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LOCKING DEVICE FOR WINDOWS

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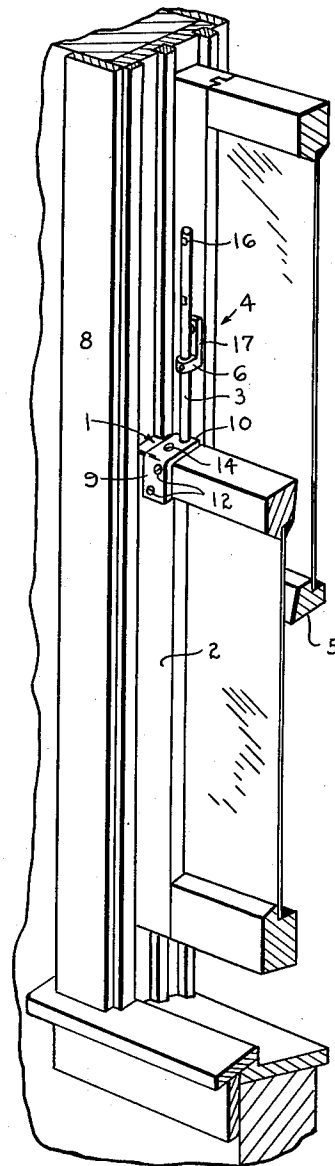
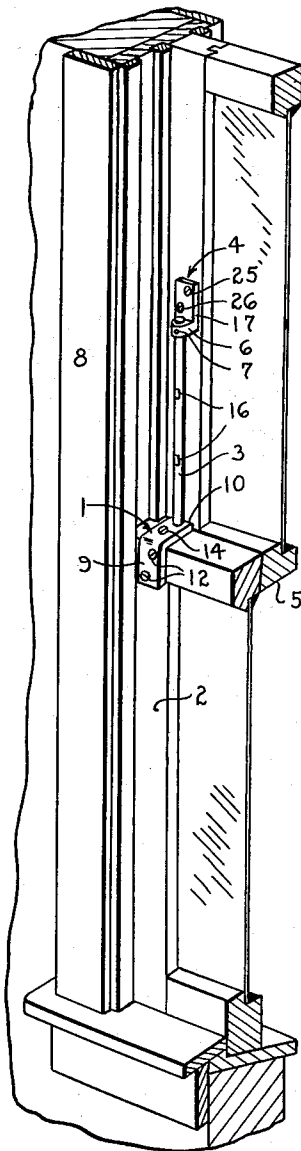
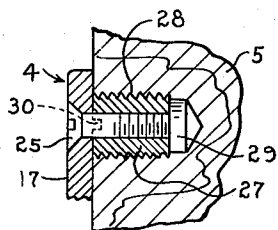
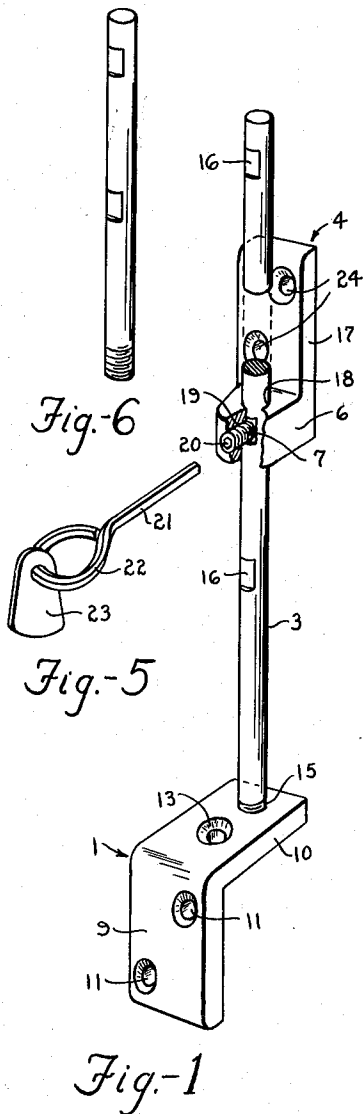


Fig.-2

Fig.-3

Fig.-4

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## LOCKING DEVICE FOR WINDOWS

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1 Claim. (Cl. 292—305)

This invention relates generally to locks or fasteners and more particularly is directed to a locking device which is preferably adapted for use in connecting a pair of complementary window sashes or other sliding members together.

One of the principal objects of the invention is to provide a locking device embodying improved principles of design and construction.

An important object of the invention is to provide a locking device which is comprised of a minimum number of durable parts or components which can be economically manufactured and assembled.

A significant object of the invention is to provide a locking device, so designed and constructed that it can be easily and quickly installed or applied to any of the conventional window sashes now in use.

Another object of the invention is to provide a locking device with a special key, the arrangement being such that when the device is unlocked the sashes can be manually moved relative to one another to any position or positions desired, and then locked together. The locking device also affords a setup whereby the sashes can be locked together for simultaneous movement so as to leave or provide an opening to admit air above the upper sash or below the lower sash or at both of these locations.

More particularly, an object of the invention is to provide a locking device comprising a pair of fittings adapted to be respectively mounted on the sashes, a rod normally carried by, but detachably connected to one of the fittings, and means carried by the other fitting for locking the rod thereto, the arrangement being such that when the rod is so locked it will at the same time be locked against disconnection from the first-mentioned fitting. In other words, the lock on one fitting will prevent disconnection of the rod from both fittings.

An additional object of the invention is to so construct the components or parts of the device and attach them to sashes in such a manner that the device for all practical purposes cannot be removed from the sashes or rendered inoperative by tampering by anyone within or outside a building.

A specific object of the invention is to provide means which may be inset in the sashes to provide durable seats or sockets for the screws used in securing the fittings to the sashes.

A further object of the invention is to provide a locking device in which provision is made for utilizing detachable rods or members of different lengths so that the device can be readily applied to sashes of various lengths or heights.

Many other objects and advantages of the invention will become apparent after the description hereinafter set forth is considered in conjunction with the drawing annexed hereto.

In the drawing, wherein the preferred embodiment of the invention is illustrated and the various components are identified by the same numerals in the different figures of the drawings:

Figure 1 is a perspective view showing the various parts of the locking device;

Figure 2 is a perspective view showing the locking device applied to window sashes for locking them in closed positions;

Figure 3 is a view similar to Figure 2, depicting the sashes locked together to provide a space above the upper sash and a space below the lower sash;

Figure 4 is a sectional view illustrating inset means which may be used to provide a seat for any one or all of the screws employed in attaching the fittings to the sashes;

Figure 5 is a key used to lock and unlock the device; and

Figure 6 is a view of a rod that may be substituted for the one shown in Figure 1.

The various components or parts of the locking device may be designed and constructed as desired, but as exemplified in the drawings, it preferably includes a lower angular fitting 1 secured to an inner lower window sash 2, a rod 3 projecting upwardly from the fitting, an upper fitting 4 secured to an outer upper sash 5, a guide 6 integral with the fitting 4, and a locking element 7 carried by the guide for locking the rod in any desired position with respect to the fitting 4. The sashes are of a conventional character and mounted for vertical movement in a frame 8.

The lower fitting 1 includes a pair of legs or right angular portions 9 and 10. The leg 9 is provided with a pair of corresponding countersunk holes 11, through which screws 12 extend. The leg 10 is provided with a countersunk hole 13 for a screw 14. The free rear extremity of the leg 10 is provided with a threaded aperture 15 which detachably receives the lower threaded end of the rod 3. When this fitting is attached by the screws to the upper left corner of the lower sash as shown in Figures 2 and 3, the rod will extend vertically upward in spaced parallel relation to and in back of the left side or stile of the upper sash.

The rod is preferably made round in cross-section and constructed of a durable material such as brass or steel. Although not essential, the rod may be provided with a plurality of longitudinally spaced notches or interruptions 16 for selective cooperation with the locking element 7 to effect a more positive locking action at such locations. More specifically, entry of the locking element into any one of the notches will positively prevent both relative longitudinal and rotational movement between the rod and the fittings. Locking the members against rotational movement has the distinct advantage of preventing unauthorized attempts to unscrew the rod from its fitting and support 1.

The upper fitting 4 includes a leg 17 and the guide 6 integral therewith, which is offset outwardly therefrom and provided with an opening 18 which slidably receives the rod 3. This offset guide is provided with a threaded aperture 19 within which the locking element 7 is disposed. The locking element is preferably made in the form of a screw having a hexagonal socket 20 at its outer end for detachably receiving a key 21 of corresponding configuration, as shown in Figure 5. The key is provided with a loop 22 to which a tab or handle 23 is preferably loosely connected. This tab may be manipulated to an angular position with respect to the loop to increase the leverage when tightening and loosening the locking element. Although various forms of locking elements may be utilized, the element exemplified, has proven most satisfactory because of the difficulties encountered by an unauthorized person in finding or shaping an instrument to fit the socket 20. It is also obvious that due to the character of the locking device, small children cannot find a way to operate the element.

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The leg 17 of the upper fitting is provided with a pair of countersunk holes 24 through which screws 25 and 26 extend for attaching the fitting to the left side or stile of the upper sash. Attention is directed to the important fact, that when the rod is disposed over the screws 25 and 26, as shown in Figure 3 it is impossible to remove the screws with a regular screwdriver. Thus, the rod provides an obstruction which prevents removal of this fitting.

Although the length of the rod illustrated in Figures 1, 2, and 3 has proven most desirable for most installations, it is to be understood that a longer rod may be used, and that a shorter one, as shown in Figure 6, may be sufficient for the purpose.

In view of the foregoing, it should be manifest that when the locking device is rendered inoperative by loosening the element 7, the sashes may be manually shifted or moved relative to one another. Also, it should be noted that the upper fitting 4 provides a positive stop limiting the distance or travel the sashes can be moved toward one another. This is true, even though the rod 3 is omitted. More particularly, the range of travel of the sashes toward one another is determined by the distance between the underside of the offset guide 6 and the upper surface of the leg 10 of the lower fitting. When the device is initially installed, as shown in Figure 2, the fitting 4 is preferably secured to the upper sash to receive the upper end of the rod so as to allow for maximum travel between the sashes. Obviously, the range of travel may be reduced by locating the fitting 4 lower down on the sash.

Due to this limited or predetermined travel, it may be impossible for a person within a building to clean the outer upper surface of the glass of the lower sash and a person on the outside of a building from cleaning the inner lower surface of the glass of the upper sash. In order to permit the cleaning of such glass surfaces, it is necessary to remove the upper fitting 4 from the upper sash. Depending on the length of the rod used and the length of the sashes it may also be necessary to detach the rod from the lower fitting. The lower fitting 1 need not be removed, unless desirable when painting or refinishing the sash.

Since the upper fitting 4 will, in all probability, be removed a considerable number of times, any screws extending therethrough into the wood of the stile will eventually damage or destroy the threads made in the wood by the screws. In order to prevent such damage, a metal seat or socket 27, as shown in Figure 4, is preferably provided for one or both of the screws 25 and 26. Each seat is of tubular construction and exteriorly threaded as indicated at 28 for threadedly engaging the side wall of a hole 29 provided in the sash. The outer end of each seat is preferably provided with a slot 30 for a screwdriver so that the seat can be driven to a position substantially flush with the exterior surface of the sash as shown. Each seat is also internally threaded to receive the threaded shank of the screw 25. The seats have

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proven very practical in use for the purpose mentioned, and although seats are preferably employed for the screws 25 and 26, seats may also be provided for similar screws to attach the lower fitting 1 to the sash 2.

It is to be understood that the locking device may be attached to sliding closure members other than window sashes and that it may be applied to the right sides of sashes in lieu of the left sides as shown.

In view of the foregoing, it will be apparent that the invention provides a novel device whereby window sashes can be locked in closed or various open positions to prevent unauthorized entry into a building and which, to all intents and purposes, cannot be rendered inoperative by anyone inside a building except by the use of a special key. The invention may be employed wherever applicable, but has proven most useful in preventing small children from falling through open windows.

Having thus described my invention, it will be obvious that various modifications may be made in the same, and that I do not wish to limit the scope of the invention, other than by the claim appended hereto.

I claim:

A locking device of the kind described comprising a first fitting having a rearwardly extending horizontal leg and a depending leg, a rod secured in an upstanding position to the free end of the horizontal leg, a hole provided in one of the legs so that fastening means can be inserted through the hole for securing the fitting to the upper part of a lower window sash, a second fitting having an upwardly extending leg and an outwardly extending leg respectively disposed in parallel relation to the depending and rearwardly extending legs of the first fitting, said outwardly extending leg being provided with an opening through which the rod slides, a hole provided in the upwardly extending leg of the second fitting through which means can be inserted to secure this fitting in place on the side rail of an upper sash, said last mentioned hole being placed in back of the rod so that a securing means extending therethrough cannot be removed when the rod is in front thereof, said forwardly extending leg of the second fitting being provided with a threaded aperture extending endwise into the leg, and a screw seated in the aperture and engageable with the rod for locking the second fitting on the rod.

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