March 17, 1953 M. AINSWORTH 2,631,877

LOCKABLE SLIDE BOLT ASSEMBLY FOR DOORS AND THE LIKE

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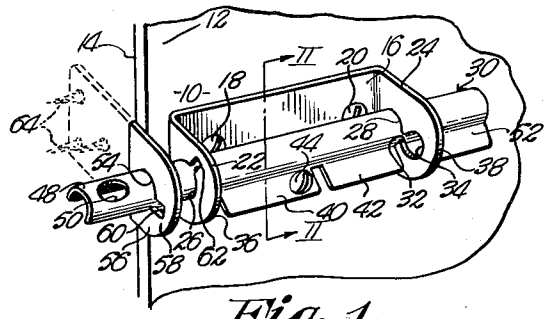


Fig. 1.

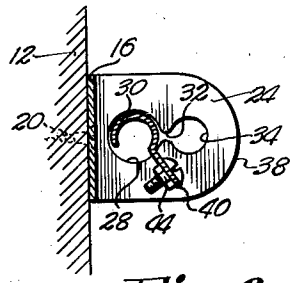


Fig. 2.

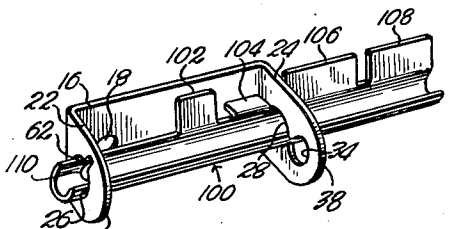


Fig. 3.

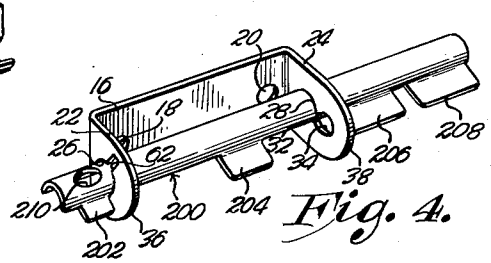


Fig. 4.

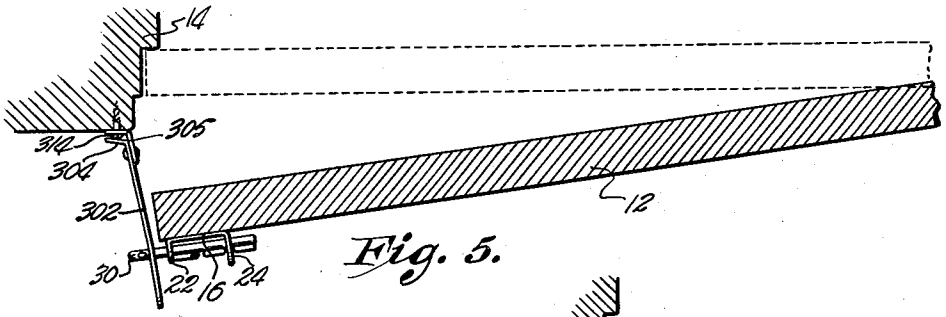


Fig. 5.

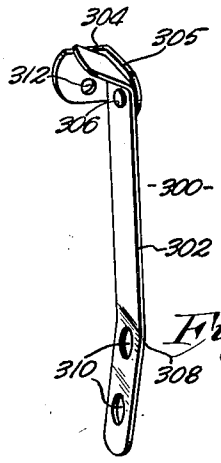


Fig. 6.

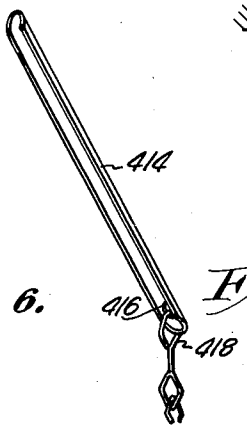


Fig. 8.

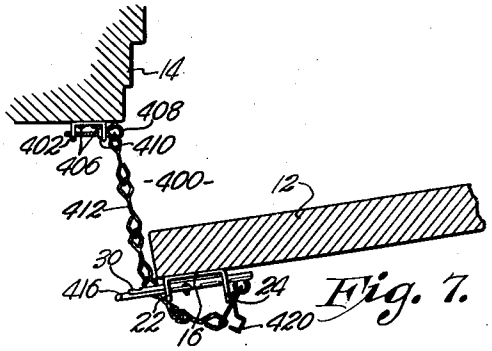


Fig. 7.

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LOCKABLE SLIDE BOLT ASSEMBLY FOR DOORS AND THE LIKE

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Application July 28, 1950, Serial No. 176,495

1 Claim. (Cl. 292—57)

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This invention has to do with closure structures, such as doors, windows and the like, and more particularly to a sliding bolt locking device adapted to be mounted on said structure.

