May 3, 1955 G. M. WOOTEN 2,707,536

WINDOW

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Fig. 1

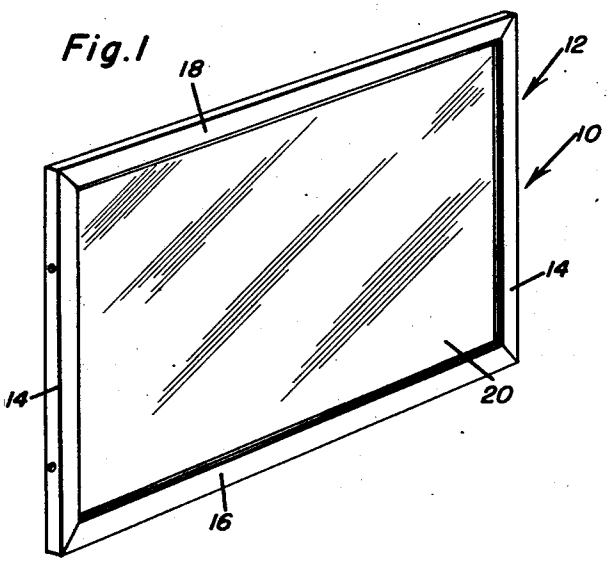


Fig. 3

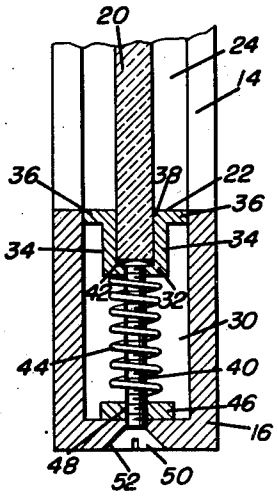
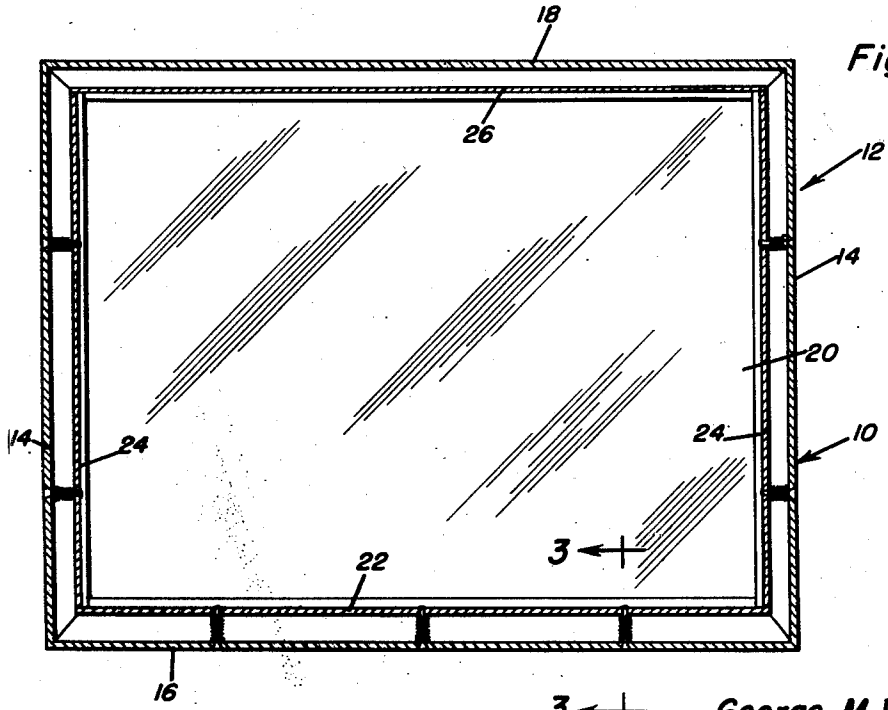


