July 1, 1930. H. J. GODFRIED ET AL 1,769,288

DOOR LATCH.

Filed Oct. 5, 1927.

Fig. 1.

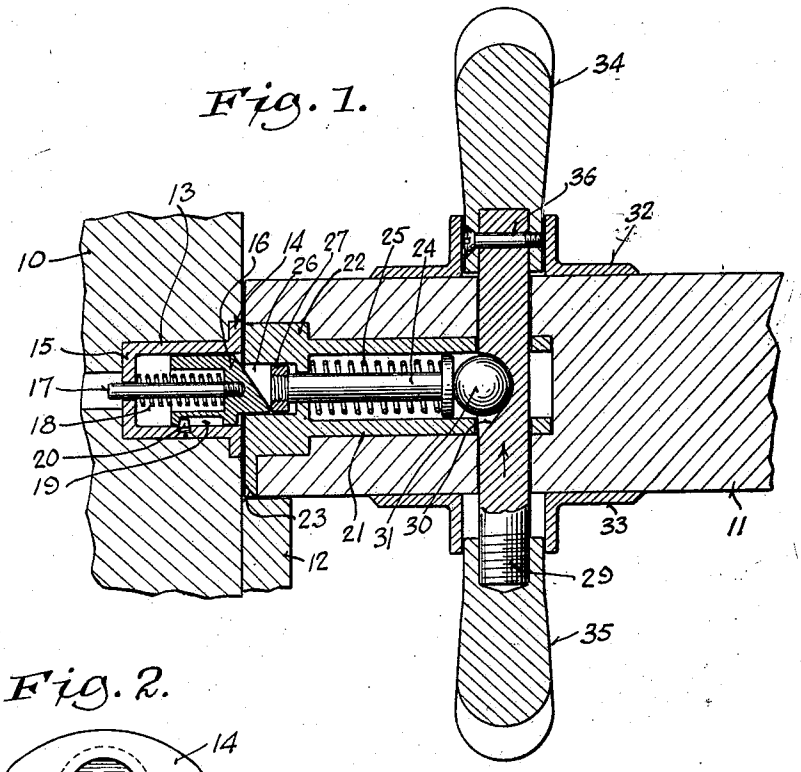


Fig. 2.

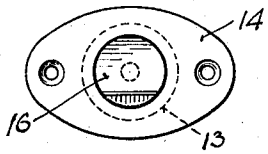
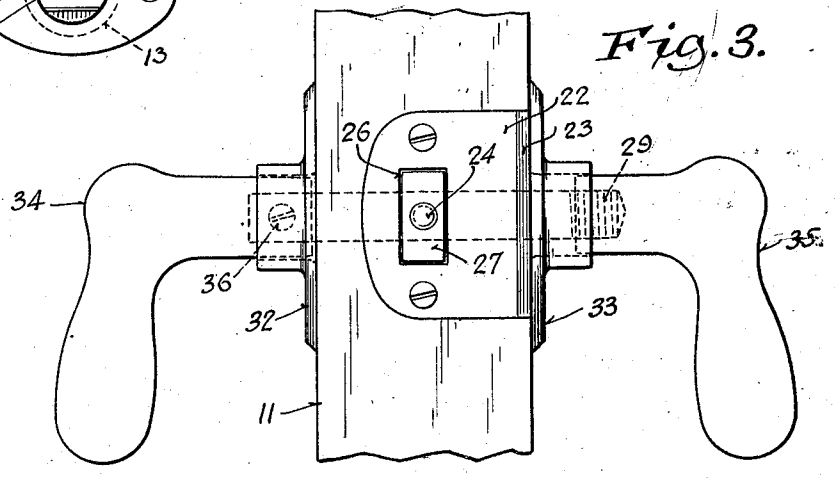


Fig. 3.



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UNITED STATES PATENT OFFICE

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DOOR LATCH

Application filed October 5, 1927. Serial No. 224,209.

The invention comprises an automatically operated door retaining latch set in the jamb of the door, the operating means for such latch being set in the front edge of the door, and in position to effect the withdrawal of the latch in a simple and easy manner.

The edge of the door is provided with a keeper having a bore therethrough, in which a spring retracted plunger is moved to expel the latch from its engagement with the keeper, so as to permit the door to be opened.

The aforesaid plunger is operated by the transverse movement through the door of a slide functioning as a cam. Handles to be pushed at one side of door and pulled at the other, are attached to the opposite ends of the slide, so that the door, when closed may be opened from either side.

