May 12, 1953 E. C. MUELLER 2,637,879

STORM WINDOW

Filed Oct. 4, 1950 2 Sheets-Sheet 1

FIG. 1.

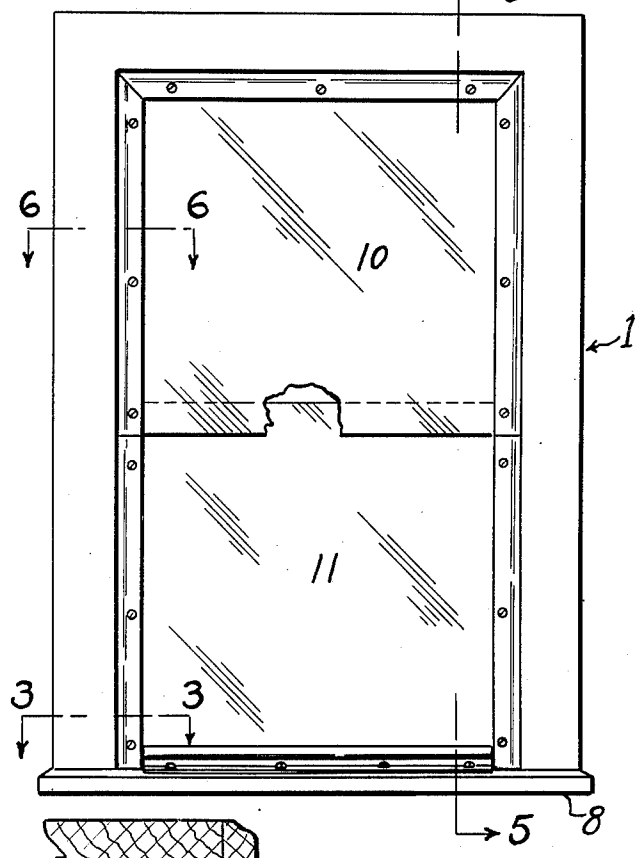
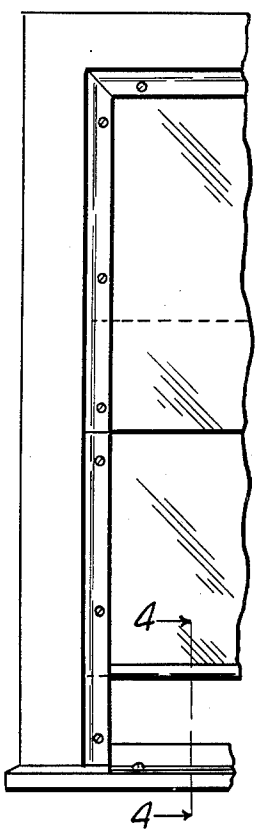


FIG. 2.



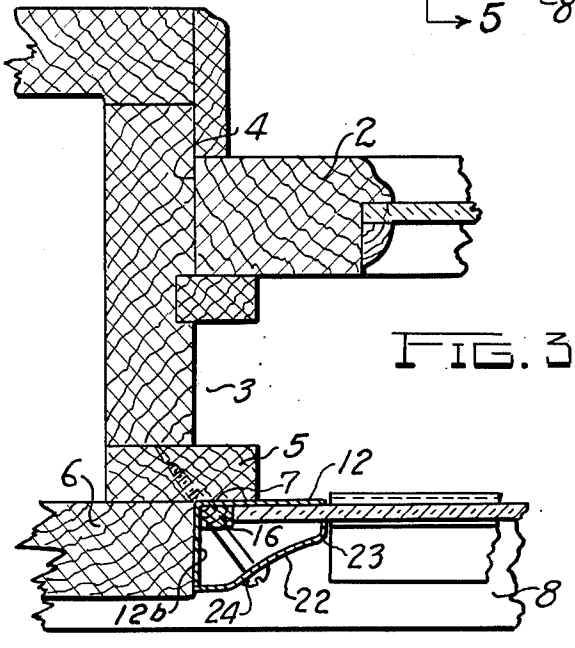
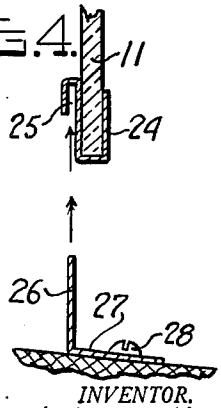


FIG. 3.

FIG. 4.



