

W. M. LEWIS.
CAR DOOR LOCK.
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1,016,836.

Patented Feb. 6, 1912.

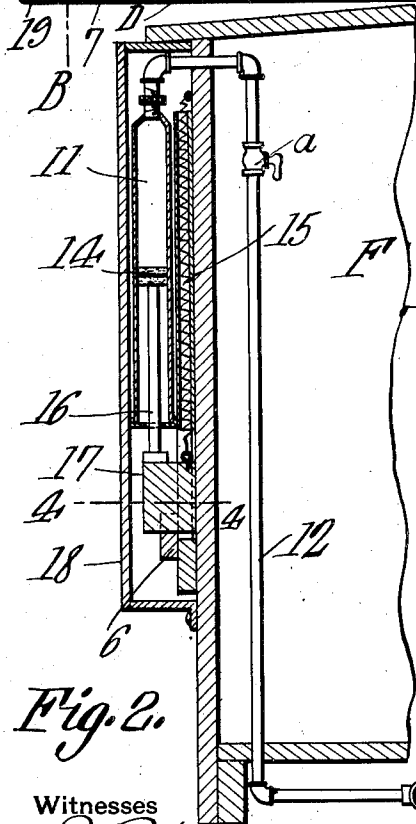
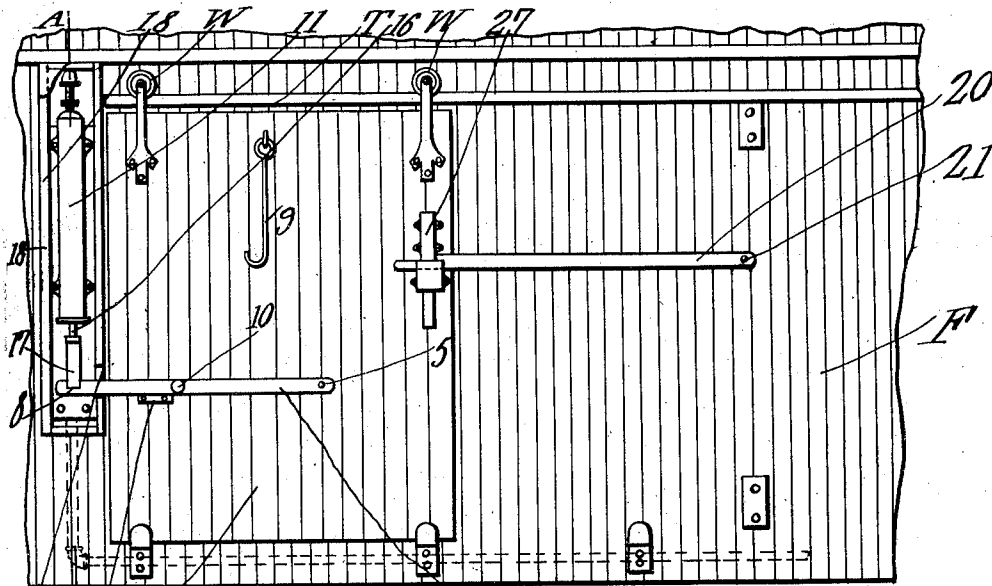


Fig. 2.

Witnesses

J. J. Tamm
L. H. Wilcox

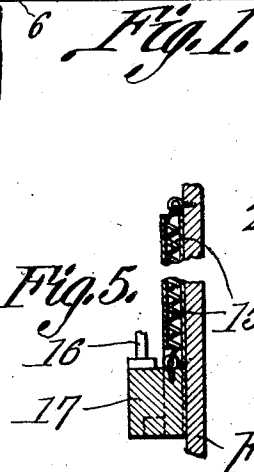


Fig. 5.

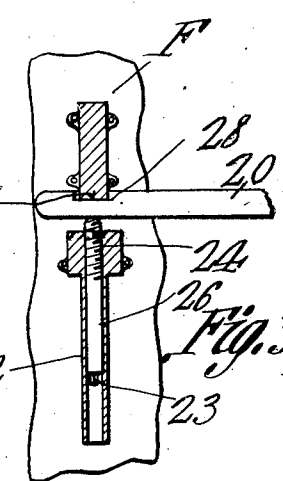


Fig. 3.

