S. F. ADAMS.

CAR DOOR LOCK.

APPLICATION FILED FEB. 28, 1914.

1,097,155. Patented May 19, 1914.

Fig. 1.

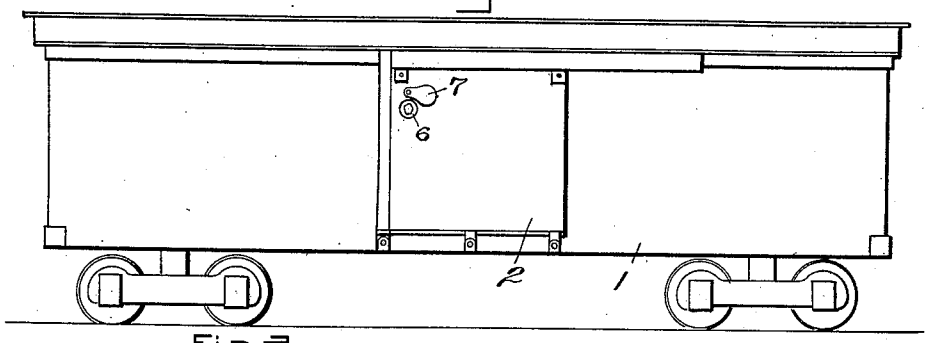


Fig. 2.

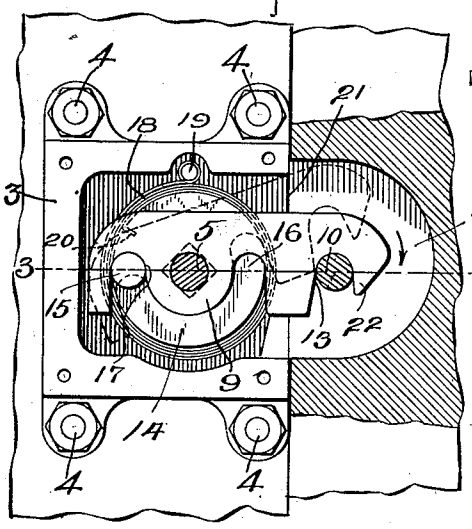


Fig. 3.

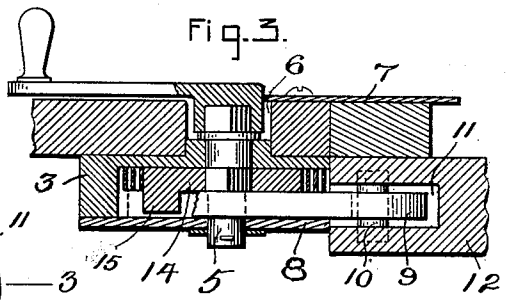
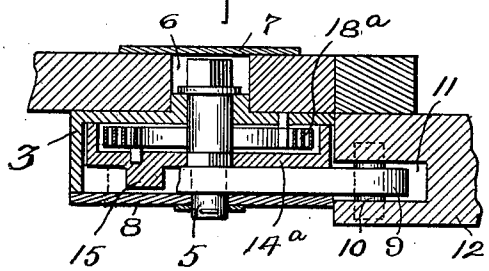


Fig. 4.



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CAR-DOOR LOCK.

1,097,155. Specification of Letters Patent. Patented May 19, 1914.

Application filed February 28, 1914. Serial No. 821,662.

To all whom it may concern:

Be it known that I, SAMUEL F. ADAMS, a subject of the King of England, residing at Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Car-Door Locks, of which the following is a specification.

This invention relates to a lock designed more particularly for the doors of freight cars. Its object is the provision of a simple and inexpensive lock of this character which cannot be tampered with by car burglars or other unauthorized persons without great difficulty or danger of detection.

In the accompanying drawings: Figure 1 is a side elevation of a freight car provided with the improved lock. Fig. 2 is a fragmentary interior view of the car and the lock, on an enlarged scale, the cover of the lock case being removed. Fig. 3 is a horizontal section on line 3—3, Fig. 2. Fig. 4 is a view similar to Fig. 3, showing a modified construction of the lock.

Similar characters of reference indicate corresponding parts throughout the several views.

1 indicates the car-body and 2 the usual sliding door guided thereon by any suitable means.

3 indicates the case of the lock secured to the inner side of the door, so as to be inaccessible from the exterior of the car when the door is locked. The heads of the bolts 4 by which the lock-case is fastened to the door are arranged on the outer side of the door to increase the difficulty of tampering with the case.

Journaled transversely in the lock case is a horizontal spindle 5, the front end of which is shaped to receive a suitable wrench for turning it, said end being preferably of irregular or unusual form, as shown, so that it can be turned only by an authorized person possessing a proper wrench for that purpose. In the preferred construction shown, the accessible end of this spindle is countersunk in an opening 6 of the door which may be provided with a suitable lid 7 to exclude ice and snow. As shown in Fig. 3, the inner portion of the spindle is supported in an opening in the removable cover 8 of the lock case which is screwed or otherwise secured to the body of the case.

