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DOOR KICK-OUT DEVICE

Filed June 22, 1929

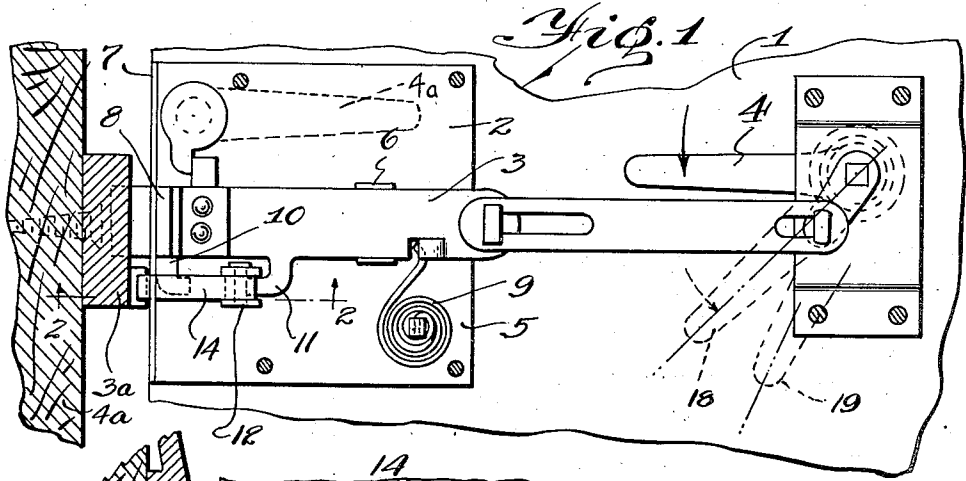


Fig. 1

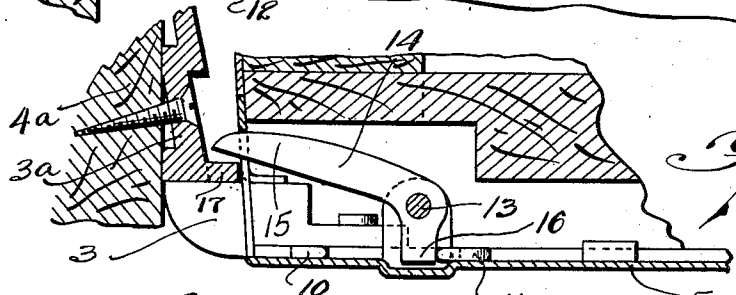


Fig. 2

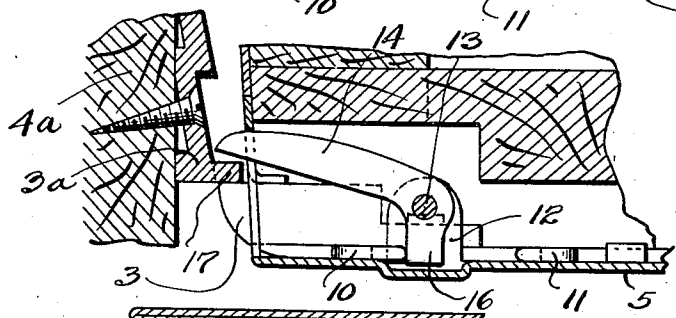


Fig. 3

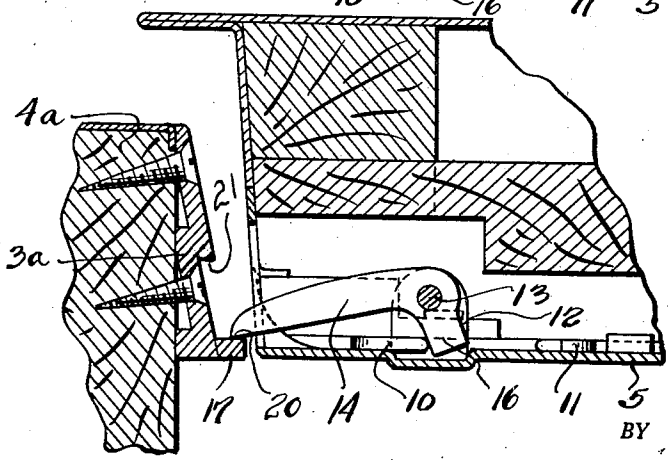


Fig. 4

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DOOR KICK-OUT DEVICE

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This invention relates to a door kick-out device.

After the latch bolt in the door latch of the automobile door has been retracted, it is often very difficult to open the door. In some instances the door sticks so tightly that it must actually be kicked by the foot or knee to open it. The initial resistance of the door is due not only to the fact that the door often fits tightly into the door frame, but also to the fact that it is common practice to mount upon the door appropriate dovetails for giving greater rigidity to the body proper.

It is the object of this invention to overcome this initial difficulty of opening the door and this has been achieved by associating with the door latch mechanism means which will be actuated after the door latch mechanism has been placed in a position to permit opening of the door to impart an opening impetus to the door.

In the drawings:

Fig. 1 shows the trigger device associated with a remote control type of door latch.

Fig. 2 is a section along the line 2—2 of Fig. 1, and shows the position of the trigger when the door is in locked position.

Fig. 3 is a section similar to that of Fig. 2 showing the position of the trigger after the latch bolt has been retracted to release the bolt from the striker.

Fig. 4 is a view similar to Fig. 3 showing the position of the trigger and of the door after the latch bolt has been entirely retracted.

