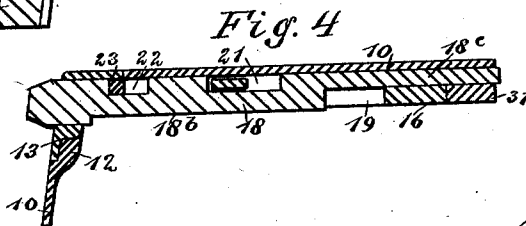
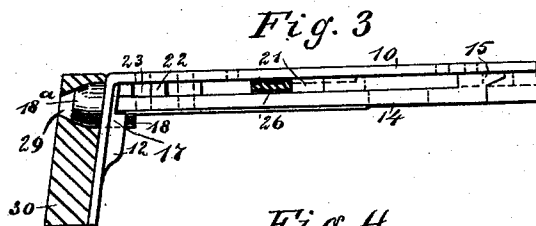
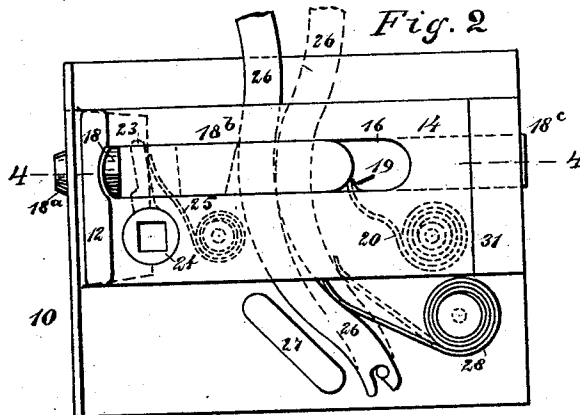
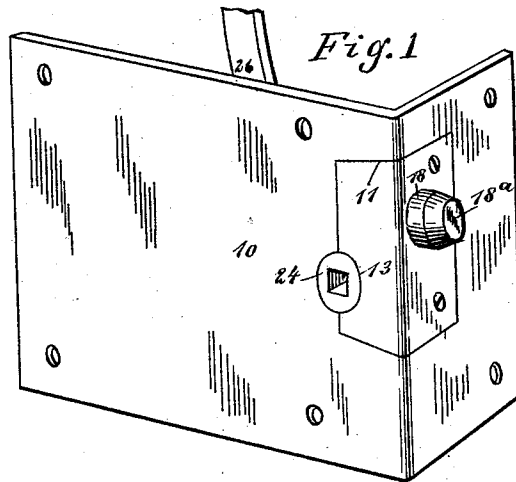


(No Model.)

J. M. ORR.
COACH DOOR LATCH.

No. 472,388.

Patented Apr. 5, 1892.



WITNESSES:
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UNITED STATES PATENT OFFICE.

JAMES M. ORR, OF NEW YORK, N. Y.

COACH-DOOR LATCH.

SPECIFICATION forming part of Letters Patent No. 472,388, dated April 5, 1892.

Application filed October 8, 1891. Serial No. 408,121. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. ORR, of New York city, in the county and State of New York, have invented a new and useful Improvement in Coach-Door Latches, of which the following is a full, clear, and exact description.

My invention relates to an improvement in latches especially adapted for use upon the doors of vehicles, and has for its object to provide a latch of simple, durable, and economic construction, capable of being expeditiously and conveniently removed for cleaning or oiling whenever desired; and a further object of the invention is to so form the latch that it may be attached to any vehicle-door, the outer end of the latch being flush with the free edge of the door.

Another object of the invention is to so shape the bolt of the latch and the socket in the door-casing that the latch will not have vertical or lateral play. By this means the bolt of the latch will be effectually prevented from rattling and a tie connection between the bolt and the socket will be at all times maintained.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a perspective view of a plate adapted to be fitted into the door of a vehicle and also adapted to receive the lock. Fig. 2 is an elevation of the inner side of the lock and the plate. Fig. 3 is a plan view of the plate and lock and a horizontal section through the socket for the lock-bolt and the casing of the door receiving the socket, and Fig. 4 is a horizontal section taken practically on the line 4 4 of Fig. 2.

The plate 10, which may be termed a "face-plate," adapted to receive the lock and to be mortised or otherwise sunk in the door to which the lock is to be applied, is angular or essentially L-shaped in cross-section, and at the juncture of its members the plate is provided with an opening 11, the said opening at one side being provided with a wall 12, which

wall is recessed to receive the auxiliary face-plate 13 of the lock.

The auxiliary face-plate of the lock corresponds in contour to the opening 11, and when the lock is in position is flush with the outer face of the plate 10 of the door, as shown in Fig. 1, being secured to the wall 12 of the opening 11 through the medium of screws or their equivalents.

The auxiliary face-plate of the lock has integral with one end a body-plate 14, horizontally located, essentially, at a right angle to the face-plate, as is best shown in Figs. 3 and 4.

A lip 15 is formed integral with the rear end of the body-plate 14 of the lock, the said lip being formed upon the outer face of the body-plate, as is best shown in Fig. 3. The body-plate has produced therein a longitudinal slot 16, and the auxiliary face-plate of the lock has formed therein an opening 17, through which the outer end of the bolt 18 of the lock passes. Near the outer end the bolt is preferably made circular in cross-section; but its outer extremity is conical, as illustrated at 18^a. The inner portion of the bolt is somewhat flat and is made, preferably, in two step-sections 18^b and 18^c, as shown in Fig. 4. The front section 18^b is thicker than the rear section 18^c, and the latter section is located between the plate 10 of the door and the body-plate 14 of the lock.

