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LATCH MECHANISM HANDLE

Filed Jan. 13, 1927

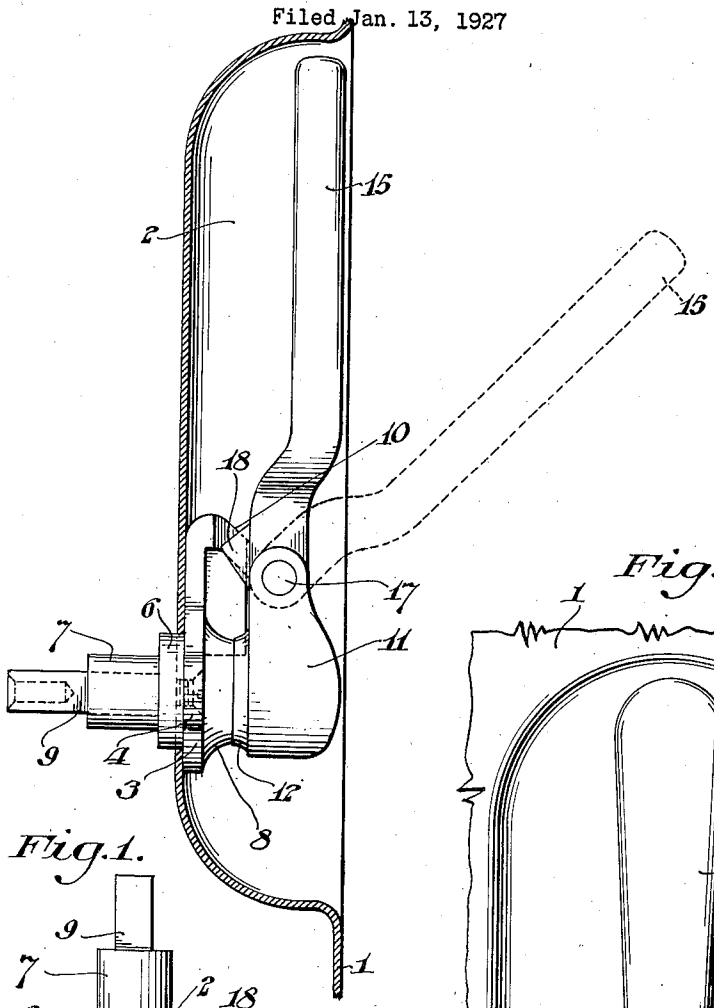


Fig. 1.

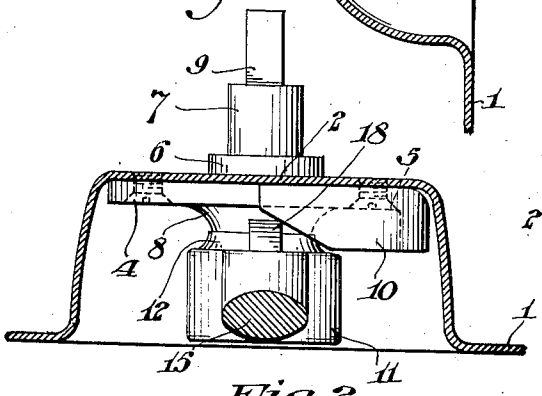
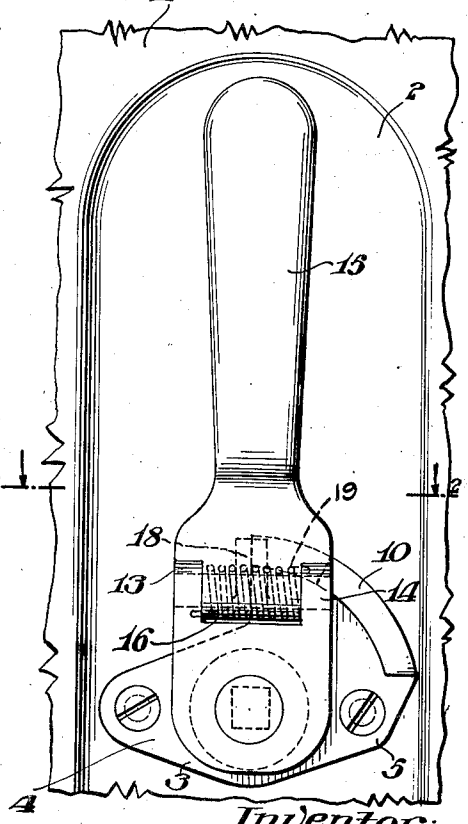


