Jan. 15, 1935. L. R. SNYDER 1,987,757

WINDOW STRUCTURE

Filed Jan. 20, 1934

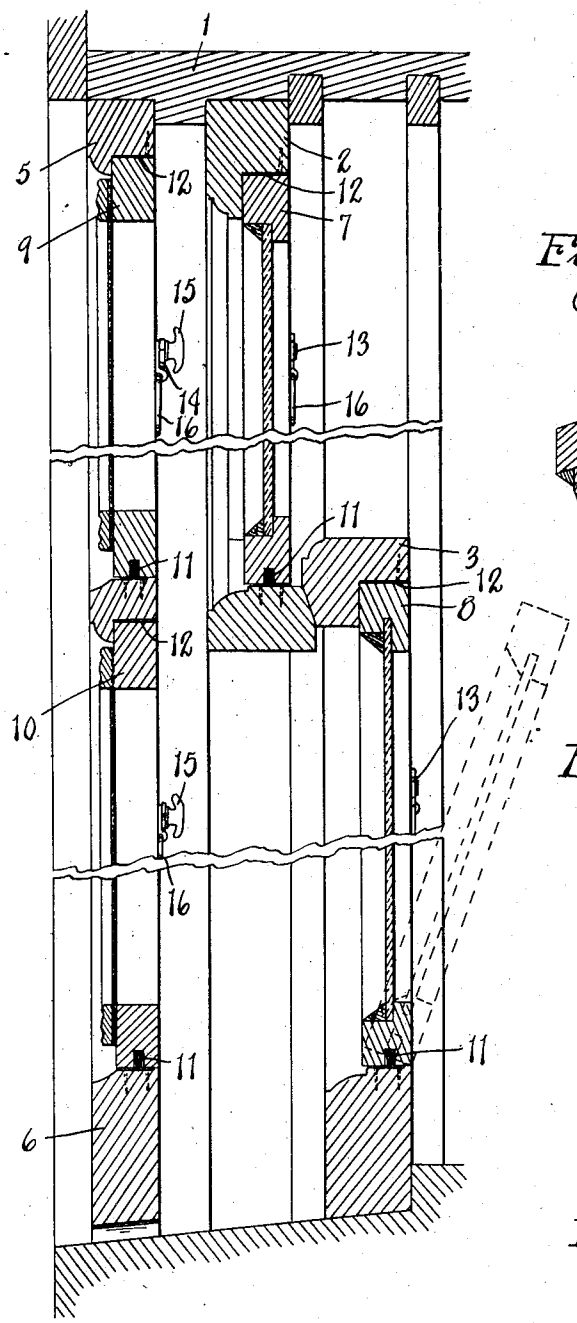


Fig. 1

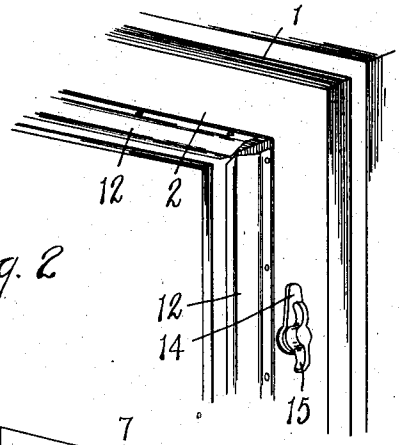


Fig. 2

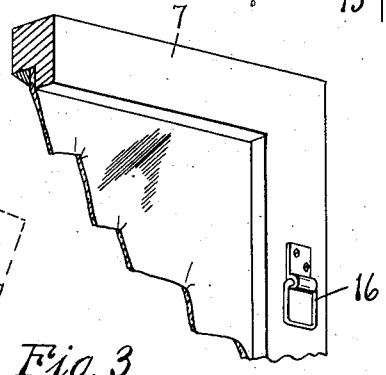


Fig. 3

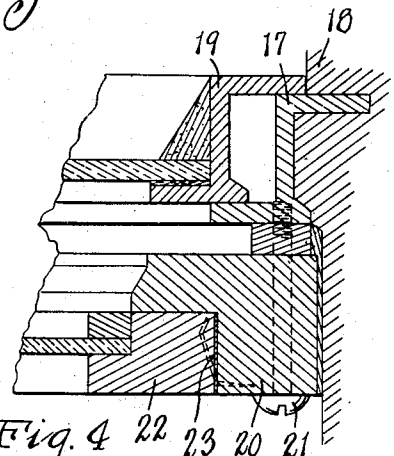


Fig. 4

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WINDOW STRUCTURE

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7 Claims. (Cl. 20—56.1)

The main objects of my invention are:

First, to provide a window structure having removable glazed and/or screened sashes which can be manipulated with comparatively little effort and from the inside of the window.

