Aug. 6, 1929. R. G. MOORE 1,723,803

LATCH

Filed May 8, 1926

Fig. 1

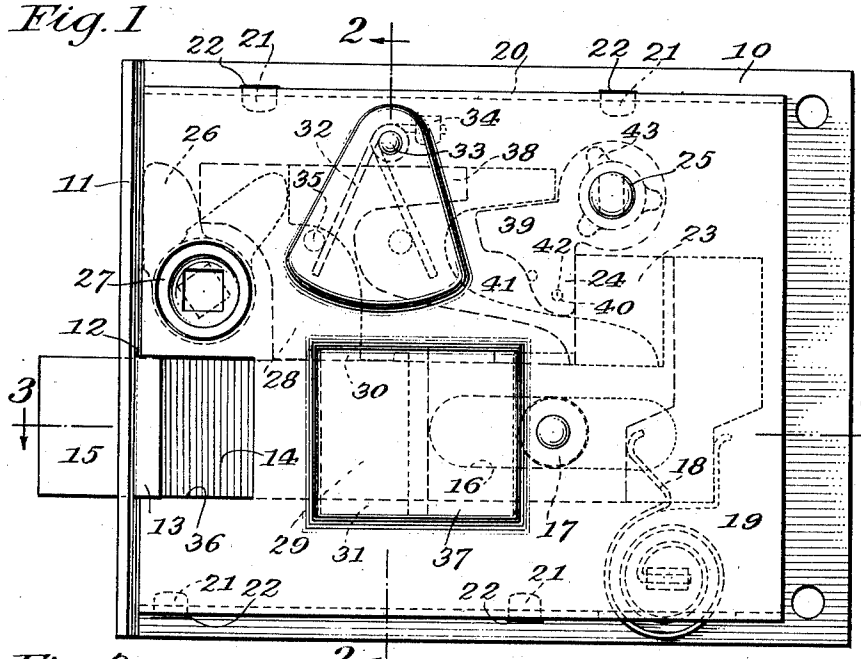


Fig. 2

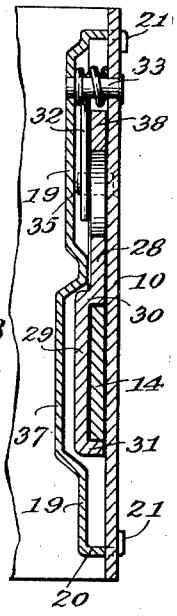


Fig. 3

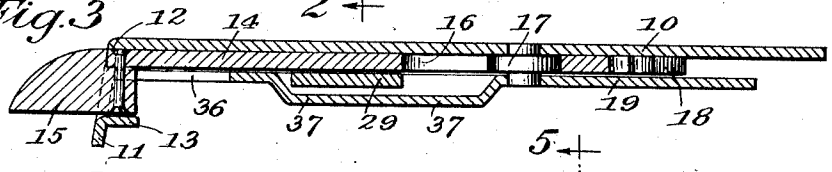


Fig. 4

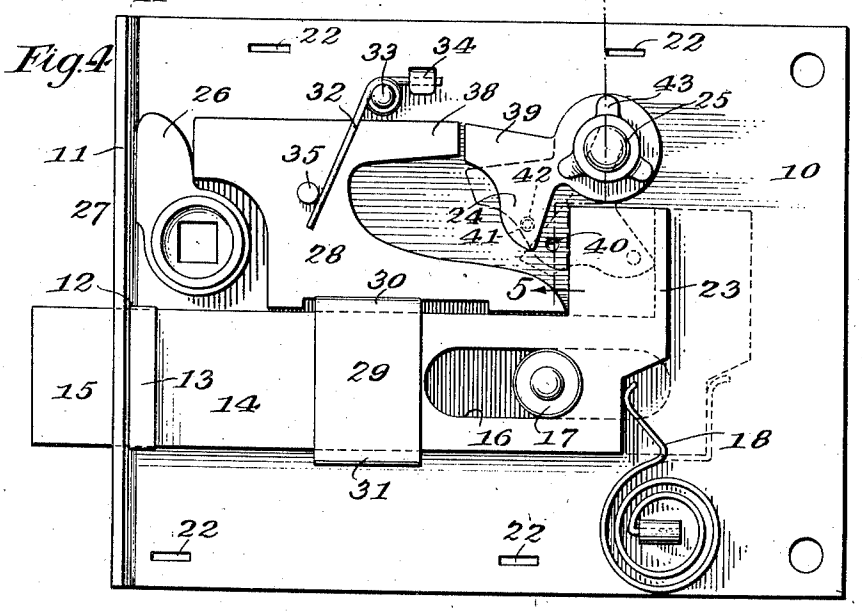
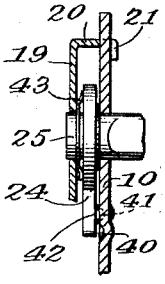


Fig. 5



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Patented Aug. 6, 1929. 1,723,803

UNITED STATES PATENT OFFICE.

