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SEARCH ROOM

May 27, 1941. F. HIZDOS 2,243,155

DOOR LOCK

Filed Nov. 8, 1939

Fig. 1.

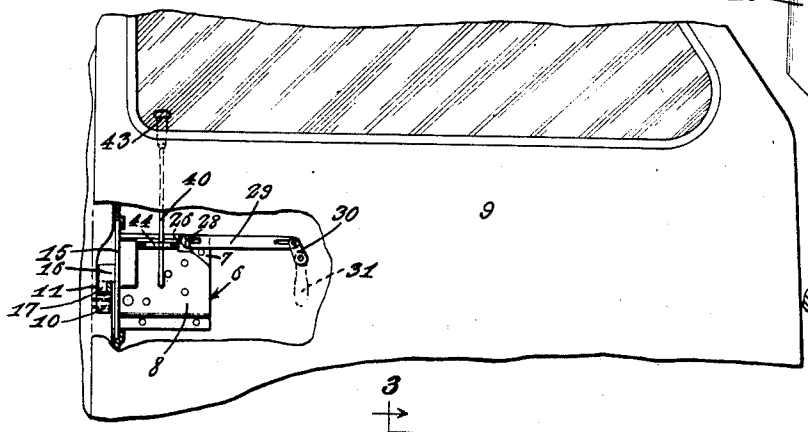


Fig. 5.

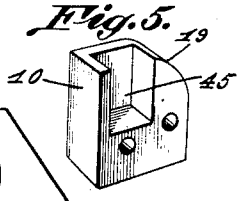


Fig. 3.

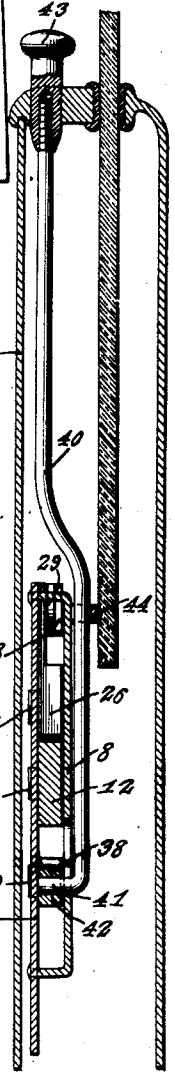


Fig. 4.

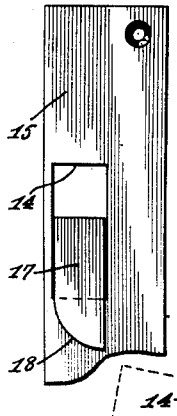


Fig. 2.

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ATTORNEYS

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SEARCH ROOM

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UNITED STATES PATENT OFFICE

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DOOR LOCK

Frank Hizdos, Bethlehem, Pa.

Application November 8, 1939, Serial No. 303,461

3 Claims. (Cl. 292—124)

The present invention relates to door locks and more particularly to door locks for motor vehicles.

The primary object of the invention is to provide a door lock especially adaptable for use with motor vehicles that will prevent accidental opening of the door by small children or by the strain on the vehicle body when rounding sharp curves or through sudden shocks due to obstructions in the highway being impacted by the vehicle.

A further object of the invention is to provide a safety door lock mechanism operable from inside the door to render both the inside and outside door handles ineffective when the safety structure is in latched position.

A still further object of the invention resides in the provision of a safety door lock mechanism for motor vehicles that is sturdy in construction, relatively inexpensive to manufacture yet fully effective for the purpose for which it is intended.

The invention will be fully and comprehensively understood from a consideration of the following detailed description when read in connection with the accompanying drawing which forms a part of the application.

In the drawing:

Figure 1 is an elevational view of a portion of a motor vehicle door with the improved lock in use thereon.

Figure 2 is a detail sectional view of the lock mechanism.

Figure 3 is a vertical sectional view taken substantially on line 3—3 of Figure 2.

