

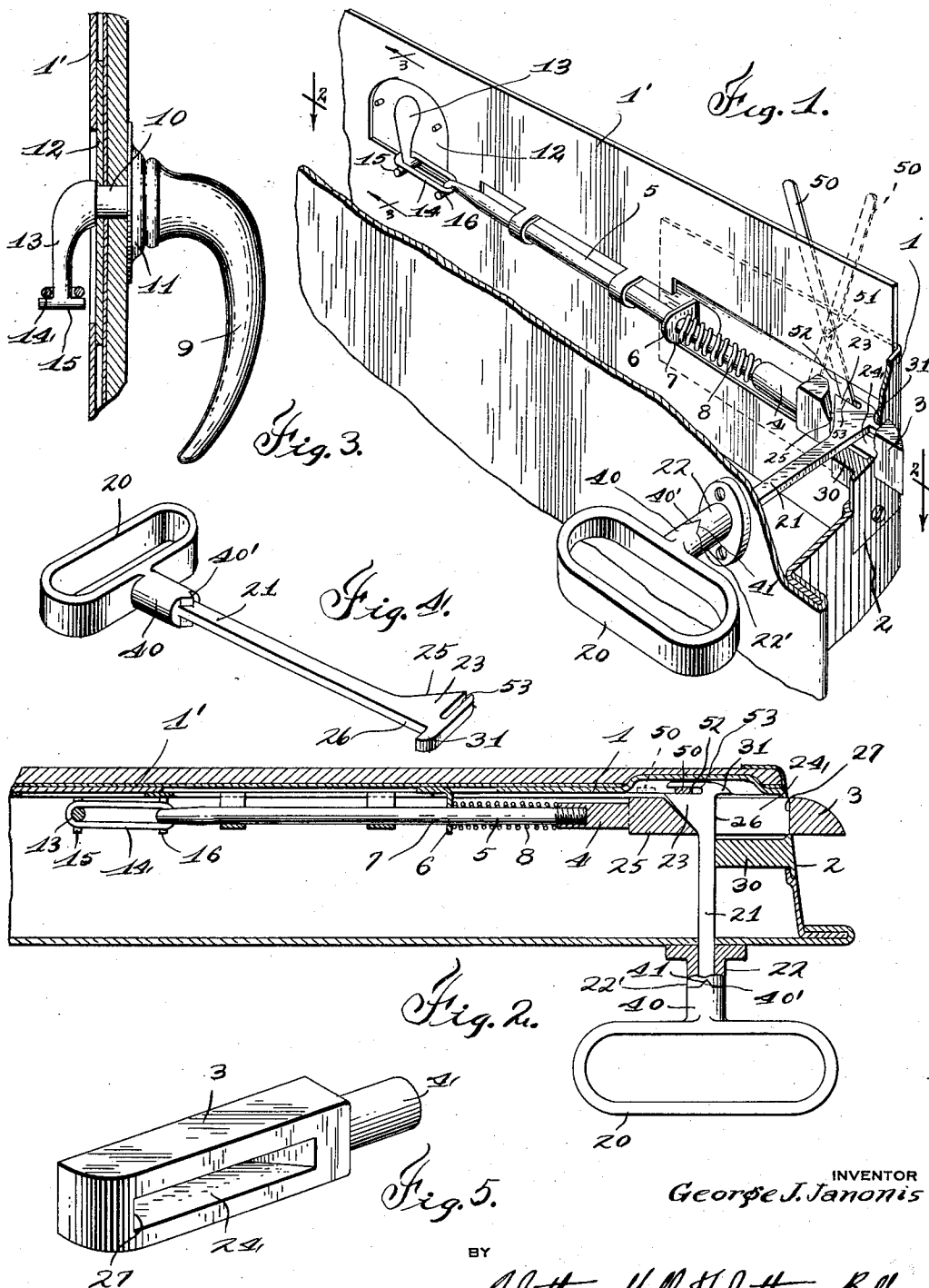
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DOOR LATCH MECHANISM

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DOOR LATCH MECHANISM

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This invention relates generally to latch mechanism for vehicle doors and the like, and consists of certain novel features of construction, combinations and arrangements of parts that will be hereinafter more fully described and particularly pointed out in the appended claims.

In the accompanying drawings:

Figure 1 is a fragmentary perspective view of a door lock board with a latch mechanism embodying my invention applied thereto and showing by full and dotted lines respectively the operative and inoperative positions for the dogging means for the outside bolt retracting means;

Figure 2 is a horizontal sectional view taken on the line 2—2 of Figure 1;

Figure 3 is a vertical sectional view taken on the line 3—3 of Figure 1;

Figure 4 is a detail perspective view of the outside bolt retracting member and handle;

Figure 5 is a detail perspective view of the latch bolt and shank.

Referring now to the drawings, 1 is a latch case plate secured to the inner side of a lock board 1' upon the inner side of a vehicle door and having a lateral flange 2 at its forward edge attachable to the free edge of the door. 3 is a reciprocating latch bolt that is movable through an opening in the flange 2 for engagement with a suitable keeper (not shown) and having an integral shank 4 constituting a rearward extension and slidable upon the case plate 1. 5 is a relatively long rod threadedly connected to the shank 4 and projecting rearwardly therefrom in substantially parallel relation to the case plate 1. 6 is a lateral flange struck out from the case plate 1 intermediate of its ends and having an opening 7 receiving the rod 5, and 8 is a coil spring sleeved upon the rod 5 between the lateral flange 6 and the rear end of the shank 4 and normally holding the latch bolt in projected position.

