

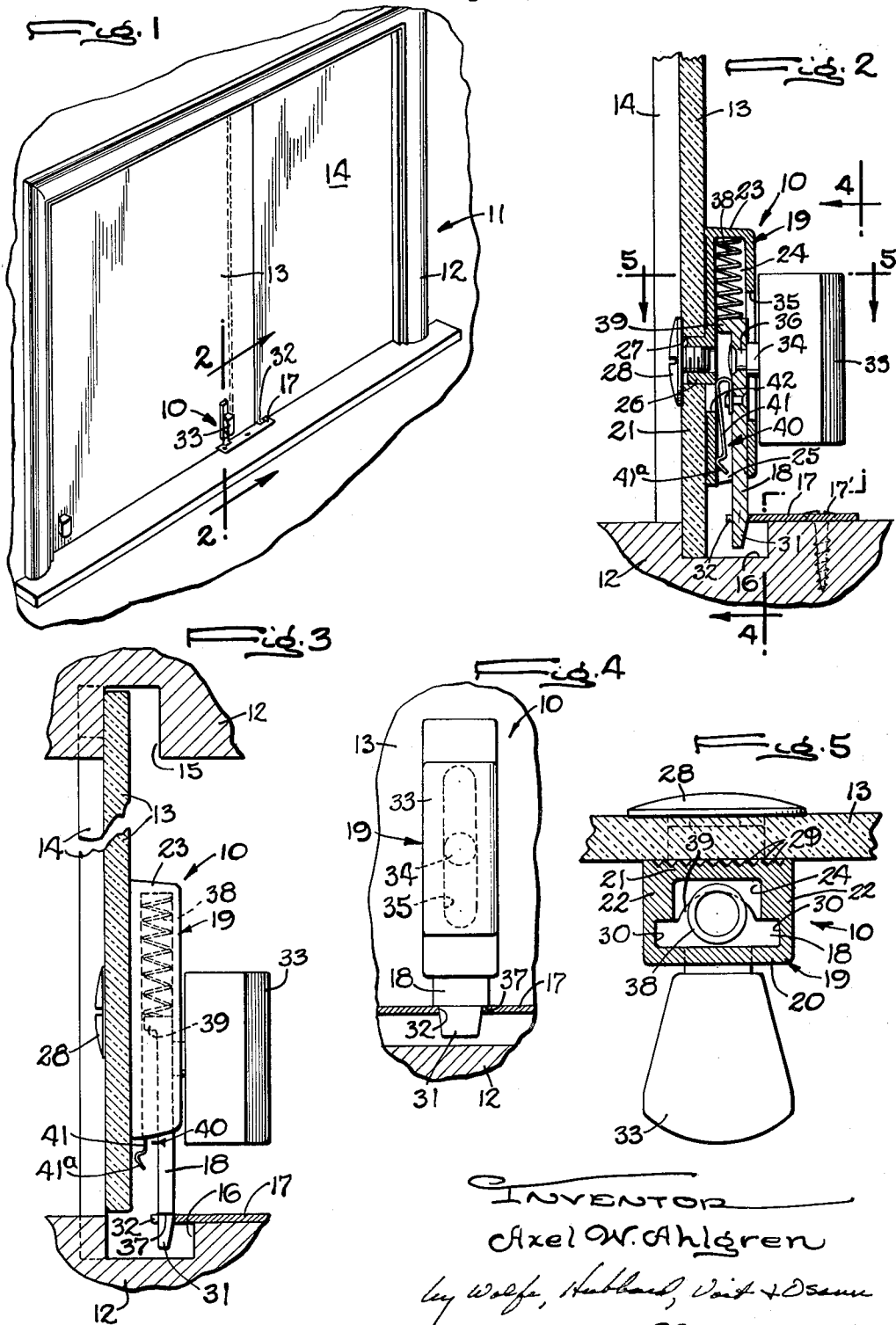
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SASH LOCK

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SASH LOCK

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This invention relates to a lock for use on windows having panes slidable in a frame back and forth along upper and lower horizontal grooves in the frame between open and closed positions. More particularly, the invention relates to a lock for use on windows in which the panes may be removed from the frame by shifting the panes upwardly relative to the frame to lift the lower edge thereof out of the lower groove and drawing the lower edge away from the frame to permit the upper edge to be dropped out of the upper groove.

