Aug. 22, 1933. J. R. HUGHES 1,923,149

DOORLOCK

Filed Jan. 17, 1929

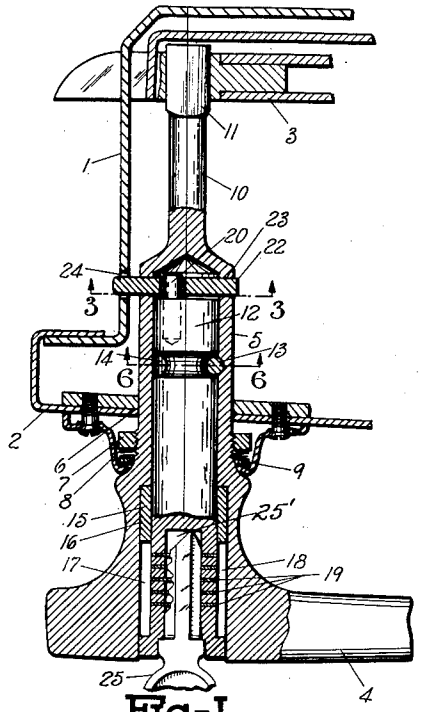


Fig-I

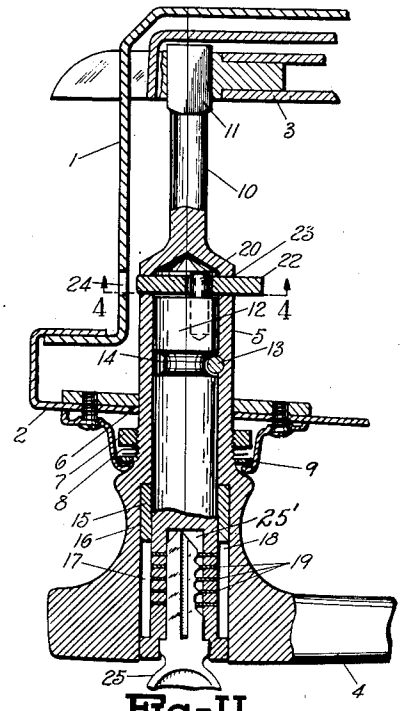


Fig-II

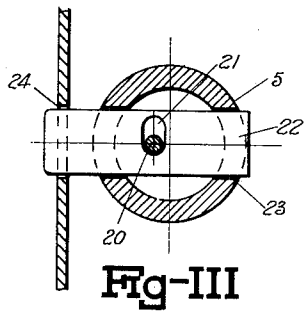


Fig-III

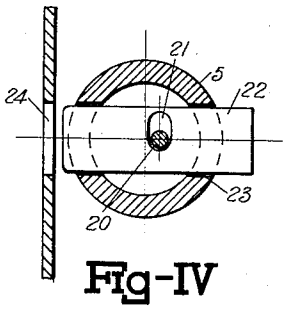


Fig-IV

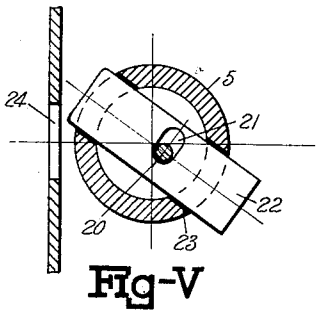


Fig-V

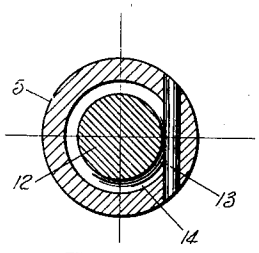


Fig-VI

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1,923,149

DOORLOCK

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13 Claims. (Cl. 70—91)

This invention relates to door latches and more particularly to means for locking the latch member against movement to thereby prevent the unauthorized opening of the door of which the latch mechanism forms a part.

The principal object of this invention is to provide a rotatable latch operating handle having a hollow shell extending into the door in which is mounted a key-controlled member rotatable independent of the latch handle, and an eccentric formed on the key-controlled member engageable with a locking member for moving the same into engagement with the door for locking the door latch against movement to thereby prevent the unauthorized opening of the door.

A further object is to support the locking member in the hollow shell so that when the locking member is moved into engagement with the door, the door latch handle is constrained against rotative movement.

The above being among the objects of the present invention, the same consists of certain features and combinations of parts to be hereinafter described, and then claimed having the above and other objects in view.

Referring to the drawing in which like numerals refer to like parts throughout the several views,

Figure 1 is a sectional view showing certain parts in full lines and other parts broken away, with the locking member extended into engagement with the door.

Figure 2 is a sectional view similar to Figure 1 with the locking member in retracted or inoperative position.

