Feb. 7, 1961 R. L. FISHER 2,970,855

LOCKING DEVICE

Filed July 30, 1958

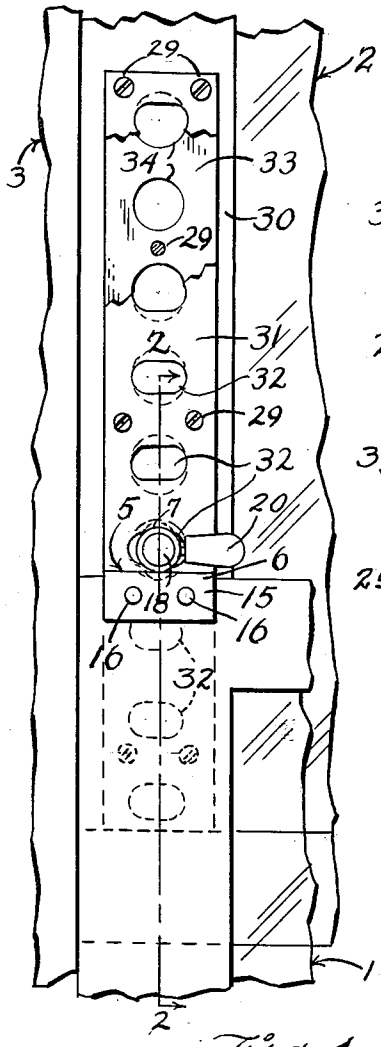


FIG. 1

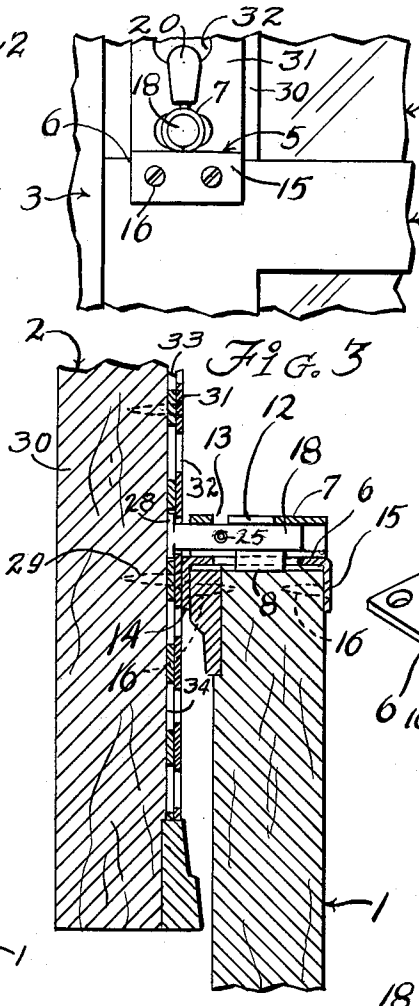


FIG. 2

FIG. 3

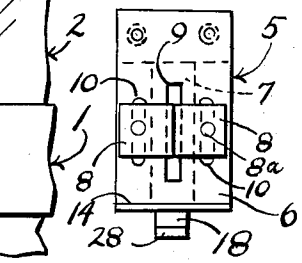


FIG. 6

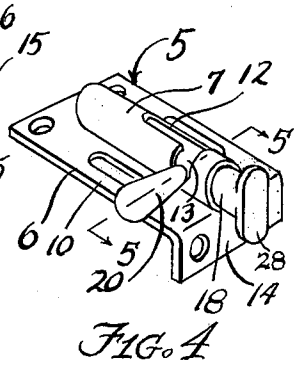


FIG. 4

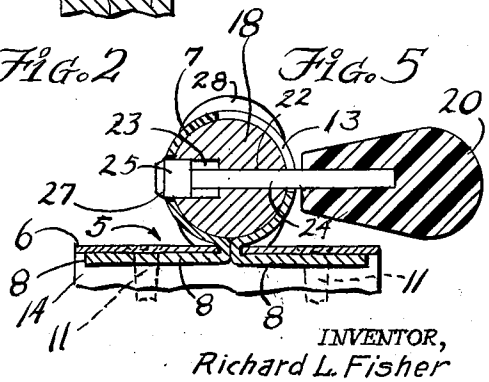


FIG. 5

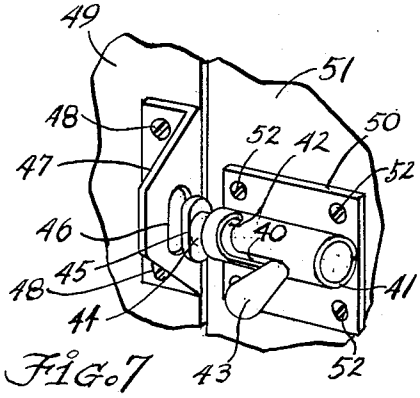


FIG. 7

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LOCKING DEVICE

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1 Claim. (Cl. 292—59)

