Sept. 18, 1945. H. A. KAUFMANN 2,384,929

CASEMENT STORM WINDOW

Filed Nov. 11, 1942 3 Sheets-Sheet 1

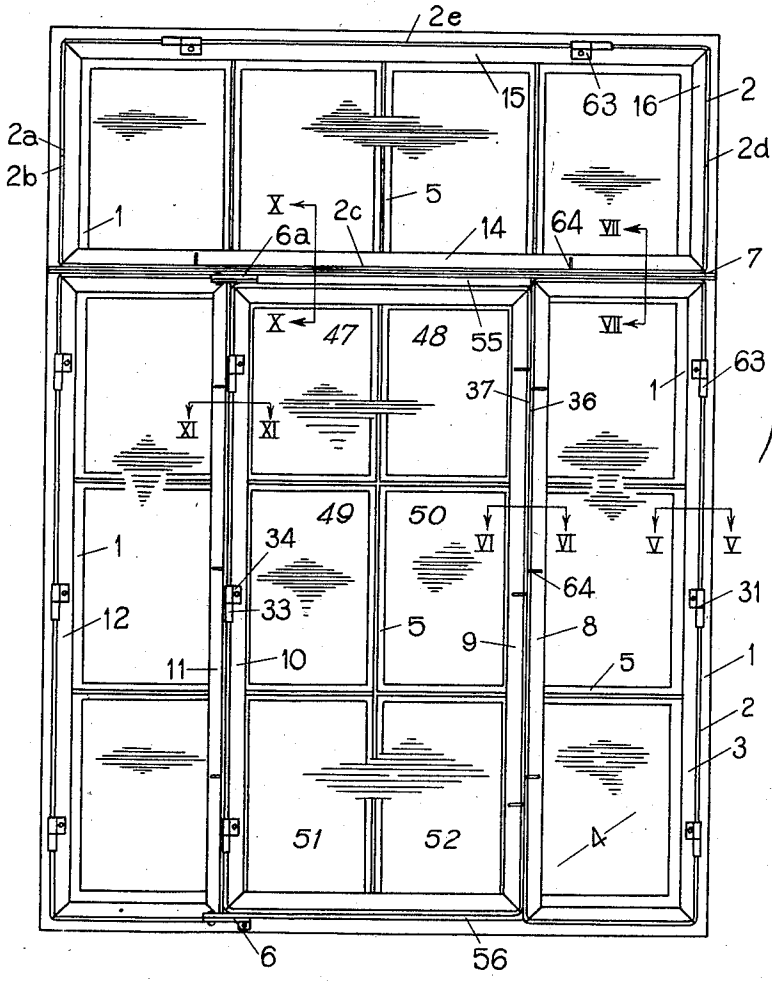


fig. 1

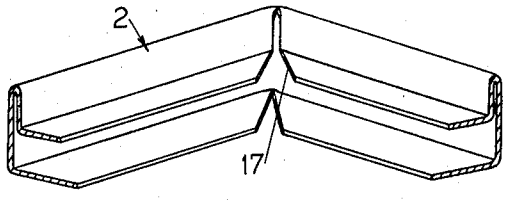


fig. 3

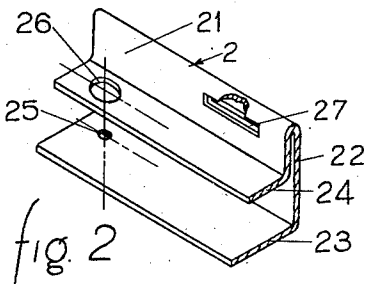


fig. 2

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Sept. 18, 1945. H. A. KAUFMANN 2,384,929

CASEMENT STORM WINDOW

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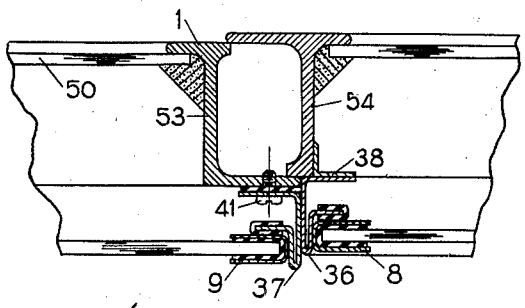


