July 3, 1945. C. O. LEWIS 2,379,727

STORM WINDOW

Filed March 6, 1943

Fig. 1

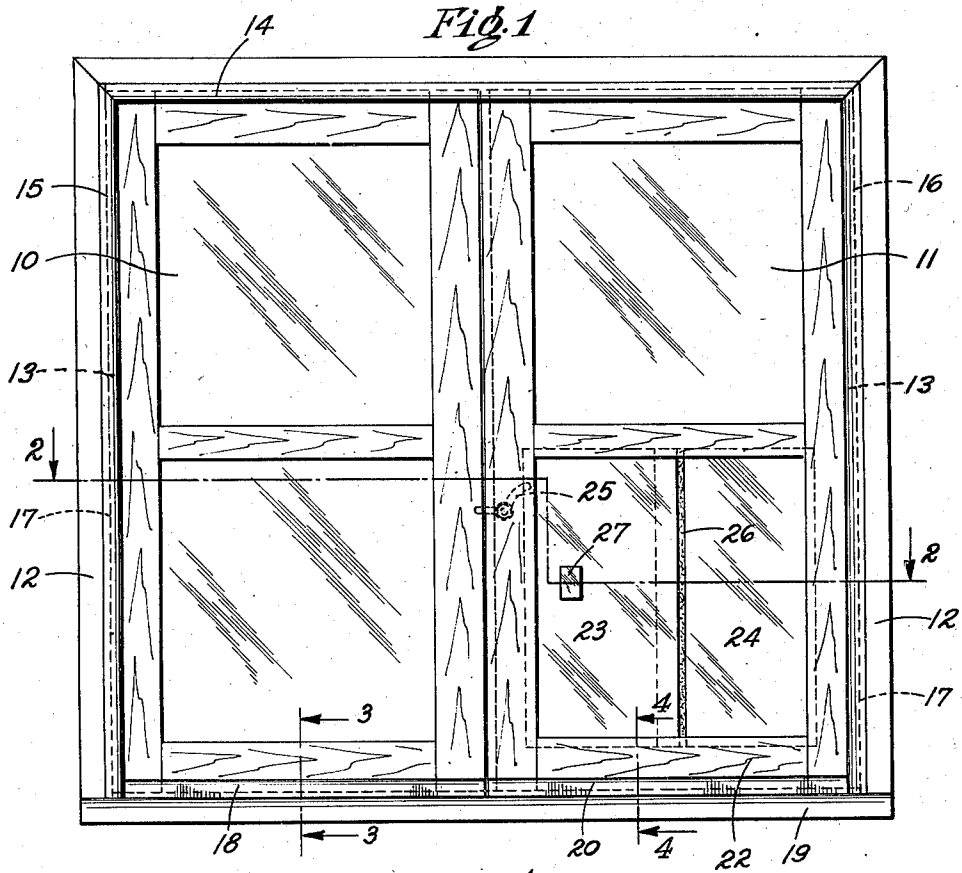


Fig. 2

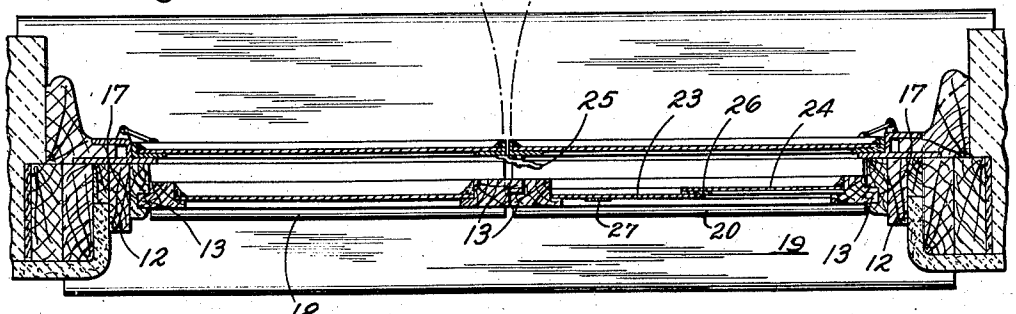
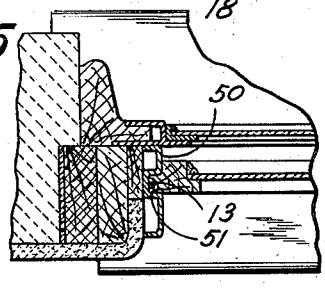


Fig. 5



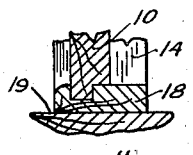


Fig. 3

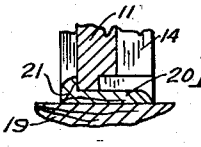


Fig. 4

INVENTOR.
CLYDE O. LEWIS

BY Richey & Watts.