INVENTOR.
Edward C. Mueller
BY Owen & Owen,
ATTORNEYS

May 12, 1953 E. C. MUELLER 2,637,879

STORM WINDOW

Filed Oct. 4, 1950 2 Sheets-Sheet 2

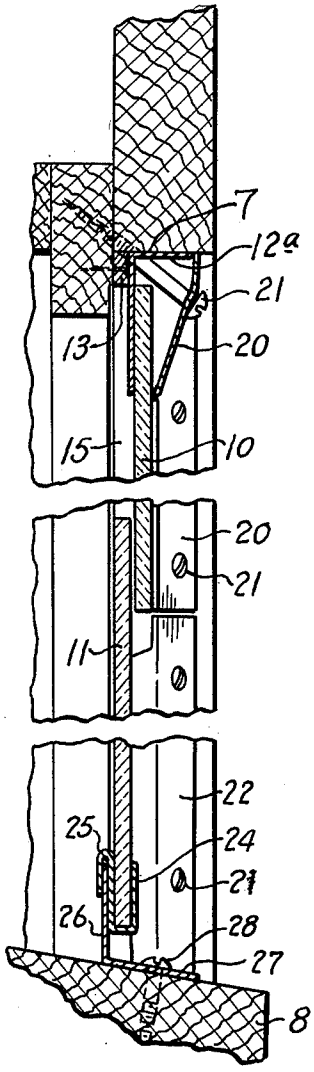


FIG. 5.

FIG. 6.

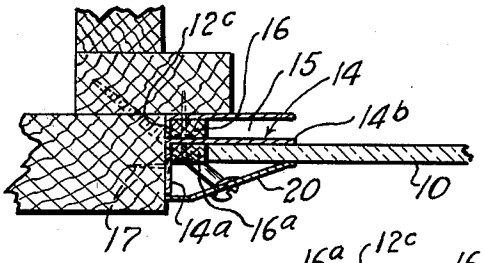
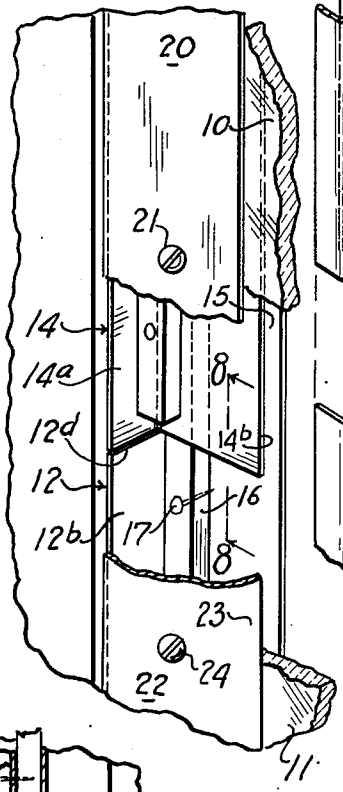


FIG. 7



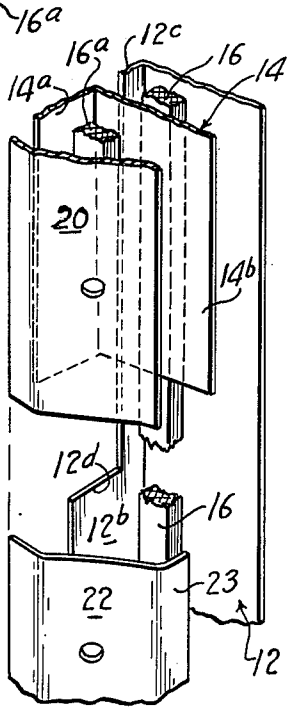


FIG. 9.

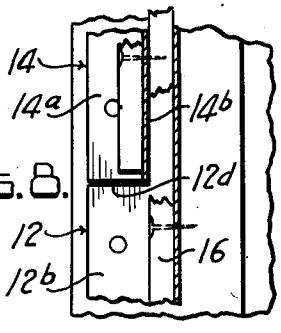


FIG. 8.

INVENTOR.
Edward C. Mueller
BY Owen & Owen,
ATTORNEYS

Patented May 12, 1953

2,637,879

UNITED STATES PATENT OFFICE

2,637,879

STORM WINDOW

Edward C. Mueller, Spencerville, Ohio

Application October 4, 1950, Serial No. 188,376

2 Claims. (Cl. 20—55)

1

This invention relates to storm windows, and has for its object to provide a simple and efficient window of this class that is capable of being easily, quickly and economically installed in a window casing. The novel features reside primarily in the manner of mounting the window members in the casing.

