

UNITED STATES PATENT OFFICE

1,991,120

AUTOMOBILE DOORLATCH

Holden W. Rightmyer, Toledo, Ohio, assignor to
The American Swiss Company, Toledo, Ohio,
a corporation of Ohio

Application July 25, 1932, Serial No. 624,416

12 Claims. (Cl. 292—167)

This invention relates to door latches such as used on automobile doors, and an object is to produce a new and improved door latch having the novel features of construction, arrangement and operation hereinafter described. An important feature of this construction resides in mounting the inside-operated retracting element on a rivet or pin which also has guiding influence on the movement of the latch bolt so that the same rivet or pin serves a dual purpose, and thus simplifies the construction and reduces the cost of manufacture.

For purposes of illustration, but not of limitation, an embodiment of the invention is shown in the accompanying drawing, in which:

The figure is an elevation view of a door latch and remote control unit, which is built in accordance with this invention.

Referring to the drawing, the door latch comprises a back plate 10 having a flanged face plate 11 through which a bolt head 12 projects. The bolt head 12 is secured by rivets 13 to a bolt plate 14, which has a depressed portion 15. Between the depressed portion 15 and the back plate 10 is a bolt retracting lever 16 engageable with the depressed bolt extension 17 integral with the bolt plate portion 15. The lever 16 is pivotally mounted on a headed rivet 18 carried by the back plate 10. The rivet 18 extends through a longitudinally elongate slot 19 in the portion 15 of the bolt plate. It will be observed that the slot 19 is adjacent one side edge of the bolt plate, and adjacent an opposite side edge is a spiral spring 20 having one end disposed between lugs 21 on the back plate and the opposite end engaging the rear portion of the bolt head 12 for urging the bolt to latching position.

Connected to the upper end portion of the lever 16 is a strap 22 which leads to a remote control unit 23 of any suitable or desired construction. In this instance the strap 22 is pivoted to an arm 24 mounted on a stub shaft 25, which is adapted to receive a usual actuating handle. Although the invention is shown in connection with a remote control latch, it is to be understood that the invention is of broader scope, and may be applied to advantage with the pull-to lever type latch.

Integral with the inside operated retracting lever 16 is an extension 25', which, when the lever 16 is moved in non-bolt-retracting direction, is adapted to block movement of an outside operated roll back 26. The roll back 26 is mounted on a hub 27 for receiving an operating

spindle, and one end thereof is engageable with a flange 28 of the bolt plate for withdrawing or retracting the latch bolt from the outside of the door. The roll back is held in the desired position by a cover plate 29 secured to the back plate 10, and for holding the roll back in bolt engaging position a spring 30, having one end anchored between lugs 31 on the back plate, bears against the roll back and holds it normally in the position shown in the figure.

In order to release the dogging or roll back blocking extension 25' from blocking position when the door is slammed, a stop 32 is formed on the bolt plate 14, and a lateral extension 33 is adapted to abut against the stop 32 when the lever 16 is moved forwardly into roll back blocking position. It is apparent that when the latch bolt is moved to the left of the figure the stop or abutment 32 will move the lever 16 in a counter clockwise direction, thus lifting the blocking extension 25' out of the way of the roll back 26. This arrangement is of advantage in the event that the door is accidentally locked when in open position. It is manifest that in order to prevent operation of the outside operated roll back, it is necessary that the door be in closed position.

The manner in which the lever 16 is mounted and the bolt is guided, is of importance, since it requires the use of but a single rivet. It provides the pivotal mounting for the lever 16, and also has guiding influence on the movement of the latch bolt. This provides an exceptionally simple and sturdy construction which can be inexpensively manufactured.

It is to be understood that numerous changes in details of construction, arrangement and operation may be effected without departing from the spirit of the invention, especially as defined in the appended claims.

I claim:

1. In a door latch, a tensioned latch bolt comprising a latching head and plate rigid with said head, outside-operated means for retracting said bolt, inside-operated means for retracting said bolt, said inside-operated means comprising a lever, a pivotal mounting for said lever, and a lost motion connection between said mounting and said bolt plate whereby said mounting also serves to guide the movement of said bolt.

