Oct. 20, 1931. W. B. NONAMAKER 1,828,152

PUSH BUTTON LATCH

Original Filed Oct. 31, 1928

Fig. 1.

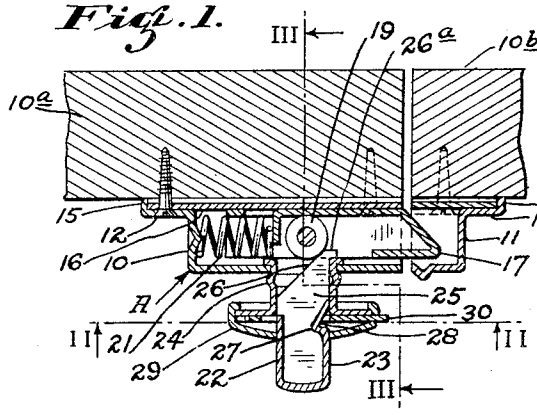


Fig. 3.

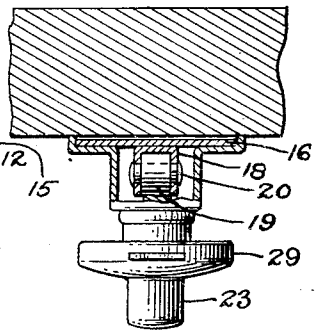


Fig. 2.

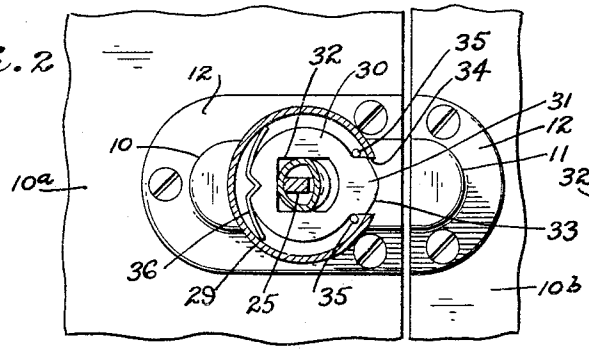
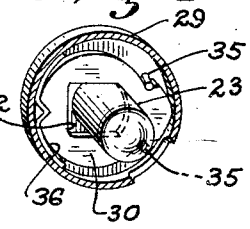


Fig. 4.



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Fig. 5.

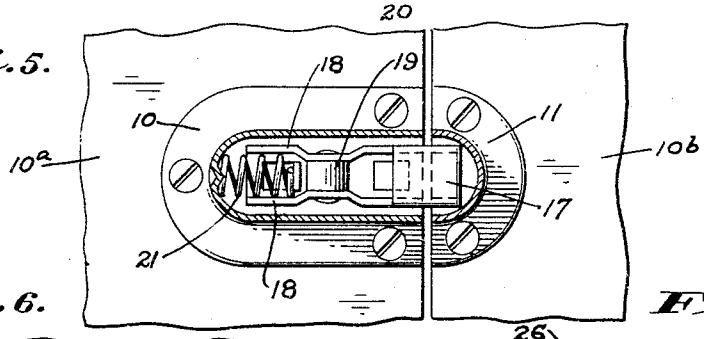


Fig. 6.

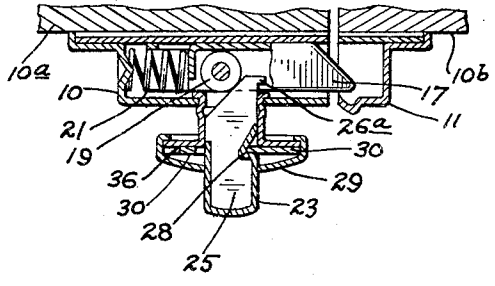
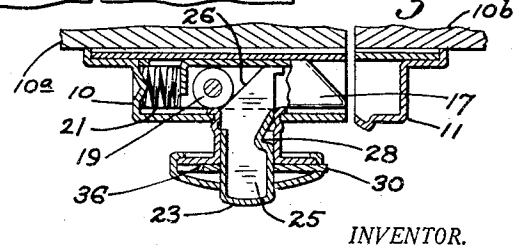


Fig. 7.