The invention is fully described in the following specification, and a preferred form thereof is shown in the accompanying drawings, in which—

Fig. 1 is a front elevation of a window casing with a storm window embodying the invention installed therein and in closed position, with a part of one of the window members broken away; Fig. 2 is a similar view fragmentarily shown with the lower window member partly raised; Fig. 3 is an enlarged cross-section on the line 3—3 in Fig. 1, with parts broken away; Fig. 4 is an enlarged section on the line 4—4 in Fig. 2; Fig. 5 is an enlarged vertical section on the line 5—5 in Fig. 1, with parts broken away; Fig. 6 is an enlarged fragmentary section on the line 6—6 in Fig. 1; Fig. 7 is an enlarged fragmentary perspective view of a side edge portion of the casing illustrating the manner of mounting the storm window members therein; Fig. 8 is a fragmentary section on the line 8—8 in Fig. 7, and Fig. 9 is a view similar to Fig. 8 in exploded form.

Referring to the drawings, 1 designates a customary window casing in which the usual upper and lower window sash are mounted, a lower sash being shown at 2 (Fig. 3). The two sash operate, in the present instance, in respective side grooves 3 and 4, the outer or weather side of the former being formed by the guide strip 5 at the outer side of which is the usual facing strip 6 of the casing. This strip 6 and the guide strip 5 cooperate at the sides and also across the top of the casing opening to form an angled recess 7.

The storm window of the present invention includes upper and lower plate members 10 and 11 preferably but not necessarily of transparent glass of heavy plate form, with their adjacent horizontal edges lapping so that the lower member, if desired, may be raised relative to the other.

The mounting means for the plate members 10 and 11 includes a right angled strip 12 fitted into the recess 7 at each side of the casing opening. A similar top strip 12^a is provided across the top of the casing opening, but this strip is spaced from the vertical face of the recess wall substantially the thickness of the lower plate member 11 by a shallow spacing strip 13 (Fig. 5), which strip is substantially the thickness of the member 11.

2

Each strip 12 has its outwardly projecting flange 12^b of greater width, or extent of outward projection, than the combined thickness of the two plate members 10 and 11 from its lower end to substantially a level with the lower edge of the upper member 10, and is then reduced in depth for the remainder of its length to substantially the thickness of the member 11, as shown at 12^c (Fig. 6). The top shoulder end of the flange 12^b, at the point where it is narrowed in width, is shown at 12^d in Figs. 7 and 8.

A second right angled strip 14 is set into the cutaway portion of the flange 12^b of each side strip 12 upwardly from the shoulder 12^d, the outwardly projecting depth flange 14^a thereof being flush at its outer edge with the outer edge of the flange 12^b of the strip 12, as best shown in Fig. 7. The width flange 14^b of the strip 14 is the same in width as the corresponding flange 12^e of the strip 12 which it parallels. The flanges 12^e and 14^b thus form a top runway portion 15 for the plate member 11 when raised.

The top angle strip 12^a is similar to the lower portion of the side strips 12 except that its outwardly projecting depth flange is reduced in depth an extent corresponding to the thickness of the spacing strip 13 (Fig. 5). The width flange of the strip 12^a is the same as the flange 14^b of the angle strip 14 and vertically aligns therewith.

In the angle of each side strip 12 is mounted an edge spacing piece 16 for the respective edge of the plate member 11, and it also serves as a means for spacing the inner edge portions of the two cooperating strip flanges 12^e and 14^b (Figs. 3, 6, 7 and 8). These strips 16 align with the top spacing strips 13. A spacing strip 16^a (Fig. 6), similar to the spacing strips 16, is mounted in the angle of each angle strip 14 in engagement with the respective edge of the plate 10. The angle strips 12, 12^a and 14, and the spacing strips 13, 16 and 16^a are secured to the casing by brads 17, or in any other suitable manner.

The upper plate member 10 is held in position against the width or inwardly projecting flange of the top angle strip 12^a and against the corresponding flanges 14^b of the side angle strips 14 by respective outer clamping strips 20 that seat at their outer edges relative to the casing opening on the outer free edges of the depth flanges of the respective angle strips 12^a and 14. These clamping strips, starting a short distance inward from their outer edges, extend inwardly on an incline toward, and bear at their free inner edge portions against, the outer face of the upper plate member 10 in opposition to the width

flanges 14a of the side angle strips 14 and the corresponding flange of the top strip 12a. The clamping strips 20 are drawn into clamping engagement with the plate member by screws 21 that are inserted through suitable openings in the strips 20 and the respective angle strips 14 and screw into the casing, as shown in Figs. 5 and 6. The screws extend through the strips 12a and 14 at approximately the angles thereof and are inclined to the plane of the plate member 10, as shown. The top and side strips 20 have mitered engagement at their meeting ends.