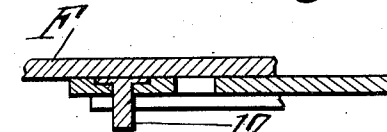


Fig. 4.

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WILLIAM M. LEWIS, OF RICHMOND, VIRGINIA, ASSIGNOR OF ONE-HALF TO CLAYTON A. BROCK, OF PINNERS POINT, VIRGINIA.

CAR-DOOR LOCK.

1,016,836.

Specification of Letters Patent.

Patented Feb. 6, 1912.

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To all whom it may concern:

Be it known that I, WILLIAM M. LEWIS, a citizen of the United States, residing at Richmond, in the county of Henrico and State of Virginia, have invented a new and useful Car-Door Lock, of which the following is a specification.

This invention relates to car door locks of that class which are controlled by the air brake; and the object of the same is to provide means whereby the engineer when he has coupled up with a freight car to be taken off a siding can lock its doors in the act of testing his air in the air-brake system as is commonly done at the present time. This object is accomplished by the construction hereinafter more fully described and claimed, and as shown in the accompanying drawings wherein—

Figure 1 is a side elevation of a portion of a freight-car with my improved lock attached to its door which latter is shown closed and locked. Fig. 2 is an enlarged section through the air-controlled lock for this door. Fig. 3 is an enlarged section in detail through another lock which I preferably provide near the rear edge of the door. Fig. 4 is a section on the line 4—4 of Fig. 2. Fig. 5 is a sectional view similar to Fig. 2, on an enlarged scale and parts thereof being broken away.

In the drawings the letter F designates a freight car having the usual side door D hung on wheels W which travel on an overhead track T. According to the prevailing custom railroad companies do not hold themselves responsible for the contents of a freight car when it is run onto a private siding and turned over to the consignee, nor do they assume responsibility for the contents of a car which has been loaded by private effort and left on a siding, until they back an engine or train onto said siding and attach it thereto. Accordingly their responsibility commences at the moment the car is attached to the engine or train and ceases at the moment it is detached, and as the air-brake system is connected or disconnected with the car at these times respectively, it will be clear that any locking mechanism which is controlled by the pressure of air

in the main line will automatically lock or unlock the door of the car when the car is coupled or uncoupled to another car for the purpose of shifting the responsibility of the contents of the car to and from the company operating the train.

Pivoted to the door D at the point 5 is a latch 6 resting on a stop 7 when it stands horizontal and having a notch 8 in its upper side near its outer end as seen in Fig. 1, and 9 is a hook hung on the door and adapted to engage a pin 10 on said latch at times when the latter is swung up around its pivot 5 and thrown out of position where its tip would project beyond the free edge of the door D and might be broken off in loading or unloading the car. Mounted on the door frame adjacent the edge of the door D is a cylinder 11 whose upper end is connected to a pipe 12 which leads in any suitable way (through a valve *a*) to the main line 13 of the air brake system, and within the cylinder moves a piston whose rod 16 at its lower end carries a flattened member 17 normally raised by a spring 15 but capable of being borne downward by the piston into engagement with the notch 8 in the latch 6. In order that these elements may not be tampered with, the entire cylinder is preferably inclosed within a casing 18 having a hole 19 in one side through which the tip of the latch moves as the door is closed.

From this description it will be clear that when the shipper loads the car he cannot lock the door even though he pushes it closed, although the act of doing so projects the latch through the hole 19 as seen in Fig. 1; but as soon as the engine connects with this car (either direct or through a long train) and the engineer tests his air, the air pressure in the main line pipe 13 is communicated through the pipe 12 and valve *a* to the cylinder 11 above the piston 14, and the latter is caused to descend against the tension of the spring 15 so that its flattened lower end 17 is engaged with the notch 18 in the latch and therefore the door is locked closed. Furthermore it will remain locked closed so long as the air-brake system is intact, and if by accident the car should become detached from the rear end

