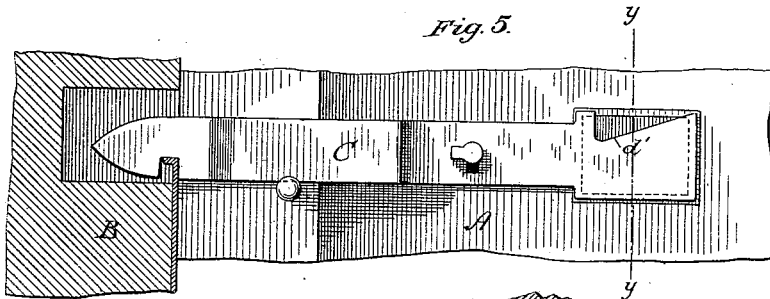
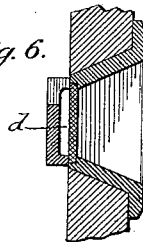


Fig. 6.



Attest:

Clarence Poole
William Blackstock

Inventor:

Edgar F. Hotchkiss
Per L. Hill,
His Atty.

UNITED STATES PATENT OFFICE.

EDGAR F. HOTCHKISS, OF UNADILLA FORKS, N. Y., ASSIGNOR OF ONE-HALF HIS RIGHT TO DAVID A. HOPKINS, OF WASHINGTON, N. J.

IMPROVEMENT IN SEAL-LOCKS.

Specification forming part of Letters Patent No. **217,874**, dated July 29, 1879; application filed November 14, 1878.

To all whom it may concern:

Be it known that I, EDGAR F. HOTCHKISS, of Unadilla Forks, in the county of Otsego and State of New York, have invented a certain new and useful Improvement in Seal-Locks; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an outside view of a portion of a door of a freight-car to which my improved lock is applied. Fig. 2 is an inside view of the same. Fig. 3 is a longitudinal sectional view. Fig. 4 is a transverse sectional view taken in the line *x x*, Fig. 2. Fig. 5 is a view of a modification of the invention; and Fig. 6 is a transverse section of the modification, taken in the line *y y*, Fig. 5.

Similar letters of reference in the several figures denote the same parts.

This invention relates to improvements in seal-locks generally, and has for its immediate object to provide a simpler, more substantial, and a cheaper lock for freight-cars than those heretofore used.

To this end the invention consists, first, of a latch-bar mounted upon the inside of the car-door or door-frame, and adapted to engage automatically with a locking-keeper when the door is closed, in combination with a frangible seal applied to its seat from the inside of the car, near the latch-bar, and over an opening through which said seal may be seen from without, whereby the unlocking of the latch-bar from without can only be effected by breaking the seal and manipulating said bar through the seal-opening.

It further consists of a latch-bar or locking-catch mounted upon the inside of the door, and adapted to automatically engage with a suitable keeper when the door is closed, and so arranged with respect to a frangible seal placed in the door and visible from without that it shall hold said seal in position when the door is locked, and when the seal is broken shall be in convenient position to be operated through the seal-opening to disengage it from its keeper.

It further consists of a metal frame of peculiar construction for the reception of the seal, and adapted for application to the car-door.

It further consists in the combination of said seal-frame, a hinged plate, having lugs or projections which bear against the seal, and the latch-bar.

It further consists of a pivoted dog or operating-lever arranged upon the hinged plate for the purpose of disengaging the latch-bar from its keeper after the seal is broken.

In the drawings, A represents a portion of a sliding freight-car door, and B is the door-post. C is a latch-bar or locking-catch, pivoted on a stud, *c*, on the inside of the door, and having a notched and beveled end, D, which automatically engages with a keeper, E, on the door-post when the door is slid closed.

A pin, F, supports the latch-bar under ordinary circumstances in a substantially horizontal position. The rear portion of the latch-bar extends back and covers, or partially covers, an opening in the door, in which the seal is located. The seal is not let directly into the door, but is inclosed in a metal frame, G, consisting of a flat face-plate, *g*, provided with an opening, *g*¹, and a projecting box, *g*². This metal frame is applied to the car-door from the outside, with the face-plate *g* resting on the face of the door, and the box *g*² projecting inwardly through an opening in the door and flush with the inner surface of the door, as clearly shown in Fig. 3.

The inwardly-projecting box protects the opening through the door, and prevents lateral access to said opening.

The stud *c*, which forms the pivot of the latch-bar, is cast upon or otherwise connected to the face-plate of the metal frame, and projects from said plate through the door. The box portion of the metal frame is provided with shoulders *g*³ *g*³, near the face of the front plate, *g*, for the purpose of preventing the dropping out of a seal, S, introduced into the box portion from the inside of the car. Lugs *g*⁴ *g*⁴ are formed upon the inner edge of the box *g*², and to these lugs a metal plate, H, is hinged, as seen in Fig. 2. This hinged plate is provided with lateral lugs or extensions *h h* at its ends, which project within the box when the plate is swung down and bear against the seal S, and hold it tightly against the shoulders *g*³ *g*³, before mentioned.

When the plate is swung down, as just in-

licated, the inner end of the latch-bar rests against its face and locks it closed, as shown in Fig. 2.

I is a dog or lever, pivoted to the rear face of the hinged plate, near one edge thereof, at *i*, and having an arm, *j*, which projects through a curved slot, *k*, in the plate, and terminates in a thumb-piece or knob, *e*, on the opposite side of the plate within the seal-box.

The short end *i*² of the lever is enlarged, and rests upon the latch-bar, near the extreme end thereof, and the longer arm *i*³ of said lever drops into a notch or recess, *m*, in the latch-bar, as shown.

From the arrangement of devices above described it is evident that when the seal is inserted, the hinged plate closed, and the latch-bar swung into horizontal position and locked to its keeper, the only way to unlock the door is to break the seal and lift the knob or thumb-piece *e* of the pivoted operating-lever *I*, which will cause the short end *i*² of the lever to depress the inner end of the latch-bar and disengage its forward end from the keeper, and thus allow the door to be slid open.

To again reset the lock, it is only necessary to swing the latch into the position shown in dotted lines, Fig. 2, raise the hinged plate, put in another seal, shut the hinged plate down, and allow the latch-bar to again drop down to its normal horizontal position on the supporting-pin *F*.

It will be observed that the seals must be applied from the inside of the car, and that consequently it is impossible for them to be removed through the front opening without destroying them.

Instead of employing the hinged plate for holding the seal, and the lever for effecting the unfastening of the latch-bar from its keeper, I may, in some cases, dispense with these parts altogether, and hold the seal in position in its frame by means of the latch-bar itself.

In Figs. 5 and 6 I have shown one mode of accomplishing this result, and which consists in constructing the retaining-shoulders for the seal on the inner end of the box of the metal frame, instead of on the outer end, as before, and in holding the seal in its place by the end of the latch-bar.

As it might otherwise be difficult to see the seal readily on account of its being located at the inner end of the box, I bevel or taper the box, as shown in Fig. 6, and thus render it plainly visible. I also recess that part of the latch-bar which lies directly under the seal at *d*, in order that the latter may be broken more easily by a blow from without; and I cut away or incline one edge of the latch-bar at *d'*, so that when the seal is broken an ordinary freight-hook may be inserted through the seal-opening, and pulled so as to force its end between the incline and the wall of the box, and thus depress the end of the latch-bar.

In neither form of the invention above al-

luded to is a key necessary, and consequently a large saving is effected, for otherwise, as the cars are transported to all parts of the country, every station would have to be supplied with a key. As it is, the operation of unlocking is effected in the one case by the fingers of the operator, and in the other by means of the freight-hook or equivalent device.

The seals employed in these locks may be of any frangible material, such as glass, india-rubber, celluloid, papier-maché, wax, dough, and other analogous materials; but whatever be their nature, I prefer to render them luminous by applying to their outer surface a composition of phosphorus, or its equivalent, covered by a thin film or coating of glue, varnish, or other material, so that the marks on the seals may be seen at night as well as by day.

In preparing the seals, the letters or marks only may be rendered luminous, or the body of the seals luminous and the letters dark or non-luminous, as preferred.

I claim as my invention—

1. In a seal-lock, a latch-bar mounted upon the inside of a car-door or door-frame, and adapted to engage automatically with a locking-keeper when the door is closed, in combination with a frangible seal applied to its seat from the inside of the car, near the latch-bar, and over an opening through which said seal may be seen from without, whereby the unlocking of the latch-bar from without can only be effected by breaking the seal and manipulating said bar through the seal-opening, substantially as described.

2. In a seal-lock, a latch-bar mounted upon the inside of the car-door or door-frame, and adapted to engage automatically with a locking-keeper when the door is closed, in combination with a frangible seal visible from without, and held in place directly or indirectly by the latch-bar, substantially as described.

3. The combination, with the car-door, of the metal seal-frame, consisting of the face-plate, adapted to rest against the outer surface of the door, and the inwardly-projecting box for protecting the opening in the door, provided with shoulders for preventing the escape of the seal, substantially as described.

4. The combination of the seal-frame, the hinged plate, and the latch-bar, substantially as described, for the purpose specified.

5. The pivoted dog or operating-lever arranged upon the hinged plate, and adapted to disengage the latch-bar from its keeper, substantially as described.

6. The combination of the metal seal-frame, the hinged plate, the pivoted dog or operating-lever, and the latch-bar, substantially as described.

EDGAR F. HOTCHKISS.

Witnesses:

WILLIAM BLACKSTOCK,
M. CHURCH.