2. In a door latch, a back plate, a latch bolt comprising a latching head and plate rigid with said head movable over said back plate, spring means for urging said bolt to latching position,

- a roll back for retracting said bolt from the outside, a lever disposed between said bolt plate and back plate for retracting the bolt from the inside, a headed rivet on said back plate providing a pivotal mounting for said lever, said bolt plate having a longitudinal slot engaging said rivet whereby the latter has guiding influence on the movement of said bolt, and a head on said rivet for holding the lever and bolt in place.
3. In a door latch, a back plate, a latch bolt comprising a latching head and plate rigid with said head movable over said back plate, spring means for urging said bolt to latching position, a roll back for retracting said bolt from the outside, a lever disposed between said bolt and back plate for retracting the bolt from the inside, a headed rivet on said back plate providing a pivotal mounting for said lever, and said bolt plate having a longitudinal slot engaging said rivet whereby the latter has guiding influence on the movement of said bolt, and an extension on said lever adapted to block movement of said roll back upon movement of said lever in a non-bolt-retracting direction.
4. In a door latch, a back plate, a latch bolt comprising a latching head and plate rigid with said head movable over said back plate, spring means for urging said bolt to latching position, a roll back for retracting said bolt from the outside, spring means for holding said roll back in bolt-engaging position, a lever disposed between said bolt and back plate for retracting the bolt from the inside, a headed rivet on said back plate providing a pivotal mounting for said lever, and said bolt plate having a longitudinal slot engaging said rivet whereby the latter has guiding influence on the movement of said bolt, and an extension on said lever adapted to block movement of said roll back upon movement of said lever in a non-bolt-retracting direction.
5. In a door latch, a back plate, a latch bolt movable over said back plate, spring means for urging said bolt to latching position, a roll back for retracting said bolt from the outside, a lever disposed between said bolt and back plate for retracting the bolt from the inside, a headed rivet on said back plate providing a pivotal mounting for said lever, and said bolt having a longitudinal slot engaging said rivet whereby the latter has guiding influence on the movement of said bolt, an extension on said lever adapted to block movement of said roll back upon movement of said lever in a non-bolt-retracting direction, and a stop on said bolt engageable by said lever when moved to roll-back blocking position whereby upon retraction of said bolt said lever is moved away from roll-back-blocking position.
6. In a door latch, a case plate, a latch bolt comprising a latching head and a plate rigid with said head, spring means for urging the said bolt to latching position, a roll back for retracting said bolt from the outside, a lever disposed between said bolt and case plate for retracting the bolt from the inside, a headed rivet on said case plate providing a pivotal mounting for said lever, said bolt plate having a longitudinal slot engaging said rivet whereby the latter has guiding influence on the movement of said bolt, and means for blocking movement of said roll back rendered operative upon movement of said lever in a non-bolt-retracting direction.
7. In a door latch, a case plate, a latch bolt comprising a latching head and plate rigid with said head, spring means for urging said bolt to latching position, means for retracting said bolt from the outside, a lever for retracting said bolt from the inside, a pin on said case plate providing a pivotal mounting for said lever, said bolt plate having a longitudinal slot engaging said pin, a head on said pin for holding said bolt plate and lever in place, and means for blocking movement of said outside-retracting means rendered operative upon movement of said lever in a non-bolt retracting direction.
8. In a door latch, a case plate, a latch bolt comprising a latching head and plate rigid with said head, spring means for urging said bolt to latching position, means for retracting said bolt from the outside, a lever for blocking movement of said outside retracting means, a pin on said case plate providing a pivotal mounting for said lever, said bolt plate having a longitudinal slot engaging said pin, a head on said pin for holding said bolt and lever in place, and means operated from the inside for actuating said lever.
9. In a door latch mechanism, a latch bolt, and two independently operable pivotally mounted members for retracting said bolt, one being separate from and movable independently of the bolt into engagement with the other to dog the same, and movable by the bolt out of engagement with the other so that the other will be free to retract the bolt.
10. In a door latch mechanism, a latch bolt, a pivotally mounted member separate from but adapted to alternately actuate and be actuated by said bolt, and means for actuating the bolt including a pivotally mounted member adapted to be rendered inoperative by the member aforesaid when it is neither actuating or being actuated by said bolt, and adapted to be freed of said first-mentioned member when it is either actuating or being actuated by said bolt.
11. In a door latch mechanism, a latch bolt, a pivotally mounted member for retracting the bolt, dogging means for said retracting means including a pivotally mounted member engageable with the bolt to retract the same, and means for releasing the dogging means from the retracting means including a projection on the bolt engageable with the second mentioned member.
12. In a door latch mechanism, a latch bolt, means for retracting the bolt, and means for dogging said retracting means including a pivoted bolt retracting member movable by the bolt from operative dogging relation with said retracting means to an inoperative position.

HOLDEN W. RIGHTMYER.