The front section 18^b of the bolt is of less length than the slot 16, and when the lock-bolt is thrown backward the said bolt engages with the rear end of the slot 16 at the rear portion of its front section 18^b, and this contact limits the inward or rearward movement of the bolt.

The rear section 18^c of the bolt passes through an opening in the lip 15 of the body-plate of the lock, and this rear section has produced, preferably, in its under edge a notch 19, in which one end of a spring 20 is entered, which spring is attached in any suitable or approved manner at its opposite end to the body-plate 14. This spring normally forces the bolt 18 outward.

The front section 18^b of the bolt has produced in its outer face two openings 21 and 22. Upward through the opening 22, which is the outer opening, a finger 23 projects, which finger is fast upon or integral with a

sleeve 24, mounted at its outer end in registering recesses in the abutting edges of the plates 10 13 and at its inner end mounted in a circular opening in the plate 14, as shown in Figs. 1 and 2, the outer face of which sleeve is flush with the outer face of the face-plate 10 when the lock is in position therein, or practically so. The sleeve is preferably provided with a rectangular opening to receive the knob-spindle, the knob being located upon the outer face of the door, and by turning the knob in the proper direction the finger 23 engages with one wall of the opening 22 in a manner to force the bolt inward from its socket against the tension of the spring 25, which spring is attached at one end to the body-plate of the lock and engages at its opposite end with the finger, as shown in Fig. 2.

The bolt is operated from the inside of the coach or vehicle through the medium of a lever 26, pivoted at its lower end upon the face-plate 10 by means of an open slot in its lower end and a stud on the plate 10, as shown in Fig. 2, the said lever being carried upward between the body-plate of the lock and the plate 10 through the opening 21 in the lock-bolt. A guide 27 is secured upon the face-plate 10, which directs the downward movement of the lever when placing the same, and the lever is kept normally in engagement with the ordinary lock-board or through the medium of a suitable spring 28.

The socket 29, located in the door-casing 30 and adapted to receive the conical end of the bolt, is of conical shape, as best shown in Fig. 3, and by forming the end of the bolt conically and this socket likewise as the walls of the socket wear away the springs controlling the bolt will force the outer end of the bolt farther into the socket, and the conical shape of these two parts effectually prevents the bolt from rocking or moving in any direction and prevents it from making any noise whatever.

The bolt is exceedingly simple in construction and is readily applicable to any coach-door, being capable of operation both from within and from without the coach.

When the lock is in position upon the plate 10, the lip 15 extends beneath a bridge 31, formed upon the inner rear portion of the door-plate 10, which bridge is provided with an opening through which the rear extremity of the bolt passes.

From the foregoing it will be apparent that should the lock get out of order it will simply be necessary to remove the lever 26 vertically out of the lock, which may be done owing to the open slot in its lower end, then remove the spindle from the sleeve 24, when the auxiliary face-plate 13, with the back plate 14, the bolt, and its operating-springs, may be simultaneously removed from the plate 10 without removing the latter. After cleaning and oiling the bolt and repairing whatever may be necessary the back plate

14, with its attached parts, may be passed through the opening 11 until its tongue 15 passes under the undercut rib or bridge 31, when the auxiliary face-plate 13 will close the opening 11. The lever 26 may now be passed down through the notch 21 until its lower end strikes the inclined guide 27, when its slotted lower end will again engage the pivot-stud. Thus the upholstering, which usually conceals the face-plate 10 of the lock, need not be removed after the lock has once been secured to the door. The auxiliary face-plate and its attached parts virtually form a mortise-lock.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A carriage-door lock comprising a main angular face-plate having an opening at the juncture of its two sections, an auxiliary face-plate having a back plate carrying the bolt and readily removable and insertible through said opening, and a vertically-removable lever passed loosely through an opening in the bolt and separably fulcrumed at its lower end, substantially as set forth.

2. A mortise carriage-lock the bolt of which has a transverse recess or opening, a fulcrum-point below the bolt, and a vertically removable and insertible lever passed loosely through said recess or opening to operate the bolt and loosely engaged at its lower end with its fulcrum to be readily removed by drawing it upward and adapted to be readily engaged with its fulcrum by passing it downward through the recess or opening in the bolt until its lower end engages said fulcrum, substantially as set forth.

3. In a lock for the doors of vehicles, the combination, with an angular plate adapted for attachment to the door and provided at the junction of its members with an opening, of a lock inserted in the opening of the plate and removably connected with the plate, the said lock comprising a bolt having a conical outer end, a sleeve carrying a finger having a bearing against the bolt, and a lever engaging with the bolt, the said lever and sleeve being adapted to operate the bolt, the lower end of the lever being separately fulcrumed to permit it to be readily removed and inserted by sliding it vertically up or down through the lock, as the case may be, as and for the purpose specified.

4. In a lock for the doors of vehicles, the combination, with a plate essentially L-shaped in cross-section and adapted for attachment to the door, provided with an opening at the junction of its members, a vertical undercut rib or bridge 31, a pivot-stud, and a guide 27 in front of the stud, of a lock inserted in the opening of the plate and removably attached to the latter, said lock comprising an auxiliary face-plate, having a back plate provided with a tongue at its inner end to pass under the rib or bridge, a spring-pressed bolt, a sleeve having a bore to receive a spindle and provided

with a spring-pressed finger engaging with the bolt, and a lever passed down through a transverse recess or opening in the bolt and having an open slot in its lower end to embrace said pivot-stud, the sleeve and the lever being adapted to throw the bolt inward, whereby by first removing knob-spindle and the said lever vertically out of the lock the auxiliary face-plate and lock mechanism carried thereby may be removed after the manner of a ro mortise-lock without removing the main face-plate, as and for the purpose specified.

JAMES M. ORR.

Witnesses:

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J. VINTON LOCKE.