April 3, 1951 C. E. ANDERSON 2,547,108

DOOR LATCH

Filed May 22, 1947

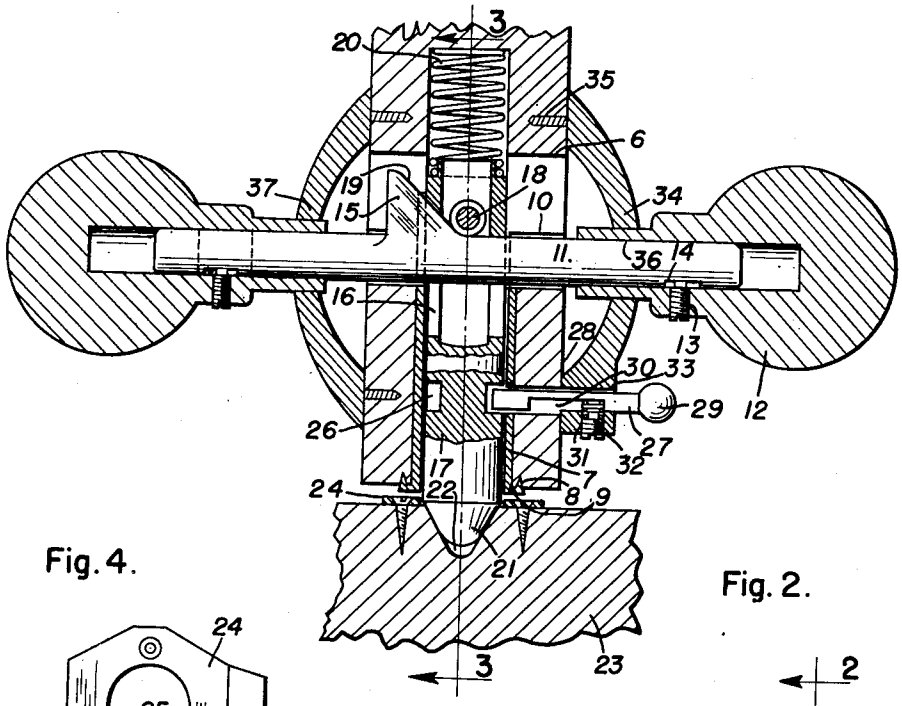


Fig. 4.

Fig. 2.

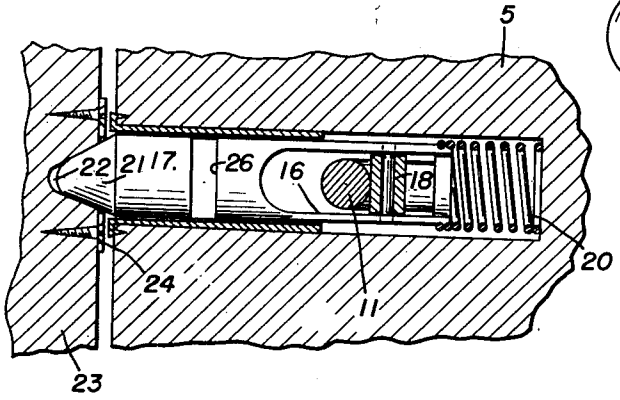


Fig. 3.

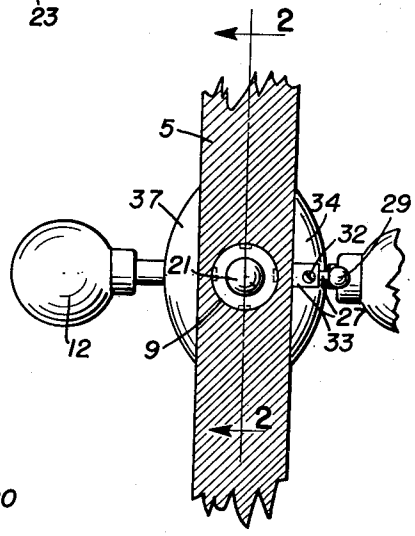


Fig. 1.

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Patented Apr. 3, 1951

2,547,108

UNITED STATES PATENT OFFICE

2,547,108

DOOR LATCH

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Application May 22, 1947, Serial No. 749,793

2 Claims. (Cl. 292—170)

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The present invention relates to new and useful improvements in door latches and more particularly to means for retracting the latch bolt by a pushing or pulling movement of the opposite door knobs or handles.