Fig. 2.

Fig. 3.



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LATCH-MECHANISM HANDLE.

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This invention relates to a handle for a door latch mechanism.

The handle may be used with the operating spindle of any form of latch and upon any type of closure as appears desirable. A particular advantageous use for a handle embodying the invention has been found to exist in the large motor busses now so widely used in inter or intra urban passenger service. As is well known, such busses are provided, as a rule, with a main door at the front end of the vehicle. It is not necessary to provide these doors with an exterior handle, the same being operated from the interior by the driver. However, it is desirable, and the laws of most States make it compulsory to provide an auxiliary or safety door adjacent the rear of the bus, and these doors should have both interior and exterior latch operating handles.

The advisability of maintaining the exterior handle flush with the outer surface of the door, except when the same is being used to actuate the latch bolt, and of providing means for preventing the marring of the paint thereby is apparent.

Accordingly, the principal object of this invention is to provide a latch actuating handle for doors which will normally be flush with or counter-sunk in the door paneling except during operation of the latch bolt and which will not strike against the paneling during its movement to or from such position.

In the course of this description other objects and advantages will become apparent from time to time.

An embodiment of the invention is illustrated in the accompanying drawing, wherein

Fig. 1 is a section through a door paneling, showing in side elevation the handle and latch actuating spindle mounted thereon, the handle being indicated in latch operating intermediate position by dotted lines.

Fig. 2 is a horizontal sectional view taken on line 2—2 of Fig. 3, and

Fig. 3 is a front elevational view of the door panel and handle mounted thereon.

The latch operating handle is shown as mounted on the exterior of a door, such as a motor bus emergency exit, although it is to be understood that its application is not to be limited to such use.

The door paneling 1, in this instance the outer side of the door, has a countersunk or depressed pocket 2 formed therein.

An escutcheon plate 3 having attaching flanges 4 and 5 is screwed, riveted or otherwise secured to the door paneling within the depressed pocket 2. This escutcheon has an annular part 6 projecting inwardly of the door through an opening in the paneling and a reduced annular part 7 forming an extension of the part 6. Extending outwardly of the escutcheon on the exterior of the paneling is a frusto-conical part 8, the purpose of which will become clear later. The escutcheon, and parts 8, 6 and 7 have an aligned opening or bearing therethrough in which the latch spindle 9 is oscillatably journalled. At one of the upper edges of the escutcheon plate an arcuate inclined or cam flange 10 is arranged. This cam flange may be an integral part of the escutcheon casting or stamping, or it may be a separate member secured thereto, and it is of diminishing height toward the center of the pocket 2. Preferably the cam has its lowest portion, which is its inner end, located on the vertical line through the latch spindle 9, and its highest portion slightly above the horizontal line therethrough.

The handle comprises a hub 11 which in the customary manner may be secured to the spindle 9 or formed integral therewith. The inner side of the hub has a frusto-conical reduced shoulder 12 which bears against and is coextensive with the similar part 8 of the escutcheon. The upper side of the hub is bifurcated to provide spaced ears or lugs 13 and 14. The remainder of the handle comprises an operating lever 15 the lower end of which is of larger cross section than the upper part and has a projecting portion 16 which is adapted to fit between the ears 13 and 14. The portion 16 and the ears 13 and 14 are provided with aligned openings in which a pin 17 is fastened; the opening through the portion 16 being of sufficient diameter to accommodate a coil spring 19 arranged upon the pintle and having one of its ends bearing against the ear 13 and the

other of its ears bearing against the portion 16. In this manner the lever is normally forced into its inward position. The inner side of the portion 16 is also provided with a lug 18, which may be either integral therewith or a separate member secured thereto.

