

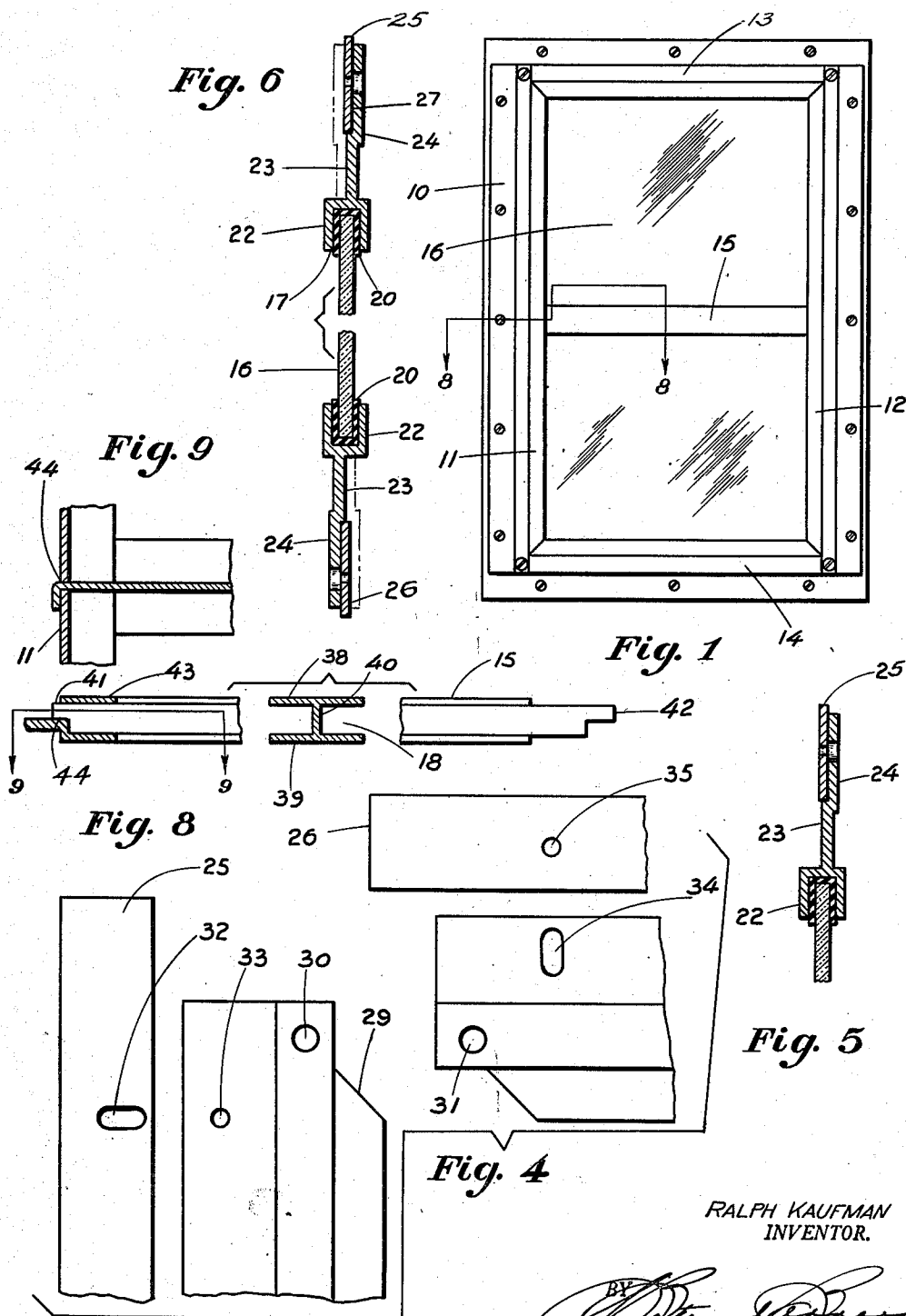
March 31, 1953

R. KAUFMAN
STORM WINDOW SASH KIT

2,632,928

Filed April 16, 1949

4 Sheets-Sheet 1



RALPH KAUFMAN
INVENTOR.