fig. 6

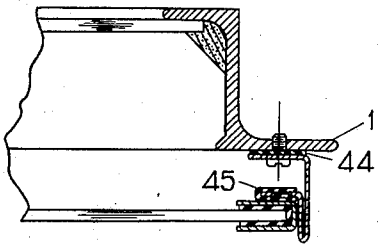


fig. 5

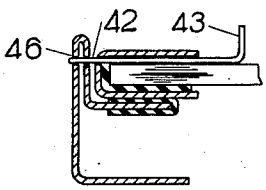


fig. 14

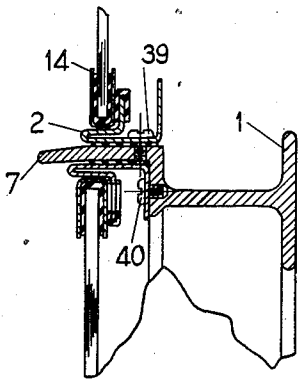
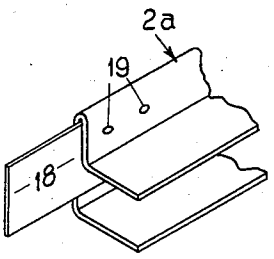


fig. 7



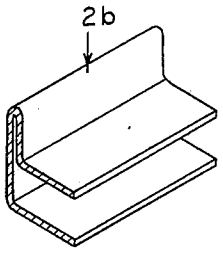


fig. 4

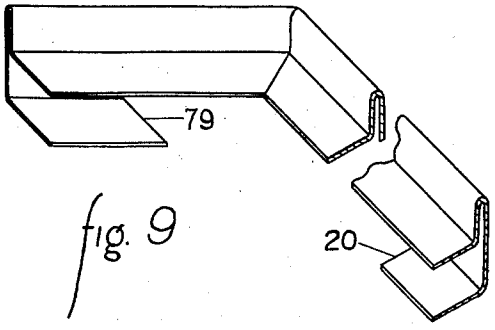


fig. 9

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CASEMENT STORM WINDOW

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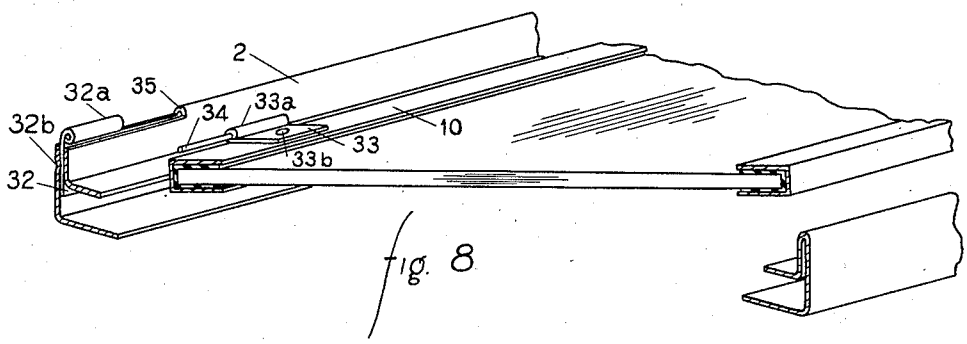


fig. 8

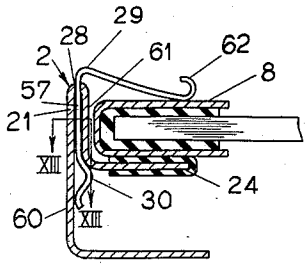


fig. 12

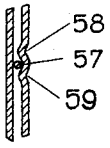


fig. 13

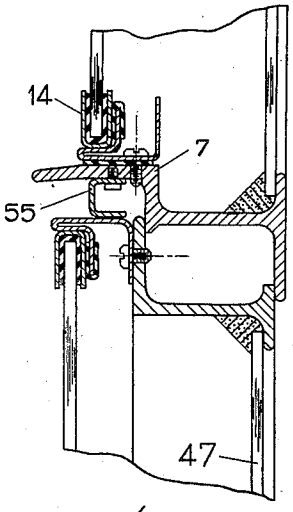


fig. 10

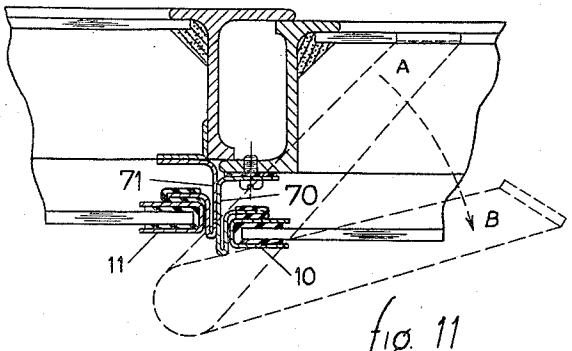


fig. 11

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UNITED STATES PATENT OFFICE

2,384,929

CASEMENT STORM WINDOW

Harry A. Kaufmann, Grosse Pointe Park, Mich.

