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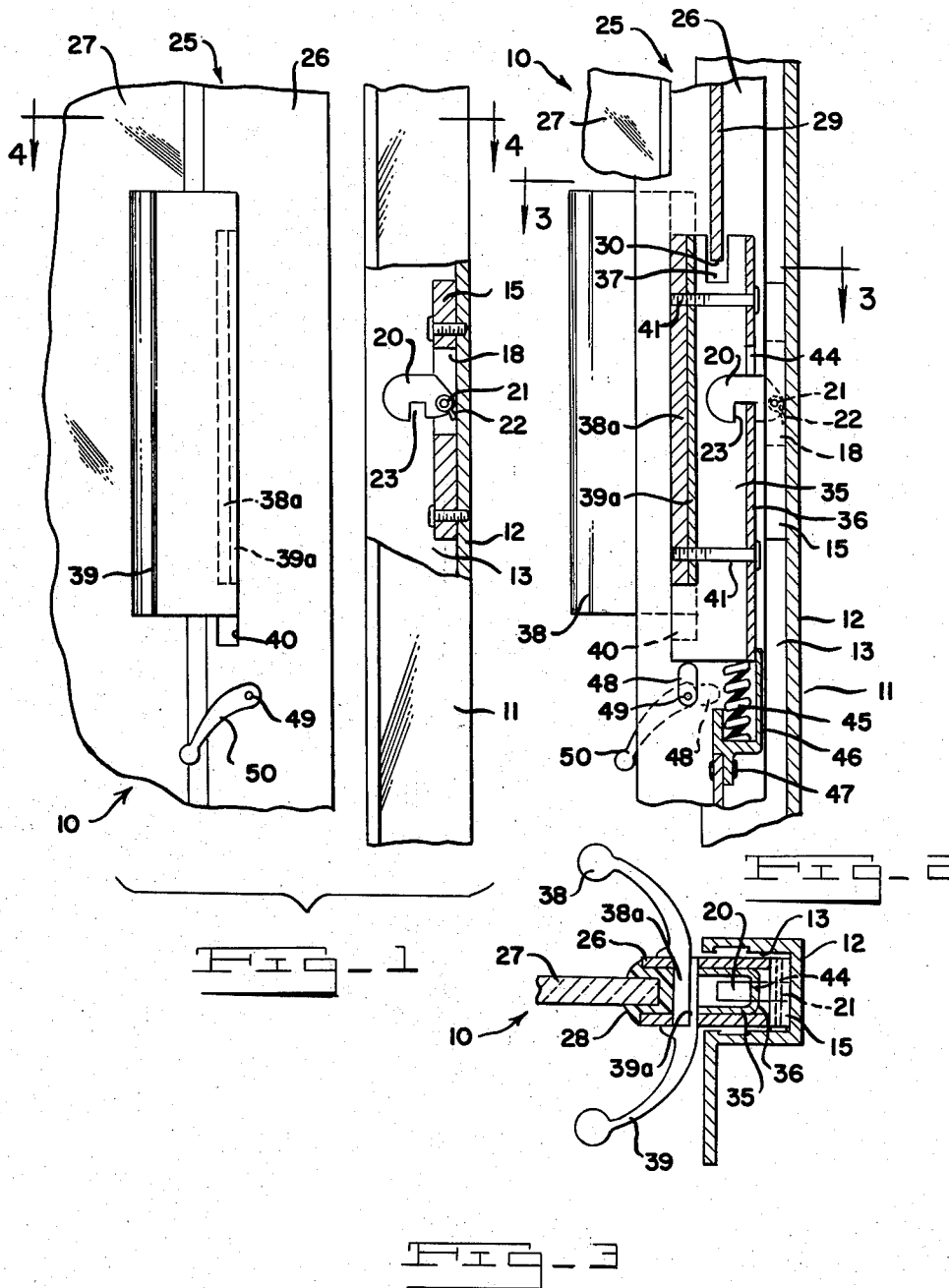
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LATCH FOR SLIDING PANELS