BY *[Signature]*
ATTORNEY

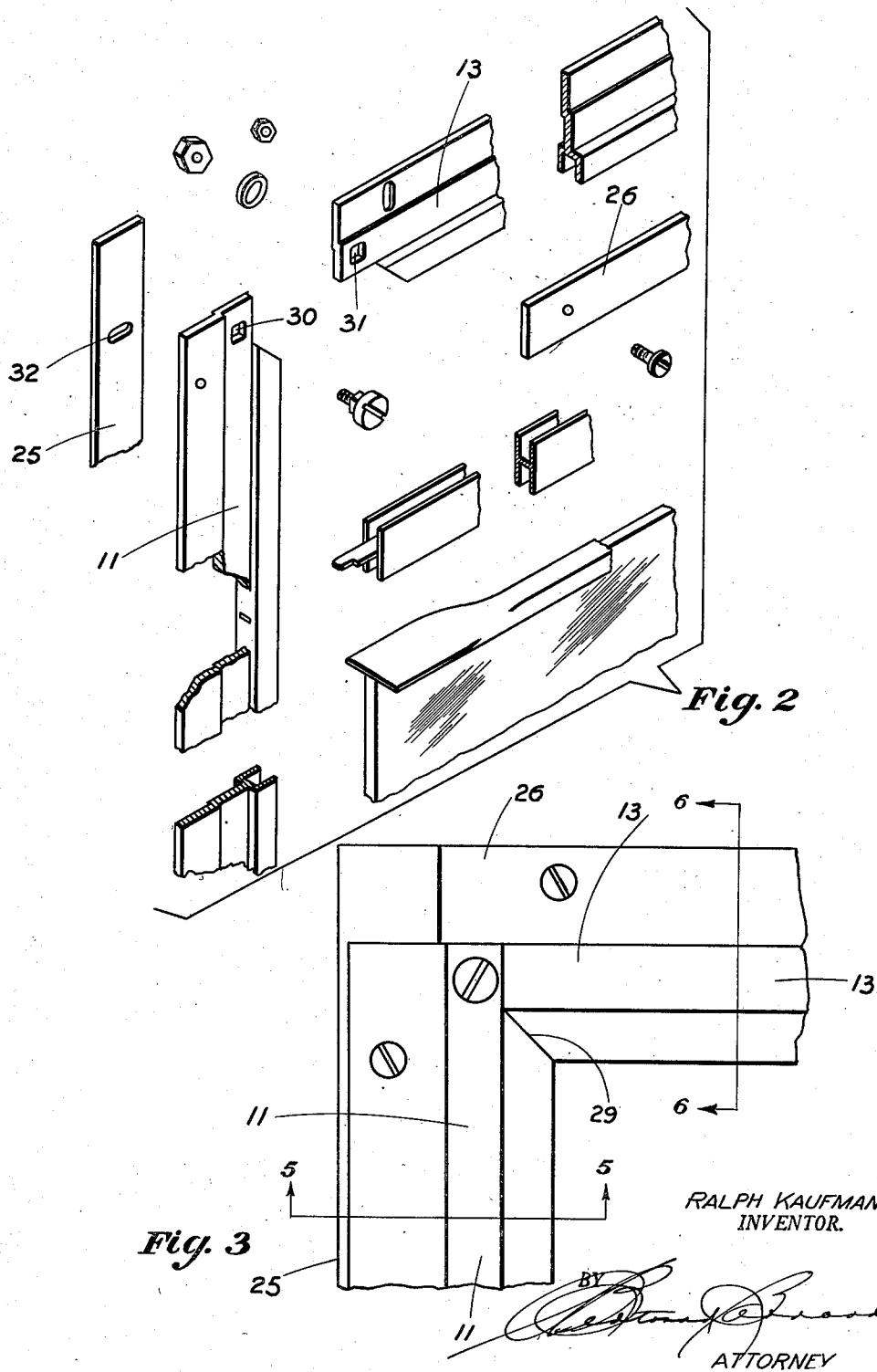
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