Application November 11, 1942, Serial No. 465,285

19 Claims. (Cl. 189—64)

This invention relates to metallic sash storm windows and particularly to the type thereof designed for application to casement windows.

The major purpose of this invention is to provide a storm window for application to a casement window which will have small and neat parts for holding the glass or other panel, and yet fit the casement window tightly, smoothly, and with a trim appearance.

In pursuance of this major purpose, it is a further object of this invention to provide a storm window having metal supports, fastening means, and sashes which are capable of being readily fastened to a casement window.

It is a further object of this invention to provide a storm window which can be applied to and removed from a casement window with a minimum of labor.

A further object of this invention is to provide a storm window for application to a casement window which will open and close with the vent of said casement window easily and readily, and, when in a closed position, will make a tight weather seal against adjacent stationary portions of the window.

A further object of this invention is to provide a storm window for application to a casement window in which there will be required a minimum of light materials for construction but the window will be strong and rigid.

In the art of making storm windows as heretofore known, casement windows could ordinarily be provided with storm sash only by means which were bulky in appearance, clumsy in operation, and difficult of application and removal. Particularly, prior existing storm sash, when applied to a casement window, often would not permit the opening of any portion of the casement window without either great inconvenience caused by the necessity of special manipulation of the storm sash, failure of the storm sash to seal tightly when again closed, or both.

This invention solves this difficulty by providing a storm sash which is carried solely by the frame of the casement window in which certain portions thereof are independently mounted on the stationary part of said casement window, and other portions are mounted on the movable part of said casement window; and effective means are provided for sealing the meeting surfaces of said members against entry of weather when said window is closed.

Referring to the drawings:

Fig. 1 represents an overall view of a conventional casement window as seen from the outside, with my improved storm sash applied thereto.

Fig. 2 is a detail showing the construction of a portion of the storm sash main frame.

Fig. 3 is a detail showing the corner construction of the frame.

Fig. 4 is a detail showing the means for fastening the meeting ends of the frame strips.

Fig. 5 is a section taken on the line V—V of Fig. 1 looking in the direction of the arrows and showing the manner of mounting the storm sash onto the storm sash main frame.

Fig. 6 is a section taken on the line VI—VI of Fig. 1 looking in the direction of the arrows and showing the meeting of the movable and stationary members of the storm window.

Fig. 7 is a section taken on the line VII—VII of Fig. 1 looking in the direction of the arrows and showing the fastening of the storm window frame to a portion of the casement frame.

Fig. 8 is a detail showing the construction of the storm sash hinges and their application to the storm window sash and frame.

Fig. 9 is a detail of the vent portion of the storm window showing the cut-out provided for the supporting hinges of the vent portion of the casement window upon which the storm window is mounted.

Fig. 10 is a section taken on the line X—X in Figure 1 looking in the direction of the arrows and showing a further detail of mounting.

Fig. 11 is a section taken on the line XI—XI in Figure 1 looking in the direction of the arrows and showing the details of construction at the hinge side of the vent opening.

Fig. 12 is a section of the storm window frame showing the details of the fastening clip which holds the sash frame in position.

Fig. 13 is a section taken on the line XIII—XIII in Figure 12 showing means for holding the fastening clip firmly in place.

Fig. 14 is a view similar to Fig. 12 and showing alternative means for holding the sash frame in place.

In the description following hereinafter, it will be understood that the term "casement window," or "casement window frame," shall refer to the casement-type window or frame thereof which is installed in a house or other building and to which the storm window is being applied. The term "storm sash main frame" shall refer to the portion of the storm window construction which is designated generally by the numeral 2 and comprises the relatively permanent structure applied to the casement window. The term "storm

window sash" refers to the portion of the storm window structure removably mounted on the storm sash main frame and holding the glass.

Referring now to the drawings and particularly to Fig. 1, there is indicated at 1 the outer frame of a casement window which may be made of any material or of any conventional shape without changing the scope of this invention, but which for the purpose of the hereinafter-following description is assumed to be made of steel, and is further assumed to be of substantially the cross section shown in Figures 5 and 6. This casement window has panels supported by members 5, and includes a vent having panels 47, 48, 49, 50, 51, and 52 thereof, which vent is mounted in a hinged frame for opening in the usual manner. The remaining panels are stationary. The hinges for opening said vent are indicated generally at 6 and 6a.

