Feb. 26, 1946. H. A. KAMMERER 2,395,742

COMBINATION WINDOW SASH

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Fig. 1.

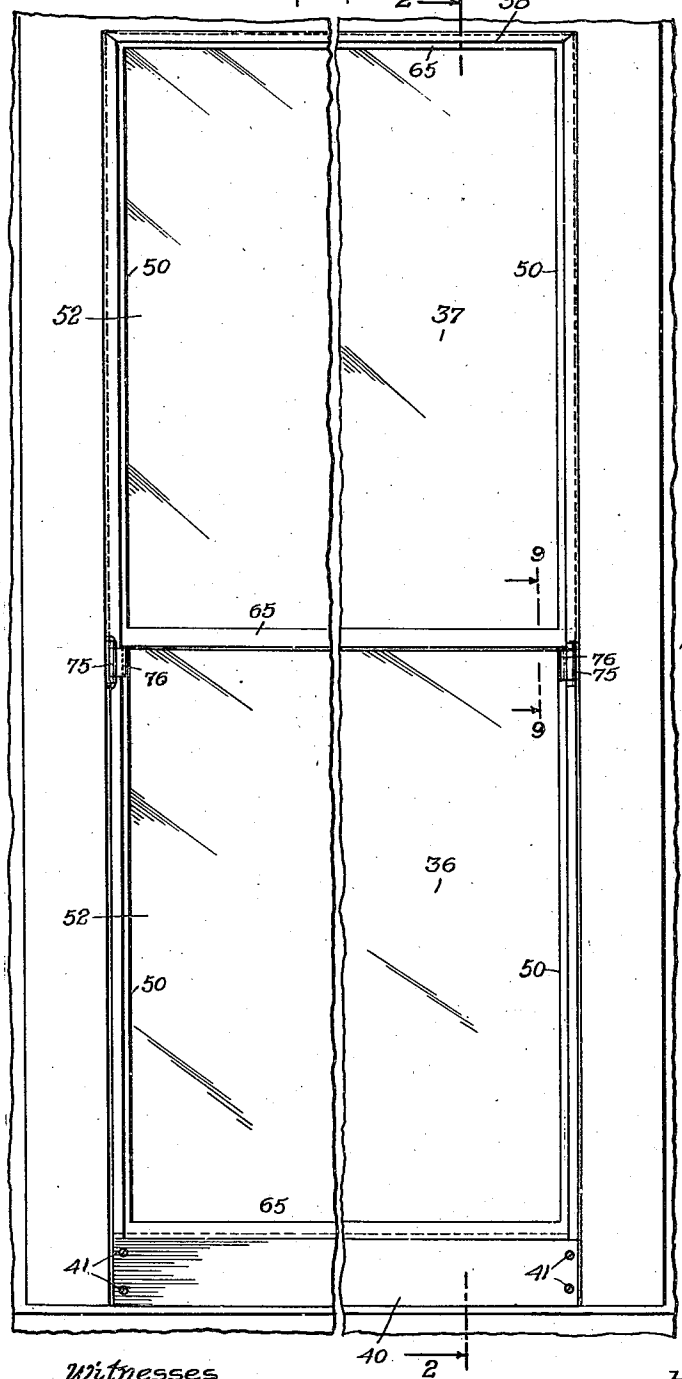
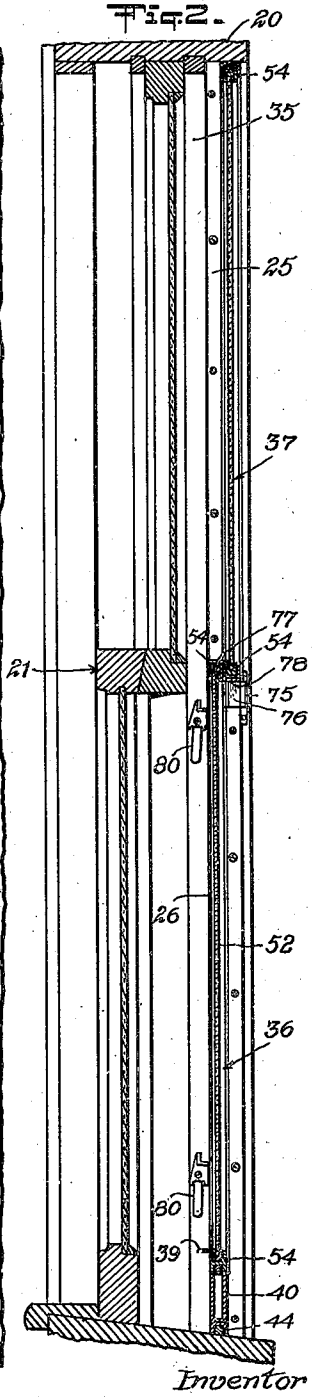


Fig. 2.



