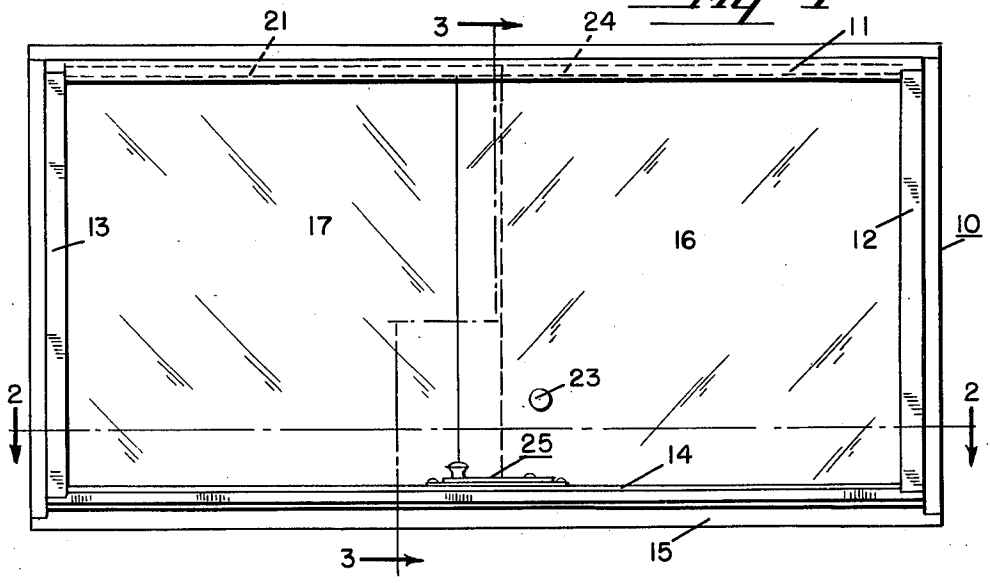
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LOCKING MEANS FOR SLIDING PANELS

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Fig 1



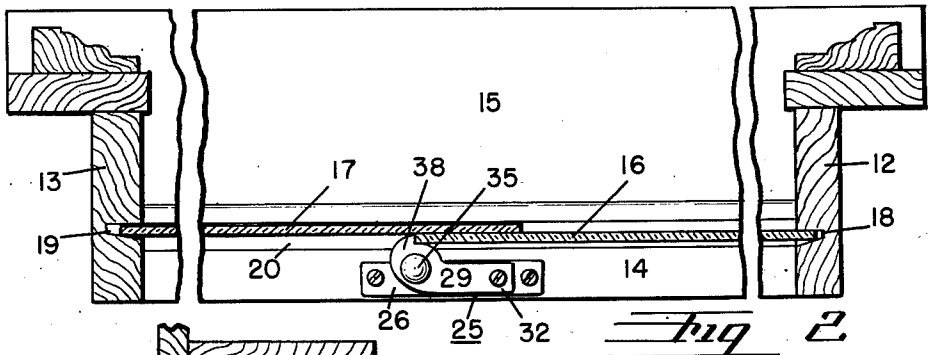


Fig 2

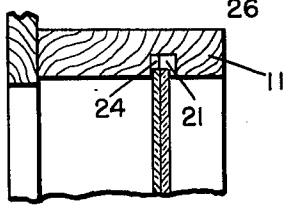


Fig 3

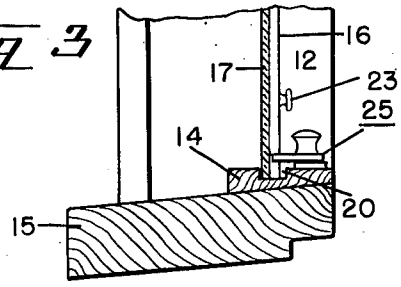
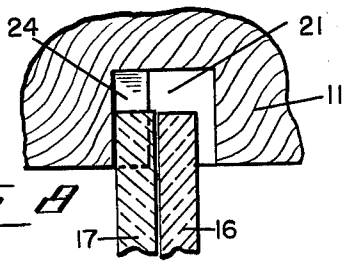


