

May 3, 1960

G. R. NELSON, SR

2,934,799

WINDOW ASSEMBLY WITH REMOVABLE SASHES

Filed Aug. 29, 1957

2 Sheets-Sheet 1

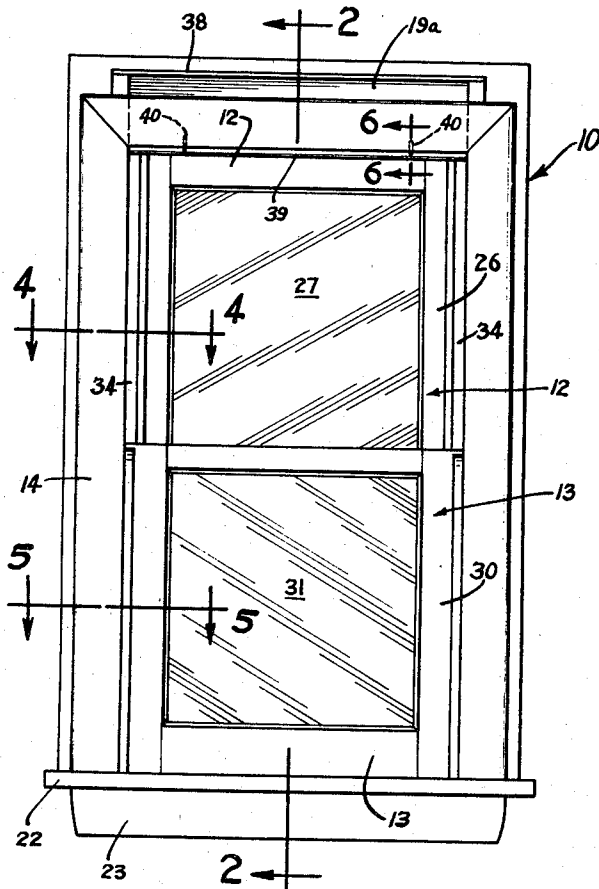


FIG. 1

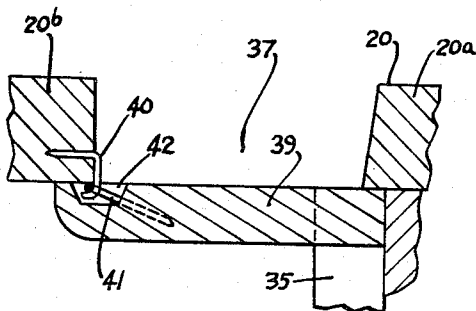


FIG. 6

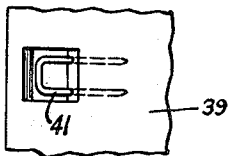


FIG. 7

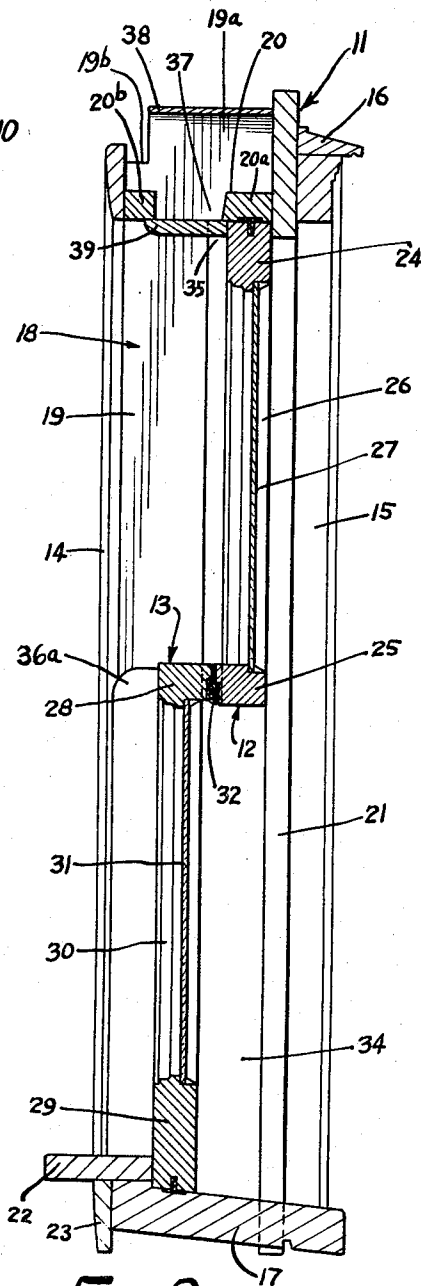


FIG. 2

INVENTOR.

