

May 16, 1933.

D. MILLER

1,909,210

DOORLATCH

Filed May 19, 1930

2 Sheets-Sheet 1

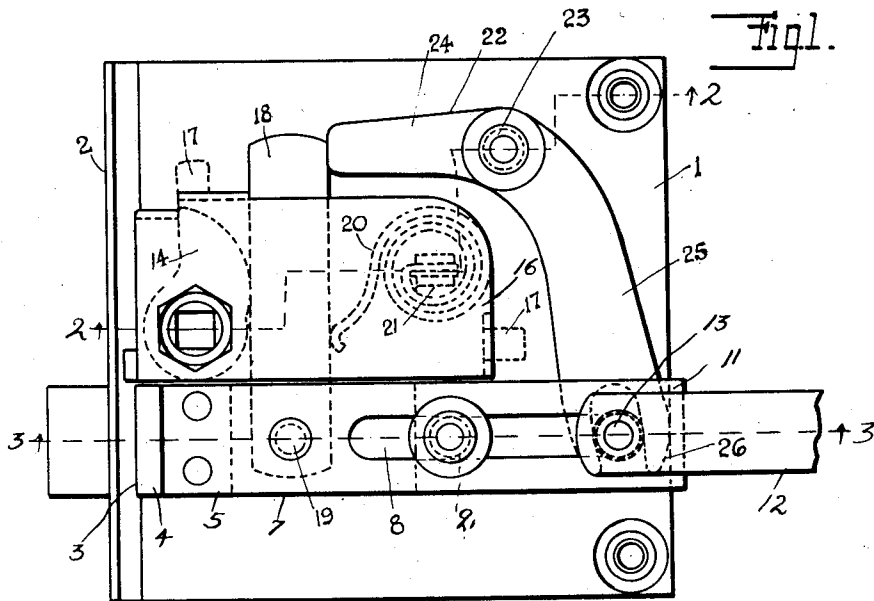


Fig. 1.

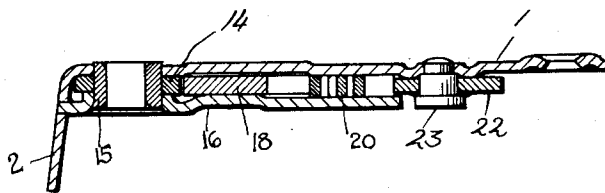


Fig. 2.

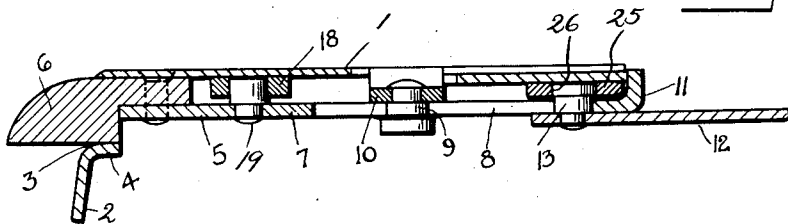


Fig. 3.

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2 Sheets-Sheet 2

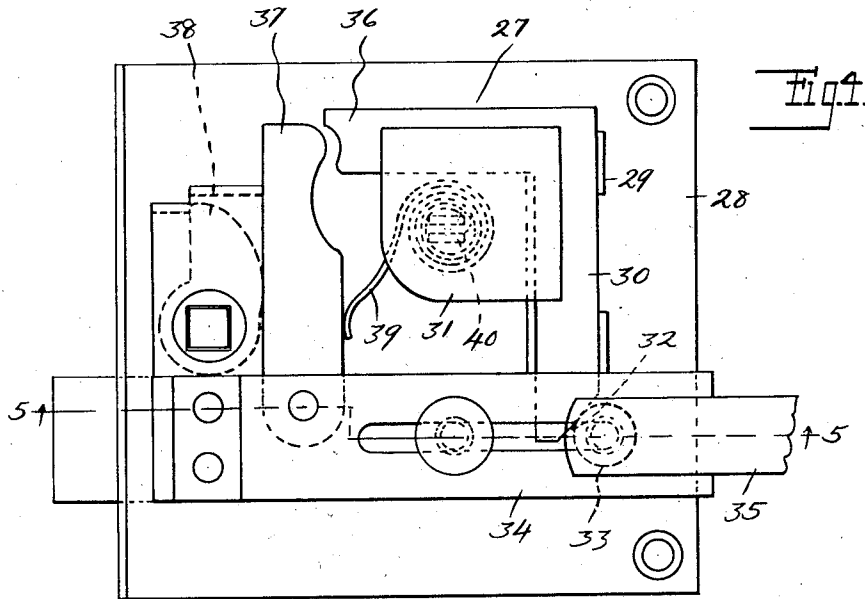


Fig. 4.