Fig. 2



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Fig. 4

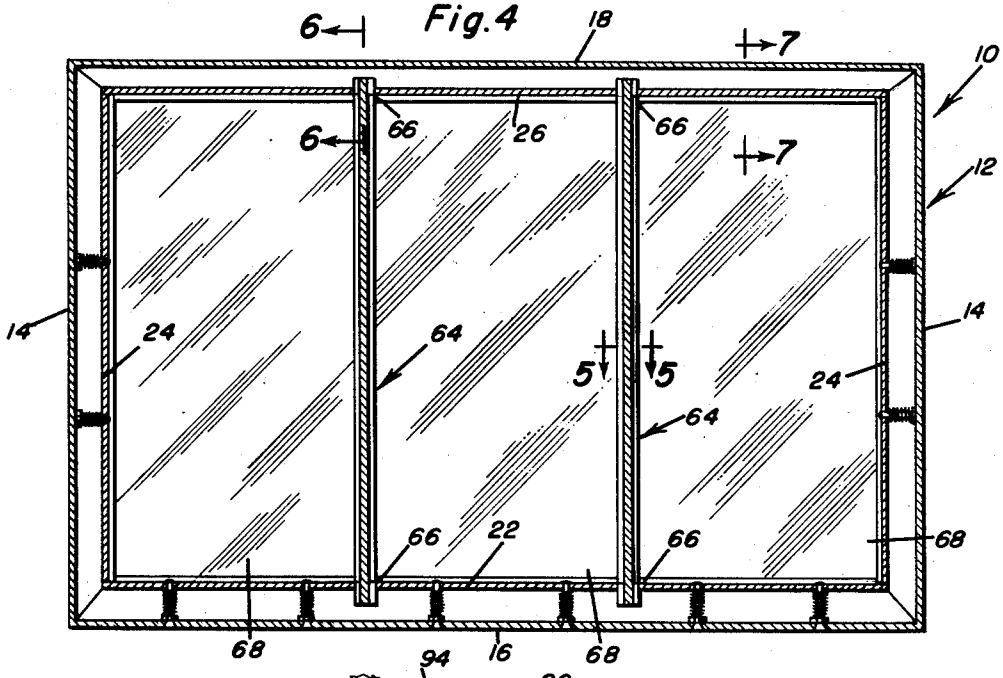


Fig. 9

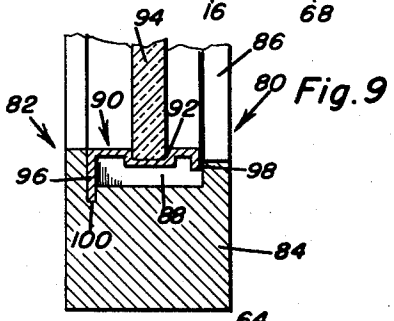


Fig. 6

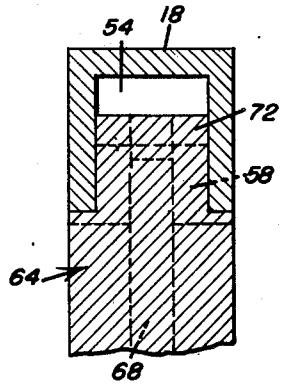
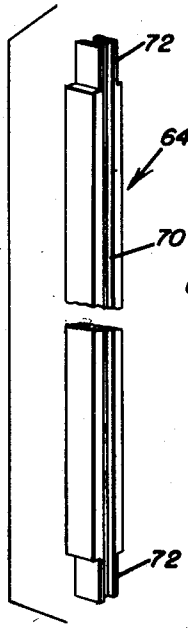


Fig. 8



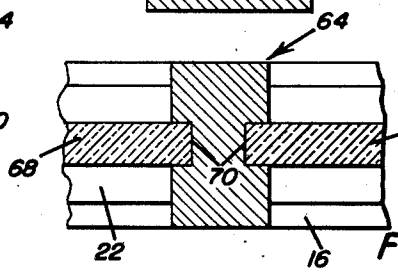
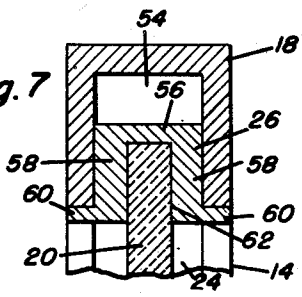


Fig. 5

Fig. 7



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WINDOW

George M. Wooten, Appomattox, Va.

Application October 12, 1953, Serial No. 385,478

2 Claims. (Cl. 189—76)

This invention relates in general to improvements in window construction, and more specifically to an improved manner of mounting panes in sash frames.

The primary object of this invention is to provide an improved manner of mounting panes in sash frames which permits a pane to be conveniently mounted in a sash frame in sealed relation therewith without the use of putty or other similar sealing materials.

Another object of this invention is to provide an improved pane mounting means which permits the resilient mounting panes within a window frame to facilitate ease of inserting and removing panes from their associated sash frames.

A further object of this invention is to provide an improved window sash construction which includes pane mounting strips resiliently carried by a sash frame and sealingly engaging panes associated therewith, the pane mounting strips being quickly and easily positionable to retain a pane in its proper position.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a perspective view of an improved window which conforms to the spirit of this invention;

Figure 2 is a vertical sectional view taken through the center of the sash frame of Figure 1 and shows the manner in which the pane is mounted therein, the view being on an enlarged scale;

Figure 3 is an enlarged fragmentary sectional view taken substantially upon the plane indicated by the section line 3—3 of Figure 2 and shows the exact manner in which a pane is retained in the sash frame by pane mounting strips;

Figure 4 is an enlarged vertical sectional view similar to Figure 2 and shows a modified form of sash which includes muntin bars;

Figure 5 is an enlarged fragmentary horizontal sectional view taken substantially upon the plane indicated by the section line 5—5 of Figure 4 and shows the general cross section of the muntin bars and the manner in which panes are sealed therewith;

Figure 6 is an enlarged fragmentary vertical sectional view taken substantially upon the plane indicated by the section line 6—6 of Figure 4 and shows the relationship between an upper end of one of the muntin bars and the upper frame rail of the sash frame;

Figure 7 is an enlarged fragmentary vertical sectional view taken substantially upon the plane indicated by the section line 7—7 of Figure 4 and shows the relationship of the upper frame rail of the sash frame, an upper pane mounting strip and an upper edge of the pane;

Figure 8 is an enlarged perspective view of one of the muntin bars, the intermediate portion thereof being omitted; and

Figure 9 is an enlarged fragmentary vertical sectional view taken through the lower portion of a modified form of sash construction and shows the relationship of the modified form of pane mounting strip with respect to a lower frame rail of the sash frame.

Referring now to the drawings in detail, it will be seen that there is illustrated in Figure 1 a preferred form of window construction which is referred to in general by the reference numeral **10**. The window construction **10** includes a sash frame which is referred to in general by the reference numeral **12**. The sash frame **12** includes a pair of spaced parallel stiles **14** which are connected at their lower ends by a lower horizontal frame rail **16** and at their upper ends by an upper horizontal frame rail **18**. Removably carried by the sash frame **12** is a conventional pane **20**.

Referring now to Figure 2 in particular, it will be seen that the pane **20** is retained within the sash frame **12** by a lower pane mounting strip **22**, vertical pane mounting strips **24** and an upper pane mounting strip **26**. The pane mounting strips **22** and **24** are identical and are adjustable relative to the sash frame **12** whereas the pane mounting strip **26** is relatively fixed with respect to the sash frame **10** and is of a different construction from the other pane mounting strips.

Referring now to Figure 3 in particular, it will be seen that the lower horizontal frame rail **16** is generally channel-shaped in cross section and includes an inwardly open peripheral recess **30**. The peripheral recess **30** has disposed therein the lower horizontal pane mounting strip **22**. The pane mounting strip **22** is generally channel shaped in cross section and includes a lower web portion **32** which has formed integral with the edges thereof upstanding flanges **34**. Formed integrally with the upstanding flanges **34** are horizontal flanges **36** which extend towards and engage vertical boundaries of the recess **30**.

It will be noted that the web portion **32** and the flanges **34** form a pocket **38** which receives the lower peripheral edge of the pane **20**. In order that the pane **20** may be disposed within the pocket **38**, the mounting strip **22** is mounted for movement down into the recess **30**.

In order that the pane mounting strip **22** may be selectively positioned within its recess **30**, there is provided a plurality of longitudinally spaced fasteners **40**. The fasteners **40** have their upper ends passed through the web portion **32** and are riveted over as at **42** to prevent upward movement of the pane mounting strip **22** relative thereto. Carried by the fastener **40** is a coiled spring **44** which engages the underside of the web portion **32** and urges the pane mounting strip **22** upwardly out of the recess **30**. Disposed at the bottom of the recess **30** is an elongated strip **46** which is provided with an internally threaded bore **48** threadedly receiving the fastener **40**. The fastener **40** also includes an enlarged head **50** which is countersunk in a countersunk bore **52** in the bottom surface of the lower horizontal frame rail **16**.

It will be seen that when the fastener **40** is turned in a counter-clockwise direction to unscrew it, it will move downwardly out of the recess **30**. Inasmuch as the pane mounting strip **22** is connected to the fastener **40**, downward movement of the fastener **40** will result in likewise downward movement of the pane mounting strip **22** against the resistance of the coil spring **44**. After the pane mounting strip **22** has moved downwardly into the recess **30** a sufficient distance, the pane **20** may be conveniently removed from the seat **38**.

Although the pane mounting strips **24** function in exactly the same manner as the pane mounting strip **22**, the pane mounting strip **26** is of a different construction, as is best illustrated in Figure 7. The up-

per horizontal frame rail **18**, like the lower horizontal frame rail **16** and the stiles **14**, is channel-shaped in cross section and includes an inwardly open peripheral recess **54**. The upper pane mounting strip **26** is generally channel-shape in cross section and includes a web **56** which has formed integral with the edges thereof depending flanges **58**. The flanges **58** engage the vertical boundaries of the recess **54** and terminate in flanges **60** which abut against the inner edges of the upper horizontal frame rail **18**. The web **56** and the flanges **58** combine to form a seat **62** receiving the upper peripheral edge of the pane **20**. Inasmuch as the pane **20** is urged upwardly by the lower pane mounting strip **22**, it will be seen that the upper pane mounting strip **26** need not be adjustable.