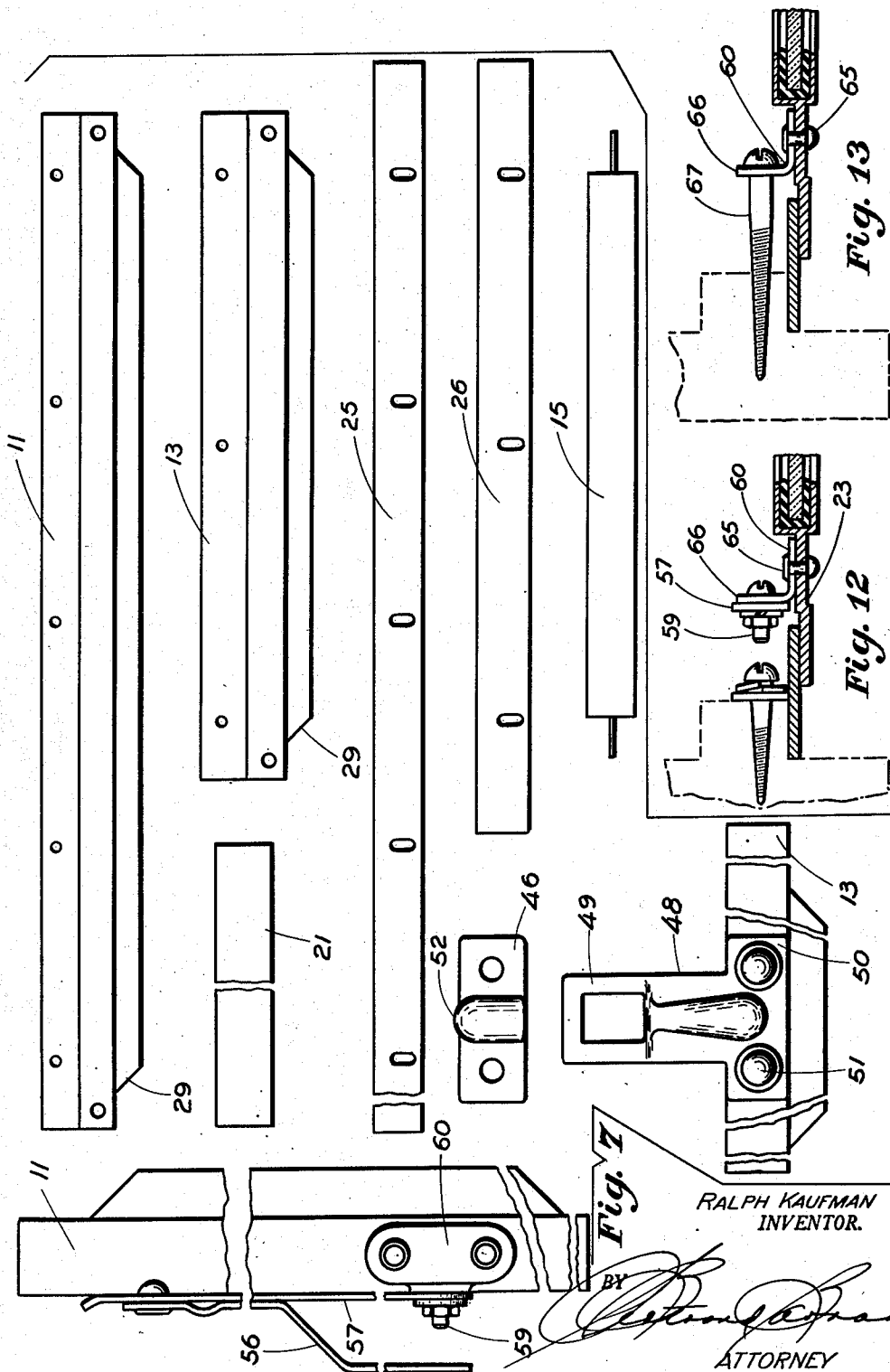
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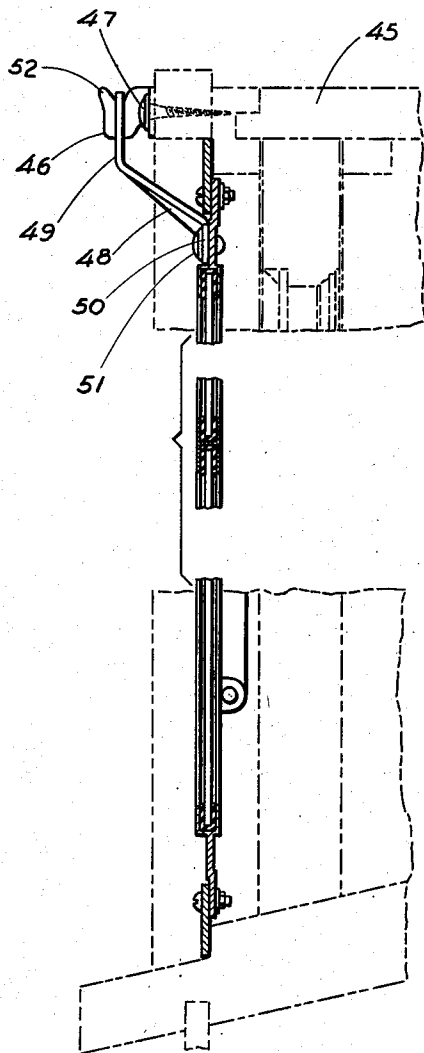