With the present construction the latch bolt 3 may be retracted from the inner side of the door by a handle 9 having a shaft 10 that is journaled in an escutcheon plate 11 and auxiliary plate 12 upon the inner side of the door and that has a crank 13 at its inner end dis-

posed upon the inner side of the plate 12 and terminally connected by a link 14 to the rear end of the rod 5. Preferably the adjacent end portions 15 and 16 respectively of the crank and rod are T-shape in form and are received in the link 14 at opposite ends thereof. Thus rotation of the handle 9 in an anti-clockwise direction will cause the link 14 and rod 5 to retract the latch bolt against the tension of the spring 8. In this connection it will be noted that the handle 9 is longitudinally curved and is substantially parallel to the inner side of the door, hence may also be used as a pull-to handle when it is desired to close or open the door.

Preferably the means operable on the outer side of the door for retracting the latch bolt comprises an operating handle 20 of loop formation having a substantially straight reciprocating shank 21 slidable in a rose or escutcheon 22 upon the outer side of the door and provided at its inner end with a triangular portion 23 that is received in an elongated longitudinally extending slot 24 in the bolt shank 4. As shown, the inclined edge 25 of this triangular portion is at the rear thereof and engages the rear end of the slot 24 and is adapted when the handle 20 and shank 21 are pulled laterally outwardly in a direction at right angles with respect to the door to cam the latch shank 4 rearwardly and thereby cause the bolt 3 to be retracted against the tension of the spring 8. The straight edge 26 of the triangular portion is at the front thereof and is normally spaced rearwardly with respect to the forward end 27 of the slot 24.

Thus with the latch mechanism described, the bolt 3 may be retracted from the inside of the door by manipulation of the inside handle 9 without moving the outside bolt retracting means. Likewise due to the link 14 connection between the rod 5 and crank 13, the bolt 3 may be retracted from the outside of the door by manipulation of the loop handle 20 without moving the inside bolt retracting means. As a result, the bolt 3 may be operated from opposite sides of the door by independently operable means.

Preferably a block 30 is secured to the rear

face of the lateral flange 2 in parallel relation to the bolt shank 4 and constitutes an abutment or stop for a shoulder 31 upon the forward straight edge 26 of the triangular portion of the shank 21 and also serves as a guide for said straight edge 26 when the triangular portion and shank are reciprocated inwardly and outwardly by the handle 20. It will also be noted that the hub 40 of the outside handle 20 is provided at its inner end upon diametrically opposite sides thereof with triangular or wedge shape projections 40' which normally engage similar recesses 41 in the forward end of the rose or escutcheon hub 22' and thereby normally maintain the outside handle in proper operative position to be grasped by the operator.

With the present construction the outside bolt retracting means including the handle 20, shank 21 and triangular portion 23 may be dogged or rendered inoperative from the inner side of the door to prevent retraction of the latch bolt 3 by any unauthorized person. As shown this is accomplished by the provision of a lever 50 that is pivoted intermediate of its ends upon a pin 51 projecting laterally from the case plate 1 and that has an end portion 52 that is slidable over the case plate into a rearwardly opening slot 53 in the triangular portion 23 of the outside handle shank and thereby prevents the inclined edge 25 of said triangular portion from moving outwardly and functioning as a cam to move the latch bolt shank rearwardly. Normally the lever 50 is in an inclined inoperative or neutral position as illustrated in dotted lines, Figure 1 but may be easily and quickly moved into operative dogging position as illustrated in solid lines, Figure 1, by manipulation of the lever about its pivot. In this connection it will be noted that the upper end of this lever constitutes a handle portion always accessible from the inner side of the door.

Thus, from the foregoing description it will be apparent that I have provided an extremely simple latch means and dogging means for the outside bolt retracting means that can be manufactured at comparatively low cost and that can be readily installed upon the doors of motor vehicles and the like. Moreover, it will be noted that the coil spring 8 not only holds the bolt 3 in projected position, but due to the engagement of the rear end of the slot 24 in the bolt shank 4 with the rear inclined edge 25 of the triangular portion 23 of the outside handle shank 21, the said shank and handle 20 are normally held by the spring 8 in operative bolt retracting position. Thus with this construction only one spring is required and the usual outside handle spring assembly has been dispensed with entirely.

While it is believed that from the foregoing description the nature and advantages

of the invention will be readily apparent, I desire to have it understood that I do not limit myself to what is herein shown and described and that such changes may be resorted to when desired as fall within the scope of what is claimed.

What I claim as my invention is:

1. In a door latch mechanism, a case plate attachable to the inner side of a door, a latch bolt having a shank slidable over said case plate, and means operable from the outer side of a door for actuating said bolt including a longitudinally movable member having a cam portion between the bolt and case plate engageable with the former and limited in its inward longitudinal movement by the latter.

2. In a door latch mechanism, a latch bolt having a reciprocating shank, a reciprocating member movable in a plane at substantially right angles to the shank to move the bolt, and a support for the bolt including a case plate constituting a bearing for the shank and an abutment for the reciprocating member.

3. In a door latch mechanism, a case plate attachable to the inner side of a door, a latch bolt having a shank movable over one side of the case plate, actuating means for the bolt including a reciprocating member having a cam portion between the case plate and bolt and engageable with the latter, and dogging means for the member including a lever movable between the case plate and shank into engagement with the cam.

4. In a door latch mechanism, a latch bolt having a sliding shank, and actuating means for said bolt including a reciprocating rod movable in a plane substantially at right angles to said bolt and provided at one end with a substantially triangular enlargement that is engageable directly with said shank.

5. In a door latch mechanism, a latch bolt having a sliding shank, and actuating means for said bolt including a reciprocating rod movable in a plane substantially at right angles to the bolt and terminating in a cam that is engageable with the bolt and that has a slot for receiving a suitable dogging member.

In testimony whereof I affix my signature.

GEORGE J. JANONIS.