Fig 4



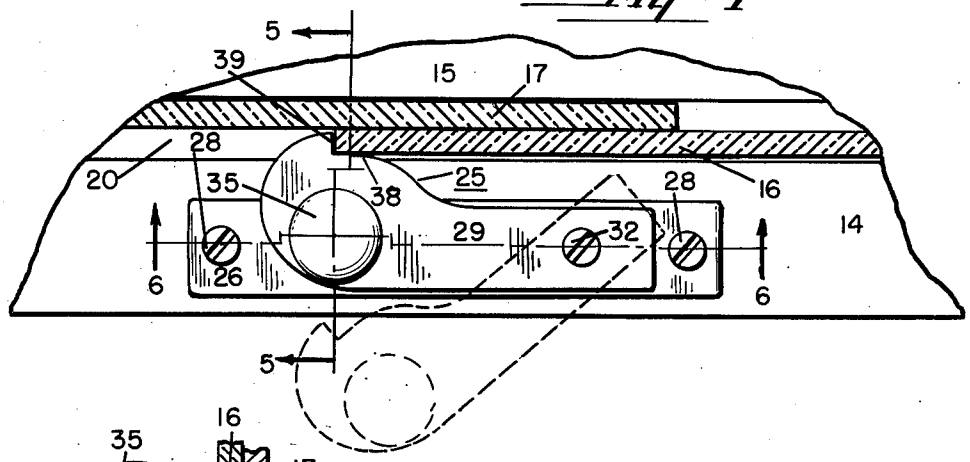
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May 14, 1957 H. D. SISSON 2,792,246

LOCKING MEANS FOR SLIDING PANELS

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Fig 4



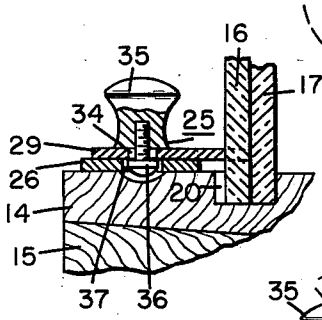
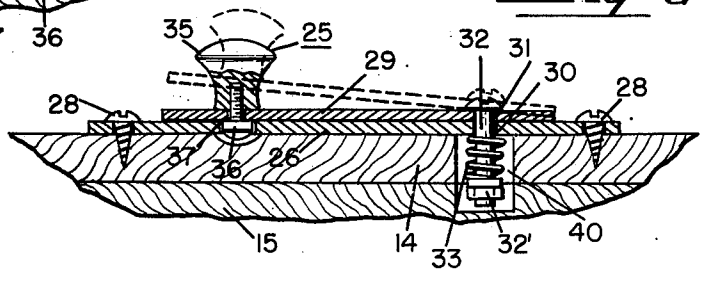


Fig 5

Fig 6



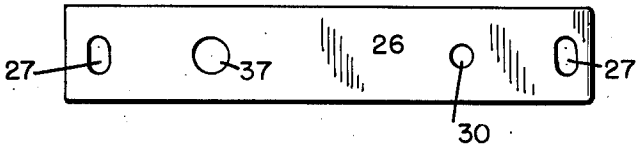


Fig 7

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2,792,246

LOCKING MEANS FOR SLIDING PANELS

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Application November 7, 1955, Serial No. 545,221

3 Claims. (Cl. 292—101)

This invention relates to panels of glass, wood, plastic or other suitable materials, slidably mounted within a frame surrounding an opening, so as to provide a closure for the framed opening, and so arranged that one panel may be moved from closed to open position by being slid over the face of a companion panel.

More particularly the invention relates to a so-called sashless window in which a pair of glass panels of approximately the same dimension, at least one of which is slidable laterally over the other, provide the closure for the window opening, and in which the adjacent edge portions of the glass panels overlap for a short distance, approximately at the middle of the window when the window is closed.

During the past few years windows of this type have become quite popular in modern housing construction, the grooves in the window frame in which the glass panels slide generally being so arranged that the glass panels can be entirely removed for replacement when necessary without removing any portion of the frame.

One of the difficulties with windows of this type arises from the necessity of providing suitable locking means for locking the panels against movement when the panels are in closed position without in any way interfering with the panels or preventing the moving or removal of the same when the locking means is unlocked. Accordingly, an object of the present invention is to provide simple and practical locking means which will meet this difficulty.