Fig. 10

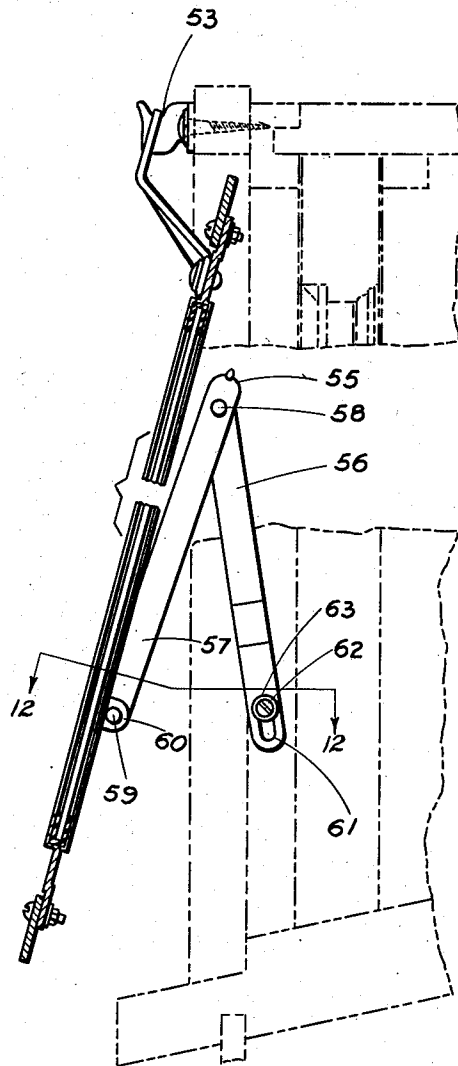
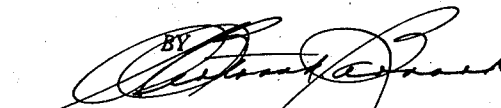


Fig. 11

RALPH KAUFMAN
INVENTOR.

BY 
ATTORNEY

UNITED STATES PATENT OFFICE

2,632,928

STORM WINDOW SASH KIT

Ralph Kaufman, Walden, N. Y.

Application April 16, 1949, Serial No. 87,961

10 Claims. (Cl. 20—55)

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This invention relates to a storm sash to be fitted to window in the conventional type of residential building, or similar structure. It is directed particularly to a storm sash unit, which may be packed and sold in the conventional type of carton or container, and assembled and installed by a home-owner, or other relatively unskilled person, without special tools and without requiring a high degree of skill.

The primary object of my invention is to provide a storm sash unit, which can be assembled and installed, with a minimum of labor, by a relatively unskilled person.

A further object is to provide a unit, the parts of which are readily assembled, using relatively simple fastenings, and which can be packed and shipped in a relatively small, compact container.

A further object is to provide a storm sash, in which the major frame members are interchangeable and reversible, so that the same dies can be used for several of the major parts.

A further object is to provide a window sash construction which is light, compact, rigid when installed, readily removable without tools, and will withstand the action of the elements over sustained periods.

A further object is to provide a sash construction, which may be economically manufactured, sold as a disassembled unit, and assembled and installed without the necessity for highly skilled labor.

Another object is to provide a unit, the parts of which can be produced in moderate quantities, in a wide range of sizes, with a minimum of elaborate and expensive tooling, and still produce parts which are adaptable to a wide range of window sizes except for the cut-off length of the frame parts.

A further object is to provide a unit which is readily adjustable, to take care of inaccuracies in window frame sizes, and building distortion, without additional machine work or special tools.

The accompanying drawings, illustrative of several embodiments and modifications of my invention, together with the description of their construction and the method of operation thereof, will serve to clarify further objects and advantages of my invention.

In the drawings:

Fig. 1 represents a front elevation of the assembled storm window.

Fig. 2 is an isometric exploded view of a portion of the sash frame showing the method of assembling the various sash parts.

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Fig. 3 is a front elevation of a corner joint of the frame of the sash of Fig. 1.

Fig. 4 is a front elevation of the joint of Fig. 3, with the parts separated to show the method of fitting and assembly.

Fig. 5 represents a cross-section thru the frame of the sash, taken at 5—5, Fig. 3.

Fig. 6 represents a composite cross-section thru the vertical and horizontal members of the frame of Figs. 1 and 3, taken at 5—5 and 6—6, Fig. 3.

Fig. 7 is a plan view of the frame, the fitting parts of the sash, and the hardware required, as knocked down for packing in a kit.

Fig. 8 is a cross-section thru the muntin joint, and partial plan view of the muntin bar, taken at 8—8, Fig. 1.

Fig. 9 is a section thru the muntin bar and frame side member joint, taken at 9—9, Fig. 8.

Fig. 10 represents a vertical section thru the sash, pivotally assembled to a window frame, with the sash in the closed position.

Fig. 11 is a vertical section, similar to Fig. 10, with the sash and stay arm in the open position.

Fig. 12 represents a section taken at 12—12, Fig. 11, showing the method of attaching the stay arm side bars to the sash frame, and the window jamb respectively.

Fig. 13 represents a partial plan view of the jamb and a partial vertical section through the sash side member, with the sash fixed to the window frame.

