March 30, 1937. M. H. ATEN 2,075,495

DOOR LOCK

Filed Jan. 26, 1935

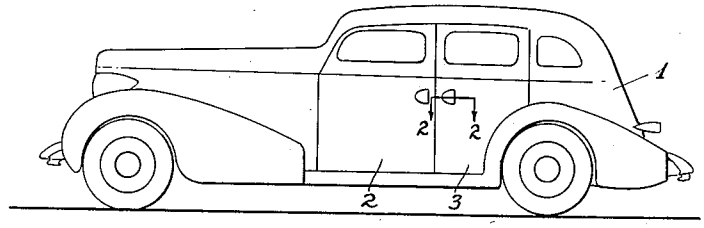


Fig. 1.

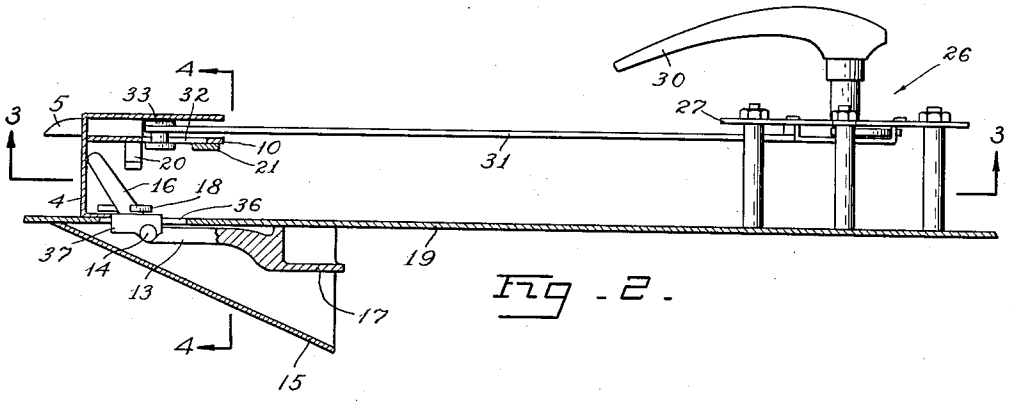


Fig. 2.

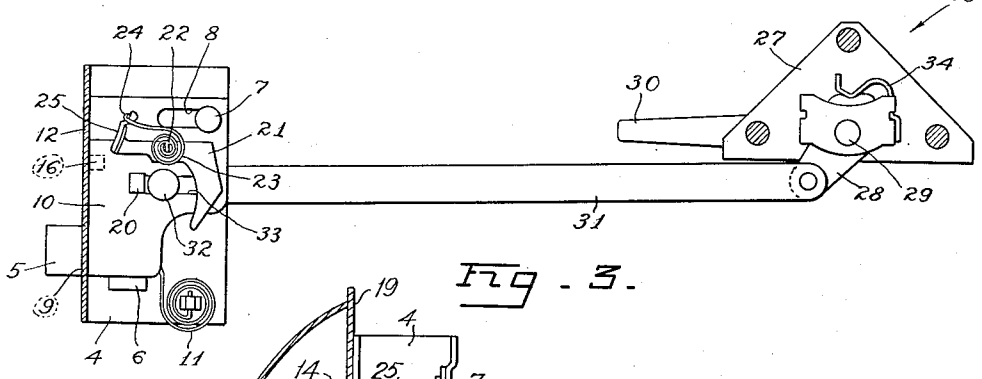


Fig. 3.

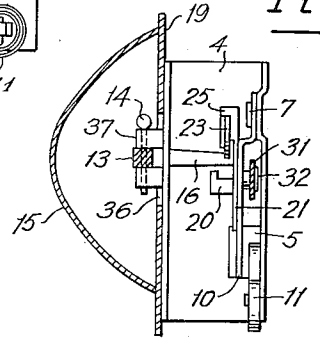


Fig. 4

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DOOR LOCK

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4 Claims. (Cl. 296—44)

My invention relates to improvements in door locks, and it consists of the combinations, constructions and arrangements hereinafter described and claimed.

An object of my invention is to provide a door lock especially designed for automobile doors in which the outside handle is freed from the bolt mechanism when the device is either locked from the inside of the car or from the outside of the car. In standard automobile door locks the outside handle is held against movement when the door is locked, and this permits the handle to be wrenched by an unauthorized person, and many times the wrenching of the handle will retract the bolt and permit the door to be opened. If the handle is freed when the door is locked, it will be seen that the moving of the handle to retract the bolt will have no effect.

A further object of my invention is to provide a device of the type described in which I employ a handle lever instead of the standard door handle, and I mount the gripping portion of the lever in a shield which forms a part of the car body. The shield hides the handle, and may be stream-lined to carry out the general effect of the stream-lining of the automobile. Moreover, a person in opening the door moves the handle toward the shield to retract the bolt and continues the same movement in opening the door. The shield and lever cooperate together to produce a hand grip during the actual opening of the door.

Other objects and advantages will appear in the following specification, and the novel features of the device will be particularly pointed out in the appended claims.

My invention is illustrated in the accompanying drawing forming a part of this application, in which

Figure 1 is a side elevation of an automobile showing my device operatively applied thereto;

Figure 2 is a section along the line 2—2 of Figure 1;

Figure 3 is a section along the line 3—3 of Figure 2;

Figure 4 is a section along the line 4—4 of Figure 2.

In carrying out my invention I make use of an automobile indicated generally at 1, and this automobile has doors 2 and 3 thereon. In Figures 2 and 3 inclusive I show a lock especially designed for the door 3. It is best to describe this lock and then to set forth the slight change necessary in order to adapt the lock for the door 2.