The handle and hub being in the position shown in Fig. 3, and it being desired to operate the latch, it simply is necessary to grasp the handle and swing the same in a clockwise direction. The lug 18 bearing on the cam flange 10 will move the handle outwardly against the tension of the spring 19 during the swinging movement until it is clear of the pocket and the outer end thereof lies beyond the normal plane of the door panel. When in this position the hub and spindle may be further rotated by the handle in the usual manner in order to complete the actuation of the door latch. As in usual constructions of this character, the latch bolt actuating spring will serve to return the hub to its normal position, while the spring previously described as being upon the pintle pin will swing the handle inwardly toward the door. Unless the cam flange 10 and lug 18 were provided it is apparent that the handle would swing in against the paneling before it was in register with the pocket, thus marring the paint. However, the lug engaging the highest part of the cam prevents such an occurrence and the handle is gradually allowed to approach the door and is thus brought into registry with the pocket. Of course, the latch actuating mechanism may be so arranged that gravity will normally hold the lever in its inner position instead of the spring.

The description of the elements and of their cooperative operation has definitely brought out the advantages of the device and its aptitude for the use suggested. Normally the handle is substantially flush with the outer body of the door thereby doing away with unnecessary projections upon the surface of the bus. The depressed pocket with the handle therein makes an attractive and unobtrusive appearance yet at the same time permitting ready operation thereof. There is absolutely no danger of marring the finish of the body by the handle striking against the same, and, at all times, it will be evident whether or not the door is closed and the latch projected. Furthermore, a handle construction of this nature comprises relatively few parts, is inexpensive to manufacture, and is readily installed. The depressed pocket is not an absolutely necessary arrangement for the use of the handle, it being within the purview of the invention to use the same wherever it would appear advantageous.

The invention is only to be limited in its scope in accordance with the appended claims, the embodiment shown herein forming one of the many forms or modifications which it may take.

I claim:

1. In latch actuating mechanism, an escutcheon plate having an inclined surface thereon, a spindle oscillatably journalled in said escutcheon, a two part handle connected to said spindle, and means on one of said handle parts coacting with the said inclined surface to cause the part to move toward and away from the escutcheon during actuation of the latch bolt by the handle.

2. In combination with a door having a depressed pocket in one of its faces, a latch-actuating mechanism arranged in said pocket, said mechanism comprising a handle and means automatically operative to swing the end of said handle into or out of said pocket when said handle is turned.

3. In combination with a door having a depressed pocket in one of its faces, a latch actuating mechanism arranged in said pocket, said mechanism comprising an escutcheon having an oscillatable spindle journalled therein secured to the door, a handle, the outer end of which is movable with respect to the inner secured to said spindle, and means on said escutcheon for causing the outer and inner ends of the handle to move relatively to each other during oscillation of the handle.

4. In combination with a door, a latch actuating mechanism arranged substantially beneath the surface of the door, said mechanism comprising an escutcheon having an inclined surface, and a handle having a lug coacting with said surface, whereby when said handle is turned its end is forced outwardly of the door beyond its surface.

5. In combination with a door, a latch actuating mechanism arranged substantially inside the surface of the door, said mechanism comprising an escutcheon secured to the door, a spindle oscillatable in said escutcheon, a hub member connected to said spindle, a handle pivotally connected to said hub having an inwardly projecting lug at its inner end, and an inclined surface upon the escutcheon coacting with the said lug whereby when the handle and hub are moved to move the spindle, the handle is moved outwardly on its pivot.

In testimony whereof he hereunto affixes his signature.

WILLIAM JOHN MAYER.