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Fig. 3.

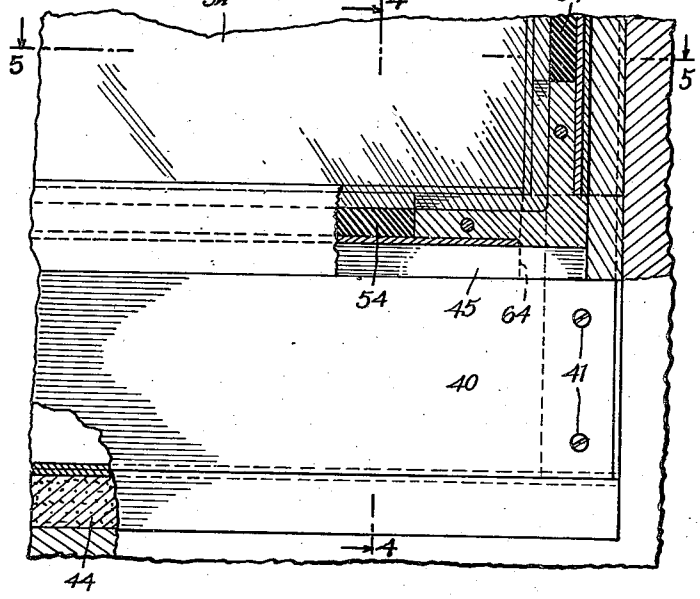


Fig. 4.

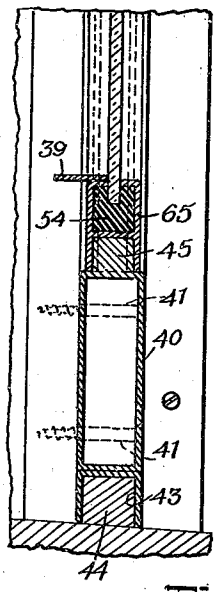


Fig. 5.

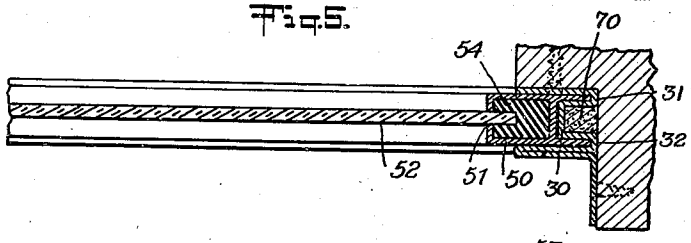
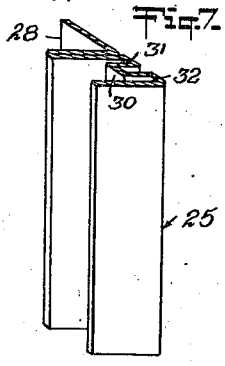


Fig. 7.



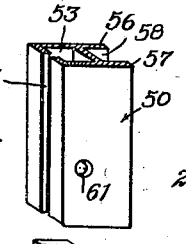
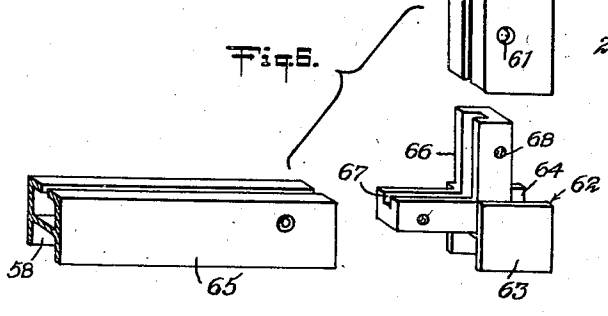


Fig. 6.



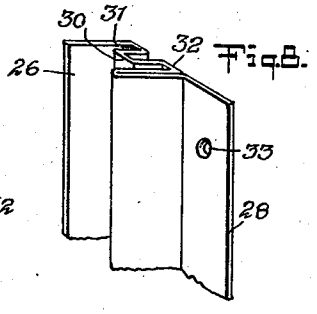


Fig. 8.

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Fig. 10.

