April 26, 1938. E. DE NICOLAIS 2,115,139

WINDOW CONSTRUCTION

Original Filed Oct. 31, 1935

Fig. 1.

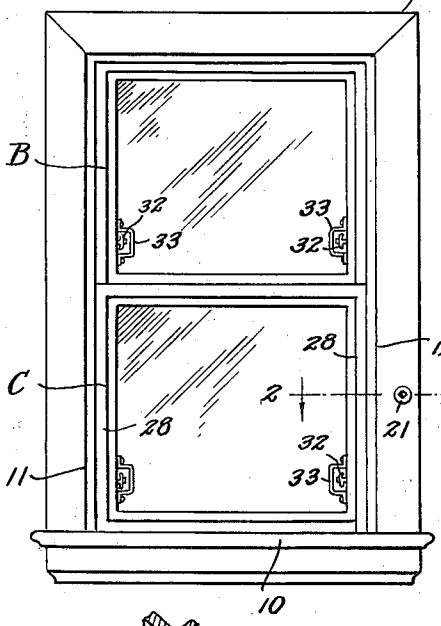


Fig. 2.

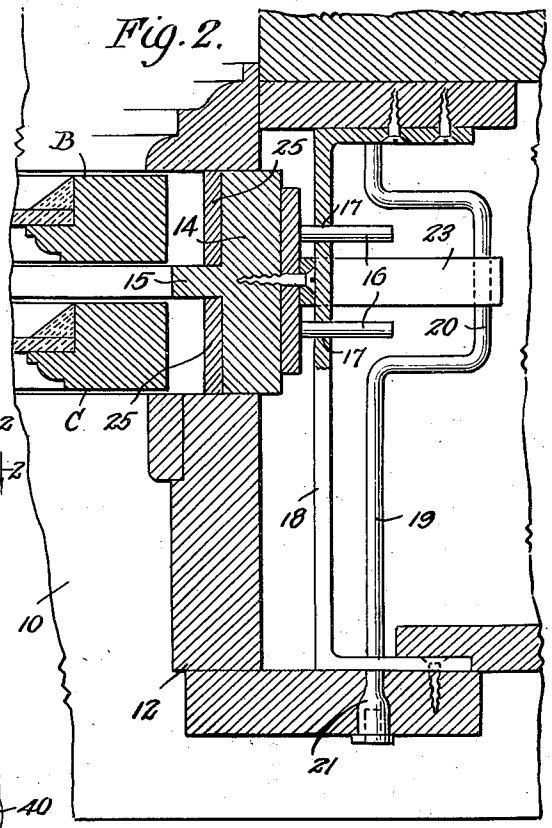


Fig. 3.

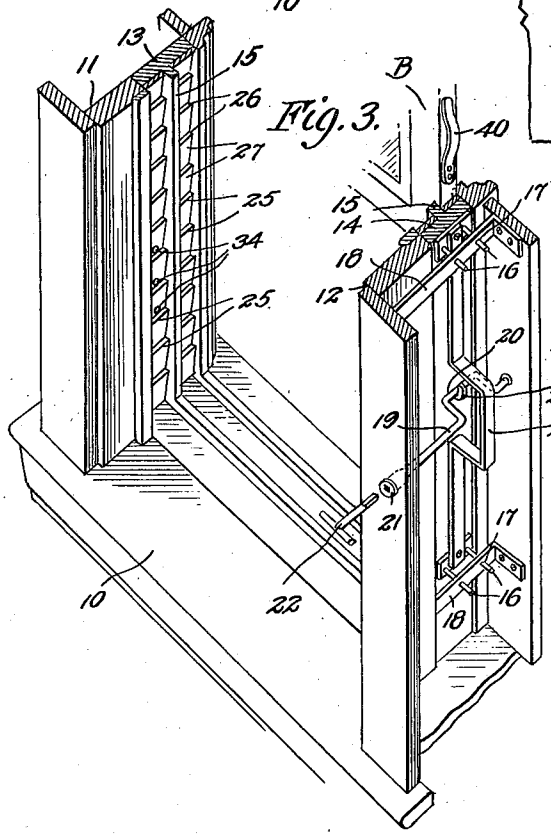
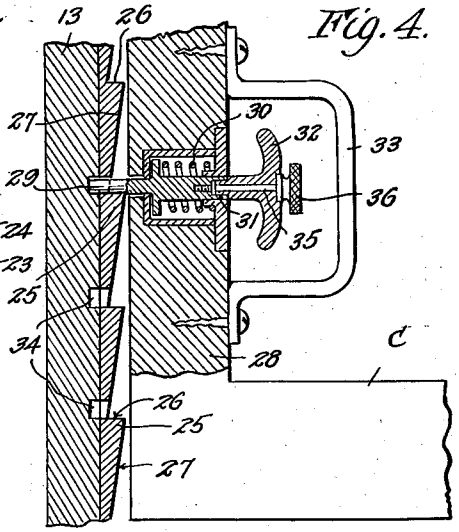


