Jan. 15, 1935. J. C. DRIESSENS ET AL 1,987,927

AUTOMOBILE DOORLATCH

Filed Nov. 21, 1932

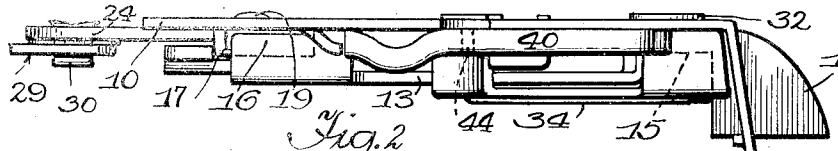


Fig. 2

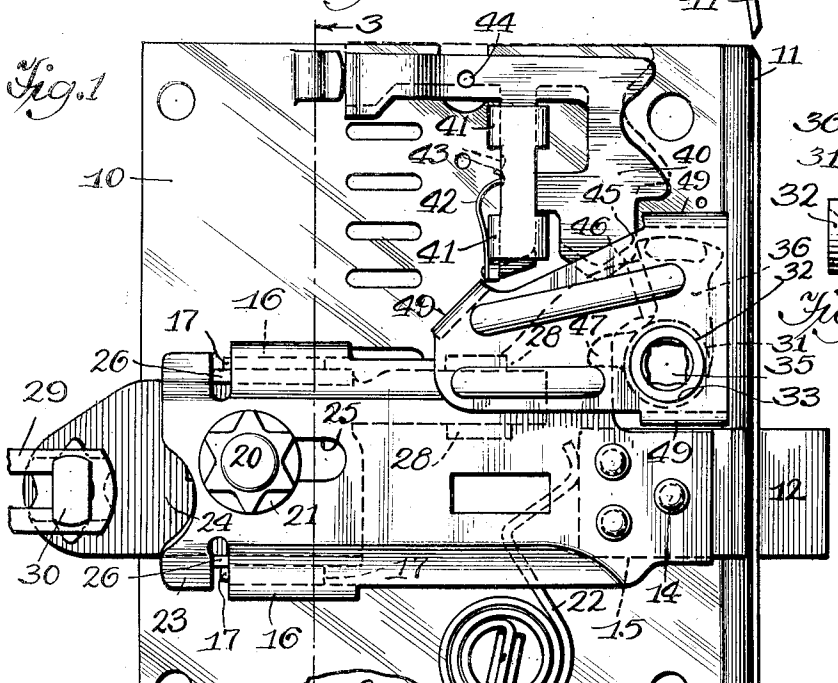


Fig. 1

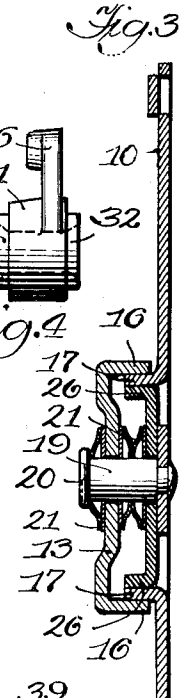


Fig. 3

Fig. 4

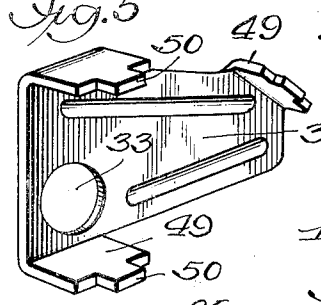


Fig. 5

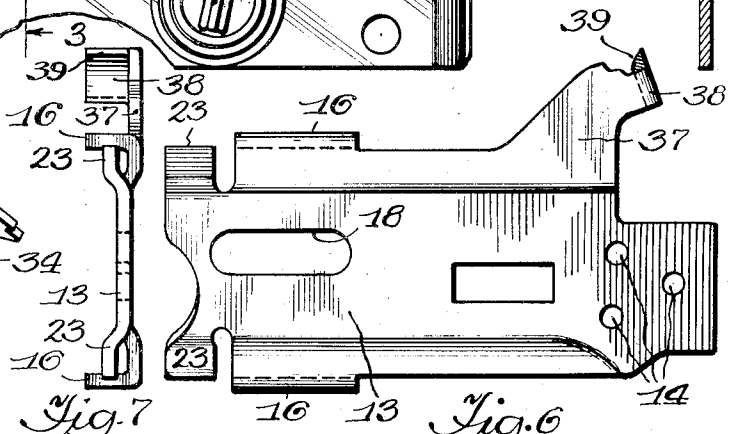


Fig. 7

Fig. 6

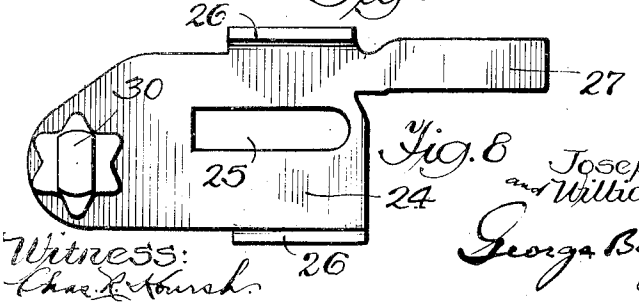


Fig. 8

Inventors,
Joseph C. Driessens
and William A. Carmichael
George Bayard Jones Atty.