Referring more particularly to the drawings wherein is shown a specific embodiment of the invention, the door, which may be referenced 1, has mounted thereon the latch which may be generally designated 2. The latch has a reciprocable bolt 3 which in this instance is arranged to be retracted either by a remote control generally designated 4, or the outside door handle 4a. The latch bolt is arranged to engage behind a striker 3a which is mounted upon a suitable support 4a which in this instance is the body pillar.

The latch consists of the front plate 5 which has struck therein suitable guide lugs 6 for the bolt 3 and of the selvage plate 7 which

has struck therein a suitable guide lug 8 for the bolt 3. The bolt 3 is arranged to be retracted by the remote control 4 or the outside door handle 4a against the usual bolt spring 9. The bolt has stamped integral therewith the two spaced lug abutments 10 and 11.

The front plate has struck therein the ears 12 which carry the pin 13 upon which is mounted the trigger member 14. The trigger member 14 is shaped like a bell crank having the arm portion 15 and heel 16. The arm 15 is arranged to engage the lug abutment 17 on the striker 3. The heel 16 of the trigger is arranged to engage between the lug abutments 10 and 11.

The operation of the kick-out device is nicely brought out in the figures. In Fig. 2 the latch bolt 3 is in locking engagement with the striker 3a and at this time the remote control 4 is in the position shown in the full lines in Fig. 1, and the trigger 14 is held secure against rattling by the lug abutment 11 which engages the heel 16 of the trigger.

When the remote control 4 has been rotated to the position indicated in the dotted lines 18 (Fig. 1), the latch bolt is released from behind the striker catch as shown in Fig. 3, and the trigger 14 is in the same position as in Fig. 2 although the lug abutment 11 has been retracted from the heel 16 of the trigger 14 and this heel 16 is now in engagement with the lug abutment 10 of the latch bolt 3. As yet the trigger 14 has not served to throw the door open.

As the remote control 4 leaves the position shown by the dotted lines 18 (Fig. 1) and moves toward the position indicated by the dotted lines 19 (Fig. 1), the lug abutment 10 of the latch bolt 3 engages the heel 16 of the trigger member 14 and causes the trigger to pivot about the pin 13. At this time arm 15 of the trigger 14, which acts as a lever, engages the abutment 17 of the striker as at 20 and serves to kick-out the door towards the opened position and the bolt 3 past the safety catch 21 of the striker.

It is evident from the above description that there is here produced a kick-out device that is simple in operation and yet effective to throw-out the door and thereby overcome the

initial difficulty encountered in door opening.

What I claim is:

1. The combination with a vehicle door or the like, of a bolt having spaced lugs for holding the door closed, of means for moving said bolt to a position to permit opening of the door, and of a trigger having a portion projecting between said lugs and having a lost play connection with said bolt lugs whereby the bolt is moved to a position to permit opening of the door before said trigger is engaged by one of said lugs to throw out the door.

2. The combination with a vehicle door or the like, of a bolt having a pair of spaced lugs, of means for retracting said bolt to permit opening of the door, and of a trigger having a heel portion arranged to have a lost play connection with said lugs whereby when the retracting means are actuated one of said lugs engages said trigger heel to actuate the trigger to throw out the door after the bolt has been retracted to a position to permit opening of the door.

3. The combination with a door latch having a bolt with an abutment and arranged to lock the door and means for moving the bolt to a position to permit opening of the door, of means arranged to be engaged by the said abutment to open the door upon actuation of said means for moving the latch bolt.

4. The combination with a door latch having a bolt with an abutment and arranged to lock the door and means for moving the bolt to a position to permit opening of the door, of pivoted means arranged to be engaged by the said abutment to open the door upon actuation of said means for moving the latch bolt.

5. The combination with a door latch having a bolt arranged to engage a striker to lock the door and means for moving the bolt to a position to permit opening of the door, of swingable means separate from the aforesaid means arranged to engage the said striker to open the door upon actuation of the said means for moving the latch bolt.

6. The combination with a door latch having a bolt with an abutment and arranged to engage the striker to lock the door and means for moving the bolt to a position to permit opening of the door, of pivoted kick-out means separate from the aforesaid means arranged to engage the striker and the said bolt abutment to open the door upon actuation of the aforesaid means for moving the latch bolt.

7. The combination with a door latch having a bolt with an abutment and arranged to engage a striker to lock the door and means for moving the bolt to a position to permit opening of the door, of a trigger member engaging said abutment and urged into engagement with the striker by the bolt abutment to kick-out the door upon actuation of

the said means for moving the latch bolt.

8. The combination with a door latch having a spring pressed bolt with a pair of spaced lugs, the said bolt arranged to engage a striker to latch the said door, and means for retracting the said bolt to permit opening of the door, of a trigger having a heel portion arranged to project between the said lugs and a lever portion arranged to fulcrum on the said keeper whereby when the latch bolt is retracted the heel of said trigger is engaged by one of the said bolt lugs to pivot the said trigger whereby the lever end of the trigger fulcrums on the said keeper to open the door.

9. The combination with a door latch having a spring pressed bolt and a pair of spaced lugs, means for retracting the said bolt to permit opening of the door, a pivoted trigger having a heel portion projecting between the said lugs, and a lever portion arranged to engage the said keeper, a stop for limiting the pivotal movement of the said trigger when the bolt is projected, one of the bolt lugs engaging the heel of said trigger to yieldably hold the said trigger against the stop to prevent rattling of the same when the bolt is projected, and the other of said lugs arranged to engage the heel of the said trigger as the bolt is retracted to throw the door open after the bolt has been disengaged from the keeper.

In testimony whereof I affix my signature.

JOHN B. FLYNN.

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