GEORGE R. NELSON, SR.

BY

Williamson, Schroeder, Adams & Myers

ATTORNEYS

May 3, 1960

G. R. NELSON, SR

2,934,799

WINDOW ASSEMBLY WITH REMOVABLE SASHES

Filed Aug. 29, 1957

2 Sheets-Sheet 2

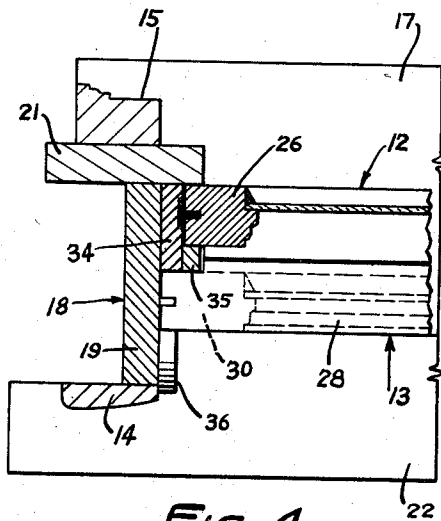


FIG. 4

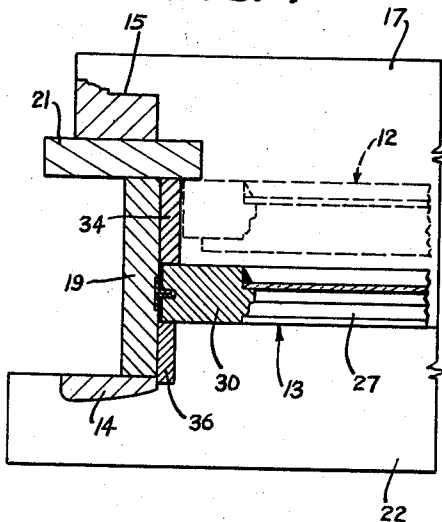


FIG. 5

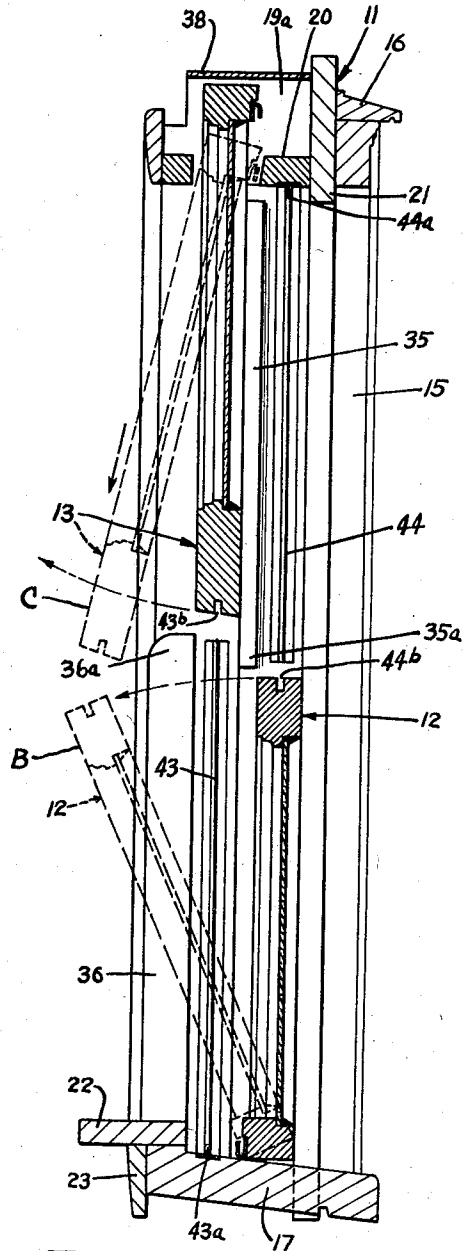


FIG. 3

INVENTOR.

GEORGE R. NELSON SR

BY

Williamson, Schroeder, Adams & Myers

ATTORNEYS

1

2,934,799

WINDOW ASSEMBLY WITH REMOVABLE SASHES

George R. Nelson, Sr., Almelund, Minn.

Application August 29, 1957, Serial No. 681,001

4 Claims. (Cl. 20—52.2)

This invention relates to a window construction and more specifically relates to a window construction of the type having removable sashes.

An object of my invention is to provide a new and improved window assembly of simple and inexpensive construction which facilitates ready and easy removal of the window sashes.

Another object of my invention is the provision of a novel window of substantially conventional construction wherein the lower and upper sashes are removable by only moving them upwardly and downwardly respectively and then swing them out of the frame.

