Jan. 17, 1933. E. C. DYAL 1,894,555

LATCH MECHANISM

Filed April 16, 1931

Fig. 1.

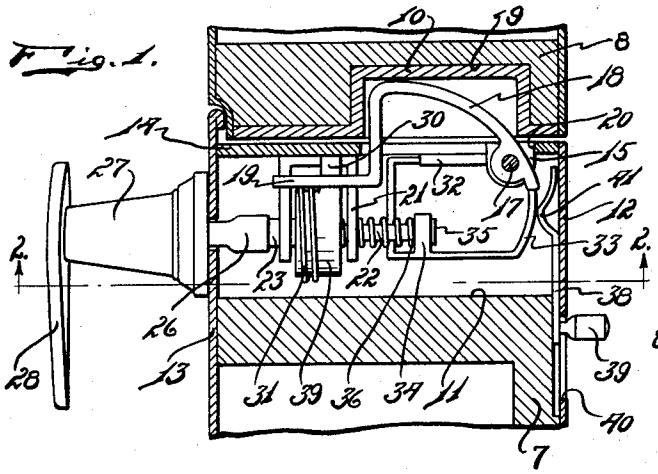


Fig. 4.

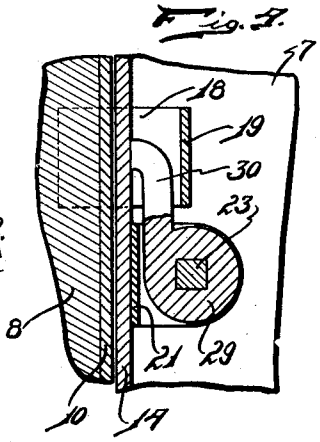


Fig. 2.

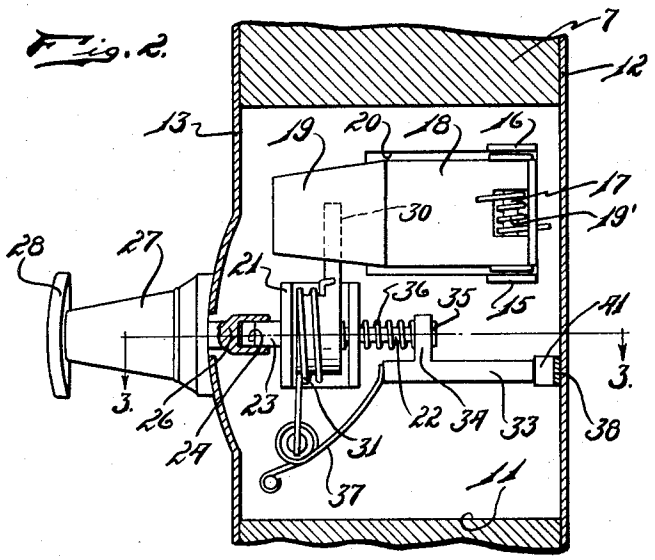


Fig. 5.

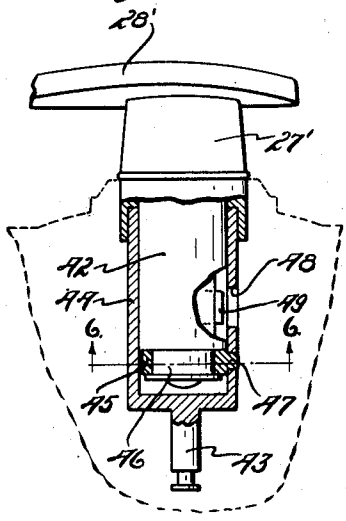


Fig. 3.

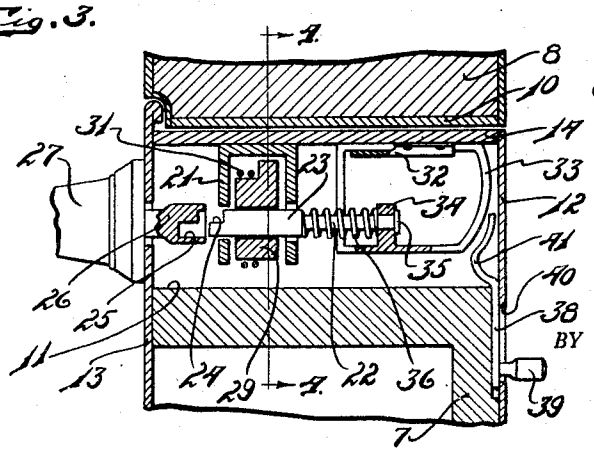
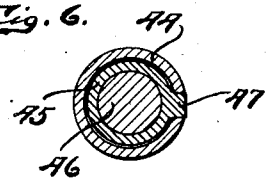


Fig. 6.



INVENTOR.
Edward C. Dyal
BY
ATTORNEY.

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UNITED STATES PATENT OFFICE

EDWARD C. DYAL, OF LINCOLN PARK, MICHIGAN

LATCH MECHANISM

Application filed April 16, 1931. Serial No. 530,546.

My invention relates to a new and useful improvement in a latch mechanism adapted for use on swingably mounted closures such as door and the like, and particularly adapted for use on vehicles having a closed body.

It is an object of the present invention to provide in a device of this kind a mechanism whereby the latch may be locked in operative position when desired and whereby the mechanism may be easily and quickly moved to position permitting release of the latch.

It is another object of the present invention to provide a latch mechanism operated by rotating handle and provided with mechanism so that when the latch mechanism is locked in latching position, the operating handle may be freely rotated.

It is another object of the present invention to provide a latch mechanism so constructed that when locked in latching position, a damaging of the operating handle will not release the latching mechanism.