Original Filed Oct. 18, 1956

2 Sheets-Sheet 1



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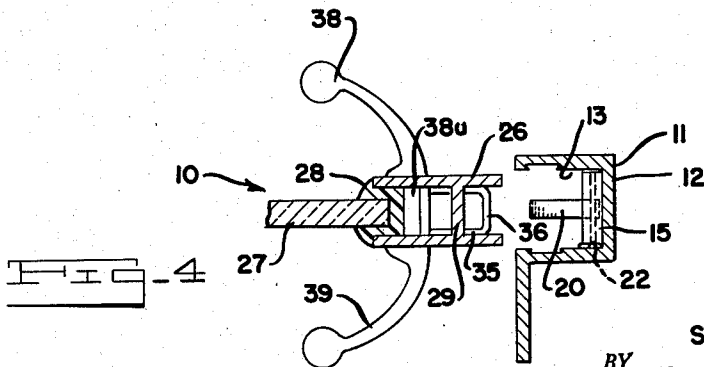
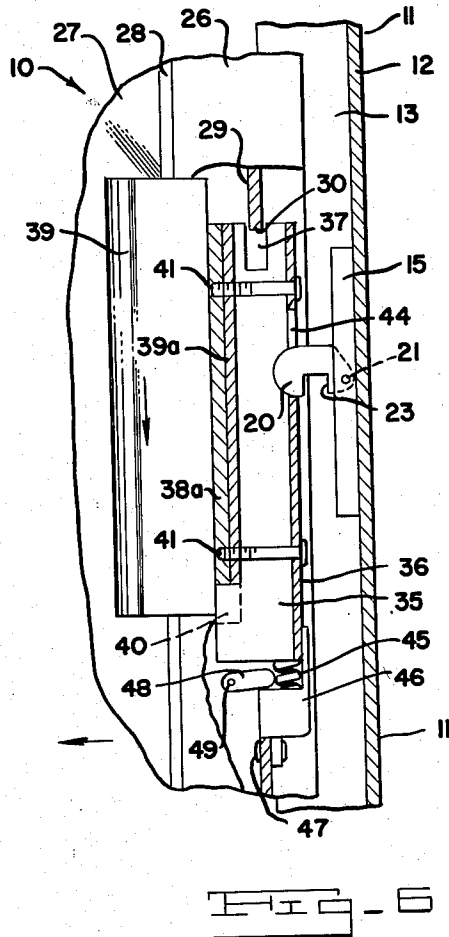
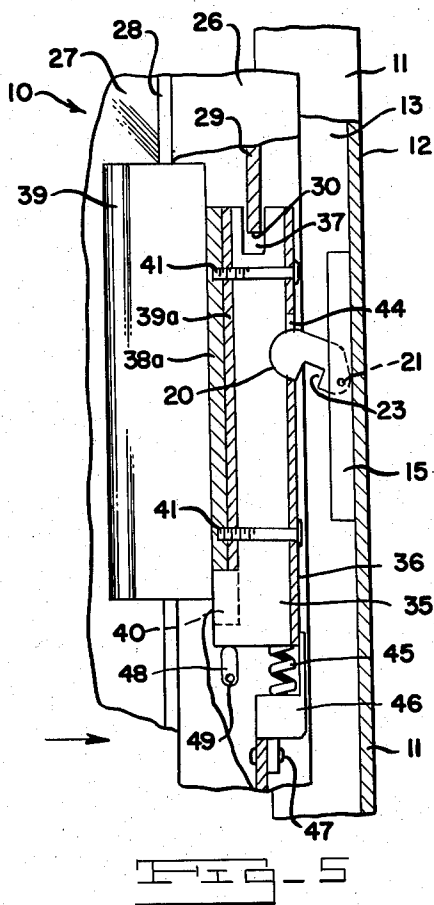
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LATCH FOR SLIDING PANELS

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Original application Oct. 18, 1956, Ser. No. 616,816, now Patent No. 2,912,714, dated Nov. 17, 1959. Divided and this application Mar. 2, 1959, Ser. No. 796,653

3 Claims. (Cl. 292—175)

This invention relates to latch construction, useful for securing sliding panels, such as horizontally sliding windows, doors and the like, in closed position in their surrounding frames. This application is a divisional of my earlier filed application Ser. No. 616,816, filed October 18, 1956, now Patent No. 2,912,714 of November 17, 1959.