Figure 4 is a fragmentary front elevational view of a door attached plate and illustrating the bolt in locking position therein, and

Figure 5 is a perspective view of the keeper.

The door lock illustrated in the present instance is applicable to a vehicle and more particularly a closed motor vehicle. The door lock generally designated by the reference numeral 6 embodies a case plate 7 and a cover plate 8, the lock mechanism being supported between said plates. The case plate 7 is secured to the door 9, while the keeper plate 10 is secured to the door frame 11.

The latch bolt 12 is pivotally supported as indicated at 13 to the case plate 7 and extends through a slotted opening 14 formed in the plate 15, the plate 15 extending at right angles to the case plate 7 and adapted to be attached to the face of the door 9. The outer end of the latch bolt 12 is thickened as indicated at 16 and has a portion 17 projecting downwardly adapted for engagement with the keeper 10 when the door is in latched position. The portion 17 is formed with a beveled surface 18 for cooperation with the beveled surface 19 of the keeper 10.

The latch bolt 12 is adapted to be released from its keeper 10 from the outside of the vehicle door through a spindle 20 adapted to be operated by a handle, not shown, the inner end of said spindle having secured thereto a cam-shaped member 21. Movement of the cam-shaped member 21 from the full line position to the dotted line position shown in Figure 2 of the drawing forces said member against the portion 22 which depends from the latch bolt 12 thereby raising the latch bolt to the dotted line position shown and permitting opening of the door 9. A coiled tension spring 23 secured at one end as indicated at 24 has its opposite end 25 bearing against the thickened portion of the latch bolt 12 to return said bolt to its normally horizontal position upon disengagement of the spindle 20.

The latch bolt 12 is also adapted to be released from the inside of the vehicle by a remote control means, said means including an L-shaped member 26 pivoted to the plate 7 at 27 and normally in contact with the upper face of the latch bolt 12. A stud 28 projects from the member 26 to which is attached a strap 29 and link 30, the remote control handle 31 being attached to the link 30 as shown in Figure 1 of the drawing. Actuating the handle 31 will urge the member 26 downwardly against the latch bolt 12 through the strap 29 and link 30 to cause said latch bolt to swing upwardly about its pivot 13 against the tension of the spring 23. Thus it will be seen that a means has been provided for releasing the latch bolt from the inside and outside of the vehicle.

A means has also been provided for securing the latch bolt in a manner to prevent accidental opening of the car door. Referring more particularly to Figures 2 and 3 of the drawing, it will be noted that the depending portion 22 is formed with a shoulder 32 for receiving one end 33 of an S-shaped member 34, said member being pivoted to the case plate 7 as indicated at 35. The opposite end 36 of the member 34 is adapted to be engaged by the free end 37 of a lever 38, said lever being pivoted to the case plate 7 as indicated at 39. With the lever 38 and S-shaped member 34 in the full line position shown in Figure 2 of the drawing, it will be readily apparent that upward movement of the latch bolt is precluded. However, disengagement of the free end 37 of the lever 38 from the end 36 of the member 34 will permit the member

34 to swing out of engagement with the shoulder 32 as either actuating handle is operated thereby permitting upward movement of the latch bolt 12. It is to be understood that the member 34 is loosely mounted on its pivot 35 so that as the latch bolt 12 is raised either by the cam-shaped member 21 upon rotating the spindle 20 or actuation of the member 26, the depending portion 22 will kick the member 34 to the dotted line position thus releasing the end 33 from the shoulder 32. It is only when the free end 37 of the lever 38 is in engagement with the shoulder 36 that pivotal movement of the member 34 is precluded.