Loosely pivoted on a cylindrical portion of the spindle 5, within the lock-case, is a vertically swinging latch 9 adapted to interlock with a transverse pin or bolt 10 arranged in a mortise 11 in the door-post 12 of the car, for locking the door. In the construction shown in the drawings, this latch is provided in the lower edge of its head with a comparatively deep locking notch 13.

14 indicates an actuating disk or member for the latch keyed or otherwise secured to the spindle to turn therewith and provided with a laterally-projecting pin or lug 15 adapted to engage against the lower edge of the latch, either on the front or the rear side of the spindle 5, for lifting or depressing the head of the latch, according as said disk is rotated in one or the other direction. For this purpose the latch extends rearwardly beyond the spindle and it is preferably provided on the front and rear sides of the spindle with recesses or seats 16 and 17 adapted to receive the pin 15.

The latch is kept in its depressed or locking position by a suitable spring 18 operating to rotate the disk 14 in the proper direction to cause its pin 15 to bear against the rear seat 17 of the latch, thereby yieldingly holding the head of the latch in engagement with the bolt 10. In the preferred construction shown in Figs. 2 and 3, this spring is coiled around the edge of the disk and one end thereof is attached to a stud 19 of the lock-case, while its other end is fastened to the disk, as shown at 20, so as to tend constantly to turn the disk in the direction of the arrow, Fig. 2. In the construction shown in the drawings, the latch is arranged between the disk 14 and the cover of the lock-case. The vertical slot 21 in the front edge of the lock case through which the latch projects is arranged to limit the downward movement of the head of the latch to a position in which its beveled nose 22 will encounter the bolt 10 upon closing the door, in order to insure the automatic engagement of the latch with said bolt. The latch is retained in this position by the spring 18 acting through the disk 14 and its pin 15, as hereinbefore described. To unlock the door, it is only necessary to turn said disk in the reverse direction to the arrow, by means of an appropriate wrench applied to the spindle 5. This movement causes the pin 15 to engage the front seat 16 of the latch, lifting the latter off the bolt and releasing the door which can then be slid to its open position in the usual manner.

In order to render it practically impossible

for car burglars to reach the lock from the ground without risk of detection, the same is preferably located near the upper rear corner of the door, say where it cannot be reached by a person standing on the ground. At the same time the lock is placed about two and a half feet below the car-roof to baffle attempts to manipulate the lock from the top of the car.

A crank-like wrench shown in Fig. 3, is preferably employed for rotating the spindle 5, and in order to increase the difficulty of turning it far enough to unlock the door, even with a proper wrench, the rear seat 17 of the latch is made of considerable depth, so that in order to unlock the door the wrench must be given more than a half turn from the locked to the unlocked position of the latch. This causes the wrench-handle to rise so high as to make it practically impossible to unlock the car from the ground. At the same time, this arrangement permits the ready unlocking of the door by authorized persons standing on a station-platform or similar elevation at which cars are usually unloaded.

I do not wish to be limited to the particular construction or arrangement of the spring shown in Figs. 2 and 3 as the same may be modified without departing from the scope of the appended claims. For example, Fig. 4 shows a modified construction in which the rotary disk is chambered or constructed in the form of a barrel 14^a, and the spring 18^a is arranged within this barrel and secured at its ends to the barrel and the lock-case, respectively. The operation of this modified construction is the same as that shown in Figs. 1–3.

My improved lock, while effectually baffling attempts of unauthorized persons to burglarize the car without detection, comprises but few parts which are not liable to get out of order, and its simple construction enables it to be produced at relatively small cost.

I claim as my invention:

1. A car-door lock, comprising a case, a rotary spindle journaled therein, a latch pivotally mounted on said spindle, a member mounted on said spindle to turn therewith and having a part arranged to engage said latch on either side of the spindle to raise or depress the latch, and a spring acting on said member and tending to rotate the same in the proper direction to depress the latch.

2. A car-door lock, comprising a case, a rotary spindle journaled therein, a latch pivotally mounted on said spindle, a disk mounted on said spindle to turn therewith and carrying a projection, said projection being arranged to engage said latch on either side of the spindle, and a spring coiled around the edge of said disk and secured at its ends to the disk and said case, respectively.

3. A car-door lock, comprising a case, a rotary spindle journaled therein, a latch pivotally mounted on said spindle and provided on opposite sides of the spindle with front and rear seats, a disk secured to said spindle and having a pin arranged to engage either of said seats to raise or depress the latch, and a spring attached at its ends to said disk and said case and tending to press said pin against the rear seat of the latch to depress the latter.

Witness my hand this 26th day of February, 1914.

SAMUEL F. ADAMS.

Witnesses:
E. M. GRAHAM,
ANNA HEIGIS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."