Another object of the invention is the provision of a device of this kind which will be simple in structure, economical of manufacture, and highly efficient in use.

Other objects will appear hereinafter.

The invention consists in the combination and arrangement of parts hereinafter described and claimed.

The invention will be best understood by a reference to the accompanying drawing which forms a part of this specification, and in which,

Fig. 1 is a sectional view through a door embodying the invention and showing the same principally in side elevation.

Fig. 2 is a view taken on line 2—2 of Fig. 1.

Fig. 3 is a sectional view taken on line 3—3 of Fig. 2, with a part broken away.

Fig. 4 is a view taken on line 4—4 of Fig. 3.

Fig. 5 is a side elevational view of a modified form, with parts broken away and parts shown in section.

Fig. 6 is a sectional view taken on line 6—6 of Fig. 5.

In the drawing I have shown the invention used with a swingable closure or door 7 co-operating with the stationary part 8 which forms the jam and in the face of which is formed a recess 9 lined by a wear plate 10. A recess 11 is formed in the door 7, this door 7 carrying at its opposite sides the panels 12 and 13 and at its edge the plate 14. The plate 14 is provided with a pair of spaced inwardly projecting lugs 15 and 16 through which is projected the pin 17 on which is mounted the latch 18 having the angularly turned end 19. The plate 14 is provided with a slot 20 through which this latch may project. Mounted on the plate 14 and projecting into the recess 11 is a U shaped support 21 slidably projected through the lugs of which is a flat faced enlargement 23 on the shaft 22. This enlargement 23 is cut away as at 24 to provide a tongue which is in alignment with and adapted to engage in the pocket 25 formed in the head 26 which projects from and rotates with the shank 27 which is rotated by the handle 28.

The member 23 projects slidably through a block 29 which is provided with a flat faced opening extending therethrough to accommodate the member 23 so that the block 29 will rotate with the enlargement 23. Projecting outwardly from the block 29 is an actuating finger 30 adapted to engage the angularly turned end 19 of the latch member. A spring 31 serves to resist rotation of the block 29 so as to normally maintain the actuating finger 30 in such a position that the spring 19′ may maintain the latch 18 in outwardly pressed or operative position as shown in Fig. 1.

A sleeve 32 is secured to the plate 14 and serves to maintain slidably mounted thereon the frame 33 which carries the projection 34 through which the shaft 22 is slidably projected. A head 35 formed on the end of the shaft engages one face of the projection 34 and the other face thereof is engaged by one end of the spring 36, the other end engaging the enlargement 23, this spring 36 embracing the shaft 22. A spring 37 also engages the end of the frame 33.

When the mechanism is in the form shown in Fig. 3, it is obvious that the handle shank 27 may be rotated freely without disturbing the latching mechanism. A plate 38 is provided with a handle 39 which projects

through a slot 40 formed in the channel 12. Intermediate the ends of the plate 38, which is preferably made of resilient material, is formed the boss 41 so that when the plate 38 is slid upwardly into the position shown in Fig. 1, the frame 33 will be moved forwardly so as to force the tongues on the member 23 into the pocket 25. This brings the mechanism into such a position that when the handle 28 is rotated, the block 29 will also be rotated and the latch 18 moved to unlatching position. It is thus seen that in order to render the handle operative or inoperative, a sliding of the plate 38 to one position or the other is all that is required. Thus the door when closed may be locked against unlatching from the interior of the car on which used.

In order to provide a key locked mechanism operating on the same principle, I, on one of the doors, provide the handle 28′ with a shank 27′ carrying the tumbler 42 which always rotates with the shank 27′. The latch operating mechanism is as already described, the block 29 being rotated by the trunnion 43 which projects outwardly from the sleeve 44. In order to prevent axial movement of the sleeve 44 and the tumbler barrel 42, I provide a collar 45 which is rotatably mounted on the neck 46 of the tumbler barrel 42. A stud 47 projects outwardly from the collar 45 and through an opening formed in the sleeve 44. A slot 48 is formed in the sleeve 44 in registration with a plunger 49 carried by the tumbler barrel 42 and adapted for being drawn entirely within the sleeve 44 when the device is locked against release of the latch. In order to render the device operative for releasing the latch, the plunger 49 is key released so as to project through the slot 48. The particular form of key release mechanism is not described as it may be of any well known type which is well known to those skilled in the art and which of itself forms no part of the present invention.

From this description, it is believed that the durability and simplicity of the structure as well as its ease of operation and its compactness is apparent.

While I have illustrated and described the preferred form of construction of my invention, I do not wish to limit myself to the precise details of structure shown, but desire to avail myself of such variations and modifications as may come within the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A latch mechanism of the class described, comprising: a swingable latch member; a rotatable member for swinging said latch member to inoperative position; an axially movable shaft supporting and rotating said rotating member; a rotating handle for rotating said shaft; and resilient means for disengaging said shaft from said handle.

2. A latch mechanism of the class described, comprising: a swingable latch member; a rotatable member for swinging said latch member to inoperative position; an axially movable shaft supporting and rotating said rotating member; a rotating handle for rotating said shaft; resilient means for disengaging said shaft from said handle; and slidable means operative at will for effecting engagement of said latch with said handle.

3. In a latch mechanism of the class described, a swingable latch; a rotatable latch moving member; rotatable means for rotating said latch moving member; resilient means for normally maintaining said rotatable means in inoperative position; a frame for moving said rotatable means to operative position; and a slidable member for moving said frame for effecting movement of said rotatable means to operative position and retaining the same in operative position.

In testimony whereof I have signed the foregoing specification.

EDWARD C. DYAL.