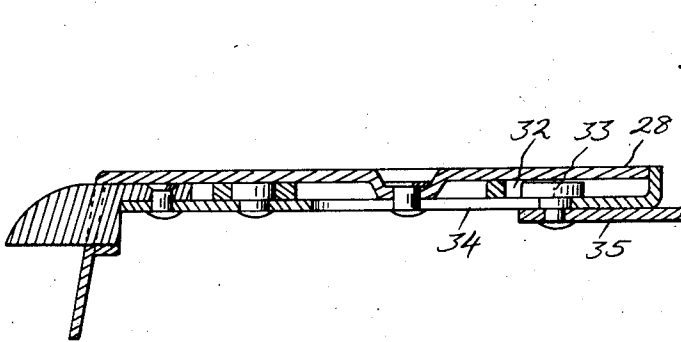


Fig. 5.

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UNITED STATES PATENT OFFICE

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DOORLATCH

Application filed May 19, 1930. Serial No. 453,740.

The invention relates to latches and more particularly latches for motor vehicle doors. The invention has for one of its objects to provide a latch in which the latch bolt may be retracted by both inside and outside manually operable means and in which the outside means may be rendered ineffective in its operation by means controlled by the inside means. The invention has for further objects to provide a latch in which the latch bolt is retracted from the outside manually operable means through an intermediate retracting member, while the latch bolt is retracted from the inside manually operable means independently of the retracting member; to provide a latch in which the retracting member may remain in operative relation to the outside manually operable means and the outside means is rendered effective or ineffective in its operation by a control member adapted to form a fulcrum or to be rendered inoperative; to provide a latch in which the control member is movable into the path of movement of the retracting member or out of its path of movement to control the operativeness of the retracting member; and to provide a latch in which the retracting member is yieldably maintained in operative relation to prevent rattling. The invention has for a further object to provide a latch in which the retracting member is maintained in operative relation and the latch bolt is retained in extended position by a common means.

With these and other objects in view, embodiments of my invention are shown in the accompanying drawings and will be more fully hereinafter described and the invention defined in the claims.

Referring to the drawings:—

Figure 1 is a side elevation of a latch showing an embodiment of my invention;

Figures 2 and 3 are cross sections, respectively, on the lines 2—2 and 3—3 of Figure 1;

Figure 4 is a view similar to Figure 1, showing another embodiment of my invention;

Figure 5 is a cross section on the line 5—5 of Figure 4.

The present latches showing embodiments of my invention are designed particularly for use in doors of closed motor vehicles and the latch illustrated in Figures 1, 2 and 3 has the case plate 1 with the transverse flange 2 at its front edge, which latter is formed with the rectangular aperture 3 and the transverse ear 4 for receiving and guiding the bolt 5. This bolt has the nose 6 which slidably engages the case plate 1 and extends through the aperture 3 and is guided by the ear 4. The bolt also has the body 7 which is preferably formed of sheet metal and which is riveted to the nose 6. This body has the longitudinally extending slot 8 through which extends the shouldered pin or rivet 9 secured to the ear 10 struck out from the case plate, the rivet serving to guide the bolt. The body has at its rear end the transverse flange 11 which is engageable with the rear edge of the case plate 1 to limit the movement of the bolt toward its extended position.

