A. V. Hartwell.

Lock.

No. 96,230. Patented Oct. 26, 1869.

Fig. 1.

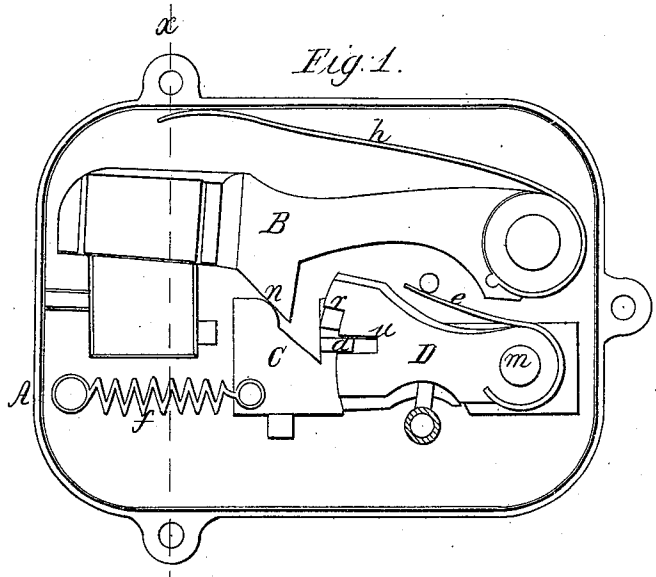


Fig. 2.

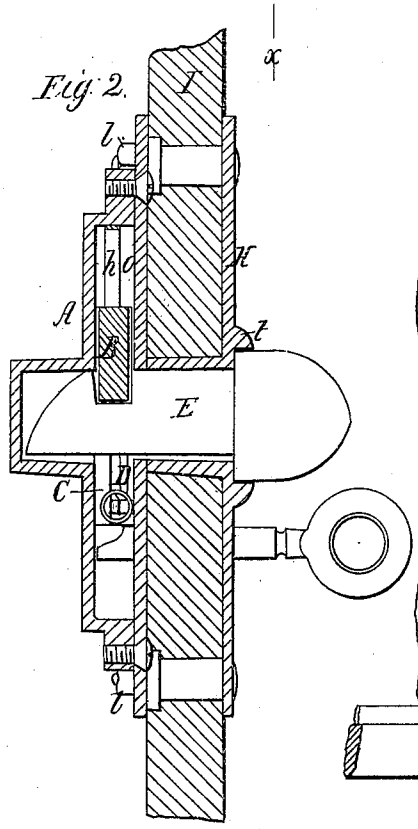
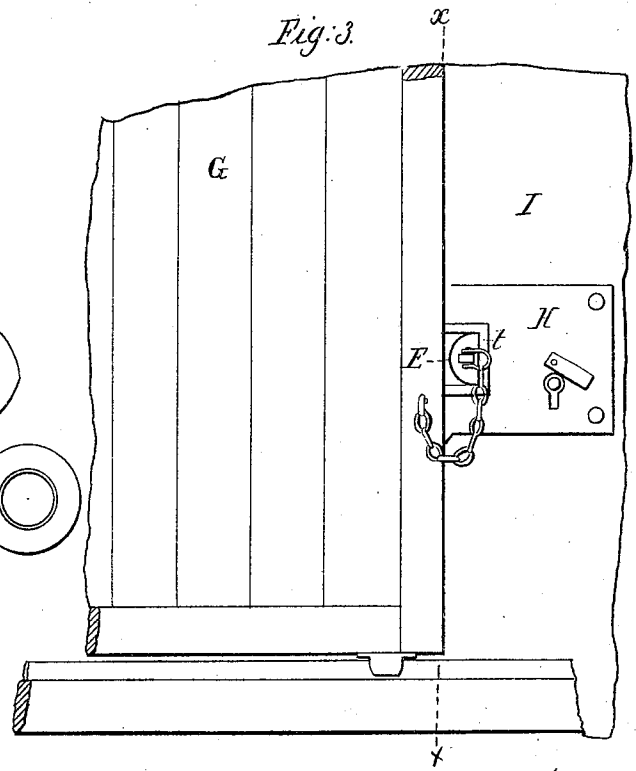


Fig. 3.



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UNITED STATES PATENT OFFICE.

A. V. HARTWELL, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN LOCKS FOR CAR-DOORS.

Specification forming part of Letters Patent No. **96,230**, dated October 26, 1869.

To all whom it may concern:

Be it known that I, A. V. HARTWELL, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in a Device for and Mode of Fastening Car-Doors; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, and to the letters of reference marked thereon, like letters indicating like parts wherever they occur.

To enable others skilled in the art to construct and use my invention, I will proceed to describe it.