A related object of the invention is to provide a satisfactory locking means for a glass panel, no part of which locking means will be mounted on the panel itself, and which, therefore, will make it possible to remove or replace the panel without dismounting the locking means or removing any part of the locking means.

Another object of the invention is to provide an improved locking means which will have locking engagement with the edge of a glass panel without any possibility of the panel becoming damaged in the locking of the panel.

In windows of the type above indicated, wherein the adjacent portions of a pair of glass panels overlap each other when the panels are in closed position, it is necessary, for the locking of the window, not only to hold the panels against sliding, but also to keep the overlapping edges of the panels pressed firmly together where the locking occurs so that the window will be sufficiently weather-tight in such places. A further object of the invention is to provide locking means which will hold the overlapping portions of panels pressed tightly together when the panels are in locked position, in addition to preventing any sliding panel movement.

A further object of the invention is to provide improved locking means for sliding panels, particularly sliding glass window panels, which can easily be adjusted for panels of different thickness in the event a panel of greater or less thickness is substituted for a previous panel.

The manner in which these objects and other incidental advantages are attained will be apparent from the following brief description of my improved locking means, wherein I have described the same in use on a modern sashless window, inasmuch as this is considered the most important use of such locking means, although the invention is not to be regarded as limited to use only with glass window panels.

In this description, reference is made to the accompanying drawings, wherein:

Figure 1 is an elevation of a modern sashless window showing the locking means in use on the same, this view being taken from the inside of the window with the slidable glass panel shown in closed and locked position;

Figure 2 is an enlarged and foreshortened plan section on line 2—2 of Figure 1;

Figure 3 is an enlarged and foreshortened sectional elevation on line 3—3 of Figure 1;

Figure 4 is an enlarged fragmentary plan view of the lock, corresponding in part to Figure 2, but drawn to a much larger scale and with an open position of the lock indicated in broken lines;

Figure 5 is a fragmentary section on line 5—5 of Figure 4;

Figure 6 is a fragmentary section on line 6—6 of Figure 4;

Figure 7 is a plan view of the bottom member or mounting plate for the lock; and

Figure 8 is a fragmentary section taken through the top of the window on line 3—3 of Figure 1, and thus corresponding in part to the upper portion of the sectional elevation shown in Figure 3, but drawn to a considerably larger scale for the purpose of clarity.

Referring first to Figure 1, the locking means is shown installed in a sashless type window. The window frame, indicated as a whole by the reference character 10, includes a top frame piece 11, a pair of end frame pieces 12 and 13, a sill 15, and a grooved bottom frame piece 14 mounted on the sill 15 (see also Figure 3).

Two glass panels or panes 16 and 17 form the closure for the space within the frame 10, the two panels in the window as illustrated being of identical size. As shown in Figure 2, grooves 18 and 19 are provided in the end frame pieces 12 and 13, respectively, to receive the corresponding edges of the respective panels 16 and 17 when the window is closed. The bottom piece 14 (Figures 2 and 3) and the top frame piece 11 (Figures 3 and 8) are also provided with grooves 20 and 21, respectively, to accommodate the panels 16 and 17. The bottom and top grooves 20 and 21 are slightly wider than the combined thickness of the two panels and the top groove 21 furthermore extends up beyond the top edges of the panels 16 and 17. As is well-known, this arrangement of the top and bottom grooves in the frame not only enables one panel to slide past the other, but also enables the panels to be separately removed from the frame (the inner panel being removed first) by raising the panel in the top groove 21 until the bottom edge of the panel can clear the bottom piece 14 and be swung inwardly. When the panels are being removed they must, of course, first be slid away from their respective side grooves 18 or 19 (Figure 2) in the end frame pieces 12 and 13, since these grooves 18 and 19 are so formed and positioned as to receive the corresponding edges of the respective panels tightly as illustrated in Figure 2.

It is customary also in a window of this type, having a pair of glass panels such as 16 and 17, to place a blocking strip in the upper groove beyond the outer panel 17 as shown by the block 24 in Figures 3, 8 and 1, to prevent the outer panel 17 from being slid from left to right (as viewed in Figure 1), unless the inner panel has first been removed. Thus, in such a window con-

struction the inner panel 16 will be freely slidable from right to left (as viewed in Figures 1 and 2) over the inside face of the outer panel 17 for opening the window unless the inner panel 16 is restrained by special locking means, while the other panel 17 is not slidable unless and until the panel 16 is removed. To facilitate the sliding of the inner panel 16 when the window is to be opened, it is customary to provide this panel with finger-engaging means such as the knob 23.

The panel locking means comprising the present invention is indicated in general in Figures 1–6, inclusive, by the reference character 25. The locking means comprises a bottom plate 26, which is secured to the bottom piece 14 of the window frame in the relative position indicated in Figures 2 and 4. This bottom plate 26 is shown by itself in Figure 7. It is formed with a pair of screw slots 27 at opposite ends to accommodate the screws 28 (Figure 6) by which the plate 26 is secured to the frame piece 14.

A latch member 29 is mounted on the bottom plate 26 by a bolt 32 (Figure 6) which extends down through registering holes 31 and 30 in the latch member 29 and bottom plate 26, respectively. As shown in Figure 6, the bolt 32 extends down for some distance below the bottom plate 26 and carries a nut 32′ spaced below the plate 26 and an interposed spring 33 which is held under compression between the nut 32′ and the plate 26. The reason for mounting the latch member 29 on the bottom plate 26 in this manner will be presently apparent. A recess 40 is cut into the window frame beneath the plate 26 to accommodate the bolt 32, nut 32′ and interposed spring 33.

A handle knob 35 is secured on the latch member 29 by means of a screw 36 which has a rounded head. The shank of this screw 36 extends up through a slot 34 (Figure 5) in the latch member 29 and engages a threaded recess in the handle knob 35. As will be noted from Figure 5, the slot 34 provided in the latch member 29 for the shank of the screw 36, is slightly elongated in a direction extending transversely with respect to the latch member. This allows the position of the handle knob 35 to be adjusted to a limited extent transversely. The bottom plate 26 has an aperture 37 to accommodate the head of the screw 36, the head of the screw 36 being substantially semi-spherical but with the periphery of the upper portion cut down to cylindrical shape with the diameter only slightly less than that of the receiving aperture 37.

Thus, as apparent from Figure 6, when the head of the screw 36 is brought into engagement with the wall of the aperture 37 in the bottom plate 26, the latch member 29 will be held firmly positioned on the bottom plate 26. Nevertheless, the latch member 29 can be moved from such position by manually raising the knob 25 and the corresponding end of the latch member 29, as indicated by the broken lines in Figure 6, so that the head of the screw 36 will be lifted from the aperture 37, whereupon the latch member 29 may be swung back away from the window panels to some such position as indicated by the broken lines in Figure 4. The arrangement of the bolt 32, nut 32′ and interposed spring 33 makes it possible to raise the latch member in this manner from the normal resting or locking position on the bottom plate 26, but at the same time the tension of the spring 33 will prevent any inadvertent movement of the latch member when the head of the screw 36 is in the aperture 37 and the latch member is in the full line position of Figures 4, 5 and 6.

The latch member 29 is preferably shaped substantially as shown in Figure 4 with the end portion, on which the handle knob 35 is located, widened on the side nearest the panels. The periphery of this widened portion has a shoulder 39 extending substantially at 90° with respect to the longitudinal center line of the latch member. At the inner end of this shoulder 39 the periphery of the

latch member has a short straight portion 38 extending substantially parallel with the longitudinal center line of the latch member, and thus extending at right angles with the shoulder 39, and from this portion 38 the periphery then slopes, preferably in a curved line, until it meets the straight edge of the remaining side portion of the latch member. The length of the shoulder 39 is slightly less than the thickness of any panel which would be used.

As will be understood from Figures 2 and 4, the bottom plate 26 and the latch member 29 are so positioned with respect to the inner panel 16 that when the inner panel 16 is in fully closed position and the latch member 29 is in normal locked position on the bottom plate 26, the shoulder 39 will engage the end edge of the inner or adjacent panel 16 and the portion 38 of the latch edge adjacent the notch 39 will be pressed tightly against the adjacent side of the panel and will cause the panel 16, in turn, to press firmly against the outer panel 17.