A further object of my invention is the provision of an improved and novel window assembly wherein the lower sash is normally retained in its normal position for vertical, window-opening and closing movement, but is movable upwardly beyond its normal upper limit of travel so as to be free to swing outwardly of the window frame and then lowered outwardly thereof.

These and other objects and advantages of my invention will more fully appear from the following description made in connection with the accompanying drawings wherein like reference characters refer to the same or similar parts throughout the several views and in which:

Fig. 1 is an elevation view of the window assembly as viewed from the building interior;

Fig. 2 is a longitudinal section view taken on a vertical plane as indicated at 2—2 in Fig. 1;

Fig. 3 is another longitudinal vertical section view substantially similar to Fig. 2, but showing the window sashes in the positions facilitating removal thereof;

Fig. 4 is a detail transverse section view taken on a horizontal plane as indicated substantially at 4—4 in Fig. 1;

Fig. 5 is a detail transverse section view taken on a horizontal plane as indicated substantially at 5—5 in Fig. 1;

Fig. 6 is a detail section view taken on a substantially vertical plane as indicated at 6—6 in Fig. 1; and

Fig. 7 is a detail plan view of a portion of the apparatus shown in Fig. 6.

One form of the present invention is shown in the accompanying drawings and is completely described herein. The window assembly which is indicated in general by numeral 10 includes, in general, a window frame, indicated in general by numeral 11 and a pair of vertically movable window sashes 12 and 13.

The window frame 11 is of generally conventional construction which is common to many windows in which the sashes move upwardly and downwardly. The window frame 11 includes the inside form or inner casing 14, the outer casing 15 with the drip cap 16 affixed on the top thereof, the central window frame which includes the side stiles 19 and the frame header 20, the sill 17 which is affixed to the bottom of the frame, and the blind stop 21 disposed between the central window frame and the outside casing 15 and formed so as to project in-

2

wardly of the window opening from the outside casing and the window frame, both at the side stiles and the header. The window frame 11 also includes the stool 22 at the bottom of the inside casing and overlying the inner portion of the sill 17, and the apron 23 which projects downwardly from the stool 22 along the inner edge of the sill 17. All of the parts of the window frame 11 are securely affixed together as by nails (not shown).

The window frame thus far will be seen to be of conventional construction.

The upper and lower window sashes 12 and 13 are also of conventional construction, and are arranged in the window frame in confronting relation with each other. The upper window sash 12 has substantially conventional upper and lower frame elements 24 and 25 which are affixed to the side stiles 26 of the window sash, and of course the window sash has a pane of glass 27 therein. The lower window sash 13 has substantially conventional upper and lower frame elements 28 and 29 which are affixed to the sash stiles 30 and of course the lower sash 13 has a window pane 31 therein. Suitable weather stripping 32 is provided on the lower frame element 25 of the upper sash 12 and on the upper frame element 28 of the lower sash 13 so as to provide a weather seal between the window sashes when the same are closed.

The window frame 11 is provided with means defining sash-mounting tracks in which the upper and lower sashes 12 and 13 may be vertically moved. Such means include a pair of upright filler strips 34 at the opposite sides of the frame 11 and affixed to the side stiles 19 of the window frame 11 adjacent the blind stop 21 as by nails (not shown). The filler strips 34 extend downwardly to the sill 17 and upwardly to the header 20. A pair of parting strips 35 are affixed on the filler strips 34 and project downwardly therealong from the header 20 throughout the length of the upper window sash 12. As best seen in Fig. 3 the lower ends 35a of the parting strips 35 are disposed above the sill 17 a distance slightly in excess of the height of the upper window sash 12. It will therefore be seen that the parting stop 35 and the inner surface 21a of the blind stop 21 cooperatively define a sash-mounting track which extends downwardly from the frame header 20 to a position intermediate the upper and lower ends of the frame so as to permit the upper sash 12, when shifted downwardly into the position in Fig. 3 to tilt generally toward the other sash 13 and out of the window frame into the dotted position B as shown.

Such track-forming means also include a pair of upright, elongated window stops 36 affixed on the side stiles 19 of the frame 11 and in spaced relation with the filler strips 34. The window stops 36 project upwardly from the stool 22 throughout the length of the lower window sash 13, so that the upper ends 36a thereof are disposed intermediate the upper and lower ends of the frame and are spaced from the header 20 a distance slightly less than the height of the lower window sash 13. The window stops 36 and the filler strips 34 cooperatively define sash-mounting tracks at the opposite sides of the frame which extend upwardly from the stool 22 to a position intermediate the stool and frame header 20.

