W. B. BOLLES.

MEANS FOR HOLDING BOLTS OF DOORS IN RETRACTED POSITION.

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1,367,855. Patented Feb. 8, 1921.

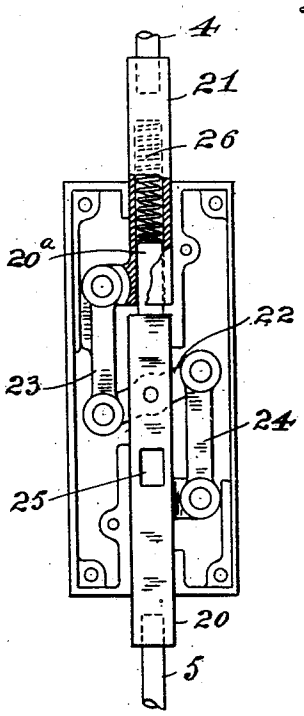


Fig. 6

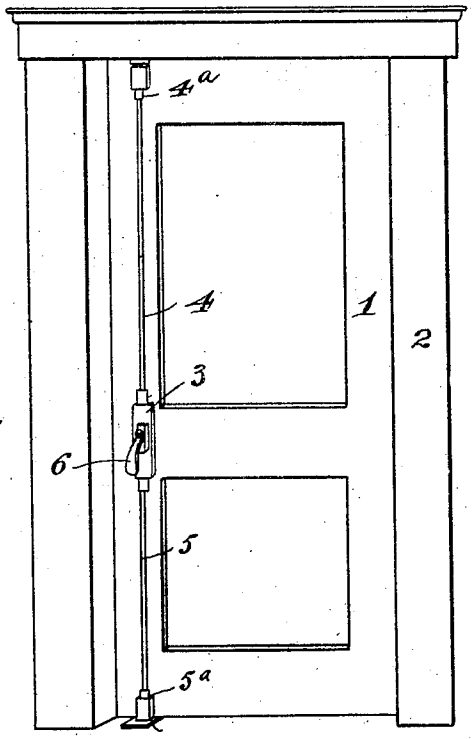


Fig. 1

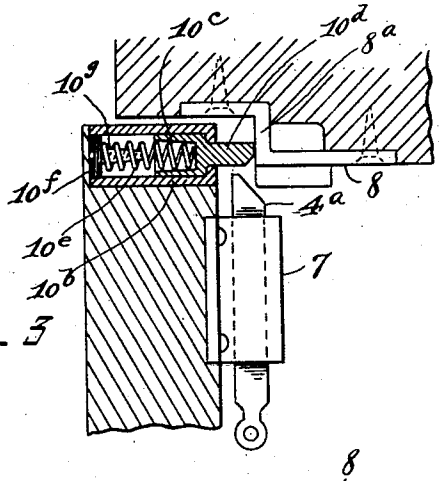


Fig. 3

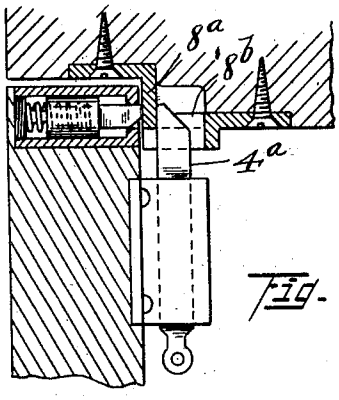


Fig. 2

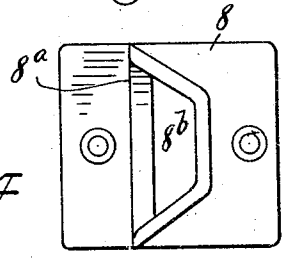


Fig 4

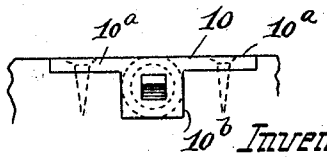


Fig 5

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UNITED STATES PATENT OFFICE.

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MEANS FOR HOLDING BOLTS OF DOORS IN RETRACTED POSITION.

1,367,855. Specification of Letters Patent. Patented Feb. 8, 1921.

Application filed August 29, 1918. Serial No. 251,898.

To all whom it may concern:

Be it known that I, WILLIAM B. BOLLES, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented a certain new and useful Improvement in Means for Holding Bolts of Doors in Retracted Position, of which the following is a full, clear, and exact description.

This invention relates to a device which is adapted to be used in connection with doors, more particularly doors which are equipped with sliding bolts which extend longitudinally of the door and are adapted to seat in a recess in the casing of the door, and in the floor beneath the door.

The purpose of the combination of elements about to be described is for the purpose of holding the locking bolts in retracted position when the bolts have been withdrawn from locking position and the door opened.

This condition is particularly desirable and advantageous in connection with doors equipped with devices which in the trade are known as anti-panic locks, these devices being used in connection with the doors of public buildings or semi-public buildings wherein the locking means is equipped with some form of device which permits the ready and easy opening of the door from the inside, and is particularly designed to be easily manipulated and operated so that persons in confusion seeking exit through the door may readily open the door.

It is very desirable that the locking bolts which hold the door in its normal locking position shall not be shot out into the locking position when the door is opened, for the lower bolt would undoubtedly engage with the floor which would make the door difficult to open and perchance impossible.

Generally speaking the invention may be said to comprise the elements and the combinations thereof set forth in the accompanying claims. Reference should be had to the accompanying drawings forming a part of this specification in which Figure 1 is an elevation and perspective showing a door equipped with a so-called anti-panic locking device. Fig. 2 is a section through a portion of the door and door frame adjacent to the top. Fig. 3 is a section similar to Fig. 2 showing the door in partly opened position, Fig. 4 is a top plan view of a fitting forming a part of the invention, Fig. 5 is an end elevation showing another fitting forming a part of the invention, Fig. 6 is an elevation showing the mechanism by which the locking bolts or latches are operated.

