July 16, 1929. R. G. MOORE 1,721,162

LATCH

Filed May 8, 1926

Fig. 1

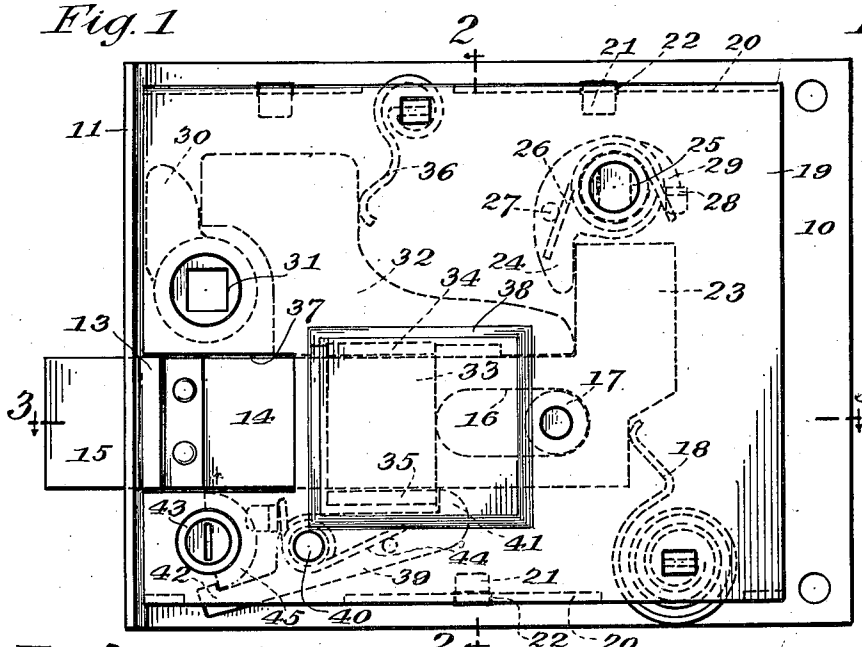


Fig. 2

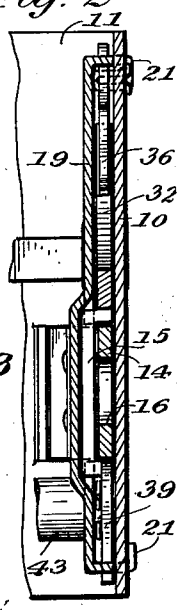


Fig. 3

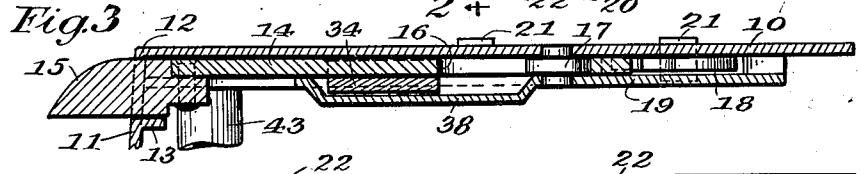
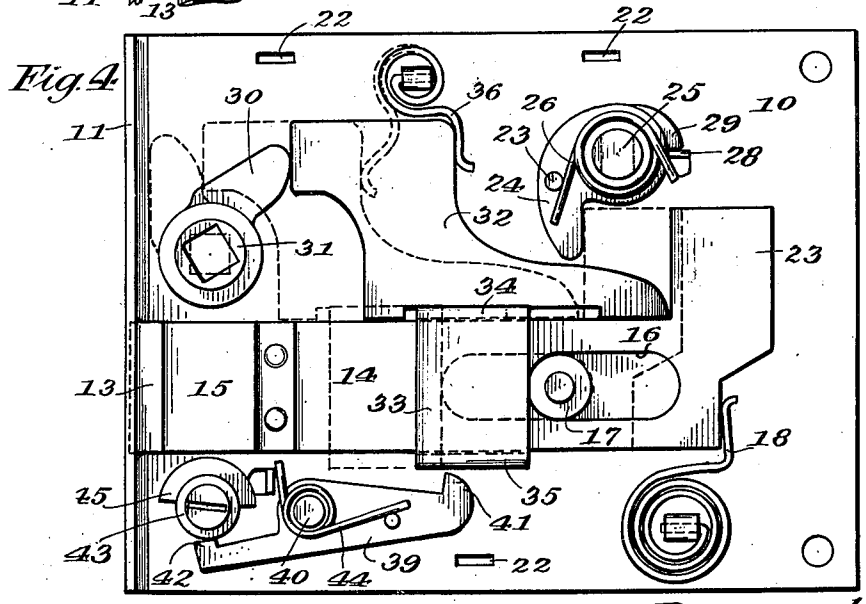


Fig. 4



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UNITED STATES PATENT OFFICE.

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LATCH.

Application filed May 8, 1926. Serial No. 107,540.

The present invention relates to an improved automobile door latch, particularly of the type adapted to be key-locked at the outside, an object being to provide a latch of simple construction, which will be efficient and reliable in operation, and in which the several main parts of the latch, the casing, bolt, retracting means, spring, etc., are adapted to use in latches not equipped with locking means, or equipped with inside locking means, which upon manipulation lock the outside handle, or render its operation ineffective.

It is particularly proposed, in the present embodiment, to provide a latch in which the latch bolt is 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, as in slamming the door closed; and further, to provide a latch construction in which the locking means may be located at any desired point on the latch casing, that is, it may be placed above or below the bolt and at any desired point longitudinally, without material changes in the structural design or main combinative relation, thereby adapting the main parts of the latch to use upon various car doors, in which the handle and lock positions 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;

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

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

Fig. 4 is a plan elevation, with the cover plate removed, and showing the locking means in unlocked relation, Fig. 1 showing the same in locked relation.