It should be noted, as is best seen in Fig. 4, that the upper window sash is somewhat narrower than the lower sash 13. The window panes 27 and 31 may be of identical sizes, but the sash stiles 26 of the upper sash 12 are substantially narrower than the side stiles 30 of the lower sash 13. Because the upper sash 12 is somewhat narrower than the lower sash 13, the upper sash 12 may, when shifted to the lowered position, as seen in Fig. 3, be swung outwardly into the dotted position B

and clear the window stops or guides for the lower sash 13.

However, although the upper sash 12, when shifted to its lowered position, is free to tilt toward the lower sash 13, the upper sash may not normally be tilted out of the window frame because the lower sash 13 remains in confronting relation with the upper sash as long as the lower sash 13 is within the normal limits of its vertical movement. Means are provided for limiting the normal vertical movement of the lower sash 13 and for permitting additional upward movement of the lower sash and out of confronting relation with the upper sash 12 so as to permit the sash 12 to be swung into the dotted position B of Fig. 3. To this end, the header 20 has an enlarged sash-receiving opening 37 formed therein and in alignment with the vertical movement of the lower sash 13. In the form shown, the header 20 is formed in two separate pieces, 20a and 20b, both of which are affixed at their ends to the frame stiles 19. The frame stiles 19 may extend upwardly from the header 20 as at 19a, and a cap 38 may be extended between or on top of the upper ends of the frame stiles 19 and affixed thereto. Cap 38 will prevent any material falling into the area immediately above header 20 so as to keep that area free and unobstructed.

The frame stiles 19 are notched at their upper ends adjacent the inside casing 14, as at 19b to receive the plaster of the inside building wall and thereby conceal the rough edge of the plaster. The inside casing 14 and the apron 23 will lie flush against the plaster of the building interior.

Movable stop or abutment means are provided for normally closing the opening 37 in the header 20 so as to provide an obstruction to movement of the sash 13 upwardly through the opening 37. In the form shown, such means includes a window head stop 39 which underlies the front and rear portions of the header 20a and 20b respectively and extends across the window frame substantially throughout the length of the header 20. The window head stop lies upon the upper ends of the parting stop 35 to be supported thereby, but removable therefrom. The front edge portion of the stop 39 is supported from the front edge piece 20b of header 20 by a depending hook 40, the lower end of which is removably received in a generally U-shaped or staple shaped element 41 which is affixed to the window head stop 39 and is recessed thereinto as at 42. The window head stop 39 is removable from the window frame and may thereby be shifted out of obstructing relation with respect to the opening 37.

It will be noted that the substantially conventional design of the window construction permits the utilization of conventional weather stripping around the edges of the sashes which engage or are moved along the window frame. Weather strippings 43 and 44 are affixed as by tacking to the side stiles 19 of the window frame and on the filler strip 34 respectively, and the weather stripping is extended across the sill 17 as at 43a and across the header 20 as at 44a. Of course the window sashes 12 and 13 are grooved as at 43b and 44b to receive the weather stripping therein.

Of course it should be understood that because of the substantially conventional design of the window sashes, sash balancers to prevent transverse movement thereof in the window frame may be applied to the sashes in any conventional manner. In one form a leaf spring might be embedded into the sash stile for engaging the weather stripping.

In order to remove the lower window sash 13, the window head stop 39 must be moved out of obstructing relation with respect to the opening 37. The lower window sash 13 will then be moved upwardly into opening 37 and beyond the upper end of the window stops 36. The lower window sash may then be swung outwardly at its lower edge into the dotted position C of Fig. 3. The

lowering of the sash 13 when in the tilted position causes it to be removed completely from the window frame.

To subsequently remove the upper sash 12, the upper sash will be lowered into the full line position shown in Fig. 3 and will then be swung into the dotted position B. When the upper sash 12 is being swung outwardly, it passes beneath the lower ends 35a of the parting stops 35, and passes between the window stops 36 on opposite sides of the window frame. The sash 12 may then be lifted out of the window frame.

It should be recognized that the upper sash 12 may be removed from the window frame without entirely removing the lower sash 13. However, because the lower sash 13 remains, continuously, in confronting relation with the upper sash 12 when the window head stop is in proper position, the removal of the window head stop 39 and the upward movement of the lower sash 13 into the opening 37 is necessitated to facilitate outward tipping or swinging of the upper sash 12 for removing it.

It will of course be understood that the window sashes 12 and 13 may be reapplied or assembled with the window frame in a manner substantially as easy as the removal. It should be understood that the upper window sash 12 must be inserted before the lower sash 13 is moved downwardly out of the opening 37.

