To all whom it may concern:

Be it known that I, Peter Schneider, a citizen of the United States, residing at Oswego, in the county of Oswego, State of New York, have invented a new and useful Car-Door Lock; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to car door locks and has for its object to provide locking means for car doors for freight cars which will prevent unauthorized persons from breaking the conventional seal that at the present time is placed on the car, from entering the same, that is it is the object to provide a positive locking means for each car door, said locking means being so constructed that after the doors have been closed it will be impossible to unlock the same until air is applied to a piston which controls the lock. Also to provide air control locking means for car doors or preventing the unlocking of the doors by unauthorized persons.

A further object is to provide a car door lock comprising a pivoted member adapted to engage a member carried by the car door, said pivotal member being prevented from movement by a piston rod which controls the same, said piston rod being provided with a piston lock control mounted in a cylinder and normally held in down or locking position by a coil spring of a tension greatly exceeding the strength of a man and to provide means whereby air may be admitted to the lower end of the cylinder for forcing the piston upwardly therein and allowing the operation of the locking lever. Also to provide means for maintaining the locking lever in unlocked position after the door has once been unlocked.

A further object is to provide lock control means for allowing the pivotal lever to drop into unlocking position and also to provide lock control means whereby the pivotal lever may be actuated independent of the air control mechanism for said lever.

With the above and other objects in view the invention resides in the combination and arrangement of parts as hereinafter set forth shown in the drawings, described and claimed, it being understood that changes in the precise embodiment of the invention may be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawings:

Figure 1 is a side elevation of a portion of car showing a car door and the door locking mechanism applied thereto.

Fig. 2 is a view of the door locking mechanism, said view taken from the inside of the car and having portions broken away to better show the controlling mechanism.

Fig. 3 is an enlarged detail view of the locking mechanism.

Fig. 4 is a sectional view taken on line 4-4 of Fig. 3.

Fig. 5 is an enlarged detail view of the locking mechanism looking from the outside of the car.

Referring to the drawings the numeral 1 designates a conventional form of freight car and 2 the door opening therein, which door opening is closed by means of a conventional form of car door 3 which may be supported in any suitable manner and is adapted to slide longitudinally of the car. Secured to the outer wall 4 of the car body and adjacent the opening 2 is a cylinder 5, said cylinder being supported by bolts 6 which pass through lugs 7 on said cylinder and through the sides of the car. A pipe 8 connects to the bottom of the cylinder and is adapted to be connected to the air line of the car so that air may be forced into the chamber 9 of the cylinder 5 when it is desired to open or unlock the car doors. It is to be understood that pipes 8 and the locking mechanism is to be applied to a series of freight cars so that they may all be allowed to be unlocked at the same time.

Cylinder 5 has slidably mounted therein a piston 10, which piston has an upwardly extending piston rod 11, said piston rod having an elongated slot 12 in which elongated slot an arm 13 engages which arm is carried by the locking bolt 14 which extends transversely through the car wall and is controlled by a key controlled lock 15, disposed on the outer wall of the side of the car. Piston 10 is normally held in its down position as shown in Fig. 3 by a coiled spring 16 which surrounds the piston rod 11 and is disposed between the end 17 of the chamber 9 of the cylinder and the upper face of the piston 10. The coiled spring 16 exerts an outward pressure thereby holding the piston 10 down with such a tension that it would be impossible for the locking bolt 14 to be moved without air being admitted to the lower end of the cylinder.
to be rotated by a key or any other means, therefore preventing the rocking of the locking bolt 14 and consequently preventing the lug 18 carried by the arm 13 from engaging under the latch 19, which is pivotally mounted on the locking bolt 14. The end 20 of the latch 19 is provided with a shoulder 21 adapted to engage a shoulder 22 of a keeper 23, which keeper is secured as at 24 to the car door 3 and extends through an aperture 25 in the post 26 of the door frame.

When it is desired to allow the various freight car doors to be opened, for instance when the train reaches the freight yard air is forced into the cylinders, which allows the operation of the latches 19 through the medium of the key controlled locks 15. The operation of one of the locking devices is as follows. Air is forced into the chamber 9 which forces the piston head and piston rod 10 and 11 upwardly thereby allowing the locking bolt 14 to be rotated when a key is placed in the lock 15. By the rotation of the lock bolt 14, arm 13 will be moved upwardly and the lug 18 which engages under the latch 19 will force said latch upwardly so that its shoulder 21 will come out of engagement with the shoulder 22 of the keeper 23. As the latch 19 is moved upwardly by the lug 18, said latch will cam by the end 27 of a pivoted lever 28, said lever being carried by a rotatable lock bolt 29, which is controlled by a key controlled lock 30, there being a stop lug 31 to limit the downward movement of the pivoted lever 28. The end of the latch 19 having cammed by the end of the pivoted lever 28 said latch will be maintained in its raised position by said pivoted lever 28 and out of engagement with the shoulder 22 of the keeper 23 thereby allowing the freight car door to be opened and access to be had to the interior thereof.

