April 2, 1946. C. O. LARSON 2,397,671

AUTOMOBILE DOOR LOCK

Original Filed July 11, 1939

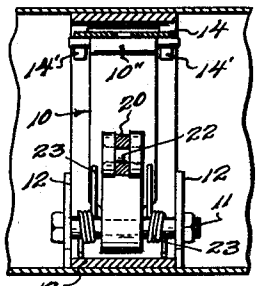


Fig. 3.

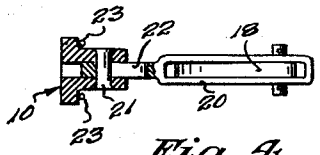


Fig. 4.

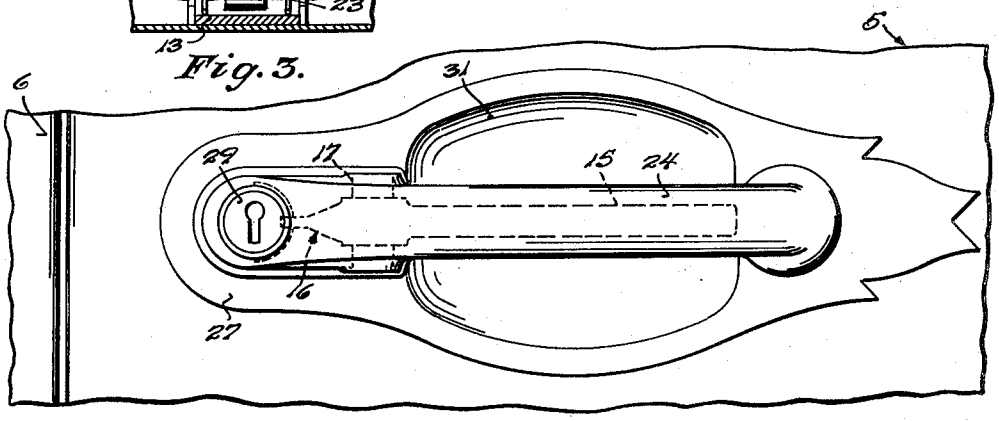


Fig. 1.

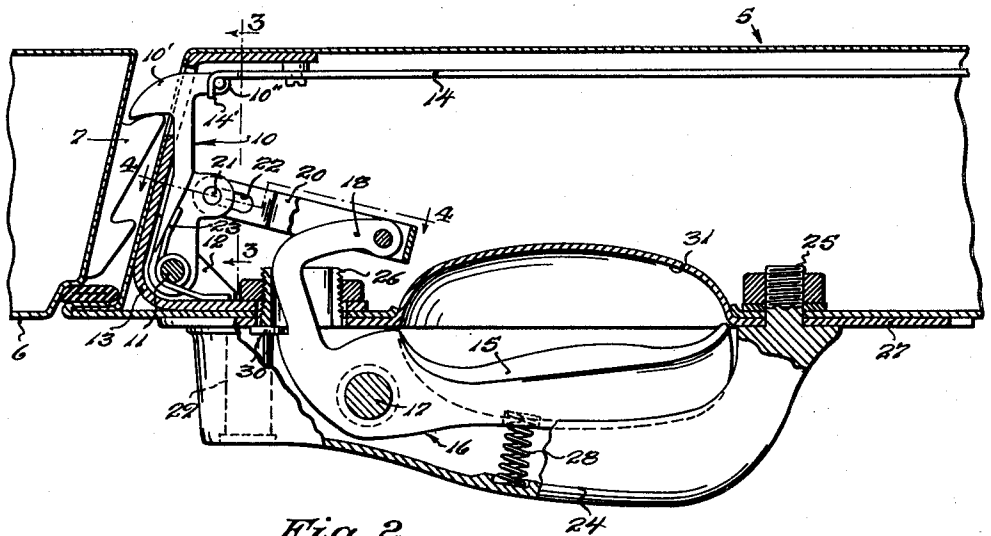


Fig. 2.

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Patented Apr. 2, 1946 2,397,671

UNITED STATES PATENT OFFICE

2,397,671

AUTOMOBILE DOOR LOCK

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Substituted for abandoned application Serial No. 283,859, July 11, 1939. This application January 18, 1946, Serial No. 642,077

5 Claims. (Cl. 292—123)

This invention relates to lock mechanism for automobile doors and its object is to improve the lock bolt and the exterior control therefor as well as the interconnection therebetween. Stated more particularly, it is a principal object of my invention to provide a hinged as distinguished from a sliding-type bolt, thereby to obtain what may be termed a floating action of the bolt with appreciable reduction in the resistance encountered by the bolt in the travel thereof over the facing surfaces of the latching plate. It is a further and particular object, in relation to the exterior control for the bolt, to provide a handle which, through compression pressure operation, assures the greatest ease in the operation of releasing the latch and one which, in the peculiar manner of its engineering, permits more advanced styling than has been heretofore possible. The present application is a substitute for an abandoned application directed to like subject matter filed July 11, 1939, Ser. No. 283,859.

The invention consists in the novel construction and in the adaptation and combination of parts hereinafter described and claimed.

In the accompanying drawing:

Figure 1 is an elevational view illustrating, fragmentarily, an automobile door provided with lock mechanism constructed in accordance with the preferred embodiment of the present invention.