Mounted on frame 1 is the storm sash main frame 2, the detailed construction of which is shown in Fig. 2. Referring thereto, it will be seen that storm window frame is made from sheet metal which can be readily rolled into shape as shown. Member 23 of storm sash main frame 2 has opening 25 therein for reception of any convenient fastening means (such as screw 41 shown in Fig. 6) by which frame 2 is fixed securely to casement frame 1. Member 24 is substantially parallel to member 23 and is spaced therefrom a convenient distance (approximately one-quarter inch in present installations) and serves to support the storm sash as also shown in Fig. 6. Since, as illustrated in Fig. 9 and explained hereinafter, parts 22 and 23 of this frame member may be cut out to accommodate a hinge, a hinge butt or other projection out from the surface of the casement sash in the region of said frame, it will be evident that part 24 must be spaced from part 23 at least a distance greater than the greatest such projection encountered in a particular installation. This is necessary in order that proper cut-out may be provided as shown in Fig. 9 without cutting into the sash supporting ledge 24 and spoiling the barrier provided thereby to leakage of rain, cold air or wind. Member 24 has opening 26 therein to permit a screw driver or other operating tool to reach the fastening member in opening 25. Frame 2 has a flange shown at 21 and a substantially smooth and flat side shown at 22 for purposes to be described hereinafter.

When there is used the form of means for locking the storm window sash onto the storm window frame shown in Fig. 14, frame 2 also has opening 27 therein, but this will be omitted when other locking means are used.

The corner construction of frame 2 is shown in Fig. 3, where a right-angular cut is made through members 23 and 24 and through the inner side of flange 21 by which frame 2 may be bent to form a neat corner.

It will be seen that the above-mentioned right-angular cut is easily made by a fixed die so that construction is rapid and accurate.

Frame 2 is ordinarily made in two separate strips, having corners as above described, and encompassing the sides of a sash section, as at 2a, 2b, 2c, 2d, and 2e. The same is provided for the other sections shown. It is hence usually necessary to fasten abutting ends together in only two places, as 2a and 2d, for each window section. For the upper section having sash members 14 and 15, one meeting point is shown at 2a and 2b and a detail thereof shown in Fig. 4. A small rectangular plate 18 is inserted within flange 21 of frame member 2 and held in place by embossings 19. The end 2b is then drawn onto plate 18 and embossed thereon similarly to the end 2a. This makes a strong, continuous frame, easily assembled for installation on the site.

It is evident that although I have found two pieces to be the most satisfactory for most purposes, that this sash frame can be made in one piece or many pieces depending upon the size of the panel being handled, the manufacturing and transportation facilities available, and installation conditions. In any event, the abutting ends, whether one or many for each panel, are all joined together in the same manner as described above for the joint at 2a and 2b.

For a window of the type shown in Fig. 1, four of these frames are made, one for the section holding sash 14 and 15, one for the section holding sash 3 and 8, one for the movable section holding sash 9 and 10, and one for the section holding sash 11 and 12. These are fastened to the casement window frame 1 as described and are left in place permanently insofar as the storm window is concerned, even though the sash be removed for reglazing or storage, but can be readily removed whenever desired.

The storm sash is preferably constructed as shown in various places, such as at 9 in Fig. 6. It is merely sheet metal rolled to the form shown and retaining a window panel between the parallel sides thereof with the assistance of a strip of rubber, fiber, or other convenient binding and shock-absorbing material with corners and abutting ends constructed in any of many conventional ways. This sash may also be constructed as disclosed and claimed in detail in my Patent No. 2,291,726, or any other convenient manner which will provide a sash of only slightly greater thickness than the thickness of the window panel itself. However constructed, these sash panels are made to fit snugly within each of the four main frame sections 2 above described. They are received into said frame sections 2 in the angle between member 24 and flange 21, lying against member 24 and within the recess defined by flange 21 as it extends around each section. They are held in place by hinges on the one side of each of them (as 63 in Fig. 1) and by locking means on the other side of each of them (as 64 in Fig. 1).

To elaborate on the mounting of the sash into the frame, reference is made by way of example to the panel containing sash members 3 and 8, as shown in Figures 6, 8, and 10, and it will be understood that all of the other panels are similarly mounted. Referring first to the hinge construction, it will be seen in Fig. 8 that a section is cut out at 35 from the extremity of flange 21 in frame member 2. The receiving portion of the hinge is a strip of metal having a flat portion 32 inserted into cut-out 35, embossed into place at 32b, and provided with rolled-over portion 32a for the reception of the hinge pin. Sash frame 10 is provided with a similar member having flat portion 33 which is fastened in any convenient manner, such as by a screw at 33b, to said sash 10 and provided with a rolled-over end at 33a. This grasps and firmly holds a pin 34. Pin 34 is inserted into the opening in rolled-over member 32a when the hinge is in operating position.

