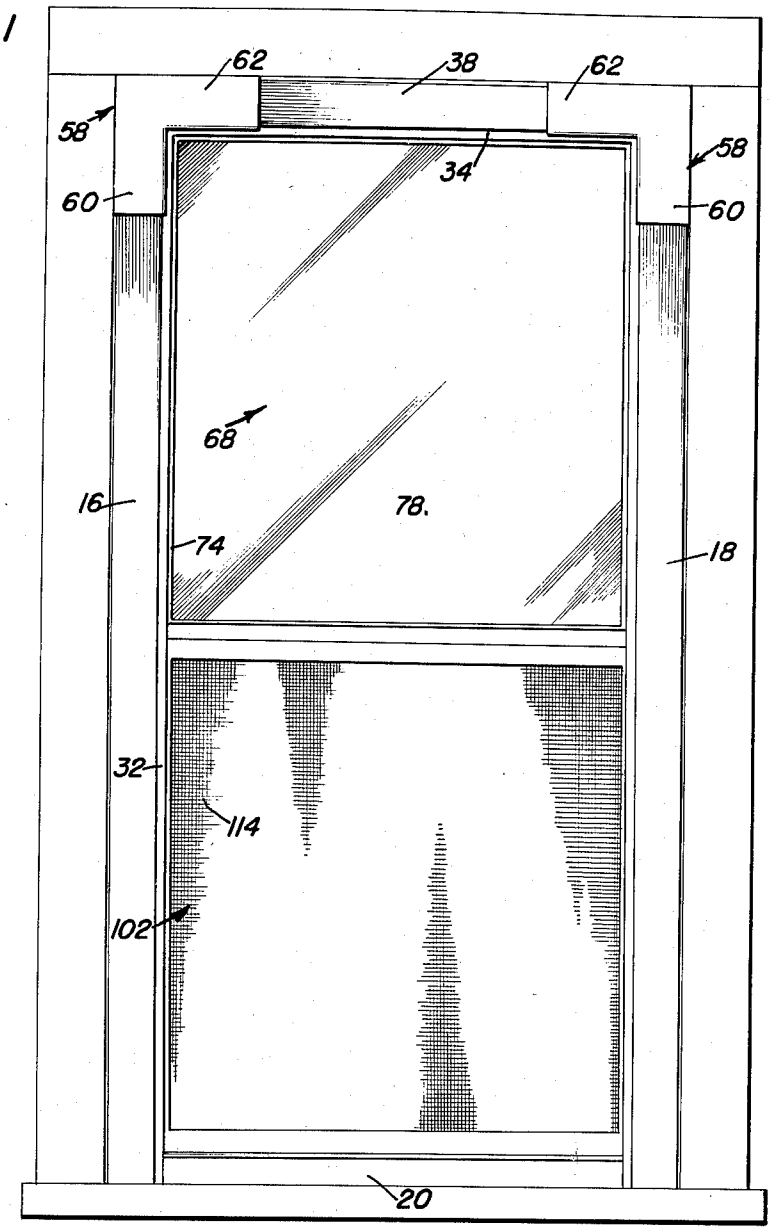
Dec. 20, 1955 W. G. SMITH 2,727,596

SEASONAL WINDOW STRUCTURE

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Fig. 1