The most important object of this invention is to present a sliding bolt structure that cannot be moved from the locking position without proper manipulation of the bolt and, also, to present means to prevent sliding of the bolt by one wishing to obtain an illegal entry.

Another important object of this invention is to present a sliding bolt structure that is economical to manufacture, light in weight and easily adapted to various closures.

Other important objects of this invention reside in the novel structure thereof which will become apparent during the course of the following specification, referring to the accompanying drawing, wherein:

Figure 1 is a perspective view of a lockable slide bolt assembly for doors and the like made according to one form of my present invention.

Fig. 2 is a cross-sectional view taken on line II—II of Fig. 1.

Fig. 3 is a perspective view showing a modified form of bolt for said assembly.

Fig. 4 is a view similar to Fig. 3, showing another modified form of bolt.

Fig. 5 is a plan view of the assembly mounted on a door and its jamb, showing a modified form of bolt keeper.

Fig. 6 is an enlarged, perspective view of the keeper shown in Fig. 5.

Fig. 7 is a view similar to Fig. 5, showing still another form of a bolt keeper; and

Fig. 8 is a perspective view showing a portion of the keeper of Fig. 7.

The form of the invention illustrated in Figs. 1 and 2 includes a sliding bolt structure broadly designated by the numeral 10 and mounted on a door 12 and a door jamb 14 respectively. A U-shaped frame 16 is rigidly affixed to the door 12 by a pair of wood screws 18 and 20. The legs 22 and 24 of the frame 16 have a pair of circular openings 26 and 28 respectively, adapted to slidably and rotatably receive an elongated bolt 30 that is semi-circular in cross-section. The leg 24 has a slot 32 communicating with the opening 28 and with a second circular opening 34 adapted to receive the yoke or looped part of a padlock or like device (not shown) to prevent removal of the bolt 30, as will hereinafter be more fully explained. The leg 22 of frame 16 is slightly shorter than the leg 24 and both are arcuate on their free ends 36 and 38 respectively, as is clearly shown

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in Figs. 1 to 4 inclusive, to prevent the snagging of clothing or the like and, also, to offer a pleasing appearance.

The bolt 30 has a pair of rectangular, spaced-apart integral stop members 40 and 42 extending radially from one longitudinal edge thereof, the former carrying a bolt or other removable stop element 44.

In one end 48 of the bolt 30 adjacent the leg 26, is an opening 50, adapted, as is the opening 34, to receive the looped portion of a padlock to prevent reciprocation of the bolt 30 and a handle member 52, similar in all respects to the stops 40 and 42, is disposed at the opposite end of the bolt 30.

End 48 of bolt 30 passes through an opening 54 in an elongated, rectangular keeper 56 mounted in a groove in the face of jamb 14 adjoining the door and having an arcuate free end 58 similar to the ends 36 and 38 of the frame legs 22 and 24 respectively. Communicating with the opening 54 is a notch 60 identical to a notch 62 of the leg 22. The notch 60 of the keeper 56 is located approximately 90 degrees from the notch 62 of the leg 22 and the keeper 56 is releasably secured to the door jamb 14 by a number of wood screws 64 as is clearly shown in Fig. 1.

The operation of the slide bolt is simple and very effective. The bolt 30 is first moved into the frame 16 through the openings 28 and 26, with the stops 40 and 42 passing through slot 32 and opening 34, and the bolt 44 is then affixed to the stop 40 to prevent complete withdrawal of the bolt 30 from the frame 16. To lock the door 12, the bolt 30 is moved through the opening 54 of the keeper 56 and then turned in either a clockwise or counterclock-wise direction. In doing so, the stops 40 and 42 are moved out of register with the slot 32 and the openings 34.

As Fig. 1 clearly shows, the structure above described is in a locked position. The openings 34 or 50 are adapted to receive the looped portion of a padlock to prevent withdrawal of the bolt from the locked or unlocked position and, therefore, makes the sliding bolt structure pick-proof or burglar-proof.

Fig. 3 shows a modified form of sliding and rotatable bolt 100, but the frame 16 is identical to the one shown in Figs. 1 and 2, and therefore, need not be described again. The bolt 100 has three stops and a handle 102, 104, 106 and 108, respectively, integral therewith, substantially the same as previously described with the exception that the stops 102 and 104 are substantially one-half as large as the stop 106, and the handle 108.

The stop 104 is bent approximately at a right angle to radial stops 102 and 106 and the bolt 100 has an opening 110 formed in one end thereof similar to the opening 50 of the bolt 30.