of the train as sometimes occurs, the air system is broken and warning is given to the engineer at once. It often occurs, however, that the railroad company after having hauled the car and before it is delivered to the consignee must uncouple it from the train and side track it somewhere, perhaps in its own yard, and therefore must temporarily assume responsibility for the contents. Of course as soon as it is uncoupled the air escapes from the upper end of the cylinder 11 and the above described lock is no longer effective. I therefore provide the door with a second lock shown toward the right in Fig. 1 and in Fig. 3. This consists of a latch 20 pivoted at 21 to the side of the car and having a notch 28 in its free end, which notch is adapted to engage beneath a stop 27 secured upon the door when the free end of the latch is raised. For so raising its free end I provide a screw 26 taking through a nut 24 carried by the side of the car and directed upward under the tip of the latch, and the shank of the screw extends downward below the nut and turns freely within a cylindrical casing or guard 22, its lower extremity 23 being squared for the reception of a key (not shown) by which it may be turned. When so turned in the proper direction, the screw passes upward through the nut 24 and raises the tip of the latch into engagement with the stop 27 as shown in Fig. 3, and obviously when the key is turned in the opposite direction the screw is withdrawn from the nut so as to permit the free end of the latch to descend out of engagement with the stop. I do not wish to confine myself to this precise type of lock, but I do consider it essential that the latch 20 shall be pivoted at 21 to the side of the car F at some distance remote from the door D so that the latter can be run back to uncover the door opening and permit the shipper to load the car. After he has done so and pushes the car door shut, although he cannot set the lock which is controlled by the air-brake system as above described, if he be provided with the proper key he can set the lock last just described, and this is sometimes of great benefit to him in case he resides at a remote point or in case it will be some considerable time before the freight train shall couple up with the car and meanwhile he desires to protect his goods until the railroad company assumes responsibility for them. It may be that he is several days loading the car, and at night he locks its doors in this way. But the presence of this kind of a latch 20 (without respect as to whether the described key is used or not) requires him to close the door before he can lock it and therefore requires that the latch 6 shall be projected through the hole 19 under the locking end 17 of the air-controlled rod 16, at

the same time that he closes the door to the position necessary to permit him to lock it himself. Hence I consider this something more than mere duplication, especially when the two locks are used upon a sliding car door, and yet neither is in the way when the car is to be loaded or unloaded.

I do not limit myself to the precise details of construction or to the materials and proportions of parts. I might add that in the case of a local freight train, perhaps one having at least one car carrying very valuable freight and presided over by an agent in charge, the air must be cut off on the inside of the car when a shipper is loading, for otherwise the air pressure will hold the lock closed. This can be done in any suitable way, as for instance by the valve *a* which I have indicated in Fig. 2 as occupying a position near the top of the car. Its location, pipes, and manner of operation are of course matters of no importance; and the experienced railroad man understands the uses of this valve and the best point to place it.

What is claimed is:

1. A freight car, a sliding door therefor, a latch pivoted to the door with its free end projecting beyond the free edge of the door and having a notch, a rod having a flattened end to engage the notch in the latch, a piston on the rod, a cylinder within which the piston moves, and connections between the cylinder and the air-brake system.

2. A freight car, a sliding door therefor, a latch pivoted to the door with its free end projecting beyond the free edge of the door and having a notch in its upper side, a rod having a flattened end to engage the notch in the latch, a piston at the upper end of said rod, a cylinder within which the piston moves, connections between the upper end of the cylinder and the air-brake system, and a spring for holding the rod normally elevated and disengaged with the notch in the latch.

3. A freight car, a sliding door therefor, a latch pivoted to the door with its free end projecting normally beyond the free edge of the door and having a notch, a pin on the latch, a hook on the door so disposed that when engaged with said pin the free end of the latch is prevented from projecting beyond the edge of the door, a rod whose lower end is adapted to engage the notch in the latch, a piston on the rod, a cylinder within which the piston moves, and connections between the cylinder and the air-brake system.

4. A freight car, a sliding door therefor, a latch pivoted to the door with its free end projecting beyond the free edge of the door and having a notch, a rod having a locking end to engage the notch in the latch, a piston

on the rod, a cylinder within which the piston moves, connections between the cylinder and the air-brake system, and a casing inclosing the cylinder and having a hole
5 through which the tip of the latch is projected as the door is closed.

In testimony that I claim the foregoing

as my own, I have hereto affixed my signature in the presence of two witnesses.

WILLIAM M. LEWIS.

Witnesses:

A. J. BOWMAN,

CHAS. E. TRAVERS.