Fig. 2 is a horizontal section taken on the approximate longitudinal median line of the lock, parts of the mechanism being shown in elevation.

Fig. 3 is a transverse vertical section on line 3—3 of Fig. 2; and

Fig. 4 is a detail longitudinal vertical section on line 4—4 of Fig. 2.

The numeral 5 in the drawing denotes a car door affording a closure for an opening in the side of a car body 6, and 7 represents the latching plate for my lock mechanism of which the bolt is designated by 10.

Said bolt, according to the present invention, is pivotally mounted for swinging movement about a vertical pin 11 passing through cheeks 12 formed as integral gussets on a mounting plate 13, the bolt-forming head 10' having its latching face disposed concentric to the axis of said pin and providing, as a rearward prolongation, a toe element 10'' which is engaged by hook-forming terminals 14' of a sliding bar 14, said bar, as is conventional with automobile door locks, being controlled by a suitable lever (not shown) and operating as a means for retracting the bolt from the inner side of the door.

Operating independently of this inside control I provide an exterior control comprising a lever 16 fulcrumed intermediate its two ends, as at 17, with one of the two lever arms 15, which functions as the actuating arm, being engaged by the fingers of the operator and with the other arm 18 finding engagement with the power end of a link 20 which in turn connects from its drag end to a pin 21 passing through spaced ears provided to the rear of the bolt 10, the link being slotted as at 22. Designated by 23 are springs which lie at opposite sides of the bolt shank and by the act of bearing against shoulders formed on the latter influence the bolt into its latching position.

Describing said lever in more particularity it will be seen that I house the same in the concealed recess of a guard-forming stationary handle 24 which, at each end, is provided with threaded posts, as 25 and 26, which extend through openings in the outer wall of the car door and at the inside of said door are engaged by anchoring nuts to fixedly mount the handle with a complementing escutcheon 27 on the outer side of the door, the forwardly disposed post being hollow to permit of the passage therethrough of the elbow-shaped lever arm 18. The handle, forming a hand hold by which to apply compression pressure to the lever in opposition to a coil spring 28 seating within the recess, is or may be fitted with a key-operated cylinder-type lock 29 providing a lateral projection 30 movable by rotation into a notch of the lever arm 18, a position whereat the same interrupts bolt-retracting movement of said lever. Formed by the escutcheon is a cavity 31 to accommodate the fingers of the hand.

It will be apparent that the described parts may be modified in their construction without departing from the spirit of the invention.

What I claim, is:

1. In mechanism for operating the latch structure of an automobile door lock, the door being characterized by inner and outer spaced walls of which the outer wall is provided with a pair of spaced openings and an aperture between said openings: an escutcheon adapted to fit over said outer wall and formed with end openings adapted to register with the end openings of the wall and having a recessed part adapted to extend as a well into the center aperture of the wall; an arched handle providing threaded posts arranged to extend through said registering end openings of the

escutcheon and wall to receive, within the door, anchoring nuts, said handle having a longitudinal slot on its inner side; a lever mounted in the slot and fulcrumed intermediate its ends to the handle; a spring housed in the slot to the rear of one of the arms of said lever for influencing said arm directively from the handle; and means operatively interconnecting the other arm of said lever to the latch structure of the lock for retracting the latter to release the door in response to the application of compression pressure from the fingers of the operator to said first-named arm of the lever, said finger-compressing arm of the lever being positioned in overlying relation to the well-forming recess of the escutcheon.

2. In mechanism for operating the latch structure of a door lock, the door having inner and outer walls of which one of the walls is provided with a pair of spaced openings leading to the space between said walls: an arched handle longitudinally slotted on its underside and at each end of said slot providing threaded posts arranged to register with and extend through said wall openings of the door for application of anchoring nuts interiorly of the door, one of said posts being hollow; and a lever fulcrumed intermediate its ends to the handle to have one of its arms lie within the slot and the other arm extend through the hollow post into the interior of the door and, within the latter, providing means arranged and adapted to operatively interconnect with the latch structure of the lock to obtain door-releasing actuation of the latch in response to the application of compression pressure from the fingers of the operator to the slot-received arm of the lever.

3. In mechanism for operating the latch structure of a door lock, the door being chambered and providing an opening through the wall of the door to the chamber: an arched handle longitudinally slotted on its underside and providing a threaded post arranged to register with and extend through said wall opening into the chamber of the door for application of an anchoring nut within the chamber, said post being hollow to provide communication between the slot of the handle and the chamber of the door; and a lever received in said slot of the handle and having operative interconnection through said post into the chamber of the door and, within the latter, providing means arranged and adapted to operatively interconnect the lever with the latch structure of the lock to obtain door-releasing actuation of the latch in response to the application of compression pressure from the fingers of the operator to the slot-received lever.

4. Structure according to claim 1, one of the threaded posts of the handle being hollow and accommodating the passage therethrough of the latch-connecting arm of the lever.

5. Structure according to claim 3, and an escutcheon providing an opening arranged to register with the wall opening of the door and providing a cavity complementing the arch of the handle to accommodate the fingers of the operator in the application of compression pressure to the latch-actuating lever.

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