March 12, 1946. F. MASTRANGELO 2,396,520

SASH FASTENER

Filed April 24, 1944

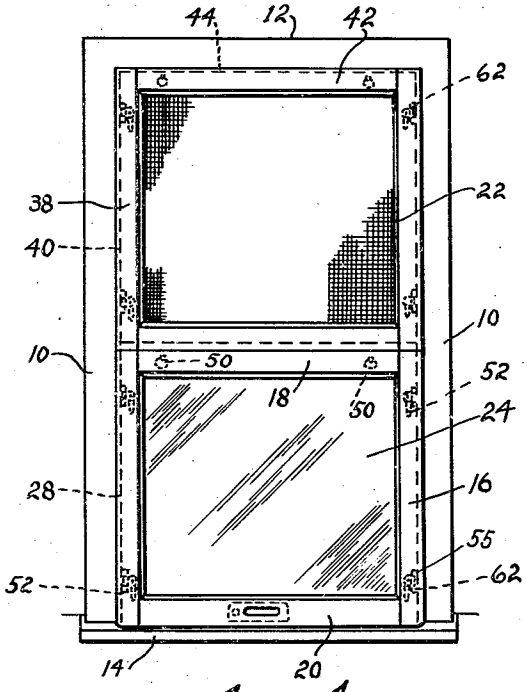


Fig. 1

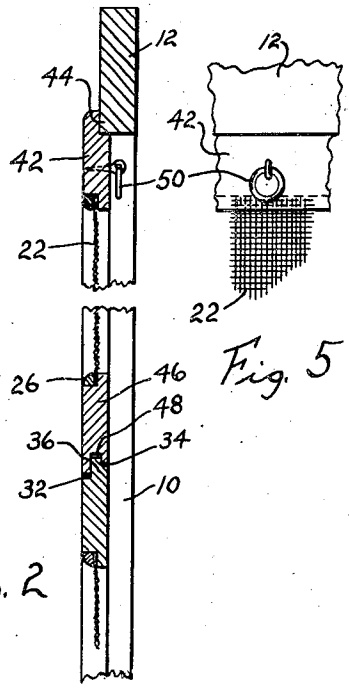


Fig. 2

Fig. 5

Fig. 3

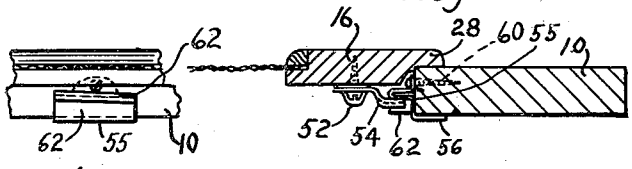


Fig. 7

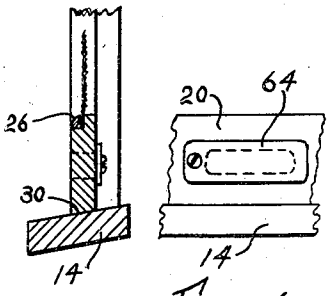


Fig. 6

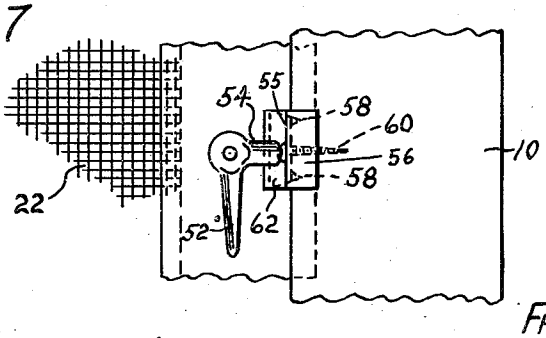


Fig. 4

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SASH FASTENER

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2 Claims. (Cl. 160—369)

This invention relates to improved fastenings for a combination storm sash and screen having separate upper and lower frames for both screen and storm window.

An important object of the invention includes the provision of an easily attachable and removable storm sash or the like having a novel fastener therefor so that the frame may be inserted from the interior of the building and attached in a matter of seconds.

Other objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawing, in which:

Fig. 1 is a view in elevation from the exterior showing a storm sash and a window screen in position;

Fig. 2 is a vertical section through an installation with parts broken away;

Fig. 3 is a section through the permanent window frame and the removable sash;

Fig. 4 is a view in elevation of the parts of Fig. 3;

Fig. 5 is a detail view showing a finger hold;

Fig. 6 is a detail view of a ventilator in a storm sash; and

Fig. 7 is a detail view of a part of the fastener which is applied to the permanent window frame.

In the drawing, the numeral 10 indicates the vertical stiles defining a permanently installed window frame and these stiles are connected as usual at the top by rail 12 and at the bottom by the windowsill 14. Parts 10, 12, and 14 are all permanent parts of the building.

A lower sash having side elements 16, a top element 18, and a bottom element 20 is provided, these elements holding either the screen 22 or a pane of window glasss 24, by any desired or convenient means such as putty, or moulding 26. The side elements 16 are rabbeted as at 28 to closely fit the inside corners of the stiles 10 of the permanent window frame. The bottom element 20 is beveled as at 30 to conform to the permanent sill 14; and the top element 18 is provided with spaced rabbets, 32 at the outside aspect and 34 at the interior side thereof, these rabbets defining between them a tongue 36 which projects upwardly for a purpose to be described. The rabbet 32 is considerably lower than the interior rabbet 34 as will be seen in Fig. 2.