While there are a number of storm sash units available on the market, they are generally relatively expensive to the home-owner, must be accurately fitted to the window frame, and require a considerable length of time, on the part of a highly skilled, specialized mechanic to install them.

In small communities, particularly those located at a considerable distance from industrial centers, the overall cost of installing storm windows, including the cost of the window and sash, the shipping costs, and the installation labor costs, coupled with the added factor that skilled mechanics, must often be transported over long distances to install them, renders the overall cost to the owner extremely high.

The unit, containing all of the necessary frame parts, the hardware and fittings required to assemble them, the necessary hangers, and the material for supporting the window glass may be precut to the window frame size, packed in a compact package, purchased as a kit, and installed by the owner.

Aside from the kit proper, the owner merely

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purchases the glass sections, precut to size, these sections being readily assembled and fitted to the frame sections, without special skills.

The storm window may be installed in such a manner that the sash is fixed to the window frame, or fittings may be provided to enable the entire sash to be pivotally opened, and maintained in the open position.

It will be understood that the foregoing general description of the construction and installation of the storm window sash kit, as well as the following detailed description thereof, are intended as explanatory of the invention and not restrictive thereof.

In the drawings, the same reference numerals designate the same parts throughout the various views, except where otherwise indicated.

The storm window sash as indicated in Figs. 1, 2 and 3 comprises, essentially, a frame 10, made up of two substantially vertical side members, 11 and 12, and a top and bottom member, 13 and 14, with a muntin bar 15, connecting the two side members, substantially at the center thereof.

Two or more panes 16, of window glass, or a transparent plastic material may be mounted in the channels 17 and 18, formed in the frame section and muntin bars respectively, the number of window sections, depending upon the number of openings, or lights in each window.

As indicated in Figs. 5 and 6, a packing channel 20, formed of a flat strip 21, of rubber or other suitable material may be fitted into the channels 17 and 18, formed in the frame members and muntin bar, to effectively grip the edges of the glass sheet, and to provide air and watertight joints, around the glass on all sides. The packing channel 20, may be furnished molded or otherwise formed to the U-section, indicated in Figs. 5 and 6, instead of being shaped from a flat strip.

The section thru the vertical and horizontal frame members 11 and 13, and the method of supporting the window panes are shown, in detail, in Figs. 5 and 6.

Fig. 5 shows a cross-section thru the material of a typical frame member. The lower, or window supporting end, is formed of a U-shaped section 22, made of extruded aluminum, or a similar material, with a channel 17, formed thru the entire length of the open end of the section.

The intermediate section 23, and the outer section 24, of the frame member may be formed integral with the U-shaped section, the entire member being extruded or rolled in long lengths, and cut to the length required for a specific window size.

Vertical and horizontal scribe mouldings or mounting strips 25 and 26, may be adjustably attached to the outer sections of the vertical and horizontal frame members, as indicated in Figs. 3 and 4, to attach the window to jamb. These mouldings may be made of thin strips of aluminum, or another metal or fibre strip.

As indicated in Figs. 5 and 6, the moulding strip is located at the center line of the window channel, with the outer section 24, of the frame member, located at the right-hand side of the moulding in the vertical frame side member when the frame member section is located in the right-hand position, Fig. 5 and at the left-hand side of the moulding when the frame member section is reversed to form the horizontal cross-member 13, Figs. 3 and 6. The distance between the mounting face 27, of the outer section and the center-line of the channel is thus held con-

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stant, regardless of whether the section is located at the left or right-hand side of the channel, thus assuring complete interchangeability of all of the material sections of the frame members except for variations in length.

The reversibility of the frame section material provides greater accuracy of assembly of the window frame, and sharply reduces the material cost, as only one set of extrusion dies is required for all of the frame members, regardless of their position, or the size and shape of the window.

The U-shaped window support sections of the horizontal and vertical frame members are mitered 29, as indicated in Figs. 3 and 4, a screw or bolt being fitted thru the mating circular or square openings 30 and 31, formed adjacent the junction between the horizontal and vertical frame member corners. Although Fillister head bolts are shown in Fig. 2, the holes 30 and 31 may be countersunk, and flat head bolts substituted therefor, to bring the head of the bolt substantially flush with the outer surface of the frame member section.

In order to provide for height and width adjustments, to take care of dimensional variations and angular distortion in the window jamb dimensions, a plurality of elongated slots 32 may be formed in the moulding, the center-line of the slots being in substantial alignment with the openings 33, in the outer section of the corresponding frame member, or similar slots 34 may be formed in the outer section of the frame member, the center-line of the slots being in substantial alignment with a plurality of circular openings 35, formed in the moulding, as indicated in Fig. 4, the slots providing for adjustment of the frame members, in a direction generally perpendicular to the channel, and therefore, permitting lateral and slight angular adjustment of the window frame members.