ATTORNEYS

Patented July 3, 1945

2,379,727

UNITED STATES PATENT OFFICE

2,379,727

STORM WINDOW

Clyde O. Lewis, Cleveland, Ohio

Application March 6, 1943, Serial No. 478,173

4 Claims. (Cl. 20—55)

This invention relates broadly to storm windows and more specifically to improvements in the structure and form of the sash and supporting elements therefor.

One of the objects of the invention is to provide a storm sash for a casement window of the outwardly swinging type which is designed to accommodate adjustments for the purpose of ventilation, without disturbing the seated relation between the sash with the window casing.

Another object of the invention is to provide a storm sash which may be readily installed in either an old or modern building and readily mounted or removed, after the initial installation without the use of tools.

Another object of the invention is to provide a storm window supporting structure which is inconspicuous either with or without the sash in place, and neat of appearance irrespective the architectural treatment of the window moldings.

A further object of the invention is to provide a sash structure which is efficient of operation, economic of manufacture and susceptible of assembly without modification thereof in window casings which are slightly out of square.

Other objects and advantages more or less ancillary to the foregoing and the manner in which all the various objects are realized will appear in the following description, which considered in connection with the accompanying drawing, sets forth the preferred embodiment of the invention.

Referring to the drawing:

Fig. 1 is a front elevational view of the improved storm window;

Fig. 2 is a transverse section therethrough, the section being taken on a plane indicated by the line 2—2 in Fig. 1;

Fig. 3 is a vertical section shown upon an enlarged scale of a fragmentary portion of the sash and casing illustrated in Fig. 1, the section being taken on a plane indicated by the line 3—3 in Fig. 1;

Fig. 4 is a vertical section shown on an enlarged scale of another portion of the sash and casing, the section being taken on a plane indicated by the line 4—4 in Fig. 1;

Fig. 5 is a transverse sectional view through a portion of a window similar to that shown in Fig. 2, illustrating an alternate form of construction.

By way of illustration the improved storm window is shown herein as associated with a steel frame window of the casement type with the storm sash adjacent the inner face thereof. It will be understood, however, that the use of the invention is in no wise limited to such environs nor confined to such arrangement.

As shown in Figs. 1 and 2, the storm window comprises a pair of sash members 10 and 11 formed for assembly within the opening defined by the casing or interior trim plate 12. The sash members are preferably formed with flanges 13 in the marginal edges thereof, the contiguous flanges, at the center of the window being constructed for overlapped relation. The top and sides of the storm windows are supported by molding strips 14, 15 and 16 braded or otherwise affixed to the top and interior trim plates 12 and formed with grooves 17 therein for the reentrant engagement of the flanges 13. The lower edge of the sash member 10 is supported by a grooved molding 18 similar in structure to the strips 14, 15 and 16 which is formed to rest loosely upon the window sill or stool 19. The sash 11 is retained by a strip 20 substantially the same in thickness as the stock of the strip at the bottom of the groove in the molding 15 and formed with a bead 21 in the forward edge thereof equal in height to the thickness of the molding 18. The rearward edge of the strip or key 20 may be tapered or rounded as shown in Fig. 4 to facilitate the ready assembly thereof between the bottom of the sash and the stool or sill 19 when the storm window section 11 is elevated to the position in which the flange 13 is seated in the groove in the head molding 14.

As will be seen in Figs. 1 and 2, the stiles of the sash 11 are kerfed for the reception of a pair of panes of glass 23 and 24 disposed in offset relation to each other an amount equal to the thickness of the glass, each pane of glass being slightly greater in width than one-half the transverse dimension of the opening in the sash. The kerfs in the transom and base rail 22 are of sufficient width, that is double the glass thickness, to permit the pane 23, adjacent the center of the window to be slid past the fixed pane 24, when access to the casement latch 25 is desired. The vertical opening between the overlapping edges of the panes may be sealed by a felt strip 26 cemented or otherwise affixed to either member and the sliding pane 23 may if desired be provided with a thumb grip 27.

In operation the initial assembly of the storm window is effected by nailing or otherwise securing the molding strips 14, 15 and 16 to the window casing or interior trim. The flanges on the top and outer edges of the sash 10 may then be fitted within the grooves in the moldings 14 and 15, the bottom strip or molding section 18

being assembled by sliding the strip sidewise with the flange in the base of the sash engaged in the groove therein. The flanges 13 on the sash 11 are next inserted to their full depth into the grooves in the moldings 14 and 16 and while so held with the bottom of the sash in spaced relation with the stool 19 the strip or key 20 is inserted between the lower face of the sash and window stool, the weight of the sash and the interlocked relation of the flanges and grooves being sufficient to assure the stability of the assembly.

When metal trim is employed the plate or jamb 50 (Fig. 5) may be formed with a groove 51 therein for the reception of the flange 13 or the edge of a sash having the flange omitted therefrom. Obviously such construction may be employed in substitution for the molding strips 14, 15 and 16 and is of particular advantage in a newly erected building constructed in contemplation of a storm window embodying the present invention.

It will be understood that the trim plates 12, when made of wood, may likewise be grooved to receive the sash and that such construction is considered as falling within the scope and spirit of the accompanying claims.

I claim:

1. In a window embodying interior casing trim and a window sill, a storm window therefor, comprising a pair of sash members, each one half the width of the window opening, flanges on the edges thereof, the contiguous flanges at the center of the window being disposed in overlapped relation, moldings having grooves therein for the reception of the top and side flanges on said sash members secured to the top and side walls of the interior casing trim, a molding strip having a groove therein for the reception of the flange on the bottom of one of the pairs of sash members mounted on the window sill and a strip slidable between the other of the pair of sash members and the window sill for the retention of the flange on the top of the last named sash member within the groove in the contiguous top molding.

2. In a window embodying interior casing trim including a sill, a storm window, comprising a pair of sash members, each one half the width of the window opening, moldings having grooves therein engaged with the top of said sash members secured to the top of said casing trim, moldings having grooves therein engaged with the outer sides of said sash members secured to the side walls of said casing trim, a molding having a groove therein engaged with the bottom of one of the sash members loosely resting on the window sill, and a strip slidable between the bottom of the other of said sash members and the window sill for the retention of the top of the last named sash member within the groove in the top molding, the contiguous edges of the two sash members being disposed in abutting relation, whereby the outer sides of said sash are retained in the grooves in the side moldings.

3. In a window embodying top and side casings and a window sill, a storm window comprising a plurality of sash members disposed between the side casings in side by side relation, flanges in marginal edges of said sash members, the flanges in the contiguous edges of the sash members being arranged in overlapped relation, molding strips mounted on the top and side casings of the window, said moldings having grooves therein engaged with the flanges in the contiguous sash members, the height of one of said sash members being less than the dimension from the top face of the window sill to the bottom of the groove in the molding strip on the top casing and a strip of a thickness substantially equal to the difference between the height of the last named sash member and the dimension from the window sill to the bottom of the groove in the molding on the top casing slidable between the window sill and the bottom of said sash member for the retention of the flange in the top of said sash member in inter-engaged relation with the groove in the molding on the top casing.

4. In a window embodying interior casing trim including a sill, a storm window comprising a pair of sash members arranged with their contiguous edges in abutting relation, moldings secured to the top and side casing trim telescopically engaged with the top and side edges of said sash members and a removable strip slidable between the bottom of one of said sash members and the window sill whereby the storm window may be removed by retraction of said strip, lowering the sash until the top thereof is disengaged with the molding on the top of the casing trim, swinging the sash outwardly until it is free from the contiguous sash, sliding the sash laterally to disengage the outer edge thereof from the contiguous side moldings, removing the sash, sliding the other of the pair of sash members laterally to disengage the outer edge thereof from the contiguous molding, then moving the base of the sash forwardly and downwardly to disengage the top thereof from the top molding.

CLYDE O. LEWIS.