Similar hinges in any convenient number are used on each of the sash sections as shown generally in Fig. 1.

It will be seen that these hinges hold one side of each window section in place with respect to

the main frame section 2. The opposite side of each of said window sections is held in place by either of the locking means shown in Fig. 12 or in Fig. 14.

Referring first to Fig. 12, it will be seen that sash member 8 lies against flange 24 in the same manner as shown in Figures 5 and 6. It is held in place by a wire clip 29 inserted through an opening 28 made in the flange 21 of frame member 2, and extending through said flange 21 to a point beyond member 24.

It is evident that by having the flat side of the sash firmly pressed against the flat surface of flange 24, a wide surface seal will be obtained around the entire perimeter of each window section so that no leakage therethrough is possible.

Referring now to Fig. 14 for alternative means, an opening is cut in the bottom of the sash frame as shown at 42 and a portion of the resilient panel-containing material is cut out to permit the reception of slide 43 between the panel and the side of the window sash as shown. Slide 43 extends through opening 42 and onward through opening 46, which is placed in the flange 21 of frame 2 in position aligned to receive slide 43. By placing a series of similar slides in any conveniently selected number around each of the storm window sections, the said sections can be held firmly in place against flange 24 around the entire lengths of frame members 2.

Clip 29 is shaped as shown in Fig. 12 with a shank 57, a bent-over head portion 62, and a bent foot 30. Shank 57 is of sufficient length that when clip 29 is in place with foot 30 resting tightly against the under side of member 24, its head 62 will press tightly against the upper surface of sash 8 to hold the same firmly in place.

In installing clip 29, the opening 28 is made of sufficient width to permit passage of foot 30 when the clip is turned so that foot 30 is parallel to the frame member 2. The clip is then inserted, moved downward to engage foot 30 under member 24; then with any convenient tool, such as a prick-punch, the two depressed portions 58 and 59 are made, one on each side of shank 57, in the side 61 of frame 2 at approximately the midpoint of flange 21. These two depressed portions, together with foot 30 which bears tightly against member 24, hold clip 29 firmly in place. Clip 29 can rotate on its shank 57, but can not move laterally. Obviously, the placing of clip 29 in place and providing said raised portions 58 and 59 can be accomplished easily and speedily. The clip is turned so that head 62 is in line with flange 21 and the sash (as sash 8) is then placed in position on member 24 of frame member 2, after which head 62 is turned back over the sash and holds it firmly in position. It is evident that any convenient number of clips may be used and will be applied to all frame members and sash members in the same manner described above.

It will be seen that removal of the window is easy for either form of fastening means shown merely by disengaging the clip 29 or the slide 43 as the case may be, swinging the window outward, and lifting the hinges out of position. Thus the windows can readily be swung outward for washing, or the entire window can be readily removed or reinstalled as called for by changing seasons.

Attention is called to the fact that although in some installations it may be omitted, best sealing and heat retention is obtained by the use of an insulating strip (which may be any sealing tape or conventional friction tape) at 44 and 45 and all corresponding positions to assure that irregularities of the opposed metal surfaces will be properly compensated and sealed, and to eliminate the highly heat wasting metal to metal contact which is now common in many installations. By thus preventing the passage of heat from the one steel frame to the other, we are able to secure the structural advantages of metal frames without being subjected to appreciable heat loss therethrough. This applies particularly to sealing strip 44 but is also true of sealing strip 45.

Strip 44 is preferably placed around the entire perimeter of each window section and thus completely insulates the storm window from the casement window. In this way, not only is heat saved, but the inside window is permitted to assume the room temperature and the storm window will assume the outside temperature. This prevents condensation of moisture on the inside window and window frame and thus prevents the now common spoiling of drapes and curtains due to such condensation of moisture on the metal frame of the inner window when the storm window and the main window both include steel frames which are assembled in steel to steel contact. In this way my window not only saves heat but eliminates a common cause of complaint against steel frame storm windows.