In Fig. 1 there is shown a door 1 which is suitably hinged within a door frame 2. Upon the door is mounted a casing into which extends rods 4 and 5. These rods are connected by suitable mechanism shown in Fig. 6, and also connected with a pivoted operating lever 6, so that when the lever is depressed the rods 4 and 5 are drawn inwardly against the action of a spring within the casing 3.

In Fig. 6, the interior of casing 3 is shown with its included parts which will be briefly described.

The rods 3 and 4 are secured to slidable members 20 and 21 which are suitably guided. The sliding member 20 is notched out so as to provide space for a lever 22 which is pivoted at its central portion to the casing 3. The opposite ends of the lever 22 are connected by means of links 23 and 24 with the sliding members 21 and 20 respectively, so that by the movement of one of the members the other is also caused to move.

The lever 6 has a part which extends into the opening 25 in member 20, and operation of the lever 6 results in moving the sliding members 21 and 20.

The member 21 has a hollow chamber which receives a spring 26 and against the spring an extension 20^a of the member 20 abuts. The spring normally urges the members 20 and 21 apart and when the lever 6 is depressed and subsequently released, the spring pushes the members apart.

The rods 4 and 5 at their upper and lower ends respectively are provided with latch portions 4^a and 5^a. The latch portion 5^a coöperates with an opening in a plate 6 which is mortised into the floor adjacent the bottom of the door.

The rod 4 at its upper end is provided with a latch portion 4^a which extends through a guide 7 that is secured to the door.

In the door frame in a portion thereof adjacent the latch 4^a, there is mortised a striker plate generally represented at 8. This fixture is provided with a straight central portion or wall 8^a and with an opening 8^b which lies behind the straight portion 8^a.

When the door is closed as shown in Fig.

2 the latch portion 4^a enters the opening 8^b and extends behind the portion 8^a, in which position the bolt holds the door in closed position.

Mortised in the top of the door and adjacent to the part which carries the guide 7 is a fixture generally represented at 10. This fixture comprises wing portions 10^a by which it is secured to the door and there is also a central part 10^b which occupies a suitable recess formed in the top of the door. The central part 10^b is hollow and receives a plunger 10^c. This plunger has a part 10^d which normally extends outside of the casing 10^b and the portion 10^c is within the casing, and receives a spring 10^e. The part 10^c is found to extend upon and coöperate with a considerable portion of the inside wall of the part 10^b thereby to effectively guide the plunger 10^c and insure its movement in a straight line. The end of the casing is closed by a threaded member 10^f which has a projection 10^g. The spring 10^e surrounds the projection 10^g and extends within the portion 10^c of the plunger, the spring normally tends to push the part 10^b to its most extended position.

When the door is closed the part 10^d will abut against the vertical portion or wall 8^a of the fixture 8, thus causing the part 10^d to be retracted or pushed within the casing 10^b. However, as soon as the door is started to open, the part 10^d is pushed out of the casing 10^b by the spring 10^e and when so pushed out projects above the latch portion 4^a. In other words, when the latch portion 4^a is retracted to pass beneath the vertical part 8^a, the detent 10^d shoots outward under spring action and prevents the latch portion 4^a from rising. Such being the case and due to the fact that the rods 4 and 5 are connected through the mechanism in casing 3, the latch portion 5^a is also held in retracted position. Thus it will be impossible for the locking rods to in any way interfere with the complete opening and closing of the door.

Obviously, as soon as the door is moved to its closed position, the detent 10^d is pushed inwardly by its engagement with the portion 8^a of the fixture 8 so that the latch portion 4^a is free to move upwardly as soon as the latch portion registers with the opening 8^b.

Having described my invention, I claim:

1. The combination of a door frame and a door, a spring pressed locking latch mounted to slide along the door, means for operating the latch and a striker plate carried by the door frame, said striker plate having flanges lying in different planes, which flanges are adapted to be secured to the door frame, a wall connecting said flanges, an opening in one of said flanges, a depending skirt portion surrounding said opening, the said locking latch being adapted to engage with the said wall to depress the latch and to extend into the said opening when the door is closed.

2. The combination of a door, a frame in a door, a spring pressed latch mounted to slide along the door adjacent an end thereof, means for operating the latch, a spring pressed plunger mounted upon the door proper adjacent to the latch, a striker plate mortised into the door frame, said striker plate having flanges which lie in different parallel planes, a wall joining the said flanges, there being an opening in one of said flanges, the said wall being positioned to engage with the spring pressed plunger and depress the same when the door is closed.

3. The combination of a door frame in a door, a spring pressed latch mounted to slide along the door adjacent one end thereof, a casing secured to the door at one end thereof, a plunger within said casing and mounted to reciprocate transversely of and in front of the said latch, said plunger having a portion which extends through an opening in the casing and also having an enlarged portion within the casing which engages with the walls of said casing, a striker plate carried by the door frame, said striker plate having a wall against which the said plunger engages when the door is closed.

4. The combination of a door frame and a door, a spring pressed locking latch mounted to slide along the door adjacent one edge thereof, a casing mounted upon the door adjacent an edge thereof, said casing having a plunger, the plunger having a portion which extends in an opening in the casing and also having an enlarged hollow portion within the casing which coöperates with the walls of the casing, a spring member within the casing, one end of which occupies an opening in the plunger, a threaded member for closing one end of the casing, a shank on said member over which the other end of the spring extends, a striker plate mortised in the door frame against which the said plunger is adapted to impinge when the door is closed.

In testimony whereof, I hereunto affix my signature.

WILLIAM B. BOLLES.