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DOOR LOCK

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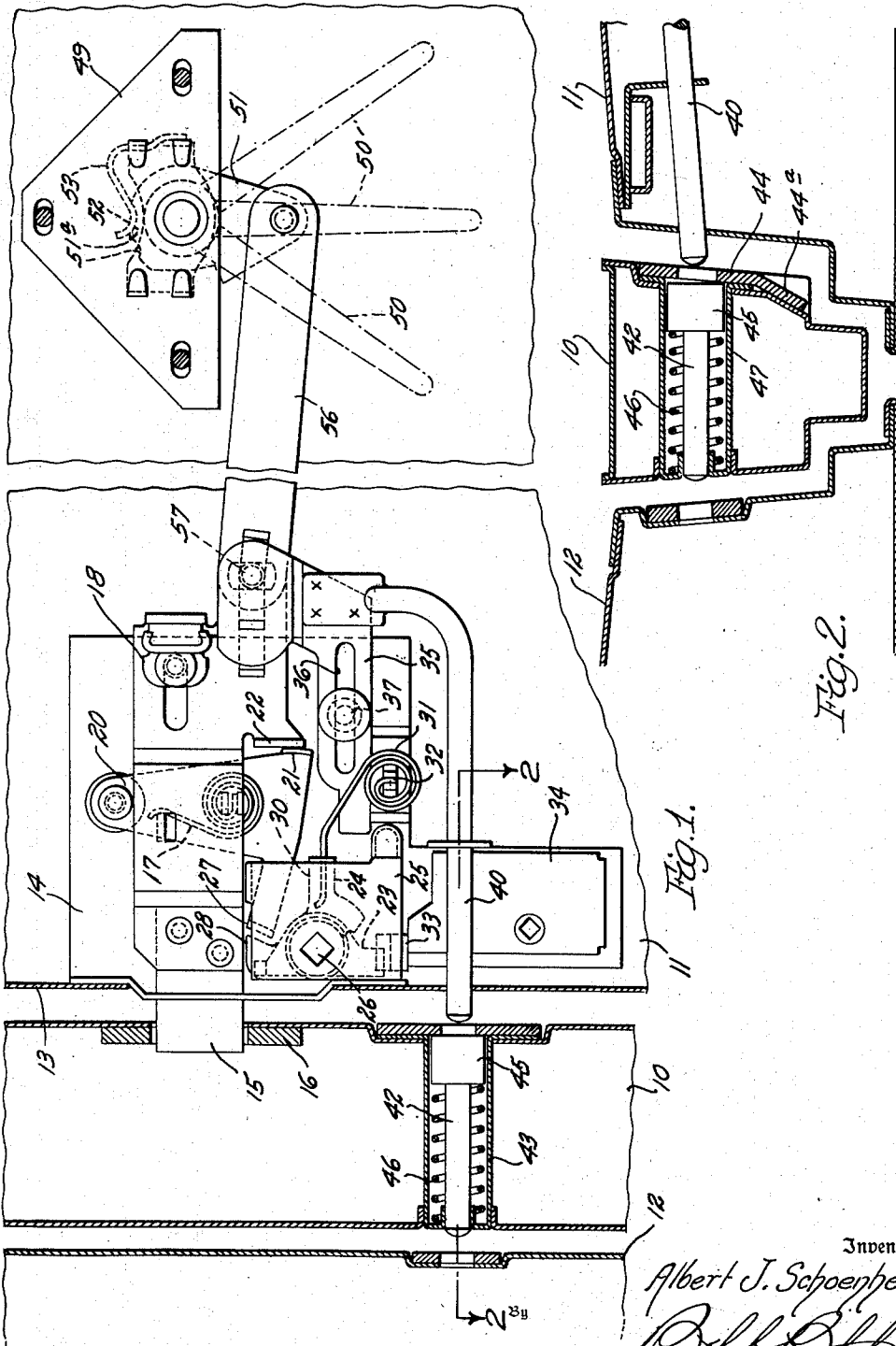


Fig. 2.

Fig. 1.

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DOOR LOCK

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1 Claim. (Cl. 292—33)

This invention relates generally to locks and more particularly to motor vehicle door locks.

It is an object of the present invention to provide a new and improved motor vehicle door lock operable to lock front and rear doors and one which is simple in structure and inexpensive to manufacture.

Other objects of the invention will become apparent from the following detailed description taken in connection with the accompanying drawing in which—

Figure 1 is a view showing in part a motor vehicle body structure and my improved door lock, and

Fig. 2 is a view shown in section taken along the line and in the direction of the arrows 2—2 of Fig. 1.

Referring to the drawing by characters of reference, the numeral 10 designates in general a body pillar or post commonly referred to as the center or locking pillar or motor vehicle bodies having front and rear doors 11 and 12 respectively. Adjacent the pillar 10, the front door 11 is provided with an intumed flange 13 extending along the lock side thereof and mounted on the front door 11 adjacent the flange 13 is a lock mechanism mounted on a supporting plate or base 14 which is rigidly secured to the door. The door locking mechanism includes a latch or bolt 15 which is mounted on the base plate 14 and arranged to project into the pillar 10, the pillar preferably being provided with a reinforcing plate 16 having an aperture to receive the bolt. A spring 17 acts to urge the bolt outwardly into latching position and retracting movement of the latch is limited by a stop member 18 mounted on the base plate 14.