Particular attention should be called to the section on the lines VI—VI as shown in Fig. 6 wherein is illustrated the meeting surfaces of the movable vent of the fixed part of the window. The frame sections of the window are shown at 53 and 54 respectively and also shown is the slight overlapping thereof as is commonly employed in this sort of window to secure sealing between these portions. The frame sections 2 are here fastened in the usual manner to window sections 53 and 54, excepting only that it may be necessary to employ bracket 38 to assist such fastening. It will be understood that bracket 38 may or may not be employed as needed. Said frame sections 2 are fastened to window frame portions 53 and 54 in such relation to each other that when the vent of the window is closed and section 53 is contacting section 54, the respectively opposed portions 36 and 37 will contact each other throughout most of their respective lengths. This will provide a wide closely contacting surface seal between these portions of the storm window to insure against entry of any rain or wind therebetween. Obviously, sash sections 8 and 9 shown in Fig. 6 are held in position with respect to frame sections 2 by either of the means above described. Also, the sealing strips indicated at 44 and 45 in Fig. 5 may be used here, too, if desired.

Fig. 11 shows the side of the vent adjacent its hinges. This is substantially the same as the side already described and shown in Fig. 6, excepting that attention is called to the fact that with standard casement hinges there will be experienced no difficulty in opening said vent and closing same again to a tight seal on the storm sash. Dotted lines A represent an ordinary position of hinges 6 and 6a with respect to the section of said Fig. 12, when said vent is closed. When it is opened, the arm of each hinge fastened to the vent will assume a position such as that shown at B, while the arm fastened to the frame will remain in the position A. Observing the line of motion of said hinge, it will be evident that the portion of frame 2 indicated at 70 moves first directly away from that indicated at 71 and then turns outwardly; and that

the return to closed position will be the converse. Hence, a tight seal will be made on the hinge side of the vent when same is in closed position.

Thus, by use of these relatively simple parts, a close seal can be secured entirely around both stationary and movable parts of the storm window.

Attention is also called to Fig. 7 showing a section on the line VII—VII of Fig. 1. This section shows the manner of affixing the frame sections on the portion of the casement window at the bottom of its transom. Obviously, similar procedure can be employed at any other frame member in the casement window at which mutually immovable sections of the storm sash are to be mounted. This feature, of course, will have its widest application on very large windows wherein a single panel can not advantageously be used.

Fig. 10 shows a section similar to that shown in Fig. 7 but taken on line X—X of Fig. 1 to show the details of the vent sealing. Particular attention is invited to member 55 therein which is merely a U-shaped member of appropriate width and depth which is inserted into the opening which would otherwise exist between the upper extremity of the vent portion of the storm window and the bottom of flange 7. Obviously, this will or will not be used according to the existence of space between the upper limit of the storm window and said flange. If used, it may be fastened by any appropriate means such as screws similar to those fastening the rest of the storm window frame. Obviously, a similar piece can be placed in the same manner at the bottom of the vent if desired or needed.

Referring to Fig. 9, it will be seen that the frame 2 can be cut out at points 19 and 20 to receive hinge brackets or other extensions from the otherwise smooth outer surface of the casement window frame. In the particular embodiment shown, the hinges 6 and 6a are assumed to be mounted on flanges fastened to the front of the vent frame and said cut-out portions 19 and 20 are cut so as to fit closely over them. Slight leakage may occur at these points, but if the cutting and fitting is done carefully, it will not be appreciable.

However, where an installation of highest quality is desired, it is evident that after the storm sash main frame is attached to the casement frame, all corners, joints, bracketed attachments (such as that including strip 36 in Fig. 6) and other points where leakage of air is conceivable may be puttied or caulked in any standard manner, and this will eliminate all possibility of leakage at any point. If the puttying and caulking job is carefully done, it is evident that it can be kept entirely out of sight from either the inside or the outside of the window.

It will be observed that by reason of the mounting of said storm window firmly onto the casement window itself, the storm window will possess all of the rigidity of said casement window, and yet its opaque parts be small to admit a maximum amount of light into the room. It will also be light in weight to minimize the load on the casement window hinges and mounting means, and it will require a minimum amount of material for fabrication.

It will be seen that while I have selected a particular type of domestic casement window as the embodiment of my invention for purposes of illustration, that the frame and sash sections disclosed and described can be varied to meet a wide variety of windows without alteration of these sections or of the technique employed in using them. The sections can be conveniently cut to fit any size window and in very large windows subdivisions can be readily made in the manner shown in Fig. 7. The movable vent can be either horizontally or vertically hinged with no difference in the installation of the storm window. With such flexibility and versatility inherent in my invention and the members used in comprising the same, it will be obvious that various modifications of the individual parts can be readily made without departure from the underlying concept of invention herein disclosed. Such variations may (by way of example only, and not as inclusive enumeration) be found in further variations of the locking means represented by slide 43 on clip 28, by variations in the section of sash member 3, and its counterparts, wherein the same can be variously reinforced, providing only the frame section is substantially rectangular, or by using any of the many forms of hinges which will be found readily available. Therefore, excepting as the claims specifically limit otherwise, they will be construed to include these and the various other variations which will be found available.