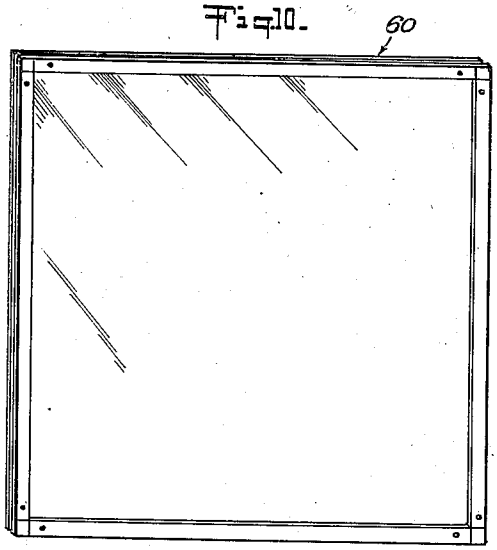


Fig. 9.

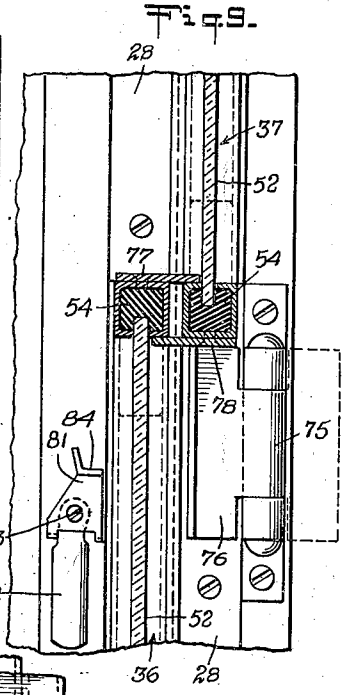


Fig. 13.

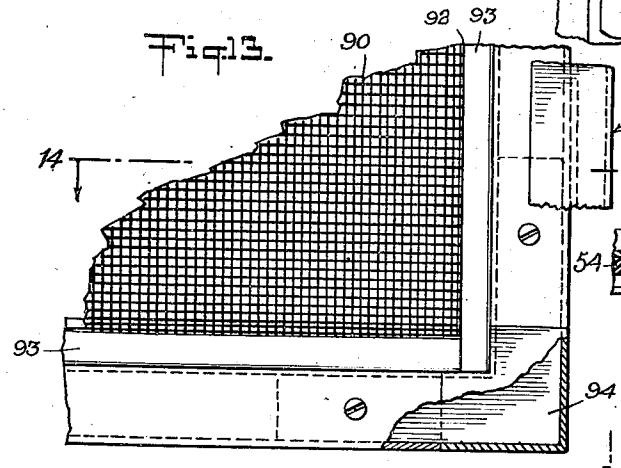
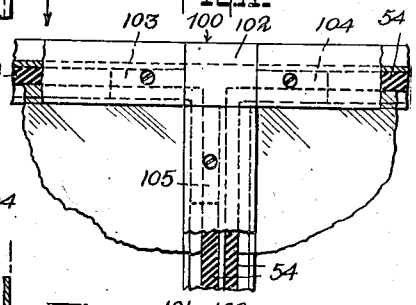


Fig. 11.



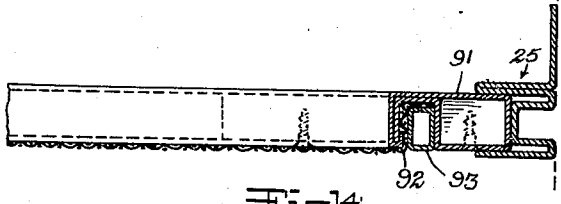
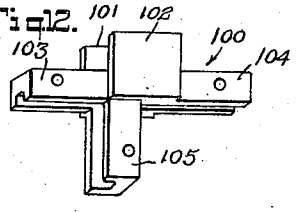


Fig. 14.

Fig. 12.



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Patented Feb. 26, 1946 2,395,742

UNITED STATES PATENT OFFICE

2,395,742

COMBINATION WINDOW SASH

Harry A. Kammerer, Mount Vernon, N. Y.

Application October 12, 1943, Serial No. 505,913

4 Claims. (Cl. 189—76)

This invention relates to a window sash, and more particularly to an auxiliary or storm window sash.

The advantages of an auxiliary or storm sash are well known and there are many types of conventional sash that are adapted to be put on and removed as the weather changes, to protect against the cold and storm, and may be replaced by screens in the summertime.

A further object is to provide a sash of the type described in which at least one of the sashes may be raised or lowered at will for ventilation or for cleaning purposes.

One of the principal advantages of my invention resides in the manner in which the frame of the sash is fabricated, which enables it to be adapted readily to different sizes and shapes upon installation and the manner in which the frame of the sash dove-tails into the supporting members to provide a complete air-sealing, while at the same time to allow free operation in opening and closing.

Another advantage resides in the fact that upon installation my fittings may be caulked to insure a complete sealing.

Other objects and advantages of my construction become apparent from the accompanying drawings, in which—

Fig. 1 is an elevation of a window embodying my invention;

Fig. 2 is a cross-sectional view of the same window taken on the line 2—2 of Fig. 1;

Fig. 3 is a detail view somewhat enlarged of a corner of the window;

Fig. 4 is a cross sectional view taken on the line 4—4 of Fig. 3;

Fig. 5 is a cross sectional view taken on the line 5—5 of Fig. 3;

Fig. 6 is a perspective view showing the manner in which the frame members are joined together at the corners;

Fig. 7 is a perspective view of the channel member as used with the upper sash;

Fig. 8 is a similar view showing the channel member as used with the lower sash;

Fig. 9 is a detail cross sectional view taken on the line 9—9 of Fig. 1;

Fig. 10 is an elevation of a storm sash;

Fig. 11 is a detail view of a modification adapted to be used when more than one light is necessary;

Fig. 12 is a detail view of the joining member shown in Fig. 11;

Fig. 13 is a detail view showing the manner in which the screen is used; and

Fig. 14 is a cross sectional view taken on the line 14—14 of Fig. 13.

Referring more particularly to the drawings, my construction is adapted not only for original installations in the building of new windows, but also installations in existing windows, and is adapted to be fitted into the conventional frame 20 as an auxiliary to the conventional window 21. I provide channel members 25 having a pair of inwardly extending flanges 26 and 27, and an additional flange 28 at right angles thereto. Flanges 26 and 27 provide a channel 29 in which is formed a U-shaped member 30 which defines, with the flanges 26 and 27, grooves 31 and 32 therein. The flange 28 is provided at spaced intervals with screw holes 33 for installation purposes.

The channel member is adapted for installation in both the upper and lower sash being only necessary to reverse it from one position to the other. Referring to Fig. 2, the channel member 25 is installed with the flange 28 against the window stop 35 for the upper sash, while in the lower, the flange 26 is installed against the window stop. In this manner the lower sash 36 may be raised inside the upper sash 37.

It will be appreciated that the channel members 25 must not only be installed on the sides of the window for the upper and lower sash, but at the top thereof, as shown at 38. At the bottom of the window I further install a member 40, due to the fact that in a normal window the lower sash is of greater length than the upper sash, the member 40 will compensate for the difference in length and make it possible to use an upper and lower sash of identical size. The member 40 is fastened to the inner sill and window stops by means of screws 41. At its lower end it is provided with a channel 43 which, after installation, is caulked with a suitable compound 44. At its upper edge the member 40 is provided with a U-shaped member 45 slightly narrower in width than the member itself.

The window frame is made of prefabricated stock 50 which is provided at its inner side with a slot 51 adapted to receive a pane of glass 52. The slot 51 leads to a chamber 53 in which may be mounted a sealing gasket 54. The member 50 is provided with two flanges 56 and 57 defining the channel 58. It will be seen that when the window is fitted the flanges 56 and 57 engage the channels 31 and 32 of the channel member 35, while the U-shaped member 30 is engaged in the channel 58 to insure a close fit.

In making the sash frame 60, the stock 50 is cut to the appropriate length and the holes 61 bored at the desired place. The four sides of the window are then assembled by means of the corner piece 62 which has inner and outer portions 63 and 64 matching the sides 65 of the member 50. The corner portion 62 is provided with an elbow member 66 which has a channel 67 and the elbow portion 66 is adapted to fit within chamber 53 behind slot 51 in the member 50, as indicated in Fig. 6. The elbow member 66 is also provided with tapped holes 68 to fasten the corners together. As all four sides of the window

are constructed of the same material, it is a simple matter to cut the stock to the desired size and quickly fit it together by means of the corner members 62.

In the past, most windows of this type have been welded or otherwise permanently fastened together, and when a pane of glass is broken, it is necessary to return them to the factory. With my improved construction, the glass may be readily replaced by removing one end and its adjoining corner portions.

In installing my window the channel strips 25 are fastened to the frame of the window against the stop 33, the channel strips for the upper window having the flange 28 against the window stops, while the channel strips for the lower window are reversed. Caulking compound 70 is inserted in the channel 30 to completely seal the channel strips to the frame. The member 40 is then put in place. The lower window 36 is put into place first and the upper window 37 may then be slid into place. In order to hold the upper window in closed position, a hinged latch 75, having an extending member 76 abutting the under side of the window, may be provided on either side. In order to seal the windows when closed, the strip 77 is fastened to the top of the lower window, and a similar strip 78 is fastened to the bottom of the upper window, as most clearly shown in Fig. 9. Since it may be desired to open the lower window for ventilation, latches 80 may be provided at convenient places. The latch 80 consists of two members 81 and 82, the latter being a handle member and is pivoted by the screw 83.

As the window is raised, the member 81 will tend to fall outwardly and the window will be caught by the latch surface 84. It will be appreciated that it may be readily released by moving the handle member 82 toward the glass.

When it is desired to remove the windows they are removed in the same way by opening the hinged member 75 and allowing the upper sash to slide downwardly and then by removing the lower sash. Screens 90, as shown in Fig. 13, are provided, having ends 91 adapted to fit within the channel 29. Since an air seal is unnecessary with screens, the end 91 may be rectangular. Obviously, any type of screen may be used, but one most suitable is shown in Figs. 13 and 14, which may be cut of standard stock and provided with a channel 92 and a wedge member 93 to hold the screen in place. The stock may be joined by the corner member 94 to hold the screen together.

Where it is desirable or necessary to have two or more lights in a window, a T-member 100 is provided. Like the corner member 62, the T-member has two portions 101 and 102 matching the stock 50, and arms 103, 104 and 105 adapted to engage the stock to fasten it together.

While the material used does not form an essential feature of my invention, quite obviously metal or other materials may be molded or pressed as most suitable, since the channel strips 25 may be pressed out of sheet material, while the stock 50 can most readily be pressed and welded together. Lighter metals may readily be used since there are no stresses or strains involved. The lower sash 36 may also be provided with a handle member 39 to facilitate its raising and lowering.

I claim:

1. A window sash formed of channel stock members which meet at the corners of said sash leaving a corner space therebetween, corner members which join said channel members and occupy said corner space, and means for fastening said corner members to said channel members, said channel members being substantially H-shaped in cross section, and having inwardly extending flanges formed on the inner edges of their side walls, thereby defining an inner chamber underneath said flanges, a glass receiving slot between said flanges, and an outer guiding channel, said corner members comprising L-shaped elements which are U-shaped in cross section and having side plates affixed thereto and extending in part beyond said L-shaped elements, said L-shaped elements being adapted to enter the inner chambers of adjoining channel members and to complement said glass receiving slot, said side plates being adapted to complement the side walls of said adjoining channel members and to occupy the corner space therebetween, the channels formed between the outwardly extending parts of said plates and said L-shaped elements continuing and complementing the outer guiding channels of said channel members.

2. A window sash formed of channel members joined at the corners by means of L-shaped members and joined intermediate the corners by means of T-shaped members, and means for fastening said channel members to said L and T-shaped members, said channel members being substantially H-shaped in cross section and having inwardly extending flanges formed on the inner side walls, thereby defining an outer guide channel between the outer side walls, an inner glass receiving slot between the flanges of the inner side walls and a pair of gasket receiving channels underneath said inner wall flanges, said L-shaped members being U-shaped in cross section and being provided with side plates which project outwardly to form outer guide channels corresponding to the first mentioned guide channel, said L-shaped members being adapted to enter the space defined by the inner side walls of the channel members and the flanges thereon and to complement the glass receiving slot between said flanges, the side plates being positioned to complement the side walls of adjoining channel members and to occupy the corner space therebetween, said T-shaped members being U-shaped in cross section and being provided with outwardly projecting side plates corresponding to the first mentioned side plates and forming outer guide channels corresponding to the first and second mentioned guide channels, said T-shaped members being adapted to enter the space defined by the inner side walls of the channel members and the flanges thereon, and to complement the glass receiving slot between said flanges, the side plates of said T-shaped members being positioned to complement the side walls of adjoining channel members and to occupy space therebetween.

3. A corner member for use in window sashes, said member comprising an L-shaped element which is U-shaped in cross section, having outwardly projecting side plates defining a guide channel therebetween.

4. A joining member for joining the side rails of window sashes at an angle of 180°, said joining member comprising a T-shaped element which is U-shaped in cross section, having outwardly projecting side plates defining a guide channel therebetween.

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