The muntin bar 15 may be formed in an H-section, as indicated at the center of Fig. 8, the section comprising two parallel flanges 38 and 39, connected by a central integral web 40, the width and depth of the channels 18, formed at both sides of the bar, being substantially the same as that of the channel 17, formed in the frame section, so that the flanges of the frame section and those of the muntin bar are in substantial alignment, when assembled, as indicated in Fig. 8. The flanges of the muntin bar may be cut back for a short distance, and the ends of the web, notched at one side, to form projections 41 and 42 at both ends, the width of the projections being somewhat less than the distance between the inner face of the flange 43, of the U-shaped section of the frame member, and the face of the intermediate section of the frame member, as indicated in Fig. 8.

In assembling the muntin bar to the window frame members, each of the projections is fitted thru a substantially rectangular slot 44, formed in the rear wall of the U-shaped section of the frame member, the outer end of the projection being bent, as indicated in Fig. 9, to secure the web to the frame member.

Figs. 10 and 11 show the adjustable storm sash, as pivotally attached to the frame of the window, the sash in Fig. 10, being in the closed position, and that in Fig. 11, in the open position.

The sash frame 10 may be pivotally supported on the head 45, of the window frame, by means of a hanger 46, which is attached to the window head by a plurality of screws 47, or by other suitable means of attachment.

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A hanger bracket 48, comprising an upper and lower flange 49 and 50, connected by an angular intermediate section, may be attached to the upper horizontal frame member 13 by means of a plurality of rivets 51, bolts, or other suitable attaching means, which connect the lower flange to the intermediate section of the frame member.

An opening may be formed in the upper flange 49, of the bracket, the opening being fitted over the notched extension 52, of the hanger, as indicated in Fig. 10, the curved form of the groove 53, at the top of the extension, combined with the arcuate shape of the bottom of the extension, permitting the sash to be angularly swung from the closed position, shown in Fig. 10, to the open position, Fig. 11, with a minimum of frictional resistance.

A pivoted, V-shaped stay-arm 55 may be mounted between the sash and the window frame, to limit the angular movement of the sash frame, and retain it in the desired open position. The stay-arm comprises two bars 56 and 57, of substantially rectangular cross-section, the upper ends of the bars being pivotally connected to one another by means of a rivet 58, a bolt, or other suitable connecting means. One of the bars 56, may be offset, with the other bar 57, substantially straight, the extent of the offset being determined by the form of the window frame members, and the relative position of the stay-arm mounting brackets on the window and sash frames respectively.

The lower end of one bar 57 may be pivotally attached to the vertical side member of the sash frame by means of a screw or pin 59, attached to a bracket 60, which is riveted to the side member, or by other suitable means.

A slot 61 may be provided in the lower end of the other side bar 56, a screw 62, or wing screw, with a washer 63, mounted below the head thereof, being threadably attached to the vertical member of the window frame, to lock the stay-bar in position, the slot providing for vertical adjustment of the bar, and consequently angular adjustment of the stay-arm, and the storm sash frame in the open position.

The storm sash may be mounted outside the window frame, as indicated in Figs. 10 and 11, or the sash unit, constructed in substantially the same manner, may be mounted at the inside of the frame, and attached to the window frame by one of several suitable methods, known to the art.

Two methods of attaching the storm sash to the window frame are shown in Figs. 12 and 13.

In the construction shown in Fig. 12, the sash is fitted with one or more stay-arms, as indicated in Figs. 10 and 11.

One leg of a right-angle bracket 60, may be attached to the intermediate section 23, of the frame side member 11, by means of a plurality of rivets 65, or by other suitable attaching means. The lower end of the stay-arm bar 57, may be pivotally attached to the other leg 66 of the bracket, by means of a screw or bolt, as indicated in Figs. 10 and 12. The lower end of the other stay-bar 56, may be attached to the side of the window jamb frame by a screw 62, as hereinbefore described. The scribe moulding strips 25 and 26, would be attached to the outer section 24 of the sash frame members, as indicated in Figs. 3 and 4, before the sash is mounted in the window frame. The slots 32 formed in the moulding, or in the outer sections of the frame member, enable the moulding to be moved laterally or

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thru a slight angle, with relation to the frame members, to take care of dimensional variations in the window frame opening and any slight angularity of the window jamb sections. The face of the moulding engages the side of the window frame member, in order to seal the window opening, when the sash is in the closed position, shown in Figs. 10 and 12.

The construction, shown in Fig. 13, is similar to that of Fig. 12, except that no stay-arm is used, the sash being fixed to the window frame.