More specifically, the invention embodies the provision of a transverse bar slidably mounted in a door and provided with operating knobs at the opposite sides of the door together with a spring projected sliding latch bolt operated by a camming action between the bar and the bolt to retract the bolt.

A further object of the invention is to provide means for locking the bolt against retracting movement.

Another object of the invention is to provide a latch bolt having a tapered outer end adapted to engage the complementary shaped recess in a door jamb to effect a tight fitting and antirattling engagement of the bolt with the jamb.

A still further object is to provide a device of this character of simple and practical construction, which is efficient and reliable in operation, relatively inexpensive to manufacture and install in position on a door and which is otherwise well adapted for the purposes for which the same is intended.

Other objects and advantages reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a fragmentary view in elevation of the edge of a door showing the latch bolt mounted in position therein.

Figure 2 is an enlarged fragmentary sectional view taken on a line 2—2 of Figure 1.

Figure 3 is a sectional view taken on a line 3—3 of Figure 2, and

Figure 4 is a view in elevation of the keeper for the latch bolt.

Referring now to the drawing in detail wherein for the purpose of illustration I have disclosed a preferred embodiment of the invention, the numeral 5 designates a door having a cylindrical recess or chamber 6 in its free edge and in the outer end of which a bushing 7 is secured by means of prongs 8 formed on a flange 9 on the outer end of the bushing, the prongs penetrating the outer edge of the door. The door 5 is also formed with a transverse opening 10 in which a rod 11 is slidably mounted with the ends of the rod projecting outwardly from opposite sides of the door. Knobs or handles 12 are adjustably

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secured at the ends of the rod by means of shouldered set screws 13 selectively received in longitudinally spaced openings 14 in the rod adjacent the end-portions thereof.

The central portion of the rod 11 is formed with a laterally projecting cam 15 working in a transverse opening 16 at the inner end of a sliding latch bolt 17 mounted in the bushing 7.

The rear end of the bolt 17 in the region of the opening 16 is of hollow construction and is provided with a roller 18 journalled in the hollow rear end of the bolt behind the rod 11 and against which the cam edge 19 of the cam 15 works during the sliding movement of the rod in one direction. A coil spring 20 is positioned at the inner end of the chamber 6 behind the bolt 17 to project the front end of the bolt outwardly of the edge of the door, said front end of the bolt being tapered as shown at 21 for entering a complementary shaped recess 22 in the edge of a door jamb 23. A keeper plate 24 is secured to the door jamb 23 and is formed with an opening 25 in alignment with the recess 22 to guide the tapered end 21 of the bolt into the recess of the keeper.

The bolt 17 is formed with an annular groove 26 for receiving the inner end of a locking pin 27, the pin being slidably mounted in an opening 28 in one side of the door and is movable into and out of locking position in the groove 26 by means of a knob 29 at the outer end of the pin.

The pin 27 is formed with a longitudinally extending groove 30 in which a coil spring 31 is frictionally held by a shouldered set screw 32 to secure the locking pin in either an inward or outward position.

The screw 32 is carried by a lug 33 at one edge of a dome-shaped plate 34 secured to the side of the door by prongs 35, the plate having a central opening 36 through which the rod 11 is slidable. A similar plate 37 is secured to the opposite side of the door.

In the operation of the device, the bolt 17 is projected outwardly at the edge of the door by the spring 20 to engage the keeper of the door jamb 23. The outward movement of the bolt also causes the roller 18 to ride against the cam 19 to move the rod 11 toward the left as shown in Figure 2. The bolt 17 may be retracted either by a pulling force exerted on the knob 12 at the right-hand end of the rod or by a pushing force exerted on the knob at the opposite end of the rod.

The bolt 17 may be secured against retracted movement by pushing the locking pin 27 inwardly.

I claim:

1. In combination with a sliding door bolt, a handle for operating said bolt, an escutcheon plate for the handle, a lug on one edge of the escutcheon plate, a locking pin slidable in the lug for entering a recess in the bolt to hold the latter in locked position, said pin having a longitudinal groove, and friction means carried by the lug and seated in the groove to hold the pin in either a locking or releasing position.

2. In combination with a sliding door bolt, a handle for operating said bolt, an escutcheon plate for the handle, a lug on one edge of the escutcheon plate, a locking pin slidable in the lug for entering a recess in the bolt to hold the latter in locked position, said pin having a longitudinal groove, a coil spring carried by the lug and frictionally seated in the groove to hold the pin in either a locking or releasing position, and a set screw threaded in the lug and engaging the spring to adjust the tension thereof.

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