Latches and locks of many different types are available on the market for use in locking sliding type windows and doors. However, the currently available latches are frequently expensive to manufacture, expensive to install, and difficult to repair and maintain.

Thus, it is an object of this invention to form a latch for horizontally sliding panels or the like, which latch is extremely inexpensive to manufacture, requires a minimum of labor in installation, and is formed of only a few parts, which parts move very little so as to reduce wear and breakage.

Yet another object is to form a latch wherein a latching hook, mounted on a frame, is formed to move when the panel is closed to thereby engage the panel, and wherein a latch part mounted in the panel is manually moved for disengaging the panel from the hook. Hence, one of the parts (the hook) moves for locking the panel and the other part moves for unlocking the panel, to thus reduce wear and movement of the parts.

These and other objects and advantages will become apparent upon reading the following description of which the attached drawings form a part:

With reference to the attached drawings, in which:

Fig. 1 is a view of a fragment of the leading edge of a sliding panel about to enter into an outer frame jamb (shown partially in cross-section).

Fig. 2 shows a cross-section of the leading edge locked within the jamb.

Fig. 3 is a cross-sectional view taken in the direction of arrows 3—3 of Fig. 2.

Fig. 4 is a cross-sectional view taken in the direction of arrows 4—4 of Fig. 1.

Fig. 5 is a cross-sectional view, similar to Fig. 2, showing the hook as it moves to receive the panel mounted latch.

Fig. 6 shows the panel mounted latch moved into position to release the hook.

The latch mechanism herein is shown as mounted in a conventional horizontally slideable window panel 10 which fits into and against an outer frame side jamb 11. The window is mounted in a complete outer frame formed of side jambs 11, header and sill, the window panels being horizontally slideable on the sill. The complete window construction is not illustrated since it forms no part of this invention.

The jamb 11 is formed in a U-shape, having a base 12 and a channel 13. Within the channel, a striker plate 15 is secured by screws 16 or the like.

The striker plate is provided with a center opening 18 within which a latching hook 20 is pivotally mounted

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upon a pivot pin 21. A spring 22 biases the hook into a horizontal position which is substantially normal to the base of the channel. The hook is provided with a downwardly facing notch 23. As can be seen, the hook is arranged to pivot within a substantially vertical plane, that is, a plane parallel to the walls of the channel 13. The spring returns the hook to its normal position whenever the hook is pivoted upwards.

The panel 10, is formed of a conventional frame 25, having a leading edge frame member 26, within which a glass sheet 27 is mounted by means of a suitable stuffer strip 28 (see Fig. 3).

The particular leading edge member illustrated, is formed in an H-shape, having a cross-member 29, which forms an edge channel opening towards the base of the jamb member. The cross-member 29 is cut-out (see Fig. 2) at 30.

A U-shaped, elongated latching member 35 having its base 36 facing toward the jamb is inserted in the edge channel of the leading edge member. The U-shaped member is freely slideable up and down, that is, along the length of the leading edge, and is partially guided by a notch 37 at its upper end which receives and cooperates with part of the cross-member 29.

Means are provided for restraining the U-shape member within the leading edge channel and for guiding the sliding movement of the U-shaped member. Such means comprise handles 38 and 39 each of which are provided with an inner portion 38a and 39a which pass through elongated slots 40 cut through the walls of the leading edge member. The inner portions are secured together and to the U-shaped member by mechanical fastening means, such as screws 41 (see Fig. 2). The handle inner portions slideably fit within the slots 40. The slots being of greater length than the handle inner portions, the handles may be manually slid upwards and downwards to carry with them the U-shaped member.

The U-shaped member is normally held in a position wherein an opening 44 formed in the base thereof is arranged with its lower end above the level of the bottom of the hook and at about the level of the base of the notch 23 of the hook. Thus, when the U-shaped member is moved toward the hook by means of moving the panel into the channel shaped jamb, the hook strikes the bottom edge defining the aperture or opening 44 and the hook pivots upwardly to pass over said portion. Then the hook is spring returned to its normal position so that the notch receives a portion, of the base of the U-shaped member, which defines the bottom edge of the opening 44.

The means for holding the U-shaped member in its normal position, consists of a spring 45 which is positioned within a spring receiver 46 which in turn is secured to the leading edge crossmember 29 by means of a screw 47 or the like. The spring receiver 46 is the only part of the latching mechanism that is secured to the leading edge member and it, in turn, is not secured to any part of the latching mechanism.

A pivotal stop 48 mounted upon a pivot pin 49 and having a handle 50 may be used to lock the latch in its upward or hook engaging position when it is desired to lock the handles against sliding movement. However, this stop can easily be swung out of the way by moving its handle 50.

Fig. 4 shows the operation of the panel entering the jamb channel and the hook pivoted into an upward position ready to engage the U-shaped member. Thus, it can be seen that latching is accomplished by movement of the hook.

On the other hand, unlatching is accomplished by pushing downward on the handle 38 or 39 to move the U-shaped member downward against the force of the spring

45 so that the hook is cleared by the opening 44, and then manual movement or pressure upon the handles can slide the panel in a direction away from the jamb. This is illustrated in Fig. 6.

This invention may be further developed within the scope of the following attached claims. Accordingly, it is desired that the foregoing description be read as being merely illustrative of an operating embodiment of this invention and not in a strictly limiting sense.

I now claim:

1. A latch construction for use in securing a vertically arranged leading edge of a panel to a frame member and wherein the leading edge is provided with a channel opening outwardly of it, comprising an elongated, U-shaped in cross-section latching member vertically arranged within the channel with the base of the U-shaped member being at the opening of the channel and the legs thereof fitted deeply into the channel, and a slot formed in the base for engaging a latching hook secured to the frame member, the latching member being vertically slidable upwardly and downwardly in the channel and means limiting the movement of the latching member, said means comprising a vertically elongated narrow slot formed in the side of the leading edge and communicating with the channel therein, a handle arranged at the side of the leading edge and having an elongated, vertically arranged, inner portion passed through the slot and connected to the latching member, the inner portion being slightly shorter in length than the leading edge slot but being substantially the same width as the leading edge slot whereby the handle may be slid upwardly and downwardly within its slot to move the latching member and to guide the latching member against movement in a direction other than vertical, and wherein the latching member anchors the handle to the leading edge so that the handle may be moved to thus move the panel.

2. A construction as defined in claim 1 and including a compression spring means fixed to the leading edge within the channel and engaging the bottom edge of the

latching member and normally urging the latching member upwardly to the point where the top of the handle inner portion engages the top of the slot in the leading edge.

3. A latch construction for use in a panel leading edge having an outwardly, endwise opening channel formed therein and two side walls defining the outside of the channel, comprising an elongated U-shaped in cross-section latching member fitted into the channel with its legs inwardly of the channel and its base at the opening of the channel, and a hook receiving aperture formed in the base; means for guiding and supporting the member for movement only in the direction of the length of the leading edge, said means comprising an elongated slot formed in each of the walls of the channel, the slot being aligned and extending along the length of the leading edge, a handle having a handle portion arranged on each side of the channel and having an inner portion passing through both slots and through the channel and connected to the latching member, the inner portion being flat and elongated and of a length slightly less than the length of the slots and of a width which is substantially the same as the slot widths, and spring means arranged in the channel and coacting with the latch member to normally urge the member in one direction wherein an end of the inner portion contacts the corresponding end of the slots, whereby the latching member may be slid against the spring action along the length of the leading edge until the opposite end of the inner portion contacts its corresponding slot ends and whereby the latching member anchors the handle to the leading edge for moving the panel.

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