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UNITED STATES PATENT OFFICE

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PUSH BUTTON LATCH

Application filed October 31, 1928, Serial No. 316,159. Renewed August 12, 1931.

This invention relates to hardware and particularly pertains to a cabinet latch.

It is the principal object of the present invention to provide a latch of the push button type which is very efficient in operation and which may be inexpensively produced.

One form which the invention may assume is exemplified in the following description and illustrated by way of example in the accompanying drawings, in which:

Fig. 1 is a plan section through the preferred form of my improved latch showing the construction thereof.

Fig. 2 is a view in section through the latch taken on line II—II of Fig. 1.

Fig. 3 is a view in transverse section through the latch taken on line III—III of Fig. 1.

Fig. 4 is a fragmentary view in perspective disclosing the mechanism for rendering the bolt actuator ineffective.

Fig. 5 is a view in section through the latch casing and keeper socket showing the construction of the keeper.

Fig. 6 is a view similar to Fig. 1 showing the latch plate in position rendering the bolt actuator ineffective.

Fig. 7 is a view similar to Fig. 6 showing the actuator in position withdrawing the keeper from the socket.

Referring more particularly to the accompanying drawings, A indicates a cabinet latch comprising a latch casing 10 and a keeper socket 11. These two members are placed in juxta-position at the contiguous sides of a cabinet door 10*a* and its frame 10*b*. The contiguous ends of the keeper socket 11 and the latch casing 10 are open and in alignment.

It will be noticed that the members 10 and 11 when placed in proper cooperative position form an elongated casing having semi-cylindrical ends. Due to this formation, these parts may both be blanked and drawn integrally from a single sheet of material. After being formed the casing 10 and keeper socket 11 are separated by cutting transversely at the intersection between the latch casing 10 and the keeper socket 11. Such a design enables the casing and keeper socket to be economically produced by punch press work.

From Fig. 2 it will be noticed that both the latch casing 10 and the keeper socket 11 are each formed with a surrounding flange 12 which is suitably drilled to enable the parts to be secured to the cabinet door and its frame by screws or other suitable fastening medium. The surrounding flange 12 of both the latch casing and the keeper socket is inturned as at 15 to present a finished edge and to embrace the edges of bottom plates 16 fitted one within the casing 10 and one within the socket 11.

Reciprocably mounted in the latch casing 10 is a bolt 17 which is formed of sheet metal. This bolt includes sides 18 which are spaced apart and which embrace a roller 19 arranged transversely of the bolt and rotatable about an axle 20 riveted to the sides 18 of the bolt 17. The front end of the bolt is arranged on an angle so that when the door is swung shut the beveled face of the bolt will stroke the socket 11 and act to depress the bolt to permit the door to close. A compression spring 21 is interposed between the inner end of the bolt and the end of the casing 10. This spring constantly urges the outer end of the bolt into engagement with the bolt socket 11 but may be compressed to permit the bolt to be withdrawn.

To actuate the bolt to release it from engagement with the socket 11, I provide a bolt actuator 22. This keeper actuator 22 includes a cylindrical shell 23 reciprocably mounted in a ferrule 24 secured at its inner end, by crimping, to the outer face of the latch casing 10. Secured within the cylindrical shell 23 of the bolt actuator 22 is a flat member 25 which is formed with a beveled cam end 26 engaging the bolt roller 19. This beveled or cam face 26 is so disposed that when the bolt actuator 22 is depressed cooperation between the cam surface 26 and the roller 19 will cause the bolt to be withdrawn from the socket 11. When the actuator 22 is released the spring 21 will act to return the bolt to position and project the actuator 22.

