May 1, 1923.

1,453,510

W. H. LAWRENCE

CAR DOOR LOCK

Filed Aug. 8, 1922

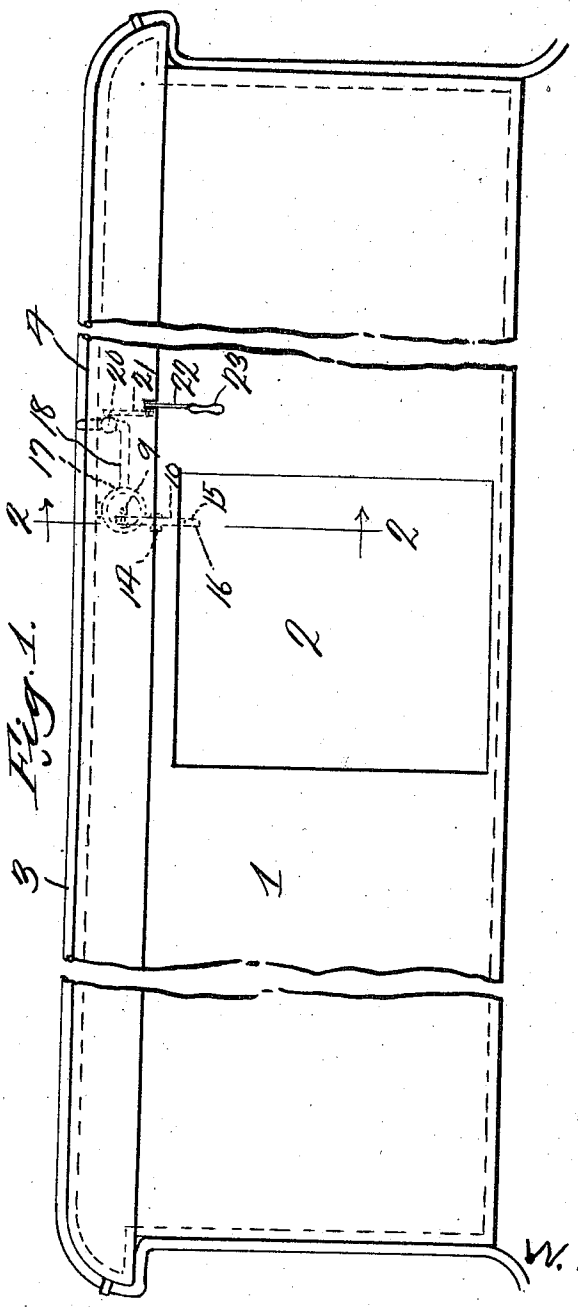


Fig. 1.

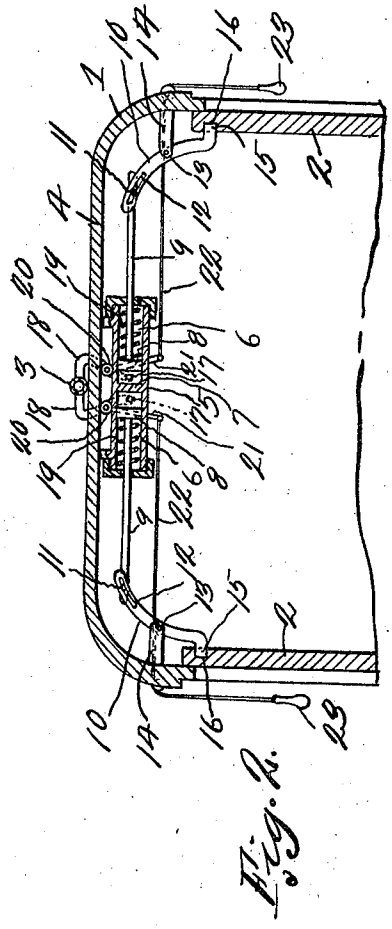


Fig. 2.

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Patented May 1, 1923. 1,453,510

UNITED STATES PATENT OFFICE.

WALTER H. LAWRENCE, OF COUNCIL BLUFFS, IOWA, ASSIGNOR OF ONE-HALF TO WILLIAM A. WELLS, OF COUNCIL BLUFFS, IOWA.

CAR-DOOR LOCK.