Witness:
Chas. L. Hough.

Patented Jan. 15, 1935 1,987,927

UNITED STATES PATENT OFFICE

1,987,927

AUTOMOBILE DOORLATCH

Joseph C. Driessens and William A. Carmichael, New Haven, Conn., assignors to C. Cowles & Company, a corporation of Connecticut

Application November 21, 1932, Serial No. 643,666

1 Claim. (Cl. 292—164)

This invention relates to improvements in automobile door latches and more particularly to those of the remote control type, in which the inside operating handle is mounted on the door at some distance from the latch mechanism and is connected thereto by a link concealed in said door.

One object of the invention is to provide an improved, simple, rugged construction whereby the latch bolt may be held to the case plate and guided on it in its movement without the usual cover plate, thus insuring a thin structure well adapted to fit in the narrow space available in an automobile door.

Another object is to provide an improved door latch in which the bolt, except its head, is formed of sheet metal, spaced from the case plate so that it may partially overlie a link plate mounted to reciprocate on said case plate and be engaged by a projection on the latter, to retract said bolt when the inside handle is operated.

Another object is to provide a latch of this type in which the roll-back for retracting the bolt by a handle on the outside of the car may be locked whenever desired, and automatically unlocked by the operation of the inside handle.

A further object is to provide a housing for the roll-back secured to said face plate and having an opening in line with an opening in the face plate whereby said roll-back may be journaled in both openings and thus afforded a rigid support.

An additional object is to provide a locking device, independent of the bolt retracting mechanism actuated by the inside handle, which may be set by hand to obstruct the roll-back and prevent opening of the door by the outside handle, but which is automatically restored to initial position by a cam on the latch when the latter is retracted by the inside handle.

Other objects and advantages will be apparent from the following description of the drawing in which:

Fig. 1 is an elevation of one embodiment of the invention;

Fig. 2 is a top plan view thereof;

Fig. 3 is a section on the line 3—3 of Fig. 1;

Fig. 4 is an end view of the rollback;

Fig. 5 is a perspective view of the housing therefor;

Fig. 6 is an elevation of the bolt with the head omitted;

Fig. 7 is an end view thereof;

Fig. 8 is an elevation of a link plate.

The latch, or lock as it is known commercially, comprises the usual case plate 10 having its outer end bent nearly at right angles to form an end flange 11 with an opening therein in which the head 12 of the latch bolt may reciprocate. The body of the latch bolt 13, shown in Fig. 6, is formed preferably from sheet metal having openings 14 at its forward end permitting it to be riveted or otherwise secured to the head 12. Said head is cut away at the rear, forming a shoulder and providing an extension 15 of reduced thickness to which the body is riveted as stated. Said body is thus spaced from the case plate to provide a clearance between the two. At or near the rear of the body of said bolt, a pair of lateral projections 16 are bent downwardly which would also serve to space said body from said case plate were it not for the fact that the rear end is otherwise supported, as hereinafter explained.

The case plate has a pair of struck up lugs 17 which are embraced by the downwardly turned lugs 16 and serve to guide the bolt in its back and forth movement. At the rear of said bolt a slot 18 is provided to receive a pin or stud 19 which may be riveted or otherwise secured to the case plate as shown in Fig. 3 and which has a head 20 serving to hold the bolt to the case plate without the usual cover plate and at the same time permitting it to reciprocate. The head of the stud or rivet 20 does not engage the body of the bolt directly but has a spring washer 21 interposed between the two with additional spring washers below the plate 13, as shown in Fig. 3. These washers yieldingly support the plate 13 at the proper height above the case plate. In other words there is a slight clearance between the downwardly bent lugs 16 and said case plate as shown in said Fig. 3.

The usual spiral spring 22 is mounted on said case plate (see Fig. 1) with its free end bearing against the inner end of the extension 15 on the bolt head 12, to maintain the bolt normally in outermost position. This extreme outer position is determined by the engagement of the rivet 19 with the end of the slot 18.