Having thus outlined the nature of the invention, the same now will be described as to its details of construction, and the novelty will be pointed out in the appended claim.

In the accomanying drawing:

Figure 1 is a horizontal sectional view through a portion of the door jamb and the contiguous edge of the door, showing the arrangement of a latch and its operating means constructed in accordance with the invention.

Fig. 2 is a front view of the casing, together with the latch therein, adapted to be placed in the door jamb.

Fig. 3 is a view in elevation of the edge of the door opposed to the latch.

In the drawing, the numeral 10 indicates the door jamb, and the numeral 11 a portion of the door, the jamb being provided with a stop 12, all of usual construction.

A tubular casing 13 having a flanged face plate 14, at its front end, is set in a countersunk bore in the door jamb, the casing 13 being provided at its inner end with a bottom plate 15, for a purpose which will be later described.

The latch 16 is mounted for longitudinal movement in the hollow casing 13, such latch being provided with a beveled striking face as usual, and with a rearward extension 17, which latter is guided in a perforation in the bottom plate 15 of the casing. An expansion spring 18 surrounding the extension 17 and confined between the bottom plate 15 and the rear side of the latch 16, acts normally to project the latch outwardly in the casing. At one side, the latch 16 is slotted as at 19, for a portion of its length. The end of a pin or screw 20, passed through the adjacent wall of the casing 13, is entered into the slot 19, and serves as a stop to limit the movement of the latch 16 with relation to the casing.

The keeper 21, formed as a tube, is set in a bore in the edge of the door, and is provided with a head 22, the face of which is flush with the edge of the door. At one side, the head is provided with a beveled striking plate 23, which latter is adapted to contact with the beveled striking face of the latch 16, and retract the latter when the door is moved to its closed position.

A plunger 24, enlarged at its inner end moves longitudinally in the bore of the keeper 21, and is normally pressed inwardly with respect to the door by means of an expansion spring 25, confined between the head of the plunger and the bottom of the bore of the keeper, in which there is a contracted opening for the guidance of the plunger. The outer end of the plunger projects into a recess 26 in the face of the keeper, and has attached thereto a plate 27, which in the construction shown, is rectangular in outline.

Movement of the plunger 24 outwardly with respect to the keeper 21, when the door is in closed position, serves to force the latch 16 out of the recess 26 in the keeper, and free the door for an opening movement. To effect the movement of the plunger, a slide 29 is arranged for movement transversely of the door, the said slide being guided in a transverse perforation through the inner end of the keeper 21. The said keeper is provided at one side with a depression 30, one wall of which is inclined in the manner shown to produce a cam surface. In the tubular part of the keeper near its rear end, and between the slide 29 and the head of the plunger 24, a ball 31 is placed, so that as the slide 29 is moved to bring the cam into action, the said ball is forced against the enlarged inner end of the plunger 24, and the latter is actuated to expel

the latch 16 from its engagement with the keeper, and so release the door for an opening movement. When the push or pull of the slide 29 is relaxed, the spring actuated plunger 24 will force the ball 31 down the inclined side of the recess, restoring the slide 29 to its normal position, with the ball 31 seated in the recess thereof.

The sides of the door are provided opposite the adjacent ends of the slide 29, with plates 32 and 33, acting as guides for the inner ends of handles 34 and 35, which latter are attached to the slide in any desired manner, one handle being shown as threaded upon the end of the slide, while the other is shown as connected thereto by a transverse screw 36.

The extension 17 on the latch 16, may be omitted, without affecting the operation of the invention, the purpose of such extension being to provide for the attachment of means for remote control of the latch through electro-magnetic operating devices.

Having thus described our invention, what we claim and desire to secure by Letters Patent of the United States, is:

In a door latch, a normally spring-projected latch slidable in the jamb of the door, a keeper in the edge of the door and adapted to be engaged by the said latch when projected, in combination with a normally spring-retracted plunger slidable in the keeper, a slide movable transversely of the door, the ends of the slide projecting at each side of the door to present means whereby the slide may be operated, the said slide having a recess in the side thereof with an inclined surface leading thereto, and a movable roller element interposed between the inner end of the plunger and the slide, to actuate the plunger and disengage the latch from the keeper in the transverse movement of the slide.

In testimony whereof, we have signed our names at Milwaukee, this 30th day of September, 1927.

HIRAM J. GODFRIED.
PAUL H. JAEGER.