Application filed August 8, 1922. Serial No. 580,537.

To all whom it may concern:

Be it known that WALTER H. LAWRENCE, citizen of the United States, residing at Council Bluffs, in the county of Pottawattamie and State of Iowa, has invented certain new and useful Improvements in Car-Door Locks, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to car door locks, and has for its object to provide locks for opposite doors of railroad cars, particularly of baggage, express and mail cars, and to control said lock by an air line which may be controlled from a distance, for instance from the engine of the train. Also to provide means whereby the locks may be controlled from the outside of the car, when pressure is on the air line.

A further object is to provide an air controlled door latching device for railroad cars comprising a transversely disposed cylinder having pistons therein movable away from each other, the pistons being provided with piston rods connected to rockable latching levers which co-operate with oppositely disposed doors. The pistons working against springs, which springs upon the release of pressure move the latching levers to opposite position. Also to provide valve means for admitting air from the air line for forcing either piston outwardly.

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 drawing, 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 drawing:—

Figure 1 is a side elevation of a conventional form of railroad car, showing the device applied thereto.

Figure 2 is a vertical transverse sectional view through the upper portion of the car taken on line 2—2 Figure 1.

Referring to the drawing, the numeral 1 designates a conventional form of railroad car, which is preferably a baggage, an express or mail car, and 2 oppositely disposed sliding doors carried thereby. Extending longitudinally over the car 1 is an air pipe 3, one end of which may lead to any suitable source of air supply, preferably to an engine where it can be controlled by an engineer. The other end of the pipe 3 may lead to other baggage cars in the train. Transversely disposed within the car 1 and beneath the roof 4 thereof is an air cylinder 5, which cylinder is preferably horizontally disposed as shown in Figure 2 and is divided into chambers 6 by means of a partition 7. Disposed within the chambers 6 are pistons 8, which pistons carry oppositely extending rods 9, the outer ends of which are connected to pivoted latching levers 10 by means of pins 11, which extend through elongated slots 12 in the levers 10. The levers 10 are pivoted at 13 to brackets 14 and extend downwardly and provided with angularly disposed outwardly extending lugs 15 which are received in recesses 16 on the inner sides of the doors. It will be seen that when either piston 8 is forced outwardly, the levers 10 will be rocked on their pivotal points 13 and either lug 15 moved out of engagement with the recesses 16, thereby allowing the doors 2 to be moved to open or closed position.

Connected to the cylinder 5 at 17 are pipes 18, which pipes are connected to the air pipe 3 and communicate with the chamber 6 of the cylinder 5 adjacent the inner ends thereof at points where air will enter the chambers 6 behind the pistons 8, in such a manner as to force said pistons outwardly against the action of the coiled springs 19, which coiled springs when pressure is released behind the pistons will cause said pistons to move inwardly for latching the doors after an unlatching operation. The branch pipes 18 are provided with valves 20 of a conventional spring closed form, which valves are provided with operating levers 21, which are controlled by cables 22 which extend through the sides of the car and terminate in handles 23, which may be grasped by the operator for opening either valve 20 or unlatching either door 2.

From the above it will be seen that air controlled door latches are provided for railroad cars, which are simple in construction, the parts reduced to a minimum and which may be easily and quickly applied to cars not in use. It will also be seen that the movable parts of the device are disposed within the car, thereby protecting the same against the weather and at the same time

not making the car of a material additional height whereby the latching device may come into engagement with obstructions.

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

The combination with a railroad car having oppositely disposed doors, pivoted latching devices cooperating with said doors for locking the same, of means for rocking said pivoted latching devices for unlatching the doors, said means comprising a horizontally disposed cylinder disposed within the car, a centrally disposed partition in said cylinder, pistons disposed within the cylinder on opposite sides of the partition, coiled springs for normally forcing said pistons inwardly, rods carried by said pistons and extending outwardly, pin and slot connections between the outer ends of the rods and the pivoted latching devices, air supply pipes connected to the cylinder adjacent the inner ends thereof and in communication with the interior of the cylinder at opposite sides of the partition, valve means for controlling the flow of air through said pipes and means for controlling said valves from outside of the car.

In testimony whereof I hereunto affix my signature.

WALTER H. LAWRENCE.