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 relation to the plate 10 to form a bearing for the latch bolt.

The latch bolt 14 is slidably engaged at its 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 into 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 of the plate 10. 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. A coil spring 26 normally engaged at one end with a lug 27 on the roll-back and engaged at its other end against a lug 28 struck from the base plate yieldably retains the roll-back in its normal position by engaging a projection 29 thereon with the leg 28.

The outside handle roll-back 30 has its hub 31 rotatably engaged in apertures in the plates 10 and 19 adjacent the face flange 11, and is adapted to actuate the bolt through an intermediate slide member 32 slidably engaged with 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 its forward end is extended upwardly and forwardly to engage against the outside handle roll-back 30. A bolt-bridging portion 33 of the slide member extends transversely across the bolt, being flanged, as at 34 and 35, to engage the upper and lower edges of the bolt and thereby retain the slide member in sliding connection with the bolt. A spring 36 engaging the upper portion of the slide member normally presses it forwardly against the outside handle roll-back, so that the latter is retained in its normal relation during operation of the inside handle, or retraction of the bolt through pressure directly applied at its nose end.

A slot 37 and a pressed out portion 38 in the cover plate 19 permit retraction movement of the bolt nose and the slide member, the latter having its bridging portion 33 engaged in said portion 38.

The locking means consists of a locking lever 39 pivotally mounted at 40, provided at one end with a lug or hook portion 41 adapted in one position of the lever to lockingly engage with the rearward end of the flange 35 of the slide member 32, to thereby lock said member, and the outside handle roll-back, against movement. The other end of the lever is provided with a lug 42 and is engaged with a rotary key-lock 43 secured to the casing, the lever having yieldable engagement with the lock through the action of a coil spring 44 tending to rotate the same in clockwise direction and out of locking relation with the slide member. The lock is provided with a substantially semi-circular cam portion 45 adapted by abutment of its end with the lug 42 to limit the rotation of the lock, and by engagement with the upper surface of the lever, through turning in clockwise direction, (Fig. 1) to move the lever into locking engagement with the slide member. Upon rotation in the opposite direction the lever moves against the cylindrical surface of the lock, as shown in Fig. 4, disengaging from the slide member, and permitting operation of the outside handle.

The sheet metal retracting member 32, it will be noted, extends above and below the bolt, and inasmuch as the blocking of this member effects locking of the outside handle, the locking lever may obviously be placed at any desired point upon the casing, without materially changing the design of the parts. The positions of the handles may also be readily changed by changing the relative placement of the forward end of the retracting member, which end may be either above or below the bolt, and the extension portion 23 of the bolt, which may also be above or below the bolt, the sheet metal structure permitting of such changes, without great expense in tools. The locking means is simple, effective, and will not readily get out of order.

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 manually operable means, a retracting member interposed between said manually operable means and the bolt and adapted to have longitudinal sliding movement with said bolt, and locking means adapted to be manipulated to prevent retracting movement of said retracting member, whereby operation of said manually operable means is prevented.

2. In a latch, a latch bolt, retracting means for said bolt including manually operable means, a retracting member interposed between said manually operable means and the bolt, and locking means adapted to be manipulated to prevent retracting movement of said retracting member, whereby operation of said manually operable means is prevented, said bolt being free to be retracted independently of said retracting member by retracting pressure applied directly thereto.

3. In a latch, a latch bolt, retracting means for said bolt including manually operable means, a retracting member slidably engaging said bolt to permit relative longitudinal movement between them, and extending into operative relation with said manually operable means, and locking means adapted to be manipulated to prevent retracting movement of said retracting member, whereby operation of said manually operable means is prevented.

4. In a latch, a latch bolt having a transverse abutment portion, retracting means for said bolt including manually operable means, a retracting member interposed between said manually operable means and said abutment portion of the bolt, and locking means adapted to be manipulated to prevent retracting movement of said retracting member, whereby operation of said manually operable means is prevented.

5. In a latch, a latch bolt, retracting means for said bolt including manually operable means, a retracting member interposed between said manually operable means and the bolt and having a bridging portion slidably engaging and extending transversely across said bolt, and locking means adapted to be manipulated to prevent retracting movement of said retracting member, whereby operation of said manually operable means is prevented.

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 adapted to have longitudinal sliding movement with said bolt, and locking means adapted to be manipulated to prevent retracting movement of said retracting member, whereby operation of said outside retracting means is prevented.

7. In a latch, a latch bolt, retracting means for said bolt including inside and outside manually operable means, said inside retracting means directly engaging the bolt, a retracting member interposed between said outside retracting means and said bolt, and locking means adapted to be manipulated to prevent retracting movement of said retracting member, whereby operation of said outside retracting means is prevented.

8. In a latch, a latch bolt having a trans-

verse abutment portion, retracting means for said bolt including inside and outside manually operable means, said inside retracting means directly engaging said transverse abutment portion, a retracting member interposed between said outside retracting means and said bolt and directly engaging said abutment portion, and locking means adapted to be manipulated to prevent retracting movement of said retracting member, whereby operation of said outside retracting means is prevented.

9. In a latch, a latch bolt, retracting means for said bolt including manually operable means, a retracting member interposed between said manually operable means and the bolt and adapted to have movement longitudinally with said bolt, and locking means comprising a lever including a portion adapted in one position of said lever to engage said retracting member to prevent retracting movement thereof, whereby operation of said manually operable means is prevented, and key actuated means adapted to move said lever into and out of locking relation.

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

RAYMOND G. MOORE.