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LATCH.

Application filed May 8, 1926. Serial No. 107,544.

The present invention relates to an improved automobile door latch, and has for an object to provide a latch of this character, having an inside and an outside operating handle, and in which the outside handle is adapted to be dogged against operation by manipulation of the inside handle. The latch is especially adapted for use upon doors of closed cars, being applied to all but one of the doors, and which latter is adapted to be locked from the outside.

I particularly propose to provide an inside handle roll-back adapted to operate directly upon the latch bolt, and an outside handle roll-back adapted to operate upon the roll-back through an intermediate member directly engaging the latch bolt at a point substantially coincident, transversely of the bolt, with the point of engagement of the inside handle roll-back, and further to provide means on the inside handle roll-back adapted through manipulation of the latter to prevent actuation of said intermediate member and the outside handle roll-back.

Another object is to provide a latch bolt adapted to have free retracting movement in the locked relation of the outside handle, either by manipulation of the inside handle or by pressure applied against the nose end of the bolt, and further to provide a latch construction in which the handle roll-backs may be located at any desired points in the latch casing, that is, they may be placed above or below the bolt and at any desired points longitudinally, without changing their main combinative relation, or materially altering the design of the parts, thereby adapting the main parts of the latch to use upon various car doors, in which the positions of the handles are differently arranged. With the above and other objects in view, an embodiment of the invention is shown in the accompanying drawings, and this embodiment will be hereinafter more fully described with reference thereto, and the invention will be finally pointed out in the claims.

In the drawings:

Fig. 1 is a plan elevation of an automobile door latch, according to the present embodiment of the invention, and showing the same in its normal operative relation;

Fig. 2 is a vertical sectional view, taken along the line 2—2 of Fig. 1;

Fig. 3 is a longitudinal sectional view, taken along the line 3—3 of Fig. 1;

Fig. 4 is a plan elevation, with the cover plate removed, and showing the parts in the relation in which operation of the outside handle is prevented; and

Fig. 5 is a detail sectional view, taken along the line 5—5 of Fig. 4.

Similar reference characters indicate corresponding parts throughout the several figures of the drawings.

Referring to the drawings, the embodiment of the invention shown therein comprises a sheet metal frame or base plate 10 having a face flange 11 bent therefrom at one end, within which a rectangular opening 12 is provided, a flange lip portion 13 of the metal cut from said opening being bent inwardly in parallel spaced relation to the plate 10 to form a bearing for the latch bolt.

The latch bolt 14 is slidably engaged at its relatively thick nose portion 15 in the opening 12, and near its inner end is provided with a slot 16 engaged with a fixed guide roller 17 secured to the plate 10, a coil spring 18 engaged with the inner end of said bolt normally pressing it to its projected position. The bolt is retained against displacement by means of a flat cover plate 19, flanged at its upper and lower edges, as at 20, and secured to the plate 10 by lugs 21 inserted through slots 22 in said plate 10 and bent over upon the surface thereof.

The main portion of the bolt within the casing may preferably be formed of flat sheet metal, while the nose portion may be a forging riveted thereto.

At the rearward end of the bolt there is provided an upwardly projecting vertical extension 23 engaged by the inner handle roll-back 24, the hub 25 of which has bearing in apertures formed in the base and cover plates 10 and 19.

The outside handle roll-back 26 has its hub 27 rotatably engaged in apertures formed in the plates 10 and 19 adjacent the flange 11, and is adapted to actuate the bolt through an intermediate slide member 28 slidably engaged upon the upper surface of the bolt and adapted to bear at its rearward end against the vertical forward surface of the bolt extension 23, while at its forward end it is extended upwardly and forwardly

to engage against the roll-back 26. A bolt bridging portion 29 of the slide member extends transversely across the bolt, being flanged as at 30 and 31 to engage the upper and lower edges of the bolt and thereby retain the slide member in sliding contact with the bolt. A spring 32 coiled about a stud 33 has one end engaged against a lug 34 formed from the casing, while its other end bears upon a pin 35 provided on the slide member and normally presses the latter forwardly against the outside handle roll-back, so that it is retained in its normal relation during operation of the inside handle, or retraction of the bolt through pressure applied at its nose end.

A slot 36 and a pressed out portion 37 in the cover plate 19 permit retraction movement of the bolt nose and the slide member, the latter having its bridging portion 29 engaged in said portion 37.

The dogging means for the outside handle roll-back consists of a horizontally projecting rearward extension 38 provided at the upper portion of the slide member 28, and a blocking portion 39 formed upon the inside handle roll-back, this portion being normally out of the path of said extension 38 during retraction movement of the slide member, as shown in dotted lines in Fig. 1, but adapted upon a partial rotation of said inside handle roll-back in reverse direction to be interposed in the path of movement of said extension to thereby prevent or block operation of the slide member and the outside handle roll-back.