One leg of a right-angle bracket 60, may be attached to the intermediate section of the frame side member by means of a rivet 65, in the same manner as that of Fig. 12. The other leg 66 of the bracket may be directly attached to the window jamb frame by means of a screw 67, or by other suitable attaching means.

The number of brackets used, and the number of screws 67, used to attach the brackets to the window jamb frame, would depend upon the size and shape of the sash, and the number of brackets supplied with the frame members.

The scribe moulding strips 25 and 26 would be attached to the outer section 24, of the vertical and horizontal frame members, as indicated in Figs. 3 and 4. When the sash is assembled in the fixed position, the face of the moulding engages the side of the window jamb frame, to seal the window opening. The slots 32 and 34 in the outer section of the frame member, enable the moulding to be moved laterally and angularly, to take up any variations in the window frames, in the same manner as that of Fig. 12.

In shipping the sash frame to the home owner, the bracket 60 may be riveted, bolted, or otherwise attached to the storm sash frame member, or the bracket may be furnished independently, to be bolted to the frame member, or otherwise mounted, at the time of erection.

After assembling the sash frame, and inserting the window panes, as indicated in Figs. 1 and 6, the owner would insert the sash in the window frame.

Fig. 7 shows the various parts of the sash, knocked down and ready for assembly, as they are boxed or crated for shipment to the home owner, prior to final assembly and installation.

The side member 11 and the top frame member 13, are shown, cut to the length required, with the necessary holes or slots punched or drilled, ready for assembly. The U-shaped section 22, of each member, is cut back at both ends, as indicated in Fig. 7, and the corner, at the ends of each section bevelled 29, to enable the vertical and horizontal members to be joined without overlap, as indicated in Fig. 3. The opposite side member 12, and the bottom member 14, are essentially the same as those shown, except that the sections are reversed as hereinbefore described. The location of the extruded section of the side members, with relation to the scribe moulding and the glass is indicated in Fig. 5, and the dot-dash portion of the lower section of Fig. 6, and that of the top and bottom members, as indicated in the lower section of Fig. 6, and the dot-dash portion of the upper section of Fig. 6, the scribe moulding being located in the same position relative to both members, the channel openings 17, to receive the panes of glass, being in substantial alignment with one another.

The scribe moulding strips 25 and 26 to fit the vertical and horizontal frame members, are furnished to cut to length, and the necessary holes and slots 32, punched or drilled, or otherwise cut

thru the moulding, to enable the mouldings to be readily assembled to the outer section of the vertical and horizontal frame members, and adjusted to the required dimension and position, without any additional cutting or machine work, and without special tools or skills.

The packing channel 20 is furnished flat, either cut to the overall length required, or preferably rolled, so that it can be sheared to the required length, to fit the channels in the frame members and the muntin bar respectively, after assembly.

After forming into a U-shape, to fit the channel, the corners may be notched by the owner, or the channel strip may be notched at the points required, prior to shipment.

The muntin bar 15 may also be furnished, cut to the required length, with the flanges at both ends cut away for a short distance, to form the web extensions, the extensions being notched to form the projections 41 and 42, as hereinbefore described, to enable the muntin bar to be assembled to the frame side members.

The hanger bracket 43 may be furnished with the lower flange 50 riveted, bolted or otherwise attached to the upper frame member 13, or the bracket may be furnished independently, to be bolted to the frame member, or otherwise mounted, at the time of erection.

The angle bracket 60, would be riveted, or otherwise attached to the side-member 11, of the sash frame.

The stay-arm 55 could be furnished with the upper end of the bars, riveted as indicated in Figs. 7 and 11, the owner mounting the lower end of the bars on the window frame and the sash frame members respectively, in the manner previously described.

The frame members and other features of the construction may be used in storm sash units sold in kit form, or may be factory assembled, erected on the site, or fitted and installed in any other suitable manner to best meet the requirements of a particular installation.

The sash frame construction is suitable for windows in the usual type of residential building, or for small industrial buildings.

The size of the sash frame, the number of window panes, the location of the muntin bar, and number of bars required would depend upon the size of the window opening, and the judgment of the supplier and the home-owner.

While an extruded frame member of a special form and size is shown in Figs. 5 and 6, this may be varied considerably to suit individual requirements.

Where the quantities of a specific type, or special ornamental design of sash frame, do not warrant the cost of extrusion dies or lend themselves readily to extrusion, the frame member section may be built up, the various parts thereof being riveted, welded, brazed, or fastened to one another, by other suitable methods known to the art.

The sections may also be rolled, stamped or formed by other suitable means, known to the art, the form of the section being varied to suit the requirements of a particular manufacturing process.

For smaller units, plastic sections may be utilized, in place of the metal sections herein described.

The method of mounting the window panes in the frame sections, the packing used to support

the glass in the frame channels may be varied considerably to suit special requirements.