This invention relates, generally, to locks, and primarily to window locks; and its principal object is to provide a locking device by means of which the two sashes of a window may be secured together in closed position, so that neither sash may be opened; or by means of which the sashes may be fastened together against relative movement, and desirably in any selected one of different related positions, when the window is open for ventilating purposes, but in any case less than enough to admit a person, and which will permit the sashes, thus locked together, to be adjusted as a unit between the top and bottom of the window frame, thereby to divide the ventilating space as may be desired between the top and bottom portions of the window opening.

Another object is to provide a device of this character that affords a double lock in that it includes a bolt which, when projected and oscillated to a given orientated position, locks the sashes together, and a handle for operating the bolt which, when appropriately manipulated, locks the bolt against retraction in said given orientated position.

Obviously, when the bolt is in retracted position, either sash may be shifted to any location within its normal range of movement; and another object of the invention is to so arrange and so constitute the handle of the bolt that it serves as a conspicuous indicator to show when the window is unlocked.

Another object of the invention is to provide a window lock that securely holds the sashes in either closed position or in ventilating position and that cannot be rendered ineffective in either instance by tampering from outside the window.

Other and more general objects are to provide a locking device of the character set forth that is simple of construction; that is strong, durable and thoroughly reliable; that is relatively inexpensive to manufacture; that is easy to install; that is adjustable to window sashes of different depths; that is convenient of use, and that is neat and attractive in appearance.

My invention also comprehends within its scope a bolt-type door lock possessing the same principles and many of the structural features that characterize the window lock.

I shall now describe the invention by reference to the accompanying drawing wherein like numerals designate like parts in the several views.

In the drawing,

Fig. 1 is a fragmentary inside elevational view of a window equipped with my improved lock and showing the sashes as they would appear when the window is partially open;

Fig. 2 is a section on the line 2—2 of Fig. 1;

Fig. 3 is a fragmentary inside elevational view of the window, showing it closed but in unlocked condition;

Fig. 4 is a perspective view of the bolt and the housing by which it is movably supported;

Fig. 5 is an enlarged sectional detail on the line 5—5 of Fig. 4;

Fig. 6 is a bottom plan view of the bolt and its housing, and

Fig. 7 is a perspective view of a door lock embodying the invention.

Designated, generally, by the reference numerals 1, 2 and 3, are the lower sash, upper sash and frame, respectively, of a window.

5 designates, generally, a housing desirably constructed of sheet metal and shown as consisting of a base 6 and a barrel 7. As appears obvious from Figs. 2, 5 and 6, the barrel 7 is formed from the central portion of a blank that includes, at its opposite ends, tongues 8 that are extended through a central longitudinal slot 9 of the base and are turned in opposite directions beneath the base. These tongues have holes 8a registering with slots 10 of the base, for accommodating screws 11 that aid in fastening the housing to the sash with the barrel properly adjusted according to the depth of the sash. A slot 12 extends partway along the top of the barrel 7 and has a right angular branch 13 at the forward end thereof. The base 6 is shown as provided with a depending flange 14 at its forward end, and the base includes material at its rear end that may be turned down at the time of installation to provide a flange 15, if desired, which may thus be spaced from the flange 14 according to the depth of the sash. If it should be preferred that the flange 15 be omitted, the material from which it is formed may be sheared off or otherwise removed. The flanges 14 and 15 are provided with holes for screws 16. A bolt 18 has an easy working fit in the barrel 7 and is adapted to be reciprocated therein a distance corresponding substantially to the length of the slot 12 by means of a handle 20 that has connection with the bolt through said slot, and, also, by means of which handle the bolt may be oscillated through an angle of approximately 90° when the handle is in the zone of the branch slot 13.

As will be seen by reference to Fig. 5, the bolt 18 is provided with a diametrical bore 22 that opens at its inner end into a counterbore 23. A pin 24 is slidable in the bore 22 and has a cylindrical head 25 that is retractable into the counterbore 23, the exposed end of the head being tapered. The handle 20, which is preferably made of red translucent plastic, is secured to the outer end of the pin 24, as by being pressed thereon. Diametrically opposite the terminal portion of the branch slot 13, the barrel 7 is provided with an orifice 27 for the reception of the head 25, thereby to lock the bolt 18 against oscillation within the barrel 7. The tapered end of the head 25 facilitates the entrance of the head into said orifice. The bolt 18 has a transversely disposed elongated head 28 at its forward end, the longer axis of which is at substantially right angles to the axis of the handle 20.

Fastened, as by screws 29, to the inner side of the left hand stile 30 of the upper sash 2, is a keeper 31 which consists of a relatively long narrow plate having a vertical series of elongated apertures 32. These apertures, which correspond in shape to that of the head 28 of the bolt 18, and are of a size to receive said head with an easy working clearance, are arranged with their longer axes substantially horizontal. The keeper 31 is spaced from the adjacent surface of the stile 30 a distance very slightly greater than the thickness of the bolt head 28, and the spacing is accomplished in the present instance by interposing, between the keeper and the stile, a shim plate 33 of metal or other suitable material; and said shim plate is provided with openings 34, shown as circular, that are in register with the elongated apertures 32 of the keeper, and are of a diameter slightly greater than the major axis of the bolt head 28.

The housing 5 is secured by the screws 11 and 16 to

the top of the lower sash **1**, with the axis of the bolt **18** in the vertical plane of the centers of the apertures **32**. Assuming that the sashes **1** and **2** are relatively adjusted, as shown in Fig. 1, to provide the desired ventilating space, the sashes may be locked together in this condition by aligning the bolt **18** with the appropriate aperture **32** and pushing the bolt forwardly by means of the handle **20**, the latter presently being in a vertical position, as shown in Fig. 3, and operating within the slot **12**. When the head **28** of the bolt is advanced through the aperture **32** and occupies the corresponding opening **34** in the shim plate **33**, the pin **24** whereon the handle **20** is mounted is in register with the branch **13** of the slot **12**. Now by swinging the handle to the position shown in Figs. 1, 4 and 5, the bolt will be turned to dispose the head **28** with its longer axis vertical or, in other words, at right angles to the longer axis of the aperture **32**. This condition will prevent retraction of the bolt; and by appropriately manipulating the handle **20**, the bolt may be held against oscillation within the barrel **7** by the projection of the head **25** of the pin **24** into the orifice **27** of the barrel.

Obviously, the sashes may be similarly locked together when the window is closed, by the interengagement of the headed end of the bolt **18** with the bottom aperture **32** of the series.

When the bolt is in retracted position, and the window accordingly is in unlocked condition, that fact is indicated by the vertical position of the handle **20**, as shown in Fig. 3. Since the handle is desirably made of red translucent plastic, as hereinbefore stated, it serves as a conspicuous indicator to show that the window is unlocked.

If greater security is desired, two of my improved locks may be used on a single window—one at each side—and, in the present construction of the bolt and housing assembly, such an arrangement would require right and left hand assemblies of these elements.

To adapt the invention to doors, the construction may be modified in the manner illustrated in Fig. 6. In this case, a longitudinal slot **40** extends along the side of the barrel **41** remote from the base and terminates at its forward end in a right angle branch **42**. By means of the handle **43**, the bolt **44** may be projected so as to advance the elongated head **45** thereof through a similarly shaped and slightly larger aperture **46** in a keeper **47** that is secured, as by screws **48**, to a door frame **49**. The housing **50** is attached to the door **51** by screws **52**.

It will be observed, in this case, that the elongated aperture **46** is arranged with its longer axis vertical, so that when the bolt occupies locked position, with its head beyond the aperture and disposed with its longer axis horizontal, the bolt, proper, will engage the side of the aperture **46** and thus prevent appreciable lateral movement of the bolt within the aperture.

Having thus described my invention, what I claim is:

In a latch mechanism, a base plate, a cylindrical barrel on said base plate, a bolt slidable and capable of oscillation in the barrel, said bolt having a transversely elongated head at its forward end, said barrel including a peripheral wall having a longitudinal slot and a branch slot that extends laterally from the forward end of the former slot, the bolt having a diametrical bore, a pin slidable in the bore and extending outwardly through the first slot, an operating handle carried by the pin, said wall of the barrel having an aperture for receiving the end of the pin opposite the handle when the pin is disposed adjacent the terminal of the branch slot, means for receiving the elongated head of the bolt in locked relation thereto, said base having an elongated slot and said barrel having portions passing through and movable along said slot and terminating in oppositely disposed flanges underlying said base, said flanges each having a slot longitudinally arranged therealong, said base plate having openings in alignment with the respective flange slots, and fastening means passing through the aligned slots and openings to fix the barrel in a selected position longitudinally on the base plate and to engage the head of the barrel securely with the bolt head receiving means when the handle is to be positioned adjacent the terminal of the branch slot, to thereby prevent rattling or relative movement between the members on which said receiving means and the bolt head are mounted.

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