The latch 19 having been raised and the car opened, if so desired the air pressure within the chamber 9 of the cylinder 5 may be released and the piston 10 and its rod may be allowed to return to normal position. However, after the car door has been opened if it is desired to lock the same it will only be necessary for the trainman to close the door and insert a key in the lock 30 so that he may pivot the lever 28 upwardly until the free end of the latch 19 is allowed to drop downwardly into engagement with the shoulder 22 of the keeper 23, thereby again locking the door.

An auxiliary means is provided for raising the latch 19 by the trainman if so desired, without first allowing freedom of action of lever 13 by the use of air. This is done by a lever 32, which is secured to a rotatable lock bolt 33, said lock bolt being controlled by a key controlled lock 34 secured to the outer face of the car in any suitable manner. It will be seen that when a key is inserted in the lock 34 and the bolt 33 thereof rotated that the free end of the lever 32 will engage under the latch 19 so that the free end of the latch 19 will be moved upwardly to its open position above and in engagement with the end of the pivoted lever 28.

From the above it will be seen that a lock is provided which is under control of the engineer or conductor of the train by means of air and also one wherein as an auxiliary means of opening the same the unlocking may be accomplished by the conductor or trainman with a key. It will also be seen that the locking of the car is positive and that the use of a seal is obviated, which seal does not prevent an unauthorized person from cutting the same and entering the car.

The invention having been set forth what is claimed as new and useful is:

1. A lock for freight car doors comprising a cylinder secured to the car adjacent the door opening, a piston controlled piston rod in said cylinder, spring means for maintaining said piston in the bottom of said cylinder, a transversely disposed rockable lock controlled bolt carried by the wall of the car, said rockable bolt having secured to its end a lever, the end of said lever engaging an elongated slot in the piston rod, a latch pivoted to the lock controlled rockable bolt, the outer end of the latch being adapted to engage a keeper carried by the car door, said latch being disposed above the lug carried by the lock controlled rockable bolt lever and adapted to raise the pivoted latch out of engagement with the door keeper after air has been forced into the cylinder and the piston raised by the rotation of the rockable bolt, and means for maintaining the pivoted latch in its unlocked position after the same has been pivoted upwardly.

2. A lock for freight car doors comprising a cylinder secured to the car adjacent the door opening, a piston controlled piston rod in said cylinder, spring means for maintaining said piston in the bottom of said cylinder, a transversely disposed rockable lock controlled bolt carried by the wall of the car, said rockable bolt having secured thereto a lever, the end of said lever engaging in an elongated slot in the piston rod, a latch pivoted to the lock controlled rockable bolt, the outer end of the latch being adapted to engage a keeper carried by the car door, said latch being disposed above a lug carried by the lock controlled rockable bolt lever and adapted to raise the pivoted latch out of engagement with the door keeper, means for conducting air to the cylinder for raising the piston thereby allowing the rockable lock bolt to be rocked, a dog pivoted adjacent the free end of the pivoted latch and so...
positioned that after the free end of the latch has cammed thereby said dog will maintain the latch in raised position, and lock means for controlling said dog.

3. A lock for freight car doors comprising a cylinder secured to the car adjacent the door opening, a piston controlled piston rod in said cylinder, spring means for maintaining said piston in the bottom of said cylinder, a transversely disposed rockable lock controlled bolt carried by the wall of the car, said rockable bolt having secured thereto a lever, the end of said lever engaging in an elongated slot in the piston rod, a latch pivoted to the latch controlled rockable bolt, the outer end of the latch being adapted to engage a keeper carried by the car door, said latch being disposed above a lug carried by the lock controlled rockable bolt lever and adapted to raise the pivoted latch out of engagement with the door keeper, means for conducting air to the cylinder for raising the piston thereby allowing the rockable lock bolt to be rocked, a dog pivoted adjacent the free end of the pivoted latch and so positioned that after the free end of the latch has cammed thereby said dog will maintain the latch in a raised position, lock means for controlling said dog, and a lock controlled pivoted lever disposed below the pivoted latch and forming an auxiliary means whereby said pivoted latch may be raised if desired by a key and without the use of air in the cylinder.

4. A controlling means for a pivoted latch, said controlling means comprising a cylinder having a piston therein, a piston rod carried by said cylinder, spring means for normally holding the piston rod in down position, the upper end of the piston rod being provided with an elongated slot, a lever secured to a lock controlled shaft on which the pivoted latch is pivoted, said lever being disposed in the elongated slot of the piston, and in engagement with the upper end of said slot, a pin carried by said lever for engaging under the pivoted latch when it is desired to raise said latch after the pin rod has been moved upwardly by air pressure and a latch carried by a door adapted to engage the pivoted latch when the same is closed and means for independently raising the pivoted latch.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

PETER SCHNEIDER.

Witnesses:

JOHN WIEGAND,

FRED MARTZEL.