The lower plate member 11 is held in position in its runway 15 by side clamping strips 22 which are similar to and preferably made separate from the strips 20 for convenience of assembly. The strips 22 are the same as the strips 20, aligning vertically therewith, and in addition are provided at their inner edges with lips 23 (Figs. 3 and 7), which have edge engagement with the plate 11 and compensate for the combined thickness of the top plate 10 and the angle strip flanges 14b. The strips 22 are drawn into clamping engagement with the plate member 11 by screws 24 in a manner similar to the action of the screws 21. The clamping of the plate member 11 is not so firm but what it can be raised and lowered in the runway 15 if desired.

The lower end of the plate member 11 fits into and is firmly clamped by a U-shaped edge strip 24 the outer upper edge of which is doubled back to form a downwardly opening recess 25 for receiving an upstanding mating flange 26 on the casing sill 8, thus forming a weather-tight joint therebetween when the plate member is lowered.

The flange 26 has a base flange 27 for seating on the casing sill and is secured thereto by screws 28. The various strips forming the mounting, guiding and clamping means for the plate members 10 and 11 are preferably but not necessarily of metal, and the spacing strips 13, 16 and 16a are preferably of wood. These strips may be quickly assembled in a window casing by first mounting the side angle strips 12, top spacing strips 13 and top angle strips 12a therein, the parts being secured in position by the use of brads, or in any other suitable manner. The side angle strips 14 are then secured to the spacing sides at the upper end portions of the side angle strips 12 in the upper recessed or cutaway flanged portions thereof with the width flanges 14b of the strips 14 bearing inwardly against the spacing strips 16. The plate member 11 may now be mounted for sliding movements in the guide spaces 15 which are formed between the width flanges 12c and 14b of the angle strips 12 and 14. The upper plate member 10 may also be placed inwardly against the width flanges 14b of the angle strips 14 after first positioning the spacing strips 16a in the angles of the strip 14. The securing of the plate members 10 and 11 in the casing may now be completed by simply positioning the clamping strips 20 across the top of the casing opening and along the sides thereof in clamping engagement with the member 10 at their inner edges and with the outer edges of the depth flanges 14a of the strips 14 at their outer edges, these clamping strips being secured in position by insertion of the screws 21. The lower member is also clamped in its runway by attaching the lower clamping strip members 22 in position by use of the screws 28 with the inner lip edges 23 thereof bearing against the member 11 and their outer edges bearing inward against the outer edges of the respective flanges 12b.

It is apparent that the mounting and holding means for the plate members may be easily and quickly attached to a casing member in plate-holding relation, and that the whole constitutes an exceedingly simple and economical mounting for storm window members.

I wish it understood that my invention is not limited to any specific construction, arrangement or form of the parts, as it is capable of numerous modifications and changes without departing from the spirit of the claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent, is:

1. The combination with a window frame or casing having a marginal recess at the sides and top of its window receiving opening, a mounting for a storm window comprising upper fixed and lower movable plate members in said opening, a first angle strip secured in the sides of said marginal recess, said angle strip having a reduced edge above the top of the lower plate, a second angle strip having a length equal to the height of the upper plate secured in the marginal recess over the upper portion of the first mentioned angle strip, spacing strips in the inner corners of each of said angle strips, a spacing strip along the top of the window recess and an upper angle strip mounted in said recess over said spacing strip, clamping strips secured in said marginal recess for retaining the upper and lower plates in the channels formed by the two side angle strips and said top angle strip.

2. The combination with a window frame or casing having a marginal recess in the sides and top of its window receiving opening, a mounting for a storm window comprising upper fixed and lower movable plate members in said opening, a first angle strip secured in the sides of said marginal recess, said angle strip having a reduced edge above the top of the lower plate to the top of the window frame, a second angle strip having a length equal to the height of the upper plate secured in the marginal recess of said first mentioned angle strip, spacing strips in the inner corners of each of said angle strips, a spacing strip along the top of the window recess and an angle strip mounted in said recess over said spacing strip, clamping strips secured in said marginal recess for retaining the upper and lower plates in the recesses formed by the two side angle strips and said top angle strips, said clamping strips around the sides and top of the upper plate member holding said top plate in a fixed position and other clamp strips on the marginal sides of the lower plate, the inner edges of which are in contact with said lower plate permitting the same to be raised behind the upper plate.

EDWARD C. MUELLER.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
138,579	Perkins	May 6, 1873
1,715,733	Applas	June 4, 1929
2,026,175	Imhofe	Dec. 31, 1935
2,120,359	Hartmann	June 14, 1938
2,151,295	Hucke	Mar. 21, 1939

FOREIGN PATENTS

Number	Country	Date
447,331	Great Britain	May 15, 1936