It will be seen that I have provided a new and improved window construction of substantially conventional design with the exception that by the moving of one part of the window assembly, the upper and lower window sashes are readily and easily removed through the inner side of the window frame so that the sashes may be removed from the building interior for washing and other maintenance.

It will, of course, be understood that various changes may be made in the form, detail, arrangement and proportion of the parts without departing from the scope of my invention which consists of the matter described herein and set forth in the appended claims.

What I claim is:

1. A window assembly comprising a frame, a unitary lower sash and a unitary upper sash in confronting relation with each other in the frame, track-defining guides on opposite sides of the window frame and mounting the lower sash for vertical movement, said guides having lower portions engaging and retaining the lower sash when in its lowermost position, said upper sash being dimensioned to tilt about its lower edge and pass between the lower portions of said guides and toward the lower sash for removal from the frame, means guiding the upper sash in vertical movement and permitting the upper sash when lowered to tilt about its lower edge toward said guides and pass between the lower portions of said guides and outwardly of the window frame, a stop movably mounted on the frame adjacent the top thereof in obstructing relation with the lower sash to limit upward movement thereof for maintaining the lower sash in confronting relation with the upper sash to prevent outward tilting thereof, said stop being movable out of obstructing relation with the lower sash to permit additional upward movement of the lower sash out of confronting relation with the upper sash when the upper sash is lowered to be tilted out of the frame whereby to permit ready and easy removal of the upper sash.

2. A window assembly comprising a window frame having a header at the top thereof with a sash-receiving opening therein, a lower sash and an upper sash in confronting relation with each other in the frame, track-defining guides on opposite sides of the window frame in alignment with the opening in the header and mounting the lower sash therebetween for vertical movement, said guides having lower portions engaging and retaining the lower sash when in its lowermost position, said upper sash being dimensioned to tilt about its lower edge and pass between the lower portions of said guides and toward the lower sash for removal from the window frame, means

5

guiding the upper sash in vertical movement and permitting the upper sash when lowered to tilt about its lower edge toward said guides and pass between the lower portions of said guides and outwardly of the window frame, and said lower sash being dimensioned to remain in confronting relation with the upper sash when the lower sash is confined within the window frame, whereby the lower sash may be moved upwardly into said opening to permit the upper sash to tilt out of the window frame when lowered.

3. A window assembly comprising a window frame having a header at the top thereof with an opening therein which is larger than the size of a sash, a unitary lower sash and a unitary upper sash in the frame, means mounting the upper sash in the frame, means defining a pair of upright and opposed sash mounting tracks on opposite sides of the window frame and in alignment with the opening in the header, said tracks slidably mounting the lower sash for vertical movement and said tracks having upper ends intermediate the top and bottom of the frame but spaced from the header a distance less than the height of the lower sash, the opening in the header being shaped and sized such as to permit swinging of the lower sash to an inclined position when the lower sash is in the opening, and a header stop movably mounted on the header in underlying and covering relation with the opening in the header to engage the lower sash and limit upward movement thereof, and means releasably securing said stop to the header to permit movement of the stop out of obstructing relation with the opening and thereby permit upward movement of the lower sash into the opening and out of the tracks and thereby permit tilting of the lower sash out of the frame.

4. A window assembly comprising a window frame having a header at the top thereof with a sash-receiving

6

opening therein, said frame having side stiles and blind stops on the side stiles, a lower sash and an upper sash in the frame, filler strips on the side stiles adjacent the blind stops and parting strips on the filler strips, said blind stops, filler strips and parting strips cooperatively guiding the upper sash for vertical movement, the parting strips having lower ends spaced above the bottom of the frame a distance greater than the height of the upper sash, window stops on the side stiles and spaced from the filler strips to coact with the filler strips and side stiles in guiding the lower sash for vertical movement, said window stops having upper ends spaced vertically from the header a distance less than the height of the lower sash, the thickness of said window stops being no greater than the thickness of the filler strips whereby the upper sash may pass between the window stops, and the opening in the header being shaped and sized so as to permit swinging of the lower sash to an inclined position when the lower sash is in the opening, means defining an unobstructed area above the opening in the header, and a removable obstruction on the header and in underlying relation with the opening therein.

References Cited in the file of this patent

UNITED STATES PATENTS

283,384	Dwyer	Aug. 21, 1883
356,857	Tintrop	Feb. 1, 1887
414,965	Barr	Nov. 12, 1889
503,189	Armbruster	Aug. 15, 1893
1,486,653	Geroux	Mar. 11, 1924
2,141,348	De Pietro	Dec. 27, 1938
2,564,299	Coughenour	Aug. 14, 1951
2,828,513	Nardulli	Apr. 1, 1958