The method of supporting the sash in the window jamb, whether the sash be fixed or adjustable may be altered considerably to suit special sizes or individual requirements, or to comply with the judgment of the supplier.

Various types of stay-arm construction may be substituted for the one herein described. The stay-arm may be made readily adjustable, and so constructed that the sash may be locked in any position, with relation to the window jamb.

It will, accordingly, be appreciated that the storm window sash kit, herein described, has new and useful constructional and operational features, offering distinct advantages over existing types of storm sash. It will, moreover, be understood that the foregoing description of the various embodiments and modifications of the construction is illustrative, and that numerous changes can be made therein, without departing from the essentials of the invention which is, rather, defined by the appended claims.

What I claim as new, and desire to secure by Letters Patent, is:

1. A storm sash unit for mounting in a window frame, comprising a pair of side members, a pair of cross-members, the cross-section of each of said side and cross-members consisting of a U-shaped channel section, an axially offset intermediate web and an offset flange integral with the U-shaped section, the U-shaped section of each of said frame members having a rectangular channel cut therethrough, the frame member cross-section being reversible, the intermediate web of the reversed section facing the intermediate web of the adjoining frame member section, the adjoining ends of the intermediate webs of each of said side and cross-members being detachably connected to one another, a scribe moulding of rectangular cross-section adjustably attached to the flange of each of said frame side and cross-members, the attaching face of the flange of one member adjoining one face of the scribe moulding, the flange of the oppositely positioned frame member section adjoining the opposite scribe moulding face, the U-shaped channel sections being in alignment with one another in either frame member section position, a muntin bar connecting the opposite side-members, said muntin bar having window pane receiving channels cut therethrough, and a plurality of window panes supported in said channels.

2. A storm sash unit for mounting in a window frame, comprising a pair of side members, a pair of cross-members, the cross-section of each of said side and cross-members consisting of a U-shaped section, an axially offset intermediate web and an offset flange integral with the U-shaped section, the section being reversible, the intermediate web of the reversed frame member section facing the intermediate web of the adjoining frame member section, means detachably connecting the adjoining ends of the intermediate webs of each of said side and cross-members, a flat strip scribe moulding adjustably attached to the flange of each of said frame side and cross-members, the attaching face of the flange of one member adjoining one face of the scribe moulding, the flange of the oppositely positioned frame member section adjoining the opposite scribe moulding face, the U-shaped section of each of said frame members having a window pane receiving channel cut therethrough, the adjoining ends of each of said U-shaped frame

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member sections being mitred, a muntin bar connecting the opposite side members, said muntin bar having window pane receiving channels cut therethrough, and a plurality of window panes supported in said channels.

3. Frame members of a storm sash unit, for attachment to moulding strips, the cross-section of said members comprising a substantially U-shaped section, an intermediate section and a flange formed integral with said U-shaped section, said intermediate section being offset from the axis of the U-shaped section, the intermediate section being adapted, when reversed, to abut the intermediate section of the adjoining member, the distance between the center of said U-shaped section and the attaching face of the flange, being substantially equal to one-half the thickness of said moulding strip to adapt said section for use in members of opposite hand.

4. Frame members of a storm sash unit, for attachment to mounting elements, the cross-section of said members comprising a substantially U-shaped section, an intermediate section and a flange formed integral with said U-shaped section, said intermediate section being offset from the axis of the U-shaped section, the intermediate section being adapted, when reversed, to abut the intermediate section of the adjoining member, the distance between the center of said U-shaped section, and the attaching face of the flange, being substantially equal to one-half the thickness of the mounting element, to provide reversibility of the section, the U-shaped section having a window pane receiving channel formed therein.

5. Frame members of a storm sash unit, for attachment to mounting strips, the cross-section of said members, comprising a substantially U-shaped section, an intermediate section and a flange formed integral with said U-shaped section, said intermediate section being offset from the axis of the U-shaped section, the intermediate section being adapted, when reversed, to face the intermediate section of the adjoining member, the distance between the center of the U-shaped section and the attaching face of the flange, being substantially equal to one-half the thickness of the mounting strip to provide reversibility of the section, said flange having a plurality of openings formed therein for adjustable attachment to the mounting strip, each of said U-shaped sections having a channel formed therein, for supporting a window pane.

6. A storm sash unit for mounting in a window frame, comprising a plurality of side members, a plurality of cross-members, the adjoining ends of said side and cross-members being detachably connected to one another, an adjustable scribe moulding attached to each of said side and cross-members, the cross-section of each of said side and cross-members comprising a substantially U-shaped section, an intermediate section and a flange formed integral with said U-shaped section, the intermediate section being adapted, when reversed, to abut the intermediate section of the adjoining member, the attaching face of the flange adjