Feb. 13, 1951 W. M. KRANTZ 2,541,926

STORM SASH

Filed Aug. 7, 1945

FIG. 1.

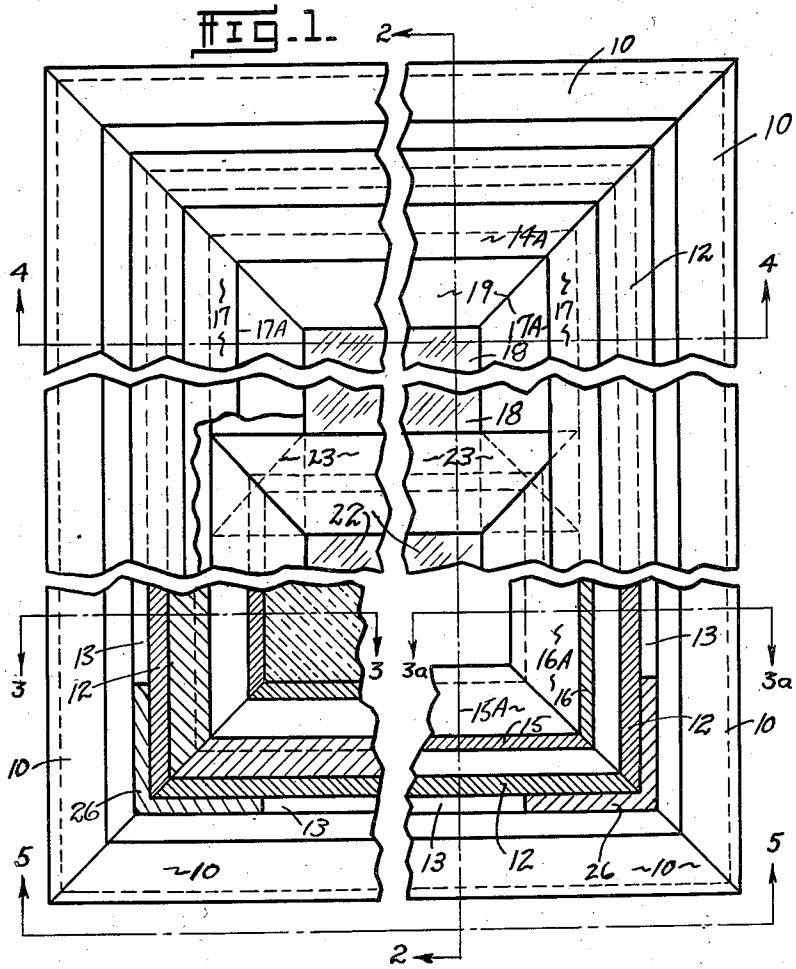


FIG. 2.

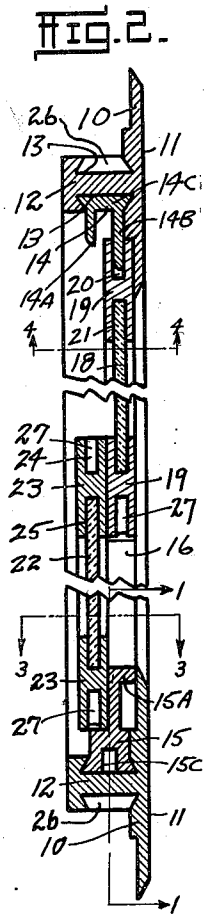


FIG. 3.

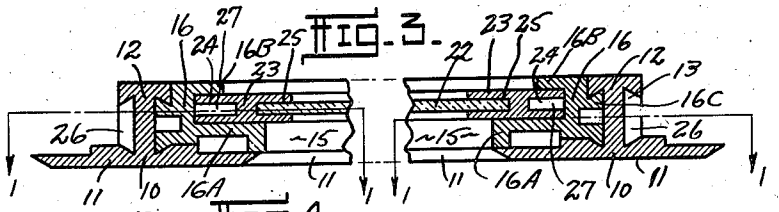


FIG. 4.

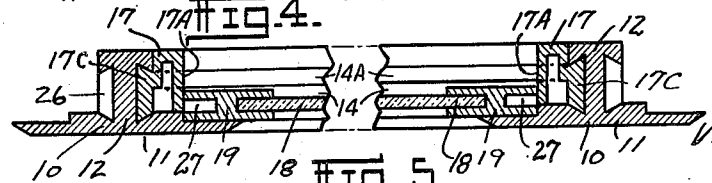
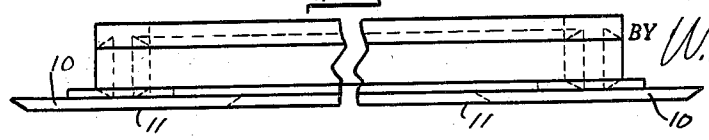


FIG. 5.



Walter M. Krantz.
INVENTOR.

BY W. B. Harpman

ATTORNEY.

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STORM SASH

Walter M. Krantz, Youngstown, Ohio, assignor, by direct and mesne assignments, to Ace Storm Window Company, Youngstown, Ohio, a corporation of Ohio

Application August 7, 1945, Serial No. 609,455

2 Claims. (Cl. 20—55)

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This invention relates to a storm sash and more particularly to a frame and sash combination.

The principal object of the invention is the provision of a storm sash comprising a suitable frame and double hung sash combination.

A further object of the invention is the provision of a storm sash for a window opening in a dwelling or other building, and incorporating an assembly of interlocking material shapes for the formation of the sash and the sash carrying frame.

A still further object of the invention is the provision of a storm sash incorporating a channeled frame and a plurality of modification pieces engagable with the said channeled frame for forming a completed frame and slidable sash combination.

A still further object of the invention is the provision of a storm sash for a window opening incorporating means for affixing the sash to an inner portion of the said window opening.

The storm sash shown and described herein has been designed to form an efficient insulating window for a conventional window opening and is adapted to be assembled from a plurality of metal shapes so as to form an efficient storm sash frame and framed sash slidably positioned therein. The principal point of novelty in the disclosure is the formation of the storm sash frame assembly and the slidable sash assemblies from a plurality of metallic shapes preferably of extruded aluminum or similar material. The frame and sash combination in completed form possesses several advantages over storm sash heretofore known in the art, both as to the ease of assembly and the efficiency of the completed storm sash construction.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

The invention is illustrated in the accompanying drawing, wherein:

Figure 1 is a back elevation of the storm sash with parts broken away and parts in cross section.

Figure 2 is a cross sectional vertical elevation taken on line 2—2 of Figure 1.

Figure 3 is a composite horizontal cross sectional elevation taken on line 3—3 and line 3A—3A of Figure 1. Lines 1—1 on Figure 3 indicate the cross section of Figure 1.

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Figure 4 is a horizontal cross sectional elevation taken on line 4—4 of Figure 1.

Figure 5 is a bottom elevation taken on line 5—5 of Figure 1.

By referring to the drawings and Figure 1 and 2 in particular, it will be seen that a storm sash has been disclosed which consists of a rectangular frame formed of four appropriately cut and mitered sections of channeled framing material 10, the said framing material 10 including a surface flange 11 and an upstanding centrally disposed axially extending rib 12 which in turn is provided along either side thereof with a pair of oppositely disposed dovetailed channels 13 such as shown in my co-pending patent application, Serial No. 608,199 filed August 1, 1945 and now abandoned.

In order that a frame formed of sections of the framing material 10 may be used for satisfactorily mounting a pair of sash in double hung relation therein, a plurality of secondary framing members are incorporated into the said frame and consist of a top sash guide 14 having a pair of downwardly extending flanges 14A and 14B, a bottom sash guide 15 having an upwardly and outwardly extending flange 15A, a pair of lower sash side guides 16 (see Figure 3), each of which has an inwardly and outwardly formed flange 16A and a back flange 16B, and a pair of upper sash side guides 17 (see Figure 4), each of which has an inwardly turned flange 17A forming a flat innermost surface. Each of the sash guides 14, 15, 16 and 17 are also provided with dovetailed extensions 14C, 15C, 16C, and 17C, respectively, all of which dovetailed extensions register with the inwardly facing dovetailed channel 13 in the rib 12 of the framing member 10 from which the rectangular frame of the storm sash is formed. It will thus be seen that by adding these several appropriately cut sections to the essential frame formed of the framing members 10, a uniquely shaped storm sash frame is formed which can receive and retain in removable relation a pair of sash, such as illustrated in Figures 1, 2, 3, and 4 of the drawings. The upper sash consists of a section of glass 18 having a frame 19 of H-shape in cross section positioned on the four sides thereof. The double channels formed by the H-shaped frame 19 are indicated by the numerals 20 and 21, respectively, and it will be observed that the outermost channel 20 is engaged upon the depending flange

14B of the top sash guide 14 while the bottom portion thereof rests upon the outermost ends of the flanges 16A of the lower sash guides 16 which terminate immediately thereunder.

By referring to Figure 4 of the drawings, it will be seen that the edges of the upper glass frame 19 rest against the flat surfaces of the flanges 17A of the upper sash guides 17. Contact is also made between the front edge of the sash frame 19 and the framing material 11 to provide a weather-tight closure at this point. It will thus be seen that the uppermost sash consisting of the glass panel 18 and frame 19 can be removably positioned within the upper outward half of the storm sash frame and is so formed that a weather-tight closure is effected between the same and the frame. The lower sash consists of a glass panel 22 framed about by an H-shaped frame 23 exactly the same as the frame 19 heretofore referred to in connection with the upper glass panel 18, and the outwardly and inwardly facing channels of the lower sash frame 23 are indicated by the numerals 24 and 25, respectively.

By referring now to Figure 3 of the drawings it will be seen that the portion of the glass frame 23 overlying the outwardly facing channel 24 lies within the channel formed by the flange 16B on the lower sash guide 16. This construction permits the lower sash carrying the glass panel 22 to slide vertically between the lower sash guides 16 and thereby form a weather-tight closure with respect thereto and the framing members 10 upon which the sash guides 16 are carried. It will be observed by referring to Figure 2 that the sash guides 16 terminate beneath the bottom-most portion of the upper sash frame 19 and it will therefore be obvious that the lower sash frame 23 may be removed from the window by simply raising it to position above the ends of the flanges 16B of the lower sash guides 16 and lifted from the storm sash structure. When this has been done, the upper sash frame 19 may then be removed by swinging the lower end of the frame thereof inwardly which will permit it to move off of the upper end of the lower sash guides 16 and permit it to be lowered sufficiently to disengage the channel 20 in the frame 19 from the downwardly depending flange 14B. For summer-time storage the normally lower sash frame 23 may be simply moved vertically and its uppermost end registers with the downwardly depending flange 14A of the sash guides 14 and a screen insert of comparable size and framed in the same manner as the glass panel 22 may be positioned thereinunder on the guides 16 and held thereby.

It will thus be seen that a simple and efficient storm sash construction has been disclosed which may be simply and efficiently constructed from a plurality of cut sections of strip material such as extrusions and that in assembled relation the several component parts form a storm sash assembly possessing the unique advantages of easy assembly, simple construction and weather-tight characteristics. It will be obvious to those skilled in the art that some method of joining the sections of the framing material 10 to one another must be provided to form an integral frame and several alternate methods are available, as shown in my co-pending patent applications, Serial No. 608,198 filed August 1, 1945, now Patent No. 2,447,347, and Serial No. 608,197 filed August 1, 1945, now Patent No. 2,447,346.

In the present disclosure L-shaped corner pieces 26 are employed and it will be observed that they register with the outermost channels

13 formed on the upstanding ribs 12 of the framing material 10. The same construction is employed in uniting the glass frames 19 and 23, L-shaped corner pieces 27 being utilized, the same lying in the outermost channels 20 and 24 of the frames 19 and 23, respectively. In both of these corner constructions a press fit between the respective channels and corner pieces is deemed sufficient to form a satisfactory frame assembly. However, it is obvious that various fastening means as known in the art and especially to those skilled in the art, may be employed in addition to the press fit characteristics to effect a desirable frame construction between the cut framing pieces and the corner pieces, respectively.

It will thus be seen that an efficient storm sash has been disclosed which may be readily formed on the job if desired, in any size, from simple extruded lengths of material cut to size, mitered and assembled without the necessity of complicated fastening tools or forming jigs or fixtures.

Having thus described my invention, what I claim is:

1. A storm window comprising a rectangular shaped frame including side members each having spaced longitudinally extending opposed inwardly directed front and rear flanges forming a dovetailed channel therebetween, a pair of elongated modifying members positioned in said channels in oppositely disposed relation at the sides of and in the lower part of said frame, said modifying members each including a pair of longitudinally extending spaced oppositely disposed front and rear channel forming flanges in the rear part of said frame, and each of said modifying members having a part extending from the side marginal portion of its front channel forming flange fitting against one of the front flanges of the frame and constituting with said front channel forming flange a filler block portion, a secondary pair of elongated modifying members positioned in said channels in oppositely disposed relation at the sides of and in the upper part of said frame, each of said secondary modifying members having a part extending between the front flange of the frame and the rear flange thereof and at a right angle thereto, a pair of sash, one located in the said channels of the modifying members in the lower rear portion of the frame and the other positioned on the upper ends of the said filler block portions in the front portion of the frame with its side edges in registry with said secondary modifying members.

2. A storm window comprising a rectangular shaped frame including side members each having spaced longitudinally extending opposed inwardly directed front and rear flanges forming a dovetailed channel therebetween, a pair of elongated modifying members positioned in said channels in oppositely disposed relation at the sides of and in the lower part of said frame, said modifying members each including a pair of longitudinally extending spaced oppositely disposed front and rear channel forming flanges in the rear part of said frame, and each of said modifying members having a part extending from the side marginal portion of its front channel forming flange fitting against one of the front flanges of the frame and constituting with said front channel forming flange a filler block portion, a secondary pair of elongated modifying members positioned in said channels in oppositely disposed relation at the sides of and in the upper part of said frame and in end to end relation with said pair of modifying members, each of said second-

ary modifying members having a part extending between the front flange of the frame and the rear flange thereof and at a right angle thereto, a pair of sash, one located in the said channels of the modifying members in the lower rear portion of the frame and the other positioned on the upper ends of the said filler block portions in the front portion of the frame with its side edges in registry with said secondary modifying members.

WALTER M. KRANTZ.

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