Sept. 20, 1932. J. B. FLYNN 1,877,836

DOORLOCKING DEVICE

Filed July 20, 1929 2 Sheets-Sheet 1

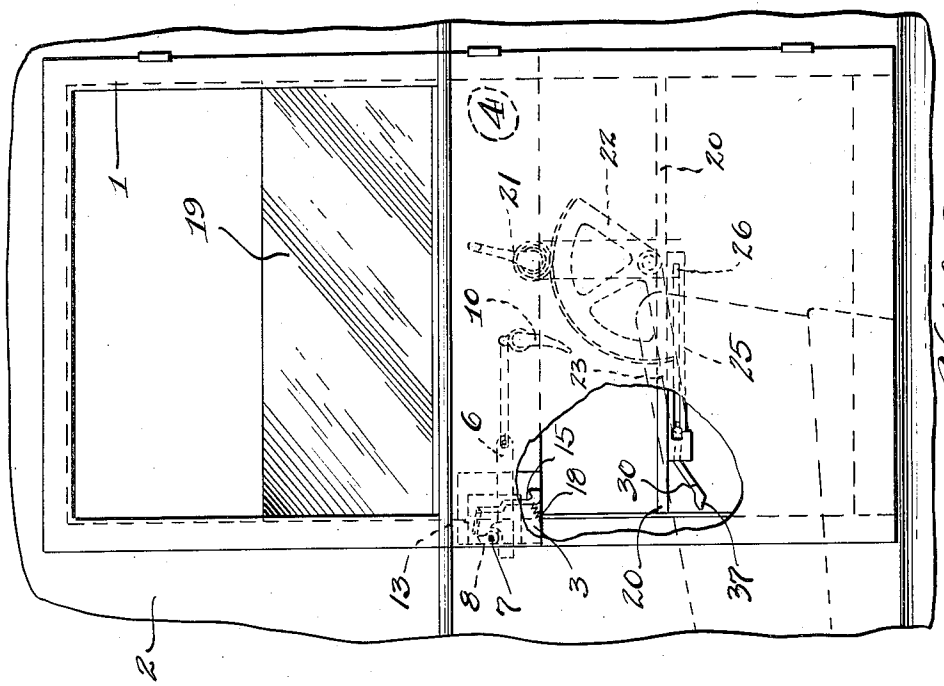


Fig. 2

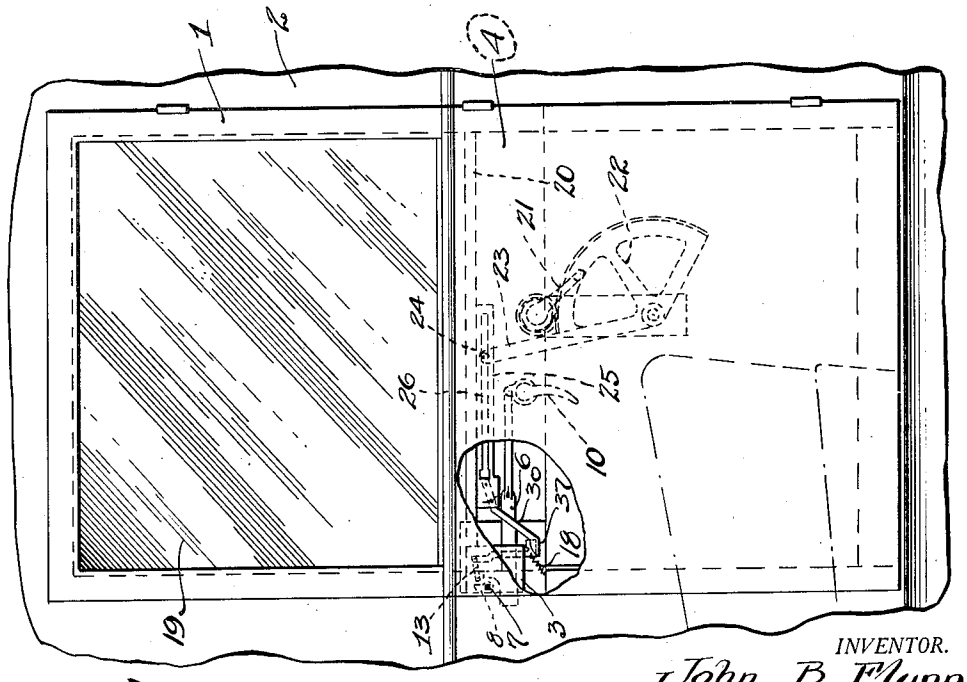


Fig. 1

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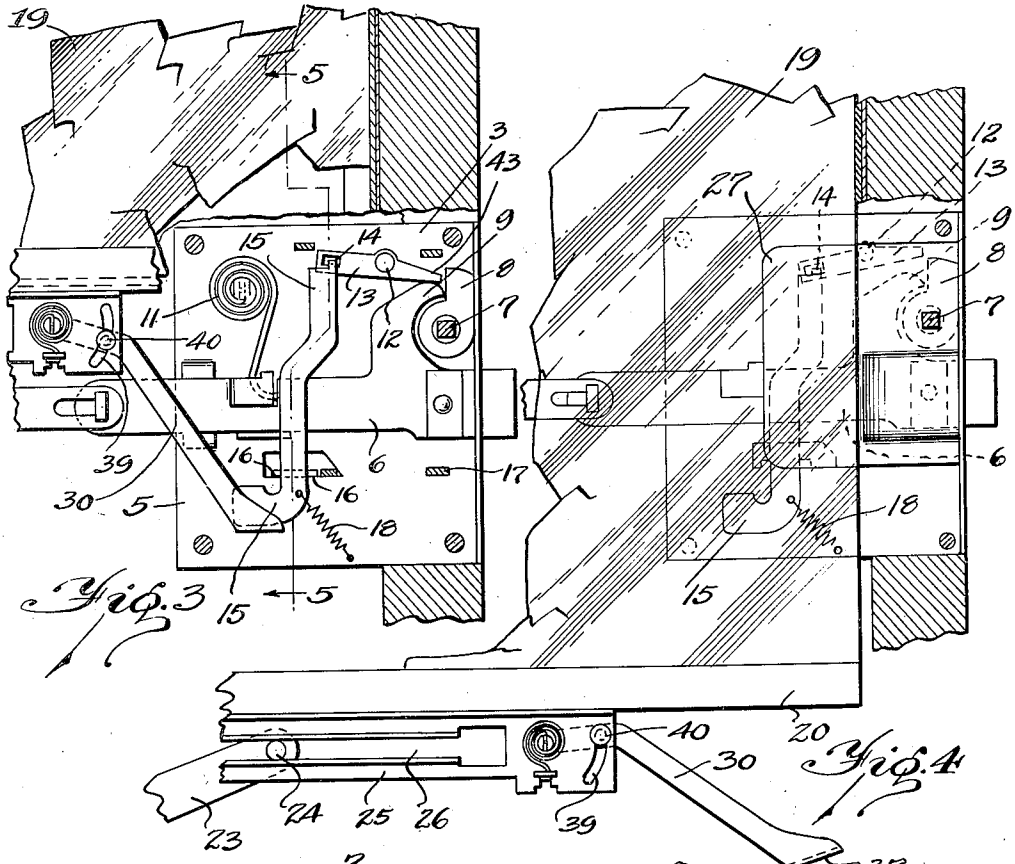


Fig. 3

Fig. 4

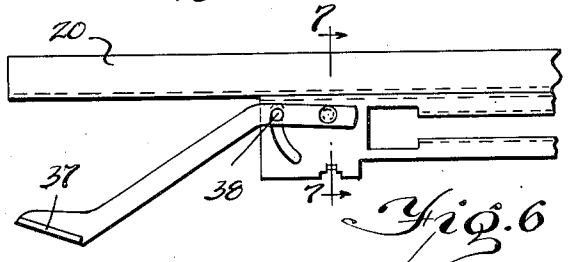


Fig. 6

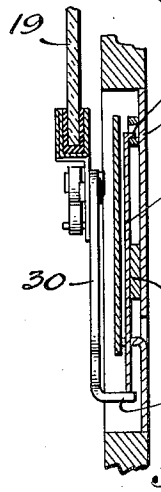


Fig. 5

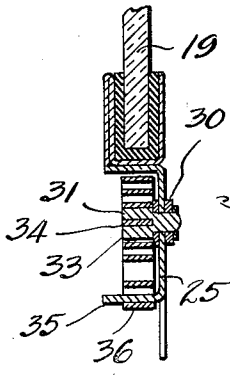


Fig. 7

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UNITED STATES PATENT OFFICE

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DOORLOCKING DEVICE

Application filed July 20, 1929. Serial No. 379,683.

This invention relates to a door locking device.

Heretofore various devices have been proposed for locking the latch of the vehicle door so that the latch bolt can not be retracted by the turning of the outside door handle. Among these various devices are those which lock the door latch by a certain manipulation of the remote control door handle and those which provide a snap-over lever associated with a dog, the actuation of the snap-over lever swinging the dog into engagement with the roll-back to positively prevent any turning movement on the part of the roll-back by actuation of the outside door handle. These various devices have all proven disadvantageous in that the operator has found it difficult and confusing to remember just when the snap-over lever or the remote control door handle has been properly manipulated to lock the latch. Consequently in order to satisfy himself and ease his mind, the operator resorts to the troublesome method of trying each outside door handle separately to determine whether or not the latch has been locked.