The primary object of the invention is to provide for use with windows of the above character a lock which remains in a latched position throughout the range of shifting of the pane relative to the frame whereby the pane cannot be removed while the lock is in the latched position.

Another object is to provide a lock which is releasably held in an unlatched position as the pane is slid back and forth between the open and closed position.

Other objects and advantages of the invention will become apparent from the following detailed description taken in connection with the accompanying drawings, in which

FIGURE 1 is a perspective view of a window secured in a closed position by a lock embodying the novel features of the present invention.

FIG. 2 is a fragmentary sectional view taken along line 2-2 in FIG. 1.

FIG. 3 is a view similar to FIG. 2 and showing the sliding pane shifted upwardly into the upper groove.

FIG. 4 is a sectional view taken along line 4-4 of FIG. 2.

FIG. 5 is a sectional view taken along line 5-5 in FIG. 2.

The present invention is shown in the drawings for purposes of illustration embodied in a lock 10 for windows 11 of the type having a panel slidable in a frame 12 between an open and closed position. The illustrated window is of the sashless type in which the panel comprises simply a glass pane 13 mounted directly in the frame 12. Usually two panes 13 and 14 are utilized, one pane 14 being mounted in a fixed position and the other pane 13 having its top and bottom edges received in upper and lower grooves 15 and 16 formed in the frame and opening toward the pane to provide a horizontal track in which the pane 13 may be slid back and forth relative to the fixed pane. When closed, the adjacent edge portions of the panes 13 and 14 overlap each other. The lock 10 is mounted on the sliding pane 13 adjacent the overlapped portions and coacts with a strike 17 mounted on the frame 12 to latch the window.

The sliding pane 13 in this type of window is usually loosely received in the grooves 15 and 16 to permit the pane to be easily removed for cleaning or replacement and, normally, the lower edge of the pane slides along the bottom of the lower groove 16. Sufficient clearance, however, is provided between the opposed bottoms of the grooves 15 and 16 to permit the pane 13 to be shifted upwardly relative to the frame 12 and the bottom edge of the pane lifted out of the lower groove 16 after which it may be swung away from the frame permitting the pane to be removed from the window.

The present invention contemplates a novel lock 10 for windows of the type described which lock prevents re-

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moval of the pane 13 when the window is latched while, at the same time, being pleasing in appearance and simple in construction and operation. To these ends, the lock 10 comprises a bolt 18 mounted on the pane 13 to slide toward and away from the frame. The window is latched by merely sliding the bolt 18 toward the frame 12 and into engagement with the strike 17. Herein, the bolt 18 is resiliently urged toward the strike 17 so as to remain in locking engagement therewith throughout the range of shifting of the pane 13 relative to the frame 12. Thus, while the lower edge of the pane 13 may be lifted out of the lower groove 16, it cannot be swung outwardly away from the frame 12 and therefore cannot be removed from the window.

Herein, the bolt 18 is slidably mounted in an elongated housing 19 having a front wall 20, a back wall 21, side-walls 22 and an end wall 23 defining a cavity 24 open at one end 25. The housing 19 is mounted on the pane 13 with its longitudinal axis perpendicular to the frame 12 and with the open end 25 adjacent the frame. A boss 26 integral with the back wall 21 projects into a hole 27 formed in the pane 13 and is drilled and tapped to receive a stud 28 extending through the pane and threaded into the boss to secure the housing 19 in position. Ser-rations 29 formed on the back wall 21 frictionally engage the pane 13 to prevent shifting of the housing 19 relative to the pane (FIG. 5).

The bolt 18 comprises an elongated flat rectangular bar slidable in grooves 30 formed in the side walls 22 of the housing 19 on opposite sides of the cavity 24 with the lower end of the bolt projecting through the open end 25. A tapered portion 31 is formed on the lower end of the bolt 18 which portion projects into a notch 32 in the strike 17 to lock the window.

Sliding of the bolt 18 toward and away from the strike 17 is facilitated by a handle 33 disposed adjacent the front wall 20 of the housing 19. A projection 34 formed on the handle 33 protrudes through a slot 35 in the front wall 20 of the housing 19 and terminates in a pin 36 riveted to the bolt 18 (FIG. 2).