The upper sash comprises a pair of side elements 38 rabbeted at 40 in the same manner as the lower sash side elements 16. In the upper sash the side elements 38 are connected by a top element 42 which is rabbeted at 44 to closely fit the inside edge of the permanent frame top element 12, see Fig. 2. The side elements 38 are connected at the bottom by a rail 46 which is grooved centrally thereof as at 48 to conform to the rabbets 32 and 34 and tongue 36. Fingerholds 50 are provided where desired for a purpose to be described.

Each removable sash is provided on its side elements with pivoted latches each having a handle 52 and a latching arm or element 54, these members being at right angles to each other and the arm 54 being offset inwardly from the plane of the handle 52, as shown in Figs. 3 and 4. In cooperating position with the pivoted latches there are provided cam brackets or plates 55, see Figs. 3 and 7, arranged to bear on the inner faces of the stiles 10, and each has at its rear edge an abutment flange 56 and between its front and rear edges is doubled or folded on itself to form a cam plate or flange 62, said flanges 56 and 62 being bent in opposite directions laterally from the body of the bracket plate. Each bracket plate is provided with spurs or points 58 for holding the same temporarily in position on the inner face of the stile so that a fastener, such as a screw 60, may be passed through the body of the bracket plate in advance of the flange 62 and into the stile to secure the bracket plate to the stile. When the bracket 55 is secured in place the flange 56 bears against the inner face of the stile and the flange 62 projects beyond the inner face of the stile into the window opening for coaction with the associated pivoted latch on the sash side elements or rails, the flange 56 gauging the position of the bracket plate so that the flange 62 is disposed in proper working position. The flange 62, as shown, is inclined downwardly and inwardly to the plane of the window frame to form a cam member. Hence when the bracket 55 is properly applied to the window frame, the cam projection 62 will be located automatically in correct position for camming engagement with element 54 of the pivoted latch and it will be seen that in the frictional holding condition of these latches, the handles 52 thereof will be disposed behind the side elements of the sashes in an out of the way position which is not visible from the exterior. It will be understood that the flange 56 serves not only as a gauging element but also as a bracing element to sustain the bracket 55 and prevent the same from shifting forward under the pressure of the latch arm 54 against the cam flange 62 in a latching action, by which the pressure will be relieved from the screw 60 and said screw prevented from working loose,

The action of the latch arm 54 on the cam flange 62 obviously serves to draw the flange 28 of the sash tightly against the outer face of the stile 10. By offsetting the arm 54 of the pivoted latch inwardly from the plane of its handle the pivoted fastener may be mounted closely against the sash rail, to avoid the use of a long pivot, while the arm 54 projects inwardly for cooperation with cam flange 62. A ventilator 64 of any desired construction may be used in the bottom element 20 of the storm sash if desired.

In order to secure the sashes in position at the exterior of the permanent window frame, it is necessary merely to pass the removable sash through the window frame from the interior to the exterior, it being preferred to put the bottom sash in position first so that it rests upon the sill 14. The finger-holds 50 are then used to hold the sash in position while the latches are rotated to secure the sash in position. The upper sash is then passed through the window frame and set upon the upper member 18 so that the tongue and groove connection will fit, and then the finger-holds are utilized to bring the upper sash into closely fitting position with the permanent window frame, the latches then being rotated as before to complete the installation.

It will be clear that this invention provides screens or storm sash which are very easy to apply to the window and which can be applied and secured completely from the inside of the building. Also, if desired, it is possible to have both of the removable sashes either storm window or screen or any combination of the two desired, as shown in Fig. 1. By using two screen sashes, the permanent window may be opened at either top or bottom or both for improved ventilation in fair weather.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what I claim is:

1. The combination with a window frame, and a sash having side rails formed with portions bearing against the outer faces of the stiles of the frame, of coacting pairs of fastening devices on the side rails and stiles operative to draw and hold the rails secured tightly against the stiles, each pair of fastening devices comprising a fastening member pivoted to a sash rail and having a latch arm, and a cooperating fastening member embodying a bracket plate bearing against the inner face of a frame stile and secured at its front portion by fastening means to the stile, said bracket plate having an abutment flange bearing against the rear face of the stile and a laterally projecting cam flange inclined to the plane of the frame and arranged between the abutment flange and said fastening means for engagement by the latch arm of the pivoted fastener on the sash rail to draw the rail against the stile, said abutment flange operating to brace the bracket plate against the pressure of the latch arm on the cam flange to relieve the fastening means from excessive strain.

2. The combination with a winndow frame, and a sash having side rails formed with portions bearing against the outer faces of the stiles of the frame, of coacting pairs of fastening devices on the side rails and stiles operative to draw and hold the rails secured tightly against the stiles, each pair of fastening devices comprising a fastening member pivoted to a sash rail in close proximity thereto and having an operating handle and a latch arm projecting laterally therefrom and offset to lie in rear thereof, and a cooperating fastening member embodying a bracket plate bearing against the inner face of a frame stile and secured at its front portion by fastening means to the stile, said bracket plate having an abutment flange bearing against the rear face of the stile and a laterally projecting cam flange inclined to the plane of the frame and arranged between the abutment flange and said fastening means for engagement by the latch arm of the pivoted fastener on the sash rail to draw the rail against the stile, said abutment flange operating to brace the bracket plate against the pressure of the latch arm on the cam flange to relieve the fastening means from excessive strain.

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