A lever 20, pivoted at its upper end to the base plate 14 is provided at its lower end with an abutment flange 21 which loosely abuts an abutment flange 22 provided on the latch 15 such that pivoting lever 20 in a counterclockwise direction facing Fig. 1 will withdraw the latch 15. Below the latch 15 a pair of levers 23 and 24 are retained in a casing 25 which is mounted on the base plate 14 and these levers have aligning square apertures 26 to receive the square shank of an outside door handle (not shown). The lever 20 is provided with an arm 27 which projects into the casing 25 for abutment by an arm 28 of the lever 24. The lever 24 is provided with another arm 30 on which one end of a spring 31 acts, the other end of the spring being anchored to the base plate, as at 32. The spring 31 acts to pivot lever 24 in a counterclockwise di-

rection which movement is limited to the position shown by the casing 25. The lever 23 is provided to cooperate with a key operated lock bolt 33 mounted below the lever in a casing 34 which is rigidly secured to the base plate 14. Since these locks are well known this lock has not been shown or described in detail.

Mounted on the base plate 14, below the latch member 15 a rectilinearly movable member 35 is provided and is operable to lock both of the doors 11 and 12 as well as prevent withdrawal of the latch 15. The operating member 35 is provided with an elongated aperture or slot 36 which receives a guide pin 37 which is rigidly secured to the base plate 14. The operating member 35 includes an end portion 38 which when member 35 is moved to the left, positions below lever arm 20 to prevent movement of lever 24 and therefore prevents unlatching of the door by the outside handle.

Rigidly secured to the operating member 35 is a locking bolt 40 which is slidably received and guided in an aperture provided in a flange 41 turned out of the base plate 14. This locking bolt 40 is adapted to lock the front door 11 to the pillar 10 and to operate a second locking bolt 42 which is adapted to lock the rear door 12 to the pillar 10. In the pillar 10, the locking bolt 42 is operable in a tube 43 which aligns or registers with the front door locking bolt 40. Preferably, the pillar 10, in the locking side thereof toward the front door 11 is provided with a recess to receive a reinforcing plate 44 which is provided with an aperture through which the front locking member 40 is adapted to project and engage and move the locking member 42. One end of the locking member is preferably enlarged, as at 45 and is adapted to abut the reinforcing plate 44 and overlies the aperture therein, the locking member 42 being moved to retracted position, preferably by a helical coil spring 46. Preferably, the reinforcing plate 44, Fig. 2, is provided with an angularly disposed portion 44a to urge locking member 40 into the door in the event that the door is closed when member 40 is in its outward position.

A remote and manual control, designated in general by the numeral 48 is provided within the vehicle body for operating the locking mechanism. This control may be rigidly secured to the front door 11 and journaled in an aperture in the plate 49 is an operating handle 50. The handle 50 is adapted to rotate a plate like member 51 in the outer periphery of which is provided a pair of spaced notches 51a adapted to receive

the rounded free end 52 of a leaf spring 53 which exerts a greater force than spring 46. A link 56 is pivotally connected adjacent one end thereof to the rotatable member 51, the other end of the link being pivotally connected to the operating member 35. The link 56 and the operating member 35 are connected together by a pin 57 which engages in a slot in the latch member 15. This pin 57 is arranged to provide for lost motion between the latch 15 and link 56 on movement of the operating handle forward but abuts in the end of the slot on movement of the operating handle 50 rearwardly so as to retract the bolt 16.

In operation of the lock, it will be seen that upon moving the operating handle 50 forward, locking member 40 will move into the pillar 10 locking the front door 11 thereto and continuing in movement pushes locking member 42 so that it projects into the rear door 12 thereby locking the rear door to the pillar. To unlock the doors, the operating handle 50 is drawn back to the intermediate position shown and the parts assume the positions shown in the drawing. In the locked positions of the parts, one end of member 35 positions beneath the lever 24 preventing withdrawal of latch 15 by the outside door handle (not shown). By moving the handle 50 rearward positive connection is made by pin 57 and the

latch 15 whereby the latch may be withdrawn from the pillar 10. When the key operated lock bolt 33 is withdrawn and the handle 50 is in the neutral or intermediate position, lever 24 may be rotated by the outside door handle and the lever arm 28 will engage and move lever 20 which in turn will withdraw the latch 15.

What I claim is:

In a latching arrangement for concurrently securing two adjacent vehicle doors separated by a post containing a keeper and an aligned normally-spring-retracted bolt projectable into an associated keeper in the second door, one of said doors carrying a latch bolt operable from an interior remote-control lever by means of operating connections including an element engageable with the conventional external-handle roll-back, the improvement which comprises providing an integral extension on said element including a portion projectable through the door into the post keeper to concurrently force the post bolt into engagement with its associated keeper whereby positive locking of the latch-carrying door will concurrently secure the other door and at the same time positively secure the latch-carrying door.

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