The operation of this modified bolt structure is similar to that first described with one exception. To completely withdraw the bolt 100 from the frame 16, an additional turn of the bolt 100 must be made in order for the stop 104 to pass through the slot 32 and the opening 34 of the frame 16. Removal and replacement of the bolt 44, which has been eliminated in the form of Fig. 3, becomes unnecessary. Fig. 3 shows the bolt 100 in the unlocked position.

Fig. 4 shows a still further modified form of a sliding and rotatable bolt 200 with the identical frame 16 illustrated in Figs. 1 to 3 inclusive. The bolt 200 has three spaced-apart stops and a handle 202, 204, 206 and 208 respectively, the stops 204 and 206 being spaced a considerable distance apart, as is clearly illustrated. The stop 202 is adjacent an opening 210 near one end of the bolt 200, and the stop 204 is spaced substantially midway between the legs 22 and 24 of the frame 16 when the bolt 200 is in the unlocked position, as shown in Fig. 4, and when the stop 206 is on the outermost side of the leg 24.

The operation of the bolt 200 is similar to those previously described with the additional factor that the stop 202 passes through the notches 60 and 62 of the keeper 56 and the leg 22 respectively, which again requires an additional manipulation of the bolt 200 to obtain complete withdrawal and unlocking of a door or window 12 to which it is attached, as the case may be. It is noted that the stops 206 and 208 embrace the leg 24 and the stop 202 is disposed on the outermost face of keeper 56 when the bolt 200 is locked, cooperating in preventing accidental unlocking. To remove the bolt 200 from the frame 16, the bolt 200 must be rotated to align the stop 202 with the slot 60 after the bolt 200 is shifted to move the stop 206 through the opening 34 and the slot 32. Thereupon, the bolt 200 is rotated to permit movement of the stop 204 through the opening 34 and the slot 32 and finally again rotated to align the stop 202 with the opening 34 and the slot 32.

A modified form of keeper, broadly designated by numeral 300 and shown in Figs. 5 and 6, has a pair of legs 302 and 304, the leg 302 being pivotally affixed to an L-shaped bracket 305 as at 306.

In the outermost free end of the leg 302 and forward of a slight bend 308 are a pair of bolt-receiving openings 310. Either of the bolts 30 or 100 will slide into either of the openings 310 and may be locked therewith, if so desired. The bracket 304 has a pair of openings 312 adapted to receive screws as shown in Fig. 5, to attach the keeper 300 to the closure jamb 14.

In operation, the keeper 300 may be utilized in substantially the same way as the keeper 56 and in connection therewith if desired. The keeper 300 is designed to hold the closure 12 ajar in order to permit circulation of air throughout a room and when the keeper 300 is not being used, it can be raised or lowered out of position, there being enough clearance between the leg 304 and the heads of the screws 314 to permit such swinging movement.

Figs. 7 and 8 illustrate a third form of keeper 400 which is adapted to be affixed to jamb 14. The frame 16 and any one of the sliding and rotatable bolts 30, 100 or 200 may be used with keeper 400. The keeper 400 consists of a U-shaped member 402 which may be attached to the jamb 14 by any suitable means, such as by wood screws 406.

Member 402 has a pair of openings not shown, adapted to receive an eye bolt 408 on which is threaded a nut 410, as shown in Fig. 7. Secured to the eye bolt 408 is a chain 412 that in turn joins with an elongated member 414 through an opening 416 of the latter. Member 414 of keeper 400 is complemental with and of a lesser diameter than that of the three previously-described bolts. Depending from one link 418 of chain 412 is a hook 420.

In operation, the member 414 is slid through the bolt of the frame 16 and the corresponding frame openings and is held in place thereby. The hook 420 can be placed in any one of the links of the chain 412 to shorten or lengthen the latter, with the result that the door 12 may be opened a greater or lesser amount. Also, the door 12 may be completely closed without removing the member 414 from the bolt and the frame.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

In latch structure, a U-shaped frame having a pair of spaced, parallel legs, each having an opening therein, one of the legs being provided with a slot registering with the opening thereof; an elongated bolt rotatably mounted in the openings for reciprocable movement on its longitudinal axis; and a plurality of laterally extending, co-planar, stop members on the bolt, one of the stop members being adjacent one end of the bolt, presenting a handle, a second and a third stop member being disposed between the handle and the opposite end of the bolt, and between the said legs when the bolt is at one end of its path of travel, said stop members all being movable through the slot upon rotation of the bolt relative to the frame to align the stops with the slot, said stop members being spaced for receiving the one leg therebetween when the bolt is rotated to move the stop members out of alignment with said slot, said second stop member being disposed between said one stop member and the third stop member, and the third stop member being provided with releasable means for holding the same against movement through the slot.

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