My invention relates to a lock or fastening more especially intended for freight and similar cars, though it may be applied to other sliding doors as well as those of cars; and the invention consists in a novel method of constructing and applying the device, as hereinafter more fully explained.

Figure 1 is a face view of the lock, with one plate removed to exhibit its internal construction. Fig. 2 is a section on the line *x x* of Fig. 3; and Fig. 3 is a side elevation of a portion of the body of a box-car, showing the manner of fastening the door by means of my improved lock.

It has heretofore been customary to secure the doors of freight-cars by means of hasps and padlocks applied on the outside of the car, and the result is that these locks or hasps are frequently broken by means of a hammer or stone, or pried off, and the contents of the car thus exposed to the operations of burglars and thieves. It is to prevent these depredations by means of a more secure fastening that my invention is intended, and the manner of constructing and applying it is as follows: I make a case, A, and in it pivot a latch, B, having a spring, *h*, applied as shown in Fig. 1, to hold it down. This latch has an inclined projection on its lower edge, against which a sliding bar or plate, C, bears when the latter is forced back by the key. Upon a stud, *m*, upon which the sliding bar C bears at its rear end, (it being slotted so as to straddle the stud,) I pivot a series of tumblers, D, as shown in Fig 1, each tumbler having a spring, *e*, attached to press it down. Each of the tumblers have a shoulder, *r*, formed on their front end, and also a slot *u*, below the shoulder, as shown in Fig. 1. The sliding bar C has a lug, *a*, projecting from its side at such a point that when drawn forward by the spring *f* it will be in front of the end of the tumblers, which have their shoulders *r* then resting on the lug *a*. When it is desired to raise the latch B, the bar C must be slid back, and that can only be done when the notches *u* in the tumblers are all brought in line with the lug *a*, and held there while the bar slides back far enough to cause the lug *a* to enter the slot *u*. This is done by the key, which is so formed as to raise the tumblers D to the proper position to bring the notch *u* of each tumbler opposite the lug *a*, when by turning the key still farther the bar C is moved back, thus raising the latch B. As the notches *u* are made at different points in the different tumblers, it follows that the guards of the key must be of such form and size as to raise the different tumblers the proper distance to bring the notches *u* in them all in line. These tumblers, being placed loosely on the stud *m*, may be taken off and changed one for another, when a different key will be required to operate them. A plate, *o*, is secured to the case A, as represented in Fig. 2, and the lock thus made is secured to the inside of the wall I of the car by means of bolts, which pass through a plate, H, on the outside of wall I, and also through plate *o* of the lock, and are secured by nuts *l* on the inside, as shown in Fig. 2. This plate H has a hole made in it of proper size to admit the end of a bolt, E, the metal extending inward to the plate *o*, so as to form a lining around the hole in the wall I, as shown in Fig. 2, there being also a projection, *t*, on the exterior of the plate H around the head of the bolt E to hold it more securely in place. This bolt E is made with its body of a size to fit the hole through the wall I, and of proper length to reach through under the latch B of the lock, its end being beveled to permit it to be shoved in and raise the latch, and it also having a notch for the latch to catch in, as represented in Fig. 2. This bolt is made with a head connected to the body, the head being wider than the body, thus forming a projecting shoulder all around it, this head projecting out a distance equal to the thickness of the car-door, or nearly so, and having a flat face on the side next to the door, to which latter it is connected by a chain, as shown in Fig. 3.

The car-doors are usually so applied as to open by sliding in one direction only, and to close by sliding back again into position. The lock is applied on the inside to the wall I of the car, directly in rear of the door, when the latter is closed, as represented in Fig. 3. Then when the door is shut the bolt E is inserted through the hole in the wall I into the lock, where it is caught and held by the latch B, the bolt E being thus securely held in position behind the door G, which cannot be opened until the bolt is withdrawn, and that cannot be done without the use of a key that shall exactly suit the lock, including all its tumblers and sliding bar C. The bolt-head being thick and strong, and being rounded or beveled off on all sides except where it bears against the edge of the door, and being further secured and protected by the projection *t* which surrounds it, makes a very secure fastening, and cannot be battered or broken off by hammering it with a stone or similar means, as the ordinary hasp and lock can. If at any time or by any means any other than the proper persons become possessed of a key, the tumblers in all the locks will be changed and new keys furnished, by which means those improperly possessed of the keys will be unable to open the cars, and this may be done a great number of times with the same locks.

Having thus described my invention, what I claim is—

1. The bolt E, inserted through a hole in the wall, and secured therein by a spring-latch on the inside, said bolt bearing against or being located in rear of the sliding door of a car, substantially as described.

2. In combination with said bolt, the pivoted latch B, with its incline *n*, the sliding bar C, with its guard *a*, and the tumblers D, all constructed and arranged within a case, A, substantially as described.

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