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SEASONAL WINDOW STRUCTURE

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Fig. 2

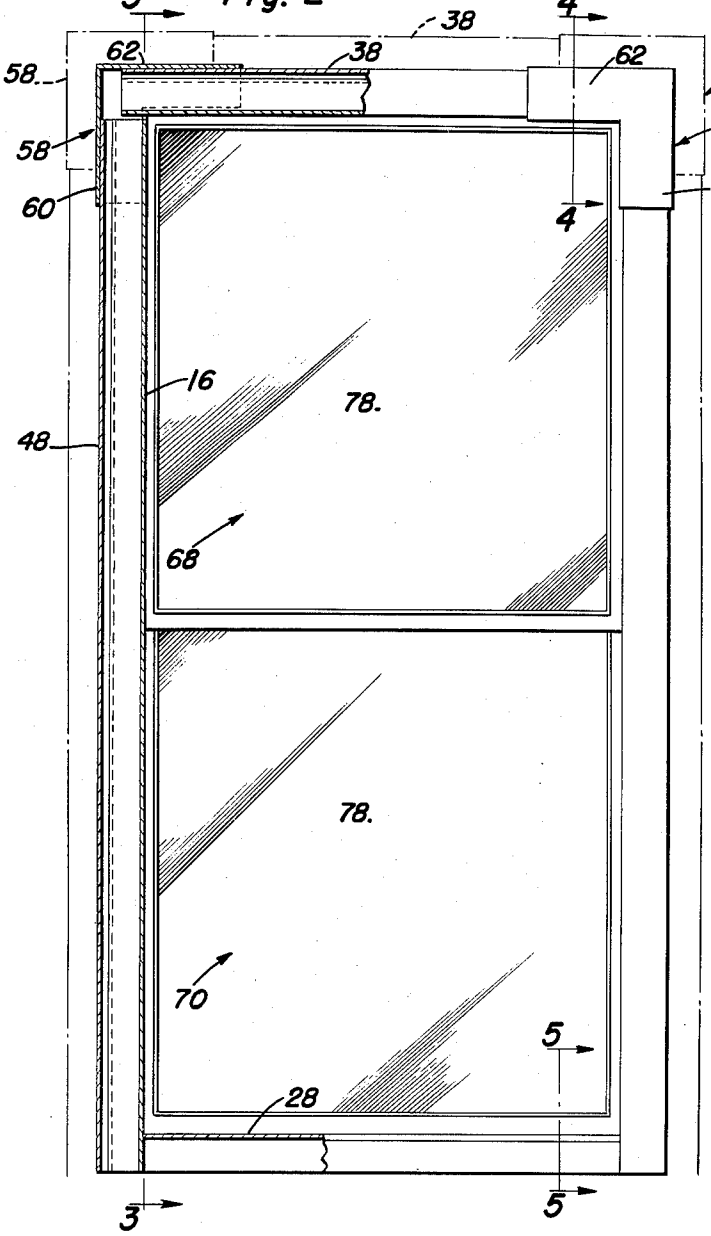
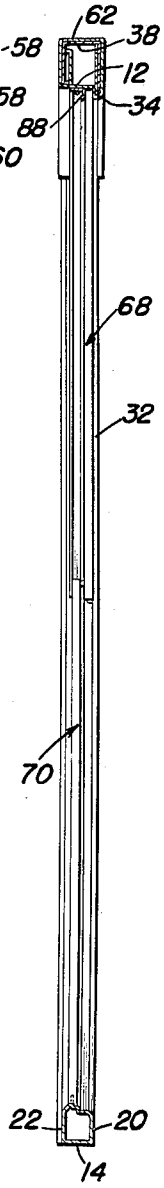