The lock proper comprises a casing 4 having a bolt 5 slidably mounted therein and guided by a projection 6 and a pin 7 that slides in a slot 8. The bolt 5 slidably extends through an opening 9 in the lock casing 4 and is secured to a sliding plate 10 which forms an integral part thereof. A spring 11 urges the bolt 5 to the left and the end wall 12 of the casing limits the movement of the bolt in this direction.

In Figure 2 I show an outside hand lever 13 which is pivoted at 14, and is mounted in a shield 15 forming part of the car body. The lever has a tongue 16 extending toward the lock, and this tongue is designed to retract the bolt when the hand grip portion 17 of the lever is moved in a clockwise direction about the pivot 14. The shield 15 and the portion 17 of the lever 13 can be gripped by the hand during the retracting of the bolt and the opening of the door.

I have indicated the end of the tongue 16 by dotted lines in Figure 3, and it will be noted that when the parts of the lock are in the position shown in this figure the tongue 16 can be moved without retracting the bolt. In other words, the outside handle 13 of the automobile lock is disconnected from the mechanism. A spring 18, see Figure 2, yieldingly urges the hand lever 13 into the position shown in Figure 2, and prevents the rattling of the hand lever.

It is obvious that the car body 19 shown in Figure 2 can have a depressed portion so that the shield 15 need not extend so far beyond the surface of the body. In this event the tongue 16 would make more of an angle with respect to the shank of the hand grip portion 17.

The plate 10 carries a projection 20 against which a cam lever 21 can be swung. The cam lever 21 shown in Figure 3 is pivotally mounted on a projection 22, and this projection carries a spring 23 that has its free end connected to the cam lever at 24, and the spring has a tendency to swing the cam lever into the position shown. As already stated, when the parts are in this position the tongue 16 will move freely between the projection 20 and the end 25 of the cam lever.

I further show a remote control indicated generally at 26, and this control has a plate 27 in which an arm 28 is pivotally secured by means of a stub shaft 29. An inside handle 30 is connected to the stub shaft 29. A link 31 is connected to the arm 28, and carries at its other end a projection 32 that is slidable in a slot 33 in the plate 10. The handle 30 shown in Figure 3 is in locked position. The parts when in this

position disconnect the outside lever handle 13 from the bolt 5. A spring 34 yieldingly holds the arm 28 in the position shown.

When it is desired to move the parts of the mechanism into operable position by the remote control, the handle 30 is swung downwardly from the position shown in Figure 3. This will swing the arm 28 and will move the link 31 so that the projection 32 will be moved to the end of the slot 33 and will engage with a cam edge 34 of the cam lever 21 so as to swing the lever in a counter-clockwise direction about the projection 22. The end or head 25 of the lever 21 will now be brought against the projection 20, and will be disposed directly in the path of the tongue 16. When the parts are in this position either the handle 30 may be used for retracting the bolt 5 or the handle lever 13 may be used.

When the hand lever 13 is used the tongue 16 will move to the right as shown in Figure 9, and during this movement will engage with the head 25 and will tend to swing the cam lever 21 in a counter-clockwise direction. This will be prevented by the projection 20 and the movement of the tongue will cause the projection 20 to move to the right and to carry with it the plate 10 and the bolt 5. When the handle 13 is released the spring 11 will return the parts to the position shown in Figure 7.

I have described how the remote control 26 can be used for opening the lock and I have also described how the hand lever 13 can be used for the same purpose. Furthermore the swinging of the inside handle 30 into locked position as shown in Figure 3 will permit the outside hand lever 13 to be moved without affecting the lock mechanism. The remote control has not been changed in any way from the standard ones now in use.

In assembling the casing 4 and the outside hand lever 13 to the car body 19, it will be seen that the hand lever is moved into the shield 15 so that the tongue 16 will enter an opening 36 in the car body. The pin 14 can now be passed through a bearing 37 carried by the casing 4, see Figure 4, and this pin will pivotally connect the hand lever 13 to the casing 4. The casing 4 can now be secured to the body 19 by any suitable means not shown.

While I have shown only the preferred form of my invention, it should be understood that various changes or modifications may be made within the scope of the appended claims without departing from the spirit of the invention.

The shield 15 acts as a stop for the hand lever in that the lever abuts the shield in opening the door. This prevents the handle from being wrenched off. The shield also acts as a hand grip for aid in opening the door because it forms a part of the door. The shield covers the opening through which the tongue of the lever handle projects. The handle is protected by the shield and the shield is stream-lined so as to add to the beauty of the car.

I claim:

1. The combination with an automobile door and a lock therefor, of a hand lever for operating the lock, said door having an opening therein for receiving a part of the handle, said door having a shield covering the handle and the opening and forming a part of the door, the open end of the shield facing toward the rear of the automobile, said shield acting as a stop for limiting the opening movement of the handle and cooperating with the handle to constitute a hand grip to aid in opening the door.

2. The combination with a vehicle door having a lock mechanism therefor, of a hand lever for actuating the lock, and a shield carried by the door and covering the lever, said shield having its open end facing the rear of the vehicle, and cooperating with the lever to constitute a hand grip to aid in opening the door.

3. The combination with a vehicle door having a lock mechanism therefor, of a hand lever for actuating the lock, and a shield carried by the door and covering the lever, said shield having its open end facing the rear of the vehicle, and cooperating with the lever to constitute a hand grip to aid in opening the door, said shield also acting as a stop for limiting the opening movement of the lever.

4. The combination with a vehicle door having a lock mechanism therefor, of a hand lever for actuating the lock, and a shield carried by the door and covering the lever, said shield having its open end facing the rear of the vehicle and cooperating with the lever to constitute a hand grip to aid in opening the door, and a spring for yieldingly holding the lever in inactive position and preventing it from rattling.

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