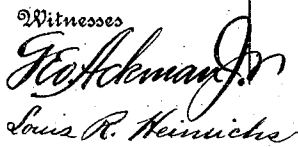


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UNITED STATES PATENT OFFICE.

WALTER A. BYRNE AND JAMES WISE, OF AUBURN, NEW YORK, ASSIGNORS OF ONE-THIRD TO MICHAEL A. O'CONNELL AND ONE-FOURTH TO PATRICK F. MORRISY, BOTH OF AUBURN, NEW YORK.

CAR-DOOR LOCK.

986,799.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, WALTER A. BYRNE and JAMES WISE, citizens of the United States, residing at Auburn, in the county of Cayuga and State of New York, have invented certain new and useful Improvements in Car-Door Locks, of which the following is a specification.

Our invention relates to improvements in car door locks.

One object of the invention is the provision of a lock of simple and novel construction wherein the latch will, upon the closing of the door, automatically engage and secure the door in closed position.

A further object of our invention is the provision of a car door lock wherein the latch cannot be moved into inactive or door releasing position except by air pressure, such pressure being preferably derived from the auxiliary cylinder of the air brake system of the car to which the lock is applied.

A still further object of our invention is the provision of a car door lock which is provided with an audible signal, the signal being adapted to be automatically sounded upon the admission of air to the lock to move the latch into inactive or door releasing position.

A still further object of our invention is the provision of a car door lock which is simple of construction and positive of operation, which may be manufactured and sold at a comparatively low cost, and which may be used in connection with any construction of sliding door.

With the above and other objects in view, the invention consists in the construction, combination and arrangement of parts hereinafter fully described and claimed, and illustrated in the accompanying drawing, wherein;

Figure 1 is a view in side elevation of a car door lock constructed in accordance with our invention, a portion of the lock being in vertical section. Fig. 2 is a sectional view taken on the plane indicated by the line 2-2 of Fig. 1, and Fig. 3 is a view in side elevation illustrating a slightly modified form of the lock.

A designates a fragmentary portion of a freight car of the usual form and construc-

tion, and B a fragmentary portion of the door of the car.

The casing of the lock comprises a front wall 2, a top wall 3, a bottom wall 4, and end walls 5 and 6, which are preferably formed integrally. The casing also comprises a rear removable wall 7 and is secured in applied position by means of bolts 8 which pass through the front and rear walls 2 and 7 respectively and through the side A of the car. The end wall 5 of the casing is provided with an opening 9 through which projects the hooked end of a latch 10 which is pivotally mounted within the casing by means of an element 11. The latch is yieldingly retained in active or door securing position by means of a spring 12 which is preferably of the leaf type. The spring 12 is secured at one end to the top wall 3 of the casing by means of an element 13, its free end being disposed for engagement with the latch 10. The tension of the spring 12 may be regulated through the medium of a set screw 14 which is mounted in the top wall of the casing and which is secured in its adjusted position by means of a jam nut 15.

The hooked end of the latch 10 is adapted to engage a keeper 16 secured to the door B. The keeper preferably comprises a casing which is secured in applied position by means of bolts 17 and has one of its end walls formed to provide an opening 18. The hooked end of the latch 10 passes through the opening 18 for locking engagement with said end wall of the keeper. The latch is provided with an outer curved edge 19 which is engaged by the keeper when the door is moved into its closed position, the contact between the keeper and said curved end being such that the latch is raised to permit its hooked portion to pass through the opening 18 for interlocking engagement with the keeper. As the spring yieldingly retains the latch in active or door securing position, it should be apparent that the latch will, upon the closing of the door, automatically engage the keeper and secure the door in closed position.

The latch 10 is adapted to be moved into inactive or door releasing position by means of air pressure derived from the auxiliary cylinder of the air brake system of the car.

A vertical pipe 20 is threadedly secured to the bottom wall 4 of the casing and the upper end thereof projects into the casing. The lower end of the pipe 20 is connected
 5 to an auxiliary air brake cylinder 21 by means of a pipe 22. A vertical cylinder 23 is located within the casing and is threadedly secured to the upper end of the pipe. As the cylinder 23 is larger in diameter than
 10 the pipe 20, the upper end of the pipe forms a seat 24 for a head 25. A stem 26 is secured to and rises vertically from the head 25, and the upper end thereof is disposed for engagement with the latch 10. A suitably constructed valve 22^a is mounted in the
 15 pipe 22 to control the admission of compressed air to the cylinder 23. Air entering the cylinder 23 will move the head 25 upwardly, such upward movement of the
 20 head moving the latch 10 into inactive or door releasing position. When the air pressure is cut off the head 25 gravitates on to the seat 24 thus permitting the latch to be returned to and yieldingly held in its active
 25 or door securing position by means of the spring 12. The head 25 is guided in its movements by means of a bar 27 which is secured across the cylinder 23 and through which passes the stem 26.
 30 An audible indicator which is preferably in the form of a whistle 28, is used in connection with our improved lock. The whistle 28 is carried by a pipe 29 which is connected with the pipe 22 by means of a
 35 coupling 30. When the valve is turned to permit the flow of compressed air to the cylinder 23, a sufficient quantity of air will pass through the pipe 29 to sound the whistle. The sounding of the whistle will
 40 be warning to the proper persons that the door has been unlocked. The modification of the lock disclosed in Fig. 3 resides in carrying the apertured end wall of the
 45 vertical edge of the door, thus permitting the lock casing to be situated a distance from

the door opening sufficient to prevent injury to the lock during the loading or unloading of the car.

It should be apparent from the above description, taken in connection with the accompanying drawing, that we provide a car door lock which is simple, durable and efficient, which will automatically secure a door in closed position, and which may be used in
 55 connection with any construction of sliding door. It should also be apparent that we provide a lock which will sound an alarm when the door is opened, and that it cannot be opened except by the use of compressed
 60 air derived from the auxiliary cylinder of the air brake system of the car.

Changes in the form, proportions, and minor details of construction may be made within the scope of the claim without departing from the spirit or sacrificing any of the advantages of the invention.

Having thus described the invention, what is claimed as new is:—

A lock comprising a casing, a cylinder located in the casing, a latch pivotally mounted in the casing above the cylinder, a head movably mounted in the cylinder, a stem secured to the head and engaging the under
 75 side of the latch, a spring engaging the upper side of the latch, an air reservoir, a pipe communicating with the cylinder below the head and with the reservoir, a valve by which air to the cylinder from the reservoir may be controlled, and a whistle communicating with the pipe at a point between the
 80 cylinder and reservoir so that when air is admitted to the cylinder to raise the latch the whistle is sounded.

In testimony whereof we affix our signatures, in presence of two witnesses.

WALTER A. BYRNE.
 JAMES WISE.

Witnesses:

JOHN RENAHAN,
 JOHN G. BYRNE.