In order to yieldably retain the inside handle roll-back in its normal and reversely moved positions there are provided spaced recesses 40 and 41 pressed into the casing and adapted to be engaged, in the respective moved positions of the roll-back, by a boss 42 provided on the under surface of the roll-back, and engaging said recesses under the action of a radial spring plate 43 provided on the hub of the roll back between its upper surface and the cover plate 19.

The operation is as follows:

As shown in Fig. 1, in which the parts are in their normal unlocked relation, the latch bolt is retracted from the inside by the inside handle, the roll-back 24 being rotated in counter-clockwise direction and bearing directly upon the extension 23 of the bolt. It is retracted from the outside by the outside handle, the roll-back 26 being rotated in clockwise direction, and through movement of the slide member retracting the bolt.

In order to dog the outside handle roll-back against operation, the inside handle roll-back is moved through a partial rotation in opposite direction to its normal retracting movement, (Fig. 4) bringing the blocking portion 39 into the direct path of the extension portion 38 of the slide member, and thereby blocking the latter and the outside handle roll-back against operation.

The normal operative relation of the outside handle is restored upon moving the inside handle in retracting direction, the initial movement bringing the blocking portion 39 out of the path of the extension 38, and the continued movement causing retraction of the bolt.

Under all conditions the latch bolt is free to be retracted independently of the handles, that is, by pressure directly applied at its nose, as in slamming the door close.

I have illustrated and described a preferred and satisfactory embodiment of the invention, but it will be obvious that changes may be made therein, within the spirit and scope thereof, as defined in the appended claims.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:—

1. In a latch, a latch bolt, retracting means for said bolt including inside and outside manually operable means, a retracting member interposed between said outside retracting means and the bolt and movable along a line in parallel relation with the longitudinal axis of said bolt, and means associated with said inside retracting means adapted upon manipulation of the latter in non-bolt-retracting direction to prevent movement of said retracting member.

2. In a latch, a latch bolt, retracting means for said bolt including inside and outside manually operable means, said inside retracting means engaging directly with said bolt, a retracting member interposed between said outside retracting means and the bolt and movable along a line in parallel relation with the longitudinal axis of said bolt and means associated with said inside retracting means adapted upon manipulation of the latter in non-bolt-retracting direction to prevent movement of said retracting member.

3. In a latch, a latch bolt, retracting means for said bolt including inside and outside manually operable means, a retracting member interposed between said outside retracting means and the bolt and movable along a line in parallel relation with the longitudinal axis of said bolt, and means associated with said inside retracting means adapted upon manipulation of the latter in non-bolt-retracting direction to prevent movement of said retracting member, said bolt being free to have retracting movement independently of said retracting member by retracting pressure directly applied thereto.

4. In a latch, a latch bolt, retracting means for said bolt including inside and outside manually operable means, a retracting member interposed between said outside retracting means and the bolt and movable along a

line in parallel relation with the longitudinal axis of the bolt and adapted to permit relative longitudinal movement between them, and extending into operative relation with said outside retracting means, and means associated with said inside retracting means adapted upon manipulation of the latter in non-bolt-retracting direction to prevent movement of said retracting member, said bolt being free to have retracting movement independently of said retracting member by retracting pressure directly applied thereto.

5. In a latch, a latch bolt, retracting means for said bolt including inside and outside manually operable means, a retracting member interposed between said outside retracting means and said bolt, and movable along a line in parallel relation with the longitudinal axis of said bolt, said inside retracting means including means operatively related to said retracting member, whereby movement of said inside retracting means in one direction is adapted to retract the bolt and in the other direction is adapted to prevent operation of said retracting member.

6. In a latch, a latch bolt, retracting means for said bolt including inside and outside manually operable means, a retracting member interposed between said outside retracting means and said bolt and movable along a line in parallel relation with the longitudinal axis of said bolt, said inside retracting means including means operatively related to said retracting member, whereby movement of said inside retracting means in one direction is adapted to retract the bolt and in reverse direction is adapted to prevent operation of said retracting member, and means for yieldably retaining said inside retracting means in its normal and reversely moved positions respectively.

7. In a latch, a latch bolt, retracting means for said bolt including inside and outside manually operable means, a retracting member interposed between said outside retracting means and said bolt, said inside retracting means and said retracting member engaging said bolt along substantially the same transverse line of said bolt, said inside retracting means including means operatively related to said retracting member, whereby movement of said inside retracting means in one direction is adapted to retract the bolt and in reverse direction is adapted to prevent operation of said retracting member.

8. In a latch, a latch bolt, retracting means for said bolt including inside and outside manually operable means, a retracting member interposed between said outside retracting means and said bolt and movable along a line in parallel relation with the longitudinal axis of said bolt, said inside retracting means including an abutment portion normally out of the path of movement of said retracting member and adapted upon movement of said inside retracting means in non-bolt-retracting direction to be interposed in the path of movement of said retracting member whereby its operation and operation of the outside retracting means are prevented.

Signed at Bridgeport, in the county of Fairfield, and State of Connecticut, this 4th day of May, 1926.

RAYMOND G. MOORE.