For retracting the bolt, I have provided inside and outside manually operable means. The inside retracting means includes the link 12, which is suitably connected at one end to a remote control handle and which is connected to the body 7 of the bolt by means of the shouldered pin or rivet 13, which latter extends through the slot 8. The outside means includes the roll-back 14 having the front end of its hub 15 journaled in the case plate above the bolt and the rear end of its hub journaled in the cover plate 16, this cover plate being spaced inwardly from and rigidly secured to the case plate by suitable means, such as the ears 17, which may be formed integral with the cover plate and extend through apertures in the case plate and riveted over against the case plate. 18 is the retracting member between the roll-back 14 and the bolt, it being noted that the link 12 is adapted to retract the bolt independently of this retracting member. This retracting member is in the nature of a lever and is pivotally connected to the bolt by the shouldered pin or rivet 19. This lever is located between the cover plate 16 and the case plate 1 and also between the body 7 of the bolt

and the case plate and extends upwardly from the bolt into the path of movement of the roll back 14. 20 is a spiral spring located between the cover plate and the case plate and having one end anchored to the case plate as by means of the struck out ears 21 and its free end engaging the rear edge of the retracting member 18 to yieldably hold this retracting member against the roll-back 14 and to also yieldably urge the bolt to its extended position.

For the purpose of rendering the outside retracting means ineffective in its operation so that rotation of the roll-back 14 will not retract the bolt 5 and also for the purpose of rendering this outside retracting means effective, I have provided the control member 22, which is in the nature of a bell crank pivotally connected intermediate its ends to the case plate 1 by the pivot 23. The lateral portion 24 of this control member in one position thereof extends in the path of movement of the retracting member 18 and is engageable with the rear edge of its upper end to form a fulcrum about which this retracting member may swing upon actuation of the roll-back 14. This lateral portion in another position of the control member is adapted to extend above and to clear the retracting member upon actuation of the roll-back. The depending portion 25 of the control member extends between the body 7 of the bolt and the case plate and is bifurcated to provide the slot 26, through which extends the rivet 13. The arrangement is such that in the normal position of the inside retracting means, including the link 12, the control member is held in the position shown in Figure 1 so that its lateral portion forms a fulcrum for the retracting member, but upon movement of the link in a forward direction or in a non-bolt retracting direction this link through the rivet 13 swings the control member about its pivot in a clockwise direction to raise the lateral portion of this control member to clear the retracting member, at which time rotation of the roll-back merely effects swinging of the retracting member 18 about its pivot 19 and does not retract the bolt.

In the modification shown in Figures 4 and 5 the general arrangement of parts is the same, but the control member 27 instead of being pivoted to the case plate 28 slidably engages the same and is guided by means of the ears 29 struck out from the case plate and engaging the front and rear edges of the depending portion 30 of the control member. 31 is a cover plate for engaging the inner side of the control member. The lower end of this depending portion 30 is upwardly and rearwardly beveled at 32 to provide an inclined face engageable with the shouldered pin or rivet 33, which extends through the bolt 34 and is connected to

the link 35 of the inside retracting means. The lateral portion 36 of this control member in one position of the control member is adapted to form a fulcrum for the retracting member 37 and in the raised position of the control member is adapted to clear the upper edge of the retracting member to render the latter ineffective. It will be seen that when the link 35 is in its lowermost position the parts are so located that the outside retracting means, including the roll-back 38, is operative to effect retraction of the bolt and that upon movement of the link in a forward direction or in a non-bolt retracting direction the control member is raised to render operation of the outside retracting means ineffective.

For yieldably holding the control member in its lowermost position and at the same time yieldably holding the control member in engagement with its roll-back and further urging the bolt to its extended position, I have provided the spiral spring 39, which is located between the cover plate 31 and the case plate 28 and is secured to the case plate intermediate its ends by the ears 40 struck out from the case plate. The two free ends of this spiral spring respectively engage the rear edge of the retracting member 37 and the depending portion 30 of the control member.

What I claim as my invention 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 bolt and movable angularly with respect to the latter, and means separate from said retracting member and bolt and controlled by said inside retracting means operative in one position of the latter to form a fulcrum about which said retracting member may be moved angularly and inoperative in another position of said inside retracting means to form a fulcrum for said retracting member.

2. 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 bolt and movable angularly with respect to the latter, and a control member separate from said retracting member and bolt and associated with said inside retracting means adapted in normal position of said inside retracting means to form a fulcrum about which said retracting member may move angularly and adapted upon manipulation of said inside retracting means in a non-bolt retracting direction to be rendered inoperative in forming a fulcrum for said retracting member.

3. In a latch, a latch bolt, retracting means for said bolt including inside and outside manually operable means, a retract-

ing member interposed between said outside retracting means and bolt and movable angularly with respect to the latter, and a control member separate from said retracting member and bolt and associated with said inside retracting means adapted in normal position of said inside retracting means to form a fulcrum about which said retracting member may move angularly, said control member being movable upon manipulation of said inside retracting means in a non-bolt retracting direction to render said retracting member inoperative.