The strike 17 comprises a flat plate secured as by screws 17' to the frame 12. One edge of the strike 17 overhangs the lower groove 16 and the notch 32 into which the tapered portion 31 of the bolt 18 projects is formed in the overhanging portion. In the locked position, shoulders 37 formed on the bolt 18 between the portion 31 and the bolt engage the strike to limit downward movement of the bolt. As noted above, the bolt 18 is resiliently urged toward this locked position.

In the present instance, the bolt 18 is urged downwardly into engagement with the strike 17 by a coiled spring 38 disposed in the housing 19 to act between the end wall 23 of the housing and an ear 39 projecting laterally from the upper end of the bolt. In normal operation of the window, the bolt 18 slides downwardly relative to the housing 19 into the locked position wherein, as noted above, the tapered portion 31 protrudes into the notch 32 and the shoulders 37 engage the strike thus limiting the downward movement of the bolt. As the pane 13 is shifted upwardly, the spring 38 urges the bolt 18 to slide downwardly relative to the housing 19 beyond the normal locked position and thus maintains the shoulders 37 in engagement with the strike to prevent removal of the pane 13 in the manner described above. To permit the bolt 18 to slide relative to the housing 19 beyond the normal locked position, the slot 35 in the front wall 20 is elongated and extends below the point where the projection 34 would be positioned in the normal locked position (FIG. 2).

When the window is opened, the bolt 18 is held in the released position by a latching means 40 acting be-

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tween the bolt and the housing 19. This latching means 40 comprises a leaf spring 41 fixed at one end to the bolt 18 with the free end bowed outwardly away from the bolt to ride along the rear wall 21 in the cavity 24 as the bolt is raised and lowered. A detent 42 is formed in the wall 21 into which detent the free end moves as the bolt 18 is slid up into the housing. The bolt is thus held in the raised position until a downwardly directed force is exerted on the handle 33.

To facilitate movement of the free end of the spring 41 out of the detent 42, the free end is V-shaped and projects toward the back wall 21 of the housing. The inclined leg 41<sup>a</sup> of the V coacts with the edge of the detent 42 to cam the spring toward the bolt as the latter is slid toward the locked position.

It will be apparent, that a lock constructed as described above securely latches the window and eliminates the possibility of gaining access to the interior of a building by merely removing the sliding pane. Operation of the lock comprises simple longitudinal sliding of the bolt toward and away from the strike.

I claim as my invention:

1. In a window including a frame having upper and lower opposed grooves, and a pane having upper and lower edges projecting into and slidable horizontally in said grooves between open and closed positions, the bottoms of said grooves at said closed position being spaced apart a distance sufficiently greater than the spacing of said edges to permit removal of the pane by raising said upper edge into said upper grooves and swinging said lower edge laterally out of said frame, the combination with said window of an elongated bolt mounted on said pane to slide vertically toward and away from said frame, a strike mounted on said frame and disposed below said bolt when the window is closed and having an opening for receiving the lower end portion of the bolt thereby to latch said pane, and a spring acting between said pane and said bolt to urge the latter downwardly into said opening, said bolt being slidable downwardly on said pane far enough to project into said opening in all vertical positions of the pane in said frame to prevent the pane from being removed from the frame when the pane is latched.

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2. For use in latching an upright pane having upper and lower edges projecting into and slidable horizontally in opposed upper and lower grooves in a frame, the bottoms of the grooves being spaced apart a distance sufficiently greater than the spacing of the edges of the pane to permit removal of the pane by raising the upper edge into the upper groove and swinging the lower edge laterally out of the frame, a lock including, in combination, a housing mountable on the pane, an elongated bolt mounted on said housing for endwise up and down sliding between raised and lowered positions, a spring acting between said housing and said bolt to urge the latter downwardly toward said lowered position, a strike mountable on said frame below said housing to receive the lower end of said bolt when the latter is in an intermediate position and thereby latch the pane both laterally and horizontally, and means on said strike and said bolt coacting to hold the latter in said intermediate position when the pane is resting on the bottom of the lower groove, said bolt being slidable relative to said housing and the pane beyond said intermediate position and toward said lowered position as the pane is raised into said upper groove thereby to prevent removal of the pane when the latter is latched.

3. A bolt as defined in claim 1 in which said means comprises shoulders adjacent said lower end engageable with the upper side of said strike to limit downward sliding of said bolt relative to said strike.

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