Since the latch mechanism including the pivoted lever 38 is disposed within the body of the door 9 a means must be provided for effecting engagement and disengagement of said lever with the member 34, said means comprising a rod 40 having an inturned end 41 suitably secured in an opening 42 formed in the free end of the lever 38. As clearly shown in Figure 3 of the drawing, the rod 40 is disposed on the outside of the cover plate 8 and extends upwardly through the door with its opposite end projecting therefrom and formed with a knob-like handle portion 43. A bracket 44 is secured to the upper end of the cover plate 8 forming a guide for the rod 40. It will be readily seen that raising or lowering the rod 40 through its handle 43 will effect engagement and disengagement of the lever 38 with the member 34. When the rod 40 is in its lowered position the latch bolt 12 is securely held so that the door cannot be opened from either the inside or the outside since the member 34 will be held in engagement with the shoulder 32 of the depending portion 22. However, upon raising the rod 40 the lever 38 will be raised out of engagement with the member 34 thereby permitting said member to move to the dotted line position shown upon actuation of either handle 20 or 31.

When in latched position the portion 17 of the latch bolt 12 is in engagement with the opening 45 formed in the keeper 10 and as the latch bolt is raised and the door opened, the beveled portion 18 rides over the beveled portion 19 of said keeper.

It is believed that the operation and utility of the door lock is readily apparent from the above description when taken in connection with the accompanying drawing. The safety mechanism including the lever 38 and member 34 are employed when desiring to prevent opening of the vehicle door by a child or by the strain on the vehicle body when rounding sharp curves. It also acts as a safety means since it prevents unauthorized opening of the vehicle door when occupants are in the vehicle.

Also it will be understood, of course, by those skilled in the art that variations in the hereinabove described device involving the substitution of substantial equivalents for the devices described are intended to be comprehended within the spirit of the present invention and that the invention is capable of extended application and is not confined to the exact showing of the drawing nor to the precise construction described and, therefore, such changes and modifications may be made therein as do not affect the spirit of the invention nor exceed the scope thereof as expressed in the appended claims.

What is claimed is:

1. In a door latch, a case plate having an extending flange with an aperture therein, a latch bolt pivotally connected to said case plate, one end of said latch bolt projecting through said aperture and formed with a depending portion adapted for engagement with a keeper, a member depending from said latch bolt having one edge diagonally extending therefrom adapted to be engaged by a door handle actuated cam for raising said latch bolt, said depending member being formed with a shoulder portion on its vertical edge, an S-shaped member pivotally connected to said plate having one end in engagement with said shoulder portion, a horizontally disposed lever having one end pivotally connected to said case plate, the other end of said lever adapted to engage the other end of said S-shaped member for locking said latch bolt, and means for actuating said lever.

2. In a door latch, a case plate having an extending flange with an aperture therein, an elongated substantially rectangular-shaped latch bolt pivotally connected intermediate its ends to said case plate, one end of said latch bolt projecting through said aperture and formed with a depending portion adapted for engagement with a keeper, a member depending from said latch bolt having one edge diagonally extending therefrom, means in engagement with the diagonal edge of said depending member for raising said latch bolt from outside of the door, means comprising a swingable member adapted for engagement with said depending member for dogging said latch bolt, means for locking said swingable member in engagement with said depending member, and means for actuating said locking means.

3. In a door latch, a case plate having an extending flange with an aperture therein, an elongated substantially rectangular-shaped latch bolt pivotally connected intermediate its ends to said case plate, one end of said latch bolt projecting through said aperture and formed with a depending portion adapted for engagement with a keeper, a member depending from said latch bolt having one edge diagonally extending therefrom adapted to be engaged for raising said latch bolt, means for actuating the latch bolt from the inside of the door, said means including a substantially L-shaped member pivoted to said case plate, and in contact with the upper portion of said latch bolt adjacent its other end, an actuating strap attached to said L-shaped member, a link pivotally connected to said strap and supporting a handle, independent means for locking said latch bolt against movement by either of said latch bolt actuating means, said independent means including a swingable member adapted for engagement with said depending member, a horizontally disposed lever having one end pivotally connected to said case plate for contact with said swingable member for locking said swingable member in engagement with said depending member, and means for actuating said lever.

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