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 bolt and movable angularly with respect to the latter, and means separate from said retracting member and bolt and controlled by said inside retracting means and operative in one position of the latter to form a fulcrum about which said retracting member may move angularly and in another position to clear said retracting member.

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 bolt and pivotally connected to the latter and extending in the path of movement of the former, and a movable control member associated with said inside retracting means adapted in normal position of said inside retracting means to form a fulcrum about which said retracting member may swing and upon manipulation of said inside retracting means in a non-bolt retracting direction be rendered inoperative in forming a fulcrum for 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 bolt and movable angularly with respect to the latter, said inside retracting means being adapted to retract said bolt independently of said retracting member, and means separate from said retracting member and bolt and controlled by said inside retracting means and operative in one position of the latter to form a fulcrum about which said retracting member may move angularly and inoperative in another position of said inside retracting means to form a fulcrum for said retracting member.

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 bolt and movable angularly with respect to the latter, and means

separate from said bolt, inside and outside retracting means and retracting member and associated with said inside retracting means adapted upon manipulation of the latter in a non-bolt retracting direction to render said retracting member inoperative.

8. In a latch, a latch bolt including inside and outside manually operable means, a retracting member interposed between said outside retracting means and bolt and pivotally connected to the latter and extending in the path of movement of the former, said inside retracting means being adapted to retract said bolt independently of said retracting member, and means separate from said bolt and inside and outside retracting means and associated with said inside retracting means adapted in one position of the latter to render said retracting member operative and in another position to render said retracting member inoperative.

9. In a latch, a latch bolt, retracting means for said bolt including inside and outside manually operable means, said outside manually operable means including a roll-back, a retracting member interposed between said roll-back and bolt and extending in the direction of movement of the former and pivotally connected to the latter, and a movable control member associated with said inside retracting means forming in one position of the latter a fulcrum for said retracting member upon actuation of said roll-back and in another position of said inside retracting means removing the fulcrum for the retracting member.

10. In a latch, a case plate, a latch bolt, a retracting member for said bolt extending between said case plate and bolt, a control member for said retracting member extending between said case plate and bolt, and movable to a position to form a stationary fulcrum for said retracting member and a member pivotally connecting said retracting member to said bolt.

11. In a latch, a latch bolt, a retracting member for said bolt, and a control member for said retracting member having a portion movable to a position to be engaged by said retracting member upon movement of the latter to form a fulcrum therefor, and movable to a position beyond said retracting member to clear the same.

12. In a latch, a latch bolt, inside and outside manually operable retracting means for said bolt, a retracting member interposed between said outside retracting means and bolt and having a permanent fulcruming engagement with the latter, and means controlled by said inside retracting means and operative in one position of the latter to form a fulcrum about which said retracting member may move upon actuation thereof by said outside manually operable means

and in another position to clear said retracting member.

13. In a latch, a latch bolt, inside and outside manually operable means for retracting said bolt, a retracting member extending transversely of said bolt and having a portion operatively connected thereto, said retracting member being interposed between said outside retracting means and bolt, and means controlled by said inside retracting means and movable thereby to a position to form a fulcrum for said retracting member at a point spaced longitudinally thereof from the operative connection between said retracting member and bolt.

14. In a latch, a case plate, a latch bolt, inside and outside manually operable retracting means for said bolt, a retracting member interposed between said outside retracting means and bolt and movable angularly with respect to the latter, and a member pivotally mounted upon said case plate and controlled by said inside retracting means, said pivotal member being operative in one position of said inside retracting means to form a fulcrum about which said retracting member may be moved angularly and being inoperative in another position of said inside retracting means to form a fulcrum for said retracting member.

15. In a latch, a case plate, a latch bolt, inside and outside manually operable retracting means for said bolt, a retracting member interposed between said outside retracting means and bolt and movable angularly with respect to the latter, and a member bodily slidably mounted upon said case plate and controlled by said inside retracting means, said bodily slidable member being operative in one position of said inside retracting means to form a fulcrum about which said retracting member may be moved angularly and being inoperative in another position of said inside retracting means to form a fulcrum for said retracting member.

In testimony whereof I affix my signature.

DORR MILLER.

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