It is the object of this invention to overcome the above outlined difficulty and this has been achieved by so arranging the door latch locking device that it will be actuated upon the raising of the window to lock the door latch. Hence, when the operator chooses to lock his car he need merely raise the windows in the usual manner and the door latches will be automatically locked. As long as the windows are raised to a substantially closed position, the operator will know that the door latches have been locked and consequently he will not need to try each outside handle individually to satisfy himself that the doors have been locked.

In the drawings:

Fig. 1 is an outside elevation of a vehicle door with parts partly broken away showing the window in closed position, the latch therefore being locked.

Fig. 2 is a view similar to Fig. 1 showing the window in lowered position with the door latch unlocked.

Fig. 3 is a detail showing the latch in locked position.

Fig. 4 is a detail similar to Fig. 3 showing the lowered window and the door latch unlocked.

Fig. 5 is a section along the line 5—5 of Fig. 3.

Fig. 6 is a detail of the locking device lever mounted on the lower window sash frame.

Fig. 7 is a section along the line 7—7 of Fig. 6.

In the drawings I have shown a specific form of my locking device. The door of the vehicle may be generally referenced 1 and is mounted in a suitable door frame 2. The door is arranged to be latched to the door frame by a door latch 3 which is mounted upon the lock board 4.

More specifically the latch consists of the latch frame 5 and the reciprocable bolt 6 which is arranged to be retracted by the usual outside door handle (not shown) mounted on the spindle 7 which carries the roll-back 8, the roll-back 8 engaging the roll-back abutment 9 when the outside door handle is turned to retract the bolt 6 from latching engagement with the door frame 2. The latch bolt 6 is also arranged to be retracted from the inside by the well-known remote control 10. The latch bolt is arranged to be retracted against the action of the usual bolt spring 11 suitably mounted upon lock frame 5.

Pivoted to the lock frame 5 as at 12 is a dog 13 which has a sliding pivotal connection as at 14 with the link 15. The link 15 is guided on each side on the lower end by the struck-in lugs 16 and is held in position by the lock cover plate 27 which is attached to the lock frame 5 by the turned over lugs 17. The link 15 has secured to the lower end thereof the coil spring 18, the other end of the coil spring 18 being fixed to the lock frame 5.

The door 1 has slidably mounted therein the window 19, the lower rail of which may be designated 20. The window 19 is arranged to be raised and lowered by any suitable type of window regulator and in the drawings I have shown a window regulator of the segment gear type having a window regulator

handle 21, segment gear 22, and a segment gear arm 23 which has mounted thereon the stud 24. The stud 24 slidably engages the guide 25 in the slot 26 upon actuation of the window regulator handle 21 to raise or lower the window 19, the guide 25 being fixed to the lower sash frame 20.

At one end of the guide 25 I have pivotally mounted the lever arm 30 by means of the pivot stud 31. It is understood, as being within the scope of the invention, to mount the lever arm 30 on the lower window sash frame 20 separate from the guide 25. The lever 30 is mounted in non-rotative relation with the stud 31, but the stud is arranged to rotatively engage the guide 25 in the opening 32. The stud 31 is bifurcated as at 33 to receive one end of the coil spring 34, the other end of the coil spring 34 being secured to the struck-in lug 35 of the guide 25 as at 36. The lever 30 has the lateral projection 37 and carries the guide lug 38 having the enlarged head 40 which slidably engages the guide 25 in the arcuate slot 39 to prevent a twisting of the lever 30 relative to the guide 25.

The operation of the device is as follows:

When the window is in lowered position (Figs. 2 and 4), the link 15 is retracted by the coil spring 18, and hence, pivots the dog 13 out of engagement with the roll-back 8. In this position the outside door handle can be turned to retract the latch bolt 6 in the well-known manner.

When the operator turns the window regulator handle 21 to raise the window 19 into closed position (Figs. 1 and 3), the projection 37 of the lever 30 engages the lower end of the link 15 and forces it upwardly against the resistance of the coil spring 18. The upward movement of the link 15 pivots the dog 13 into locking relation with the roll-back 8 as at 43. In this position the outside door handle can not be turned because the roll-back is positively held from turning movement by the dog 13. When the window is lowered the locking device and dogging device again resume the relative positions shown in Figs. 2 and 4. The lever 30 may be arranged to throw the dog 13 into locking relation with the roll-back 8 as the window is being raised but before it is in closed position. In this position springs 34 and 18 also serve as anti-rattlers for lever 30 and link 15. This is the preferable assembly, but it is within the scope of the invention to have the lever 30 throw dog 13 into locking relation with the roll-back 8 when the window reaches its fully closed position or just before the window reaches its fully closed position. It will be readily seen that the pivoting of the lever 30 upon the guide 25 by the stud 31 permits the lever 30 to adjust itself to the link 15 in case the various parts of the assembly have not been accurately positioned.