The two parts of the actuator 22 are secured together by forming the member 25 with a notch 27 within which one side of the hollow

cylindrical member 23 is crimped, forming a notch 28 in the exterior surface of the actuator 22. I utilize this notch in conjunction with other elements to render the actuator 22 ineffective in operating the bolt when desired.

This is accomplished as follows: The ferrule 24 is formed with a hollow knob 29 which is rotatable with respect to the ferrule. This knob is hollow and arranged therein is a latch disk 30 having a projection 31 extending radially therefrom. The disk 30 is formed with a slotted opening 32 through which the bolt actuator 22 extends. The projection 31 is formed with a cam face 33 and is of a width so that it may project through a slot 34 formed in the rim of the knob 29. Pins 35 which are secured to the ferrule prevent rotation of the disk 30 and limit the outward movement thereof. A spring 36 is interposed between the rim of the knob 29 and the disk 30 and diametrically opposite the projection 31. This spring constantly tends to force the projection 31 outwardly through the slot in the knob 29.

It will be noticed that the low point of the cam surface 33 of the disk 30 is just slightly inward of the interior surface of the rim of the knob 29, so that if the knob is turned relative to the disk 30, placing the slot 34 out of register with the projection 31, engagement of the interior surface of the rim of the knob with the cam surface 33 will force the disk inwardly against the action of its spring 36. This will place the inner edge of the disk 30 in engagement with the notch 28 in the bolt actuator 22, preventing the bolt actuator from being depressed to disengage the bolt 17 from the socket 11.

The provision for latching the actuator to render it ineffective in operating the bolt is provided for preventing small children from opening the latch.

In operation of the device, the latch body 10 is secured at the edge of a cabinet door and the keeper socket 11 is secured at the edge of the door frame in alignment with the latch body. To operate the latch under normal circumstances it is only necessary to depress the bolt actuator 22 which cooperates with the roller 19 on the bolt to disengage the latter from the socket 11. When the actuator 22 is released the spring 21 acts to return the bolt to engaged position and projects the actuator 22.

The outward movement of the actuator 22 is limited by engagement of a lug 26*a* at the inner end of the actuator with the inner end of the ferrule 24. By such engagement the amount of projection permitted the bolt and the outward movement of the actuator is determined.

To render the actuator 22 ineffective to open the bolt, the knob 29 is turned to place the slot 34 therein out of register with the cam end 31 of the disk 30. Thus, the inner surface of the rim of the knob will engage this cam end 31 and move the disk 30 inwardly. Such inward movement of the disk 30 causes one edge thereof to be placed in engagement with the notch 28 in the actuator 22, preventing this member from being depressed and operating the bolt.

To again make the actuator 22 effective in operating the bolt 17 it is only necessary to turn the knob 29 until the projection 31 on the disk 30 aligns with the slot 34 in the knob. The spring 36 will then urge the disk 30 out of engagement with the notch 28 and release the actuator 22 for operation.

I desire to point out that with the exception of the spring 21 and the roller 19 all of the parts of the present latch are metal stampings and can be very inexpensively produced. Likewise, the parts are assembled by punch press operations, further minimizing the production cost of the same.

While I have shown the preferred form of my invention, it is to be understood that various changes may be made in its construction by those skilled in the art without departing from the spirit of the invention as defined in the appended claim.

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

A latch comprising a latch casing, a keeper socket, a bolt reciprocably mounted in the latch casing, spring means constantly urging the bolt into engagement with the keeper socket, actuating means arranged to reciprocate in a direction at right angles to the bolt, means interposed between the said bolt and actuating means causing withdrawal of the bolt against the spring means when the actuating means is depressed, said spring means automatically returning the bolt and actuating means to normal position when the actuating means is released, a knob mounted contiguous to the actuating means and rotatable with respect thereto, and latch means associated with the knob and actuating means and capable of operation by rotation of the knob to latch the actuating means against operation.

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