Having, therefore, fully disclosed and described my invention, I claim:

1. Storm sash for a casement window comprising: a plurality of independent but cooperating sections each mounted independently on a portion of the casement window and each section consisting of a relatively permanent part and a relatively removable part, wherein said relatively permanent part comprises two spaced members both parallel to the casement panel of which one member supports said relatively movable part and the other member is affixed to a portion of the casement sash at a point on said other member located directly between the first above-named member and the portion of the casement sash to which said relatively permanent part is attached.

2. Storm sash for a casement window comprising: a strip affixed relatively permanently to the casement window frame by means located directly between said frame and the panel carried by said sash and presenting a sash-supporting surface spaced from and parallel to the sash of said casement window and a sash-retaining flange at right angles to said sash supporting surface and extending outwardly therefrom and placed back-to-back with a corresponding flange similarly mounted on an adjacent frame, said flange defining a recess; a rectangular sash and a panel retained therein; said sash being received on said sash-supporting surface and within the recess defined by said flange; removable means holding said sash against said surface.

3. Means for mounting a storm sash onto a casement window including: a relatively permanently affixed supporting strip presenting a flange adjacent the sash, which flange comprises two parallel sheets spaced apart; an opening in the top of said flange; a wire clip within said opening bent at its inner end to bear against a portion of said strip and bent at its outer end to bear against said sash.

4. Means for mounting a storm sash onto a casement window including: a strip on the frame of said casement window presenting a flange, which flange comprises two parallel sheets spaced

apart a distance substantially equal to the diameter of the hereinafter-mentioned wire; an opening in the top of said flange; a resilient wire member extending through said opening between said sheets and perpendicularly to the plane of said window, said wire being bent over at its outer end to an angle of substantially 90° with the bent-over portion bearing against said sash and said wire being also bent near its inner end to an angle of substantially 120° lying in substantially the same plane perpendicular to the window panel as the first named bent-over portion and positioned to bear against an inner extremity of said flange, said bent-over portions of said wire being spaced with relation to said extremities of said flange so that when said wire is in locked position a slight tension is placed on the portion thereof between said bent-over portions; a pair of deformed portions in one sheet of said flange extending toward the other sheet and positioned adjacent said wire on each side thereof.

5. In means for mounting a storm sash onto a casement window, a strip providing the base mounting for the sash of the storm panel comprising: a continuous member having a part lying flat on the surface of the casement window frame, another part parallel thereto and spaced perpendicularly therefrom, and a flange perpendicular to said foregoing parts, which flange comprises two sheets connected at the outer extremity of the flange and each sheet being integral with one of said first-named parts at an inner portion of said flange.

6. A mounting strip for a casement storm window comprising: a part lying flat against an outer surface of the casement window frame, a part extending from said first-named part perpendicularly to said surface of said frame, a part parallel to said second-named part and spaced relatively slightly therefrom, and a part parallel to said first-named part and spaced substantially therefrom, the whole presenting in cross-section two nested L-shaped portions wherein each leg of each L is parallel to and spaced from the corresponding leg of the other L.

7. In means for mounting a storm window onto a casement window, including a base strip affixed relatively permanently to the frame of said casement window and presenting a flange including two parallel sheets spaced slightly apart and a storm sash removably located in weather sealing relationship against said base strip, separable hinges partially supporting said sash onto said base strip comprising: means on said sash holding a pin parallel to a side section of said sash; a strip located between said sheets of said flange and substantially filling the space between them, said strip being rolled at its outer end to form a tube parallel to said flange to receive said pin and having the rolled portion bear against the outer extremity of said flange, and said last-named strip being held in place by embossing one sheet of said base strip thereagainst, whereby to form a pin-receiving member for said hinge of a single piece of material and mount same within said flange without further fastening members.

8. In means for mounting a storm window onto a casement window, including a base strip affixed relatively permanently to the frame of said casement window and presenting a flange including two parallel sheets spaced slightly apart and a storm sash removably located in weather sealing relationship against said base strip, separable hinges partially supporting said sash onto said base strip comprising: means on said sash holding a pin parallel to a side section of said sash; a strip located between said sheets of said flange and substantially filling the space between them, said strip being rolled at its outer end to form a tube parallel to said flange to receive said pin and having the rolled portion bear against the outer extremity of said flange, and means holding said strip in position between the sheets of said flange.