It will be seen that from the above description that I have produced a locking device for a door latch that will automatically lock the door latch as the window is moved upwardly into closed position, and wherein the window being in closed position will be sufficient and effective notice to the operator that the latch is locked.

What I claim is:

1. In a vehicle body the combination with a latch for inter-engaging a door having an opening and a door frame, said latch having bolt retracting means, of a movable closure for the opening in the said door, and means including a lever carried by the movable closure for locking the said latch bolt retracting means as the closure approaches closed position.

2. In a vehicle body the combination with a latch for inter-engaging a door having an opening and a door frame, said latch having bolt retracting means, of a movable closure for the opening in the said door, and means including a pivoted lever actuated by the movable closure for locking the said latch bolt retracting means as the closure approaches closed position.

3. In a vehicle body the combination with a latch for inter-engaging a door having an opening and a door frame, said latch having bolt retracting means of a movable closure for the opening in the said door, and means including a pivoted spring-pressed lever associated with the movable closure for locking the said latch bolt retracting means as the closure approaches closed position, said spring pressed lever being mounted on the said closure.

4. The combination with a latch having a roll-back for inter-engaging a door having an opening and a door frame, of a dog, a movable closure for the opening in the said door, and means actuated by the movable closure for swinging the said dog into dogging relation with the roll-back when the window is moved toward closed position to lock the said roll-back.

5. The combination with a latch having a roll-back for inter-engaging a door having an opening and a door frame, of a dog, a movable closure for the opening in the said door, means carried by the movable closure for swinging the said dog into dogging relation with the roll-back when the window is moved toward closed position to lock the said roll-back, and means for swinging the dog out of dogging relation with the roll-back when the window is moved toward opened position to unlock the roll-back.

6. The combination with a latch for inter-engaging a door having an opening and a door frame, the said latch including a roll-back arranged to move a latch bolt, of a dog, a movable closure for the opening in the said door, means actuated by the movable closure

for swinging the said dog into dogging relation with the roll-back when the window is moved toward closed position to lock the said roll-back, and resilient means for swinging the dog out of dogging relation with the roll-back when the window is moved toward opened position to unlock the roll-back.

7. The combination with a latch for interengaging a door having an opening and a door frame, the said latch including a roll-back arranged to move a latch bolt, of a dog, a movable closure for the opening in the said door, means including a pivoted member actuated by the movable closure for swinging the said dog into dogging relation with the roll-back when the window is moved toward closed position to lock the said roll-back, and a spring for swinging the dog out of dogging relation with the roll-back when the window is moved toward opened position to unlock the roll-back.

8. In a vehicle body, the combination with a latch having bolt retracting means for inter-engaging a door and a door frame, said door having an opening and a movable closure therefor, of means for moving the said closure to open or close said opening in the door, and the second means actuated by the closure including a lever for locking the said latch bolt retracting means when the aforesaid means are actuated to move the closure toward closed position and to unlock the latch bolt retracting means when the aforesaid means are actuated to move the closure toward opened position.

9. The combination with a latch for interengaging a door having a movable window therein adapted to be opened and closed by a window regulator, and a door frame, the said latch including a rollback arranged to retract the latch bolt and adapted to be operated by an outside door handle, a dog, means actuated by the window for swinging the said dog into dogging relation with the rollback when the window regulator is operated to close the window and means for swinging the said dog out of dogging relation with the rollback when the window regulator is operated to open the window.

10. In a vehicle body, the combination with a latch for interengaging a door having an opening and a door frame, the said latch having bolt retracting means, of a movable closure for the opening in the said door, means for locking the said bolt retracting means, and a yieldable member carried by the movable closure adapted to be operatively connected to the said locking means for effecting a locking relation between the locking means and the bolt retracting means as the closure approaches closed position.

11. In a vehicle body, the combination with a latch for interengaging a door having an opening and a door frame, the said latch having bolt retracting means, of a movable closure for the opening in the said door, an oscillatable dog for dogging the said bolt retracting means, and means mounted upon and actuated by the movable closure for throwing the dog into dogging relation with the latch bolt retracting means when the window is moved towards closed position.

In testimony whereof I affix my signature.

JOHN B. FLYNN.