Second, to provide a window structure of this character having improved and highly effective weather sealing means associated therewith, such weather sealing means acting to releasably hold the sash in place.

Third, to provide an improved double window assembly having upper and lower frames provided with interchangeable glazed and screened sashes which can be manipulated from the inside of the window, the arrangement being such that the amount and direction of air passing through the window can be controlled in volume and direction.

Fourth, to provide a window having the above desirable features and characteristics and which is simple and economical in its parts and very efficient and highly effective in use.

Objects relating to details and economies of my invention will appear from the description to follow. The invention is defined and pointed out in the claims.

A structure which is a preferred embodiment of my invention is illustrated in the accompanying drawing, in which:

Fig. 1 is a fragmentary transverse vertical section of a double window assembly embodying the features of my invention.

Fig. 2 is an enlarged fragmentary perspective view of the casing.

Fig. 3 is an enlarged fragmentary perspective view of a sash.

Fig. 4 is an enlarged horizontal fragmentary section of a modification, showing my invention embodied in a casement window.

Referring to the drawing, numeral 1 indicates a window casing in which are mounted for vertical sliding movement an upper inner window sash frame 2 and an inner lower window sash frame 3. Also mounted in the casing are integral upper and lower outer sash frames 5 and 6. The inner and outer sash frames are spaced as illustrated for the purpose of providing a dead air space therebetween when it is desired to prevent the transmission through the window of cold air. In the illustrated embodiment, the inner sash frames are provided with glazed sashes 7 and 8, respectively, while the outer sash frames are provided with screened sashes 9 and 10, respectively.

Glazed sashes are also provided for the outer sash frames, such glazed sashes being interchangeable with the screened sashes 9 and 10. Screened sashes interchangeable with the glazed sashes 7 and 8 for the inner frames may also be provided if desired, although this is unnecessary. Inasmuch as the sashes and seats therefor in the frames are similar, only one will be described in detail, this being the lower inner sash and frame of Fig. 1.

The frame 3 is provided with top, side and bottom seats for receiving the sash 8, the sash and bottom sash seat having a longitudinal groove and tongue connection 11 constituting sealing means and a pivot for manipulating the sash from the inside as indicated by the dotted lines. On the frame in the side walls of the top and side sash seats, I provide spring weatherstrips 12 for coaction with the sash to releasably hold the same in place. The sash is locked to the frame by means of pivoted keepers 13 mounted on the side elements of the frame. The keepers 13 associated with the inner frame are adapted to be manipulated with a tool such as a screw driver while the keepers 14 associated with the outer frames are provided with finger pieces 15 for turning them.

For pulling the sashes inwardly from their seats, I provide pulls 16 pivotally mounted on the uprights of the sash. By means of such pulls the sashes can be readily manipulated from the inside of the window.

As pointed out above, for cold winter weather the inner and outer and upper and lower frames of the window are provided with glazed sashes. This results in the formation of a dead air space between the inner and outer windows which effectively prevents the passage of cold air through the window. The dead air space also acts as an insulator against the conduction of heat through the window. In mild or temperate rainy weather the lower outer frame can be provided with a screened sash and the upper inner frame can be opened by sliding the same in the casing or by removing the glazed sash therefrom. Thus, with the lower inner frame closed, rain is prevented from passing through the window, yet fresh air is admitted upwardly between the inner and outer frames. Other combinations are possible which will occur as the necessity arises. For summer weather the inner frames can be provided with glazed sashes or none at all, as desired, the outer frames in this case being provided with screened sashes as shown.