In the event the latch edge portion 38 should not engage the adjacent edge of the panel 16 tightly enough to cause the end portion of panel 16 to press firmly against the outer panel 17 at that point, the position of the screw 36 and handle knob 35 can be adjusted (thus, shifted to the left as viewed in Figure 5) in the slot 34 of the latch 29 so as to move the latch closer to the panel when the latch is in closed position, and similarly if one of the panels should be replaced by thicker panel, necessitating opposite adjustment in the latch this can be accomplished in the same manner. Furthermore, since the two screw slots 27, 27 (Figure 7) in the bottom plate 26 for the lock are elongated, it would be possible also to adjust the bottom plate and therewith the entire locking device laterally with respect to the panels by loosening the screws 28 and then tightening them after the adjustment is made.

From Figures 2 and 4 it will also be apparent that the latch member 29 can be swung out (in counter-clockwise direction, as viewed in these figures) to allow ample clearance in the event either or both panels are to be removed from the frame, and furthermore this latch member can even be swung through an arc of 180° and thus be kept from projecting inwardly from the window sill when the window is to remain open.

I claim:

1. A locking latch assembly for a pair of slidable overlapping panels, said assembly including a mounting plate secured adjacent the overlapping edges of the panels, a latch member pivotally mounted on said plate for pivotal movement in a plane substantially parallel to the plane of said plate, said latch member having an edge portion adapted to bear against the adjacent face of the nearer panel to press said nearer panel against the other panel, a shoulder extending from said edge portion of said latch member for engaging the end edge of said nearer panel, the length of said shoulder not exceeding the thickness of said nearer panel, whereby said shoulder will hold said nearer panel against sliding while said edge portion of said latch member will press said nearer panel against said other panel, and adjustable means for holding said latch member in such panel engaging position on said mounting plate, said adjustable means so arranged that the engaging position of said edge portion of said latch member can be adjusted for panels of different thickness.

2. A locking latch assembly for a pair of slidable overlapping panels, said assembly comprising a bottom mounting plate adjustably secured adjacent the overlapping edges of the panels, a latch member pivotally mounted near one end on said plate for pivotal movement in a plane substantially parallel to the plane of said plate, said latch member having a widened portion near one end adapted to bear against the adjacent face of the nearer panel to press said nearer panel against the other panel, a shoulder extending beyond said widened portion of said latch member for engaging the end edge

of said nearer panel, the length of said shoulder not exceeding the thickness of said nearer panel, whereby said shoulder will hold said nearer panel against sliding while said widened portion of said latch member will press said nearer panel against said other panel, and means for holding said latch member in such panel-engaging position on said bottom plate, said means including an element adjustably secured on said latch member extending below the bottom face of said latch member, said bottom plate having an aperture for receiving said element, the adjustability of said element so arranged that the engaging position of said widened portion of said latch member can be adjusted for panels of different thickness.

3. A locking latch assembly for a pair of slidable overlapping panels, said assembly consisting of a mounting plate adjustably secured adjacent the overlapping edges of the panels, a latch member pivotally mounted on said plate for pivotal movement in a plane substantially parallel to the plane of said plate, said latch member having an edge portion near one end adapted to bear against the adjacent face of the nearer panel to press said nearer panel against the other panel, a shoulder extending beyond said edge portion of said latch member for engaging the end edge of said nearer panel, the length of said shoulder not exceeding the thickness of said innermost panel, whereby said shoulder will hold said nearer panel against sliding while said edge portion of said latch member will press said nearer panel against said other panel, means for holding said latch member in such panel engaging position on said bottom mounting plate, said means including an element secured on said latch member extending below the bottom face of said latch member, said mounting plate having an aperture for receiving said element, and resilient means in the pivotal mounting for said latch member enabling said latch member to be raised sufficiently to disengage said element from the wall of said aperture.

References Cited in the file of this patent

UNITED STATES PATENTS

1,742,764	Giltsch et al.	Jan. 7, 1930
2,056,488	Sasgen et al.	Oct. 6, 1936
2,586,500	Axe	Feb. 19, 1952