Additional lugs 23 are formed on the body of the bolt 13, preferably at the extreme rear, as shown in Fig. 6, and these lugs are depressed a little below the surface of said body 13, as shown in Fig. 7.

The latch bolt is retracted by means of a link plate 24 (see Fig. 8) which has a slot 25 therein to accommodate the rivet 19. This link plate is also guided in its back and forth move-

ment by struck up lugs 26 which are confined between the struck up lugs 17 on the case plate, (see Fig. 3). Said link plate has a forward extension 27 which also slides between guides formed by struck up lugs 28 in the case plate, (see Fig. 1). The latch bolt partially overlies said link plate and embraces the same, with the lugs 23 in the path of movement of the upwardly turned lugs 26, as shown in Fig. 1, whereby as the link plate is pulled rearwardly, the lugs 26 engage the lugs 23 and retract the latch bolt. This rearward movement is accomplished by a link 29 which fits over the usual headed rivet 30, the rear end of said link being connected with the inside operating handle, not shown. The link plate, it will be noted, may be moved independently of the latch bolt and vice versa. For example, when the door is slammed, the bolt moves rearwardly without moving the link plate rearwardly. Also, the link plate, as shown in Fig. 1, is in its rearmost position with reference to the latch bolt and may be moved forwardly by manipulating the inside operating handle.

The roll-back 31 is shown in Fig. 4 as having reduced extensions 32 on opposite sides, received in an opening in the case plate and in an opening 33 in a sheet metal housing 34, shown in Fig. 5, hereinafter described. Thus the roll back is journaled at opposite ends and rigidly supported. It has the usual non-circular opening 35 therethrough to admit the shaft on which the outside actuating handle is mounted. The roll back cam 36 has an enlargement thereon as shown in Fig. 4.

The body 13 of the latch bolt has a lateral arm 37 projecting therefrom the end of which is turned over at 38 to provide a larger bearing surface for engagement by the roll back cam 36 where the outside handle is turned to withdraw the latch bolt. Said lateral extension also has a cam surface 39 thereon to reset the locking device as hereinafter explained.

The locking device may be of any suitable or accepted form and in the present instance is preferably in the form of a plate 40, of special outline, as shown in Fig. 1, arranged to slide up and down between guides 41 in the form of a small cover riveted to the face plate and open at the rear to accommodate a spring 42 secured to said cover and having its free end arranged to snap into either of two grooves 43 on the rear surface of said plate, thereby tending to maintain the latter in upper or lower position. The locking plate, or dog, is depressed by a suitable handle, not shown, which may be connected thereto at 44, whereby the operator may depress said plate so that the locking projection 45 thereon is lowered sufficiently to obstruct the rearward throw of the roll back cam 36 and thus prevent the door from being opened by the outside handle. An inclined or cam surface 46 below the locking projection 45 is arranged in the path of movement of the cam surface 39 on the latch bolt so that when the latter is drawn rearwardly by the inside handle, the locking dog is restored to initial position.

The small housing 34, previously referred to, is formed by bending down a plurality of extensions 49 with lugs 50 thereon which pass through openings in the case plate and are upset to rivet the enclosure in place. The structure thus formed is substantially closed at one end by the case plate flange 11 and at the other end by one of the bent down wall portions 50. An opening is left at the top and bottom, however, to accommodate the lower end of the locking plate and the arm on the latch bolt. This enclosure or housing is of triangular form although it may be otherwise shaped, and, as previously stated, it aids in forming a rigid bearing for the roll back in addition to covering the latter.

We claim:

In a remote control door latch, a case plate having a front flange with an opening therein, two struck-up lugs at the rear, a sheet metal bolt having a solid head at the front slidable in said opening, said head having a rear shoulder to which said sheet metal bolt is secured in spaced relation from said case plate, said sheet metal bolt having downwardly turned edges at the rear to engage said struck-up lugs and guide said bolt, a link plate beneath said sheet metal bolt and between said struck-up lugs, a pin mounted in said case plate passing through slots in said link plate and said bolt and having a head to hold the same to said plate while permitting reciprocation thereof, a triangular sheet metal enclosure secured at its front and rear to said case plate but open at the top and bottom thereof, a roll-back within said enclosure, an arm on said bolt extending through said bottom opening to said roll-back and a locking member mounted on said case plate above said roll-back and having a part movable through said top opening to a position behind said roll-back to obstruct the same and having a cam surface to be engaged by said arm when said bolt is retracted to automatically raise said part and free said roll-back.

JOSEPH C. DRIESSENS.
WILLIAM A. CARMICHAEL.