Figure 3 is an enlarged section taken on the line 3—3 of Figure 1.

Figure 4 is an enlarged section taken on the line 4—4 of Figure 2.

Figure 5 is a sectional view similar to Figure 4, showing the locking member and its support in turned position.

Figure 6 is a section taken on the line 6—6 of Figure 1.

Referring in detail to the drawing, I have shown for the purpose of illustration, a section of a motor vehicle door comprising an edge face member 1 and a front face member illustrated as a sheet metal plate 2. A portion of the member 1 is bent at 90° to form a rear face member and to this rear face member a latch mechanism indicated at 3 is adapted to be secured in the usual manner.

The latch mechanism may be of any desired type and is actuated by means of the exterior handle 4, having a hollow shell 5 adapted to be inserted through an opening 6 in the face plate 2. A nut 7 is threadedly secured on the hollow shell 5 to provide a seat for the spring 8 which is interposed between the nut 7 and the escutcheon plate 9 for resiliently holding the handle 4 against longitudinal movement. The hollow shell 5 terminates at its inner end in a shaft 10 having a square portion 11 adapted to operate the latch mechanism 3 in any suitable manner.

A member 12 rotatable independent of the hollow shell 5, and also in unison therewith, is mounted within the hollow shell 5 and is held against longitudinal movement by means of the pin 13 secured in the shell 5 and seating in a groove 14 formed in the member 12 as is clearly shown in Figure 6.

A bushing 15 is mounted in a recess 16 formed in the shell 5 and surrounds the member 12 adjacent its outer end. The bushing 15 has slots 17 and 18 in the opposite sides thereof to receive the plungers 19 mounted in the rotatable member 12 for a purpose to be hereinafter described.

An eccentric 20 which is formed on or is secured to the inner end of the rotatable member 12 is adapted to be received in a slot 21 formed in the locking member 22 slidably supported in the slots 23 formed in the hollow shell 5. The locking member 22 is adapted to be moved to the extended position as shown in Figure 1 by means of the eccentric 20 and when in that position is received in a slot 24 formed in the edge face member 1 of the door. When the eccentric is moved to the position as shown in Figure 2, the locking member 22 is moved to its retracted position and out of engagement with the door 1.

When the member 12 is in the position shown in Figure 1, the plungers 19 are normally extended into the slot 18 by means of springs (not shown). To rotate the member 12 and thus retract the locking member 22, a key 25 is inserted in the key hole slot 25′ formed in the member 12 which will move the plungers 19 out of the slot 18 in which position the member 12 can be rotated independently of the handle 4 and the hollow shell 5. The member 12 can then be rotated 180 degrees, at which time the plungers can be extended into the slot 17 by the withdrawal of the key 25 from the slot 25′.

When moved to the last named position, the member 12 and locking member 22 will be in the position shown in Figure 2. When the plungers are extended into the slot 17, the member 12 is locked to rotate with the handle 4, thus prevent-

ing independent rotation of the member 12 relative to the handle 4, and also preventing the locking member 22 from engaging with the door, but instead causing the locking member 22 to rotate with the hollow shell 5 so that the latch mechanism can be operated in the usual manner.

When it is desired to lock the latch mechanism against movement, the key 25 is inserted in the key hole slot 25' so that the plungers 19 will then be moved out of the slot 17 and the rotatable member 12 can be rotated 180 degrees to move the locking member 22 into the slot 24 formed in the door 1. When in this position, the key 25 can be withdrawn and the plungers which are then moved into the slot 18 will lock the rotatable member 12 with the handle 4 so that the locking member 22 cannot be withdrawn from the slot 24 in the door 1 and the latch mechanism is thus locked against movement.

It will thus be seen that I have provided a simple and efficient means for locking the latch mechanism against movement, and while I have shown one embodiment of my invention, it is to be understood that formal changes can be made therein without departing from the spirit and substance of my invention, the scope of which is commensurate with the appended claims.

What I claim is:

1. In combination with a door structure having an opening in the edge face thereof and an opening in its side face, a rotatable latch operating handle having a tubular shell extending through said side face opening, a member rotatably mounted within said shell, key operated means for selectively causing said member to rotate with said shell and independently thereof, an eccentric on the concealed end of said member, and a lock member slidably mounted in said shell movable by said eccentric upon the independent rotation of said member into the opening in the edge face of said door structure to constrain said latch operating handle against rotative movement.

2. In combination with a door having a sheet metal edge member provided with an opening therein, a rotatable latch operating handle having a tubular shell mounted in a side face of said door, a lock member extending transversely of and slidably mounted in said shell, and means rotatably mounted in said shell having an eccentric thereon engageable with said lock member for moving said member into the opening in the edge face of said door to constrain said latch operating handle against rotative movement.

