

Feb. 17, 1953

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2,628,678

COMBINATION STORM WINDOW

Filed July 19, 1951

2 SHEETS—SHEET 1

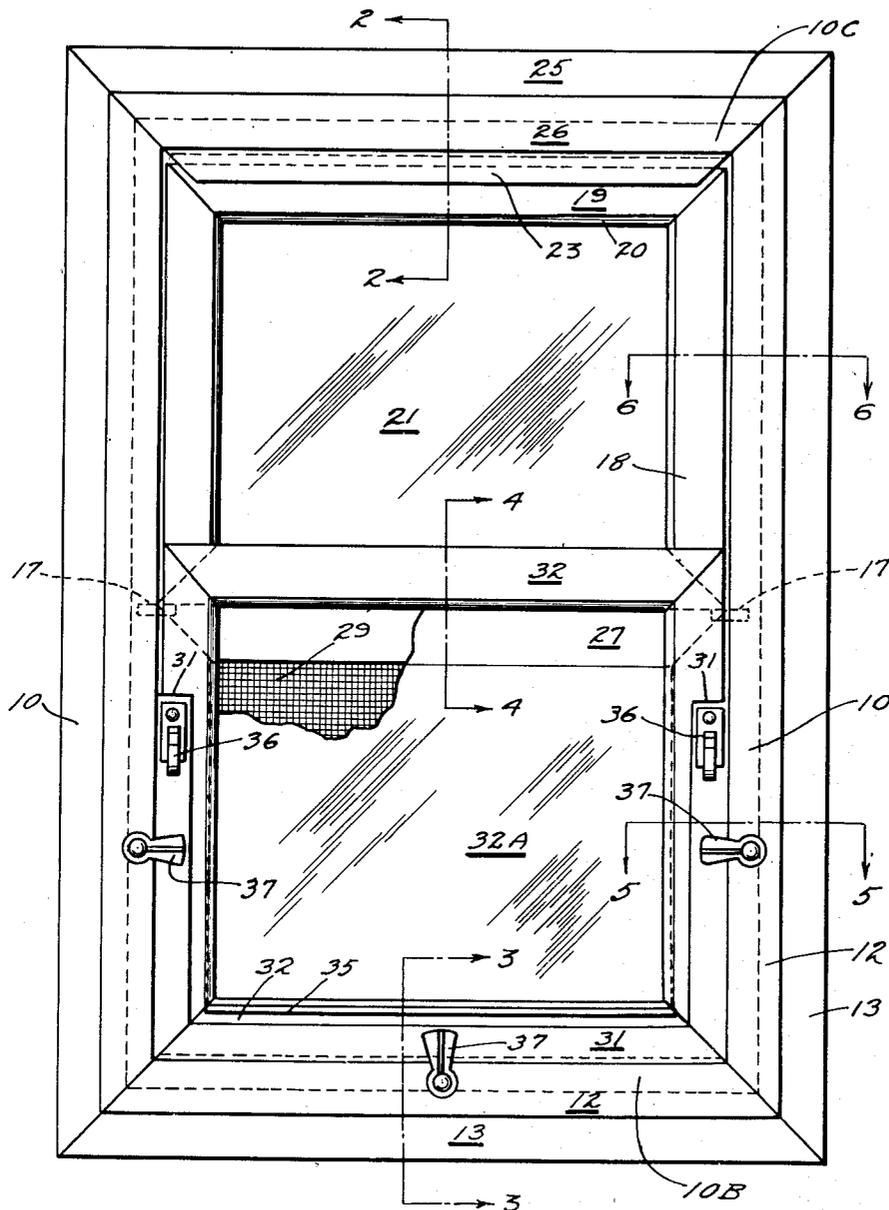


FIG. 1.

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2 SHEETS—SHEET 2

Fig. 2.

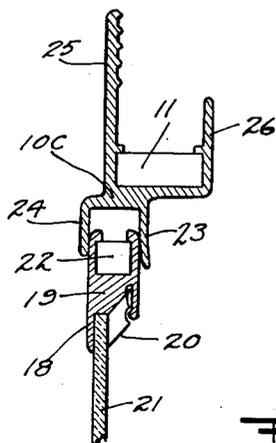


Fig. 3.

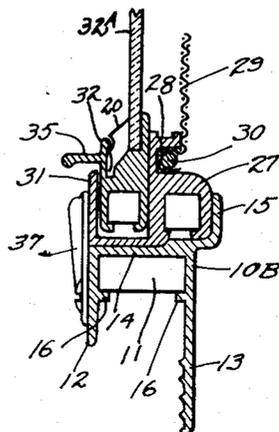


Fig. 4.

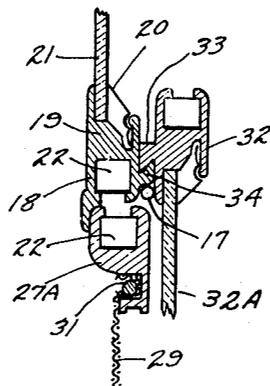


Fig. 5.

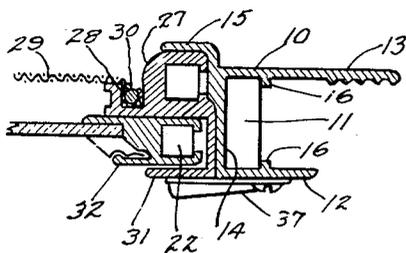
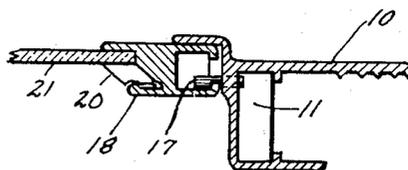


Fig. 6.



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# UNITED STATES PATENT OFFICE

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## COMBINATION STORM WINDOW

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4 Claims. (Cl. 160-90)

1

This invention relates to a combination storm window and more particularly to a simplified form of combination storm window incorporating glazed and screened sash.

The principal object of the invention is the provision of an inexpensive combination storm window construction.

A further object of the invention is the provision of a storm window construction wherein a screen sash includes means forming a channel for the reception of a glazed sash in position adjacent thereto.

A still further object of the invention is the provision of a combination storm window in which a screened sash unit is positioned in a main frame in a manner to normally support a glazed sash unit thereabove and a secondary glazed sash unit therebeside.

A still further object of the invention is the provision of a combination storm window in which the lower one of a pair of glazed sash is positioned inwardly with respect to the upper one of said pair and is movable vertically for ventilating purposes.

The combination storm window disclosed herein comprises a simple and inexpensive construction particularly when formed of suitable aluminum extrusions and comprising a main frame for mounting on or in a window opening adjacent the regular window therein and which main frame receives directly an upper glazed sash and a lower screened sash. The lower screened sash has a channel construction formed on its inner surface providing means for movably positioning a lower glazed sash therebeside to complete the storm window construction.

The improvement in the art relates primarily to the formation of the screened sash with the channel forming section integral therewith and in which channel forming sections the lower one of the glazed sash is positioned.

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 the intention to cover all changes and modifications of the example of the invention herein chosen for purposes of the disclosure, which do not constitute departures from the spirit and scope of the invention.

Figure 1 is a rear elevation of the combination storm window.

Figure 2 is a vertical section taken on line 2-2 of Figure 1.

2

Figure 3 is a vertical section taken on line 3-3 of Figure 1.

Figure 4 is a vertical section taken on line 4-4 of Figure 1.

Figure 5 is a horizontal section taken on line 5-5 of Figure 1.

Figure 6 is a horizontal section taken on line 6-6 of Figure 1.

By referring to the drawings and Figure 1 in particular it will be seen that a main frame is formed of a pair of oppositely disposed side sections 10-10, a bottom section 10B and a top section 10C. The side sections 10-10 and the bottom section 10B are formed of the same extruded metal shape, as best shown in cross section in Figures 3, 5 and 6 of the drawings. The ends of each of the sections 10-10, 10B and 10C are mitered and joined by L-shaped corner keys 11 which are preferably transversely cut sections of an angular metallic extrusion. The sections of the main frame are secured to the corner keys 11 by slight distortion of the metal of the main frame into the corner keys as is known in the art.

The metallic shape forming the side sections 10-10 and the bottom section 10B comprises a pair of flanges 12 and 13 spaced by an interconnecting web 14, the flange 13 having an offset extension 15 on the opposite side of the web 14 and outwardly with respect thereto. The flanges 12 and 13 have oppositely disposed, turned ribs 16-16 for the reception of the corner keys 11 and the flange 13 is longer than the flange 12 and is indented to overlap a window frame in which the storm window is positioned. The flange 12 insures proper positioning of the frame with respect to the window so that the screened sash and the glazed sash normally carried thereby can be moved inwardly past the blind stops of a normal window construction.

The side sections 10-10 are provided with oppositely disposed pins 17, as best shown in Figures 1, 4 and 6 of the drawings, which pins 17 enable the frame to position and support an upper glazed sash 18 therein. The glazed sash 18 includes a metallic frame 19, a metallic spline 20 and a pane of glass 21. The metallic frame 19 is mitered at its four corners and secured in assembled relation by L-shaped corner keys 22 as known in the art.

By referring to Figure 1 of the drawings it will be observed that the upper glazed sash 18 is positioned directly in the main frame formed by the side sections 10 and top sections 10C with its upper edge registering between a flange 23 and a

flange 24 on the section 10C. The section 10C is formed in the same manner as the side sections 10—10 and 10B with the exception of the flange 23 hereinbefore referred to. It includes the flange 24 which corresponds with the flange 15 heretofore referred to and a flange 25 which corresponds with the flange 13 heretofore referred to and the flange 26 which corresponds with the flange 12 also heretofore referred to. It will thus be seen that sections of two extruded shapes are used to form the main frame and that the upper glazed sash 18 is positioned directly therein.

The area in the main frame immediately below the upper glazed sash 18 is occupied by a screen sash 27, the corners of which are cut and mitered and secured to one another by corner keys 22. The screen sash includes a groove 28 inwardly from the periphery thereof in which a portion of the screen 29 is positioned and secured by a deformable plastic or metal wire-like shape 30. The screen sash 27 also includes a projecting L-shaped flange 31.

By referring again to Figure 1 of the drawings it will be observed that the uppermost portions of the L-shaped flange 31 are cut away at the opposite sides of the frame so that they terminate at a lower level than the remainder of the screen sash 27. It will be seen that the L-shaped flange 31 on the screen sash 27 is formed only on the sides and lower section thereof so that a U-shaped channel is formed for the reception of the lower glazed sash 32. The lower glazed sash 32 is identical with the upper glazed sash 18 and is held in position in the main frame by sliding registry with the channel formed in the screen sash 27 by the L-shaped flange 31 thereon.

It will thus be seen that the combination storm window disclosed herein does not require modifying sections as heretofore believed necessary in the art to form means for the reception of a pair of glazed and a screen sash. On the contrary, the screen sash is so devised that the positioning of the same in the main frame forms a channel for the reception of the lower one of the glazed sash. At the same time, the screen sash firmly engages the uppermost one of the glazed sash and contributes to the support thereof rendering the upper sash independent of the pins 17 heretofore referred to. The pins 17 serve a useful purpose in holding the upper sash in position when the screen sash 27 is removed from the assembly.

In Figure 4 of the drawings a cross sectional detail of the meeting rail portions of the combination storm window may be seen and it will be observed that the lower rail of the upper glazed sash 18 and the upper rail of the lower sash 32 are provided with oppositely disposed, interlocking formations 33 and 34 so that an air-tight seal is obtained between the glazed sash 18 and 32. The lower portion of the glazed sash 32 is provided with a longitudinal flange 35 which projects inwardly and serves as a handle for lifting the lower sash when desired.

Pivoted cams 36 are provided adjacent the upper ends of the L-shaped flanges 31 and are operable through openings formed therein, as best seen in Figure 1 of the drawings, for frictional engagement with the metal portion of the lower glazed sash 32 to hold the same in desirable elevated relation or to lock the same in closed position. The screen sash 27 and its L-shaped flange 31 is held in position in the main frame by manually movable catches 37 which

are pivotally secured to the main frame sections 10—10 and 10B.

It will thus be seen that the combination storm window is readily assembled by placing the upper glazed sash 18 in the frame with its upper edge in registry beneath the flange 23 and with its lower edge resting on the pins 17. The screen sash 27 is then positioned in the frame and secured by the catches 37. The lower sash 32 is then positioned in the channel of the screen sash 27 formed by the L-shaped flange 31 on the sides and bottom thereof. It will be observed that the meeting rail or top rail of the screen sash 27 is formed of a section of a different shape 27A than the side and bottom sections thereof as may be seen by referring to Figure 4 of the drawings wherein it will be observed that the L-shaped flange 31 is omitted.

It will thus be seen that the combination storm window disclosed herein may be inexpensively formed and hence distributed and which will form an adequate weather-tight closure or screen ventilator for a window opening.

Having thus described my invention, what I claim is:

1. A storm window including a main rectangular shaped frame having at the front side thereof an inwardly extending flange defining the opening in said frame, a screened sash comprising a metal frame and a section of screen secured thereto, said screened sash being removably positioned in the lower forward part of the main frame against said flange and having an inturned substantially L-shaped flange integral therewith on the rear face of the sides and bottom section of the same at the outer marginal portion thereof and forming therewith substantially U-shaped inwardly facing channels, a glazed sash removably slidably positioned in said channels and supported on said screened sash with the frame of the glazed sash disposed alongside and fitting against the frame of the screened sash, the channels on the sides of the screened sash being open at the upper part thereof providing for the introduction into and removal of said glazed sash from the channels of the screened sash from the rear side of the main frame, catch means on the main frame at the rear side thereof for holding the screened sash in position against said flange, and a second glazed sash removably positioned in the upper forward part of the main frame and supported on said screened sash.

2. A storm window of the construction set forth in claim 1 and in which the flange on the sides of the screened sash terminates short of the top thereof.

3. A storm window of the construction set forth in claim 1 and in which the rear portions of the L-shaped flange on the sides of the screened sash are provided with apertures near their upper ends and a cam member is pivotally mounted upon the L-shaped flange adjacent each of the apertures therein and operable there-through for applying tension to the glazed sash positioned in the channels at the rear side of the screened sash to hold said last mentioned glazed sash in different positions of vertical adjustment.

4. A storm window of the construction set forth in claim 1 and in which auxiliary means is provided for removably supporting the second glazed sash in the upper forward part of the main frame, said auxiliary means comprising oppositely disposed pins projecting inwardly

5

from the sides of the main frame in position to be engaged by the bottom section of the second glazed sash when in position in the upper forward part of the main frame to support said second glazed sash when the screened sash is removed.

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