Fig. 4.



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WINDOW CONSTRUCTION

Ernest De Nicolais, New York, N. Y.

Application October 31, 1935, Serial No. 47,601
Renewed August 14, 1937

1 Claim. (Cl. 20—12)

This invention relates to an improved window construction of the sliding sash type, the broad object of which is to eliminate the necessity of sash weights, cords and pulleys, while at the same time making provision for the ready removal of the sashes from the window frame and the replacement of the same therein.

The invention comprehends, in a window construction of the indicated character, a frame in which one of a pair of vertical jamb strips between which the sashes are mounted for guided vertical sliding movement is shiftable towards and away from the other to facilitate the removal and replacement of the sashes without the necessity of disturbing nails, screws or other similar fastening devices which are considered more or less permanent.

As a further feature the invention provides improved interengaging means on the jamb strips and sashes for selectively supporting the sashes in any one of a plurality of positions so as to dispense with sash weights, pulleys and sash cords.

The invention further embodies means for locking one or both sashes in partially opened positions so as to prevent anyone from the outside entering through the window.

Other objects are to provide an improved window construction which is comparatively simple in its construction and mode of operation, inexpensive to produce, install and maintain in proper working condition and which is highly efficient for its purpose.

With the above enumerated and other objects in view, reference is now made to the following specification and accompanying drawing in which there is disclosed a preferred embodiment of the invention, while the appended claim covers variations and modifications which fall within the scope of the invention.

In the drawing:

Fig. 1 is an inner front view of an improved window construction made up in accordance with the invention.

Fig. 2 is an enlarged fragmentary sectional view therethrough taken approximately on a plane indicated by the line 2—2 in Fig. 1.

Fig. 3 is a fragmentary sectional perspective view.

Fig. 4 is a fragmentary vertical sectional view illustrating the sash supporting and locking means.

Referring to the drawing by characters of reference, A designates generally the window frame and B and C the upper and lower sashes which are mounted therein for vertical guided sliding movement.

The frame includes a sill 10 and spaced opposite uprights 11 and 12 which are preferably fabricated of various strips to define channel shaped members. The upright 11 includes a fixed jamb strip 13 and a shiftable jamb strip 14, each having a central parting strip or bead 15 to separate the upper and lower sashes and between which jamb strips 13 and 14 the sashes B and C are located for guided vertical sliding movement. The movable jamb strip 14 is mounted and guided for lateral shifting towards and away from the fixed jamb strip 13 to admit of the ready removal and replacement of the sashes in the window frame without the necessity of having to remove screws, nails or other similar fastening elements which are of a more or less permanent nature as it will be apparent that retraction or outward lateral movement of the jamb strip 14 will permit of the shifting of the sashes laterally to disengage the same from the guideways at one edge and then their complete removal from the window frame.

As illustrated, the jamb strip 14 is provided with guide pins 16 protruding laterally outward therefrom adjacent the upper and lower ends thereof which pins extend through bearing openings 17 in bearing elements 18 fixedly secured within the upright 12 and which, in the present instance, are disclosed as metal straps fastened in place by any suitable means within the channel shaped upright 12.