9. Storm sash for a casement window comprising: a plurality of integral metal frame members mounted each independently on a portion of said casement window sash, each providing a supporting portion spaced from said sash and each defining a recess, a panel supporting sash located on said supporting portion within said recess and removably held therein by separable hinge means on one side thereof and releasable means on the other side thereof, wherein a single line perpendicular to the casement window can be drawn through each of the following: the casement frame, the point of attachment to said casement frame of the storm window frame and a portion of the panel carried by said storm sash.

10. A mounting strip for a casement storm window comprising: a part lying flat against an outer surface of the casement window frame, a part extending from said first-named part perpendicularly to said surface of said frame, a part parallel to said second-named part and spaced therefrom, and a part parallel to said first-named part and spaced therefrom, the whole presenting in section two nested L-shaped portions wherein each leg of each L is parallel to and spaced from the corresponding leg of the other L.

11. A frame member of a storm window relatively permanently affixed to a casement window sash comprising: a part of L-cross-section utilizing one leg of the L as a fastening means and another part of L-cross-section nested with the first named part and supported thereby providing a sash receiving and supporting means spaced away from the casement sash surface a distance greater than the greatest projection of a portion of said casement window above the said casement sash surface in the region of said frame, a cut-out portion in said first named L part accommodating such projection without interrupting the sash supporting L part, and caulking between said frame member in said cut-out region and said projection.

12. A frame member of a storm window relatively permanently affixed to a casement window sash comprising: a part of L-cross-section utilizing one leg of the L as a fastening means and another part of L-cross-section nested with the first named part and supported thereby providing a sash receiving and supporting means spaced away from the casement sash surface a distance greater than the greatest projection of a portion of said casement window above the said casement sash surface in the region of said frame, a cut-out portion in said first-named L part accommodating such projection without interrupting the sash supporting L part.

13. Storm sash for a casement window comprising: a plurality of unitary metal frame members mounted relatively permanently each over an individual and corresponding portion of said casement window, and a panel supported on a sash removably mounted on each of said frame members, which panel is larger than the panel mounted in the corresponding portion of the

casement window and a portion thereof is located directly outward of the point of attachment of the said unitary frame member to the casement window frame.

14. Storm sash for a casement window comprising: a plurality of independent but cooperating sections each mounted independently on a portion of the casement window and each section consisting of a relatively permanent part and a relatively removable part, wherein said relatively permanent part is affixed to said casement window by means located directly between the panel carried by said storm sash and the portion of said casement window to which said relatively permanent part is attached, whereby a smooth periphery is presented by said relatively permanent part located closely adjacent the periphery of the panel.

15. A storm window frame member for relatively permanent affixation to a casement window sash comprising: a part of L cross-section having one leg of the L lying flat against the outer surface of said casement sash as a fastening means and another part of L cross-section nested with the first-named part and supported thereby, providing by a flange thereof parallel to said fastening means a sash-supporting means spaced away from the casement sash surface and non-metallic sealing tape on said sash-supporting flange enveloping both sides thereof.

16. A mounting strip for a casement storm window comprising: a surface lying flat against an outer surface of the casement window frame, a surface extending from said first-named surface perpendicularly to said surface of said frame, a surface parallel to said second-named surface and spaced therefrom, and a surface parallel to said first-named surface and spaced therefrom, the whole presenting in section two nested L-shaped patterns wherein each leg of each L is parallel to and spaced from the corresponding leg of the other L.

17. Means for mounting a storm sash onto a window including: a supporting strip presenting a flange adjacent the sash which flange comprises two parallel sheets spaced apart; an opening in the top of said flange; a wire clip within said opening bent at its inner end to bear against a portion of said strip and bent at its outer end to bear against said sash; and a pair of deformed portions in one sheet of said flange extending toward the other sheet and positioned adjacent said wire one on each side thereof.

18. Means for mounting a storm sash onto a window including: a supporting strip presenting a flange adjacent the sash which flange comprises two parallel sheets spaced apart; an opening in the top of said flange; a wire clip within said opening bent at its inner end to bear against a portion of said strip and bent at its outer end to bear against said sash; and a pair of deformed portions in one portion of said strip one on each side of said wire when same is in operating position holding same against improper displacement therefrom.

19. Storm sash for a casement window comprising: a strip affixed relatively permanently to the casement window frame by means located directly between said frame and the panel carried by said sash and presenting a sash supporting surface spaced from and parallel to the sash of said casement window, and a sash-retaining flange at right angles to said sash supporting surface and extending outwardly therefrom and placed back-to-back with a corresponding similarly mounted adjacent flange, said flange defining a recess; a sash and a panel retained therein; said sash being received on said sash supporting surface and within the recess defined by said flange; removable means holding said sash against said surface.

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