Fig. 3



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SEASONAL WINDOW STRUCTURE

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Fig. 4

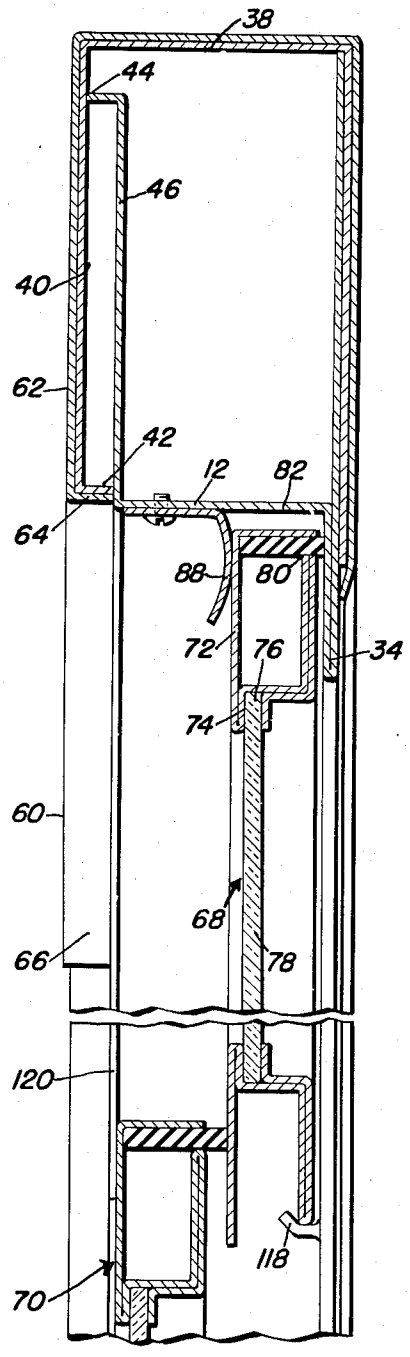
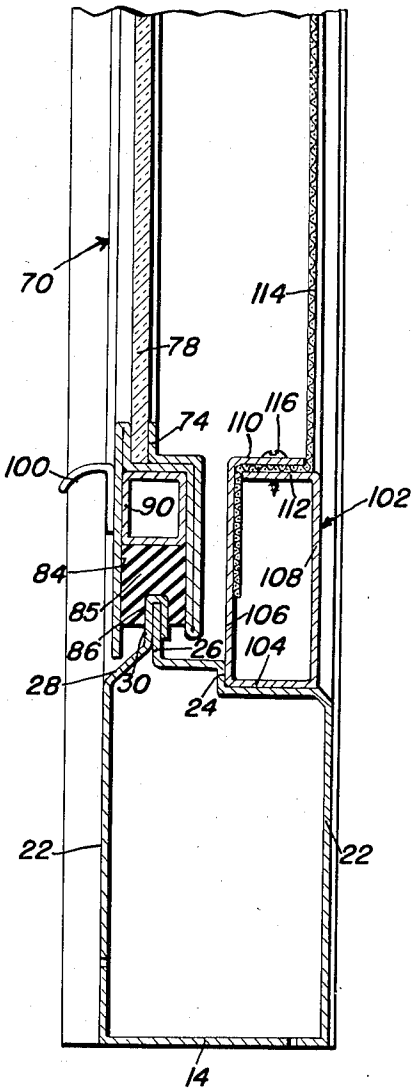


Fig. 5



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SEASONAL WINDOW STRUCTURE

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Fig. 6

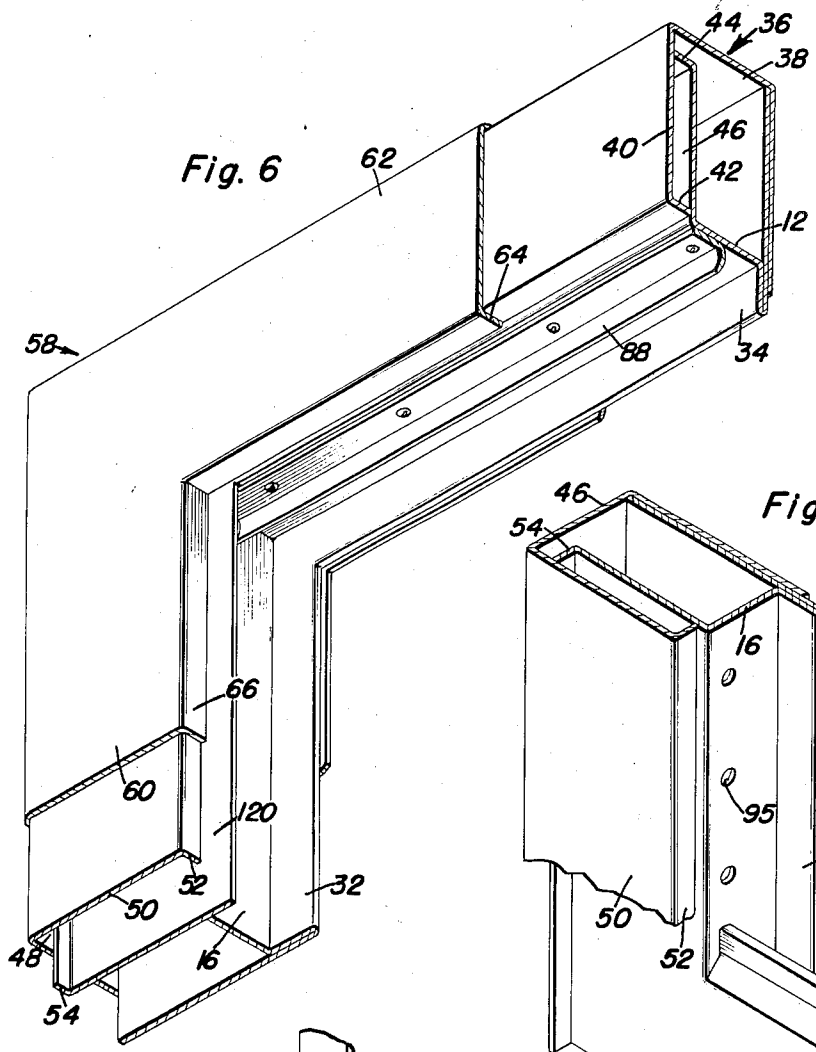


Fig. 7

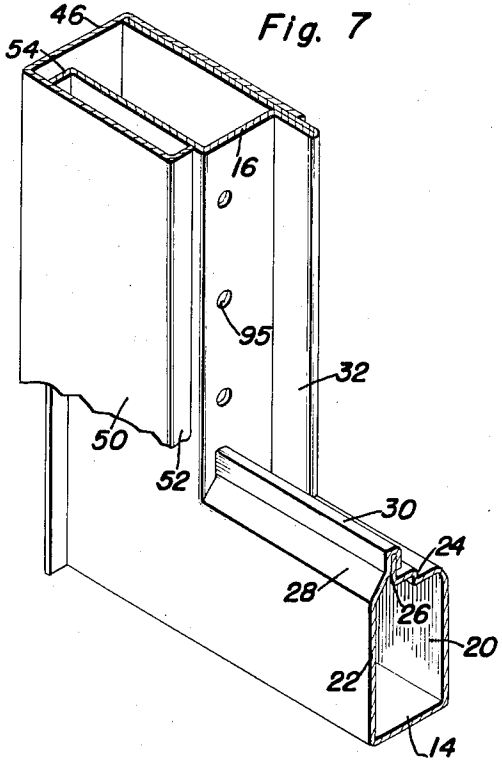
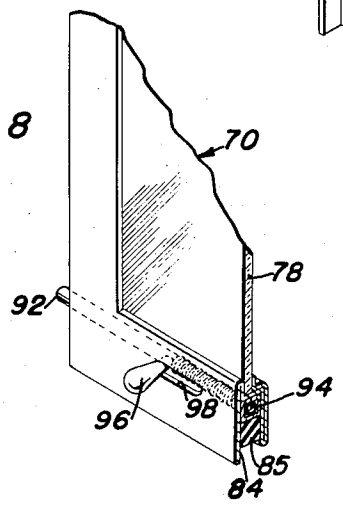


Fig. 8



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SEASONAL WINDOW STRUCTURE

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Application September 15, 1952, Serial No. 309,684

4 Claims. (Cl. 189—75)

This invention relates to new and useful improvements in window structures and the primary object of the present invention is to provide a seasonal window structure that may be installed within an existing window opening or placed within a window opening during wall construction of a building.

Another important object of the present invention is to provide a complete seasonal window structure unit that is readily adjustable to fit window frames whose stiles and rails are not perfectly straight.

A further object of the present invention is to provide a window structure composed of hollow vertical and horizontal portions that will define a continuous air chamber for insulation purposes.

Yet another feature of the present invention is to provide a seasonal window structure involving storm sash and/or screens that are quickly and readily removed from the inside of a building and which cannot be removed from the outside of a building, thereby providing a safe, anti-theft window structure whose screens and/or storm sash may be cleaned, repaired or inspected in a convenient manner.

A still further aim of the present invention is to provide a seasonal window structure that is simple and practical in construction, strong and reliable in use, compact in structure, inexpensive to manufacture, and otherwise well adapted for the purposes for which the same is intended.

Other objects and advantages reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a front elevational view of the invention installed in the window opening of a wall;

Figure 2 is a front elevational view of the invention with parts broken away and shown in section, and with dotted lines showing the frame enlarged;

Figure 3 is a longitudinal vertical sectional view taken substantially on the plane of section line 3—3 of Figure 2;

Figure 4 is an enlarged vertical sectional view taken substantially on the plane of section line 4—4 of Figure 2;

Figure 5 is an enlarged vertical sectional view taken substantially on the plane of section line 5—5 of Figure 2;

Figure 6 is a fragmentary perspective view of one upper corner of the present window structure;

Figure 7 is a fragmentary perspective view of one of the lower corners of the present window structure; and

Figure 8 is a fragmentary perspective view of one of the storm sashes used in the present invention.

Referring now to the drawings in detail, wherein, for the purpose of illustration, there is disclosed a preferred embodiment of the present invention, the numeral 10 represents an open, substantially rectangular frame member including upper and lower channel-shaped rails 12 and 14 and a pair of channel-shaped stiles 16 and 18. The channel-shaped stiles 16 and 18 face outwardly and the channel shaped rail 12 faces upwardly as shown best in Figure 6.

The channel-shaped lower rail 14 faces upwardly and its vertical flanges 20 and 22 are provided with extensions. The extension of the flange 20 is bent to form a step 24 that terminates in a vertical flange 26 and the extension of the flange 22 inclines upwardly and outwardly, as at 28, and terminates in a downwardly facing, rib-forming channel 30 that receives and grips the flange 26, as shown in Figure 7.

The web portions of the stiles 16 and 18 are pressed outwardly to form vertical abutment and retainer ribs or flanges 32 that extend into the rectangular opening of the frame member 10. The upper rail 12 of the frame member 10 is also provided with a web portion that is pressed downwardly to form a horizontal rib or flange 34 whose inner face lies in a vertical plane with the inner faces of the flanges 32.

A mounting frame 36 is engaged with the frame member 10 and includes parts which are vertically and horizontally slidably engaged with frame member 10. Mounting frame 36 includes a downwardly facing channel-shaped rail or header 38 that is received over the rail 12. The inner wall 40 of the header 38 is provided with an inturned flange 42 that will engage the outwardly turned flange 44 on the inner wall 46 of the rail 12 to limit upward movement of the header 38 relative to the rail 12.

Mounting frame 36 also includes channel-shaped stiles or side members 48 that face each other to accommodate the stiles 16 and 18. The inner walls 50 of the side members 48 are provided with inturned flanges 52 that will engage the outwardly turned flanges 54 on the inner vertical walls 56 of the stiles 16 and 18 to limit outward horizontal sliding movement of the members 48 relative to the stiles 16 and 18.

The ends of the header 38 are slidably connected to the upper ends of the side members 48 by corner channels 58. These corner channels, 58, include vertical portions 60 in which the upper ends of the members 48 are slidably received and horizontal portions 62 in which the ends of the header 38 are received. A flange 64 on the inner wall of each horizontal portion 62 is engaged under the flange 42 and a flange 66 on the inner wall of each vertical portion 60 is engaged against the inturned flanges 52 of the side members 48.

The frame member 10 is capable of removably supporting upper and lower storm sashes 68 and 70. These sashes are similarly constructed and each includes a hollow rectangular frame portion 72 of extruded resilient metal that is bent to include a peripheral channel 74 which receives the peripheral edge 76 of a window pane 78. Openings, such as 80, are provided in the vertical parts of the frame portions 72 and the upper part of the upper sash 68 and yieldingly receive weather sealing strips 82 that will contact the ribs 32, 34.

A downwardly facing channel 84 is formed in the lower horizontal rail of the lower sash 70 and yieldingly receives a weather strip 85 having a groove 86 for accommodating the channel 30. A horizontal spring strip 88 is secured to the web portion of rail 12 and coacts with the rib 34 in yieldingly gripping the upper horizontal part of sash 68, as shown in Figure 4.

Horizontal guides 90 are fixed in the ends of channel 84 and slidably receive locking plungers 92 that are urged by springs 94 from the vertical parts of the sash 70 to each selected vertically spaced aperture 95 in webs 16. Finger grips 96 attached to the plungers 92 are slidably received in guide slots 98 in the inner wall of the lower horizontal part of sash 70. Finger loops 100 on the sash

70 form means for removing and replacing the lower window sash.

The frame member 10 is further capable of removably supporting a screen 102. The screen 102 comprises a substantially rectangular, open frame 104 whose peripheral flanges 106 and 108 are bent inwardly one above the other to form retainer lips 110 and 112 that receive the edges of a foraminous member 114 therebetween. Fasteners 116 connect the lips 110 and 112 and clamp the same against the member 114.

The web portions of stiles 16 and 18 fixedly support ledge-forming hooks 118 upon which the lower corners of the upper sash 68 rest when the latter is raised as shown in Figure 4. When the upper sash is removed (following removal of the lower sash), the upper sash is raised to clear the ledge-forming hooks 118 and then it is pulled toward the operator and lowered.

Retainer guides 120 are attached to or formed with the webs of stiles 16 and 18 and extend inwardly on a plane with the inside vertical flanges of the stiles 16 and 18. These retainer guides 120 afford a positive guidance for the lower sash through an area that is otherwise inaccessible due to sashes of the inside window. The guides 120 extend downward just far enough to securely hold the top of the lower glass section 70, when the latter is in its closed position. The lower sash will, however, clear these strips when the lock plungers are released and as the sash is pulled forwardly and downwardly from under the guides.

Having described the invention, what is claimed as new is:

1. A window frame comprising a substantially rectangular open frame member, an upper channel-shaped rail received over the upper end of the frame member and vertically slidable thereon, a pair of channel-shaped stiles received over the stiles of the frame member and slidable vertically and horizontally thereon, and L-shaped corner channels each having a vertical portion and a horizontal portion, the ends of said upper rail being slidable within said horizontal portions and the upper ends of said stiles being slidable in said vertical portions, each of said stiles having an inturned flange and each stile of said frame member having an outwardly turned flange adapted to engage said inturned flange to limit horizontal sliding movement of said stiles relative to said frame member.

2. A window structure comprising an open substantially rectangular frame member including upper and lower rails and a pair of parallel stiles joining the ends of said rails, a channel-shaped header received over the upper rail and movable vertically and horizontally on said upper rail, a pair of channel-shaped vertically disposed side members received over said rails and movable horizontally and vertically over the rails, corner channels each having a vertical portion and a horizontal portion, the upper ends of said side members being slidably received in said vertical portions, the ends of said header being slidably received in said horizontal portions, first and second flanges on said stiles extending inwardly of said frame member in opposed relation, said first flanges extending the full length of said stiles, said second flanges extending along upper portions only of said stiles whereby closure members may be removably retained between said

first and second flanges, hooks carried by said first flanges intermediate ends thereof for holding an upper closure member in elevated face-to-face engagement with upper portions of said first flanges, a depending resilient strip carried by said upper rail, said resilient rib being disposed between the planes of said first and second flanges and engageable with an upper edge of an upper closure to retain same in position.

3. A window frame comprising a substantially rectangular open frame member including an upper rail, vertical stiles and a lower rail, first and second flanges on said stiles extending inwardly of said frame member in opposed relation, said first flanges extending the full length of said stiles, said second flanges extending along upper portions only of said stiles, an upper closure member mounted in an upper part of said frame member between said first and second flanges and in face-to-face engagement with said first flanges, a depending resilient strip carried by said upper rail, said strip engaging an upper end of said upper closure and urging said upper end into engagement with said first flanges, hooks carried by said first flanges intermediate ends thereof underlying a lower end of said upper closure member and retaining said upper closure member in an upper position, lower closure member cooperating with said upper closure member to close said open frame member.

4. A window frame comprising a substantially rectangular open frame member including an upper rail, vertical stiles and a lower rail, first and second flanges on said stiles extending inwardly of said frame member in opposed relation, said first flanges extending the full length of said stiles, said second flanges extending along upper portions only of said stiles, an upper closure member mounted in an upper part of said frame member between said first and second flanges and in face-to-face engagement with said first flanges, a depending resilient strip carried by said upper rail, said strip engaging an upper end of said upper closure and urging said upper end into engagement with said first flanges, hooks carried by said first flanges intermediate ends thereof underlying a lower end of said upper closure member and retaining said upper closure member in an upper position, lower closure member cooperating with said upper closure member to close said open frame member, said lower closure member being disposed in offset relation relative to said upper closure member, upper corners of said lower closure member engaging lower end portions of said second flanges, an upstanding rib on said lower rail, said rib being interlocked with a lower end of said lower closure member to restrain said lower closure member against lateral movement.

References Cited in the file of this patent

UNITED STATES PATENTS

1,632,022	Cook	June 14, 1927
1,876,486	Britten	Sept. 6, 1932
1,897,010	Pollock et al.	Feb. 7, 1933
2,545,901	Sugar	Mar. 20, 1951
2,564,264	Knott	Aug. 14, 1951
2,569,942	Milnor	Oct. 2, 1951
2,608,276	Kelly	Aug. 26, 1952