In order to provide means for facilitating the shifting of the movable jamb strip 14, a crankshaft 19 having an eccentric crank portion 20 is journaled at its opposite ends in the window frame with the forward end defining a socket terminal 21 exposed at the inner side of the frame for receiving a removable key 22 to turn the crankshaft. The movable jamb strip 14 is provided intermediate its ends with a lateral outwardly projecting thrust yoke or bail 23 with which the eccentric crank portion 20 is adapted to engage upon turning of the crankshaft in a clock-wise direction for retracting or shifting the movable jamb strip laterally outward when removing and emplacing the sashes in the frame. The eccentric crank portion 20 is adapted to engage with the intermediate portion of the outer surface of the movable jamb strip when the same is retracted and the crankshaft is turned in a counter clock-wise direction.

In order to limit the lateral inward movement of the jamb strip 14, a hooked abutment 24 is

provided on the lateral outward surface of the jamb strip 14 with which the eccentric crank portion 20 engages.

Means is provided for selectively supporting the sashes in any one of a plurality of positions without using sash cords, sash weights or pulleys and said means consists of ratchet shaped teeth 25 formed on the lateral inner surfaces of the jamb strips 13 and 14 defining vertically spaced ledges 26 connected by upwardly inclining faces 27. The side styles 28 of the sashes A and B are provided adjacent their lower ends respectively with spring projected latch bars 29 which are normally urged laterally outward into engagement with the teeth 25 by springs 30. The latch bars have socketed inner ends 31, which are disposed within the confines of the side styles 28 of the sashes and which are adapted to receive removable pull knobs 32 for withdrawing the outer terminals of the latch bars 29 from engagement with the teeth 25 when the sashes B and C are to be lowered. In order to facilitate the withdrawal of the latch bars and to provide means for raising and lowering the sashes, bail shaped handles 33 are secured to the side styles 28 in overlying relation to the pull knobs 32. It will be thus observed that by so locating the knobs 32 with reference to the handles, the operator may grasp the handles in the palm of the hand and with the thumb and third and fourth fingers, while the index and second fingers may engage around the pull knobs. In raising the sashes it is not essential to retract the latches as the same will ratchet over the upwardly inclined faces 27 of the teeth.

In order to make provision for locking one or both of the sashes in partially opened position, so as to prevent a person from the outside entering through the window, the jamb strip is provided with keeper openings 34 in the inclined faces 27 immediately above the ledges 26 into which the latch bars 29 are projected by the springs 30. It will, however, be obvious that when the latch bars 29 are disengaged from the lowermost keeper opening 34, it will not be necessary to hold the latch bars retracted as the rapid upward movement of the sash will cause the latch bar terminals to clear the keeper openings before they have an opportunity to enter the same. When it is desired to lock the sashes in partially opened condition, the pull knobs 32 are preferably disengaged from the socketed terminals 31 of the latch bars 29 and as shown, the connection is in the form of a swivelled screw 35 extending through the knob and having an exposed knurled head 36 for effecting the connection and disconnection thereof.

In order to set up a frictional resistance to the movement of the sashes in the frame and to insure a snug fit thereof and prevent rattling, the sashes may be provided with a leaf spring 40 which is secured to the side edge of each sash to exert a lateral pressure against the inner walls of the frame guide.

What is claimed is:

A window structure including a frame having channel-shaped uprights and vertical jamb strips at the opposite sides of the frame, sashes located between said jamb strips for guided vertical sliding movement with reference thereto, means for mounting, guiding and moving one of said jamb strips laterally towards and away from the other to permit of the removal and replacement of the sashes, said means including guide pins projecting laterally outward from the movable jamb strip adjacent the upper and lower ends thereof, vertically spaced cross straps located within and secured at their opposite ends to the opposite sides of one of the channel shaped uprights, said cross straps having guide bearing openings through which the guide pins extend, and means for shifting said movable jamb strip including a thrust yoke projecting laterally outward from said movable jamb strip and a crankshaft journaled in the opposite sides of said channel-shaped upright and having a crank portion engageable respectively with the yoke and the jamb strip for shifting the same from and to sash retaining position, and an abutment on said jamb strip with which the crank portion engages to retain the same in dead center position so as to lock the movable jamb strip in sash retaining position.

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