3. In combination with a door having a sheet metal edge member provided with an opening therein, a rotatable latch operating handle having a tubular shell provided with aligned slots therein mounted in a side face of said door, a lock member having an opening therein slidably mounted in said slots in said shell, a key-controlled member rotatably mounted in said shell, an eccentric on said member extending in the opening in said lock member for moving said lock member into the opening in the edge face of said door to constrain said latch operating handle against rotative movement.

4. In combination with a door having an edge member provided with an opening therein, a rotatable latch operating handle having a tubular shell provided with aligned slots therein mounted in a side face of said door, a lock member mounted in said slots slidable in said shell into and out of engagement with the opening in the edge face of said door, a key-controlled member rotatably mounted in said shell, and means on said key-controlled member engageable with said lock member movable by the rotation of said key-controlled member independently of the rotation of said latch operating handle for moving said lock member into and out of the opening in said door edge member to thereby prevent rotation of said latch operating handle when the lock member is moved to extended position and permit rotation thereof when said lock member is moved to retracted position.

5. In combination with a door having an edge member provided with an opening therein, a rotatable latch operating handle mounted in a side face of said door, a lock member extending transversely of and slidably mounted in said operating handle, and means rotatably mounted in said handle having an eccentric thereon engageable with said lock member for moving said lock member into the opening in the edge member of said door to constrain said latch operating handle against rotative movement, said lock member when in extended position preventing removal of said operating handle from said door.

6. In combination, a vehicle door latch comprising, a latch supporting means having a side flange provided with locking bolt keeper means, a latch bolt adapted to be projected through an opening in said flange, and a rollback for retracting said latch bolt, a manual member for actuating said rollback, a locking bolt, and means for projecting the same into locking engagement with the aforesaid keeper means to prevent rotation of said manual member, said locking bolt being mounted to extend normally in the same direction as the latch bolt and disposed to one side of the latter along the axis of said member.

7. The combination with a latch supporting means having a side flange, of a latch bolt projectible through said flange, latch bolt actuating means, and means carried by said latch bolt actuating means operable into engagement with said side flange to prevent operation of said latch bolt, said means for engaging the side flange extending normally in the same direction as the latch bolt and being disposed to one side of the latter along the axis of said actuating means.

8. The combination with a latch supporting means having a side flange, of a latch bolt projectible through said flange, latch bolt actuating means, and key-operated means operable into locking engagement with said flange to prevent operation of said latch bolt, said key operated means extending normally in the same direction as the latch bolt and being disposed to one side thereof along the axis of the latch bolt actuating means.

9. The combination with a latch supporting means having a side flange, of a latch bolt adapted to be projected through said flange, latch bolt actuating means, and a bolt carried by said latter means operable into locking engagement with said flange to prevent operation of said latch bolt actuating means, said last-named bolt being mounted to extend normally in the same direction as the latch bolt and located to one side of the plane thereof along the axis of said actuating means.

10. The combination with a latch supporting means having a side flange, of a latch bolt adapted to be projected through said flange, latch bolt actuating means including a tubular handle shank, a locking bolt carried by said shank, and key-operated means in said shank for project-

ing said latter bolt into locking engagement with said side flange to prevent operation of the latch operating mechanism, the locking bolt being mounted to extend normally in the same direction as the latch bolt and disposed to one side of the latter along the axis of said shank.

11. The combination with a latch supporting means having a side flange, of a latch bolt adapted to be projected through said flange, latch bolt actuating means including a tubular handle shank, a transversely reciprocable bolt disposed in said shank, and key-operated means in said shank for reciprocating said latter bolt into and out of locking engagement with said side flange, the latter bolt being mounted to extend normally in the same direction as the latch bolt and being spaced therefrom along the axis of said shank.

12. The combination with a latch supporting means mounted on one face of a vehicle door and having a side flange, of a latch bolt projectible through said flange, latch bolt actuating means, and means carried by said latch bolt actuating means and engagable with said side flange for preventing operation of said latch bolt actuating means, said means engageable with the side flange extending normally in the same direction as the latch bolt and spaced therefrom in the direction of the axis of said actuating means.

13. The combination with a latch supporting means mounted on one face of a vehicle door and having a side flange, of a latch bolt projectible through said flange, latch bolt actuating means, a locking bolt for engagement with said side flange, and locking bolt operating means carried by said latch bolt actuating means, said locking bolt being arranged when in engagement with said side flange to prevent operation of said latch bolt actuating means, said locking bolt extending normally in the same direction as the latch bolt and spaced to one side thereof along the axis of said actuating means.

JAMES R. HUGHES.