Referring now to Figure 4 in particular, it will be seen that the window **10** is provided with vertically extending muntin bars which are referred to in general by the reference numeral **64**. The muntin bars **64** extend vertically between the lower horizontal mounting strip **22** and the upper horizontal mounting strip **26** and have end portions thereof seated in sockets **66** therein. Disposed between the muntin bars **64** and the sash frame **12** are a plurality of smaller panes **68**.

As is best illustrated in Figures 5, 6 and 8, each muntin bar **64** is generally rectangular in cross section and has pane receiving sockets **70** disposed in opposed relation on opposite sides thereof. Further, the upper and lower ends of each muntin bar **64** are of a reduced cross section as at **72**. This permits the ready insertion of the muntin bars **64** in the sockets **66** in the pane mounting strips. It will be understood that the reduced cross sectional ends **72** of the muntin bars **64** are of a width to snugly fit within the recesses in their associated horizontal frame rails **22** and **26**, as is best illustrated in Figure 6.

It will be understood that other than the addition of the muntin bars **64** in utilization of relatively small panes **68**, the window construction of Figure 4 does not differ from that of Figure 2.

Referring now to Figure 9 in particular, it will be seen that there is illustrated a modified form of window construction which is referred to in general by the reference numeral **80**. The window construction **80** includes a sash frame which is referred to in general by the reference numeral **82**. Although only a lower horizontal frame rail **84** and one stile **86** of the sash frame **82** has been illustrated, it will be understood that the sash frame **82** is generally rectangular in outline like the sash frame **12**.

The horizontal frame rail **84** is provided with an inwardly open peripheral recess **88** in which is seated a pane mounting strip which is referred to in general by the reference numeral **90**. The pane mounting strip **90** is generally channel-shaped in cross section and includes a centrally located inwardly open seat **92** receiving a peripheral edge of a pane **94**. The pane mounting member **90** also includes a pair of depending flanges **96** and **98**. The flange **96** has the lower edge thereof seated in a longitudinally extending, relatively narrow recess **100** which opens into the recess **88**. The flange **98** is in sealing engagement with a vertical boundary of the recess **88** opposite from the flange **96**.

It will be understood that the stiles **86** of the sash frame **82** is provided with pane mounting strips identical with the pane mounting strip **90**. However, the upper horizontal frame rail (not shown) will be provided with a pane mounting strip (not shown) which is similar to the pane mounting strip **26**. When it is

desired to insert the pane **94** in the sash frame **82**, the portions of the pane mounting strips remote from their flanges **96** are depressed into the recesses **88**. Then the pane **94** may have its upper peripheral edge inserted in an associated seat (not shown) in the upper pane mounting strip and then shoved inwardly until it seats in the seats **92** in the pane mounting strips **90**. The pane mounting strips **90** may then be released and due to their resiliency will move back to their normal positions to resiliently engage the pane **94** and retain it in its proper sealed relation with respect to the sash frame **80**.

It will be understood that the panes described hereinabove will be removed from their associated sash frames through a reversal of the processes disclosed for their insertions.

From the foregoing, it will be seen that there has been illustrated and described improved pane mounting means whereby panes and window sashes may be conveniently and quickly inserted and removed from their associated sash frame. Further, it will be seen that there has been devised means for securely mounting panes in sealed relation to their associated sash frames without the use of putty or other similar materials.

From the foregoing, the construction and operation of the device will be readily understood and further explanation is believed to be unnecessary. However, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the appended claims.

What is claimed as new is as follows:

1. A window construction comprising a sash frame, said sash frame being provided with an inner peripheral recess, pane mounting strips carried by said sash frame in said recess, a pane retained in said sash frame by said mounting strips, springs carried by said sash frame in said recess resiliently retaining said mounting strips in a pane retaining position, fasteners carried by said sash frame connected to said mounting strips, said fasteners threadedly engaging said sash frame to facilitate movement of said mounting strips to recessed positions for permitting insertion and removal of said pane.

2. A window construction comprising a sash frame, said sash frame being provided with an inner peripheral recess, pane mounting strips carried by said sash frame in said recess, a pane retained in said sash frame by said mounting strips, springs carried by said sash frame in said recess resiliently retaining said mounting strips in a pane retaining position, fasteners carried by said sash frame connected to said mounting strips, said fasteners threadedly engaging said sash frame to facilitate movement of said mounting strips to recessed position for permitting insertion and removal of said pane, said spring being disposed over said fasteners.

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