Referring to the casement illustrated by Fig. 4 of the drawing, numeral 17 indicates a metal outer frame fixed in the wall 18 as shown. The glazed outer metal sash 19 removably fits the outer frame 17, the sash being hinged to the frame, if desired.

The inner window frame 20 is fitted in the wall 18 and secured to the outer frame 17 by means of bolts 21.

The inner window frame is provided with top, side and bottom seats as pointed out above in connection with Figs. 1 to 3. A glazed sash 22 and a screened sash (not shown) are adapted to fit within the frame on the seats. The sash and the bottom sash seat have a longitudinal groove and tongue connection constituting sealing means and a pivot, as pointed out above, the side walls of the top and side sash seats being provided with weather strips 23 for coaction with the sash to releasably hold the same in place. With this arrangement, the outer glazed metal sash 19 can be opened as desired and the glazed sash 22 can be replaced by a similar screened sash to provide ventilation.

It will be appreciated by those skilled in the art that the frames and sash can be made of hollow metal instead of wood or metal as shown without departing from the invention. Further, wood frames can be used with hollow metal or steel sash and vice versa. Also, any type of frame can be used, such as inwardly swinging inner casement with outwardly swinging outer casement, or one of these with a fixed frame or upper and lower sliding frames. If desired, only one frame of any type may be equipped with my removable sash which can be glazed and/or screened to suit conditions likely to arise from weather changes.

I have illustrated and described my improvements in embodiments which I have found very practical. I have not attempted to illustrate or describe other embodiments or adaptations as it is believed this disclosure will enable those skilled in the art to embody or adapt my improvements as may be desired.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. A window comprising a casing, inner upper and lower frames mounted in said casing for vertical sliding movement, outer integral upper and lower frames mounted in said casing, said frames having top, side and bottom sash seats, a glazed and a screened sash for each frame adapted to fit therein on said seats, the sash and bottom sash seat having a longitudinal groove and tongue connection constituting sealing means and a pivot, spring weatherstrips on each of said frames in the side walls of said top and side sash seats for coaction with the sash to releasably hold the same in place, and means for locking the sash to the frame.

2. A window comprising a casing, an inner frame mounted in said casing for vertical sliding movement, an outer frame mounted in said casing, said frames having top, side and bottom sash seats, a glazed and a screened sash for each frame adapted to fit therein on said seats, the sash and the bottom sash seat having a longitudinal groove and tongue connection constituting sealing means and a pivot, spring weatherstrips on each of said frames in the side walls of said top and side sash seats for coaction with the sash to releasably hold the same in place, and means for locking the sash to the frame.

3. A window comprising a frame provided with top, side and bottom sash seats, a sash adapted to fit within said frame on said seats, said sash and the bottom sash seat having a longitudinal groove and tongue connection constituting sealing means and a pivot, spring weatherstrips on said frame in the side walls of said top and side sash seats for coaction with said sash to releasably hold the same in place, and means for locking said sash to the frame.

4. A window comprising a casing, an outer frame fixed in said casing, a glazed sash removably fitting said outer frame, an inner window frame fitting said casing and secured to said outer frame, said inner window frame having top, side and bottom sash seats, a glazed and a screened sash adapted to fit within the inner frame on said seats, said sash and bottom sash seat having a longitudinal groove and tongue connection constituting sealing means and a pivot, and spring weatherstrips on said frame in the side walls of said top and side sash seats for coaction with the sash to releasably hold the same in place.

5. A window comprising a casing, an outer frame fixed in said casing, a glazed sash removably fitting said outer frame, an inner window frame fitting said casing and secured to said outer frame, said inner window frame having top, side and bottom sash seats, a sash adapted to fit within the frame on said seats, said sash and one sash seat having a longitudinal groove and tongue connection constituting a pivot, and spring weatherstrips on said frame in the side walls of said sash seats for coaction with the sash to releasably hold the same in place.

6. A casement window having inner and outer frames provided with sash seats, spring weatherstrips on said sash seats, and interchangeable sashes fitting said seats, there being a pivot-like connection between one side of said sashes and their seats.

7. A storm window having upper and lower frames provided with sash seats, interchangeable sashes fitting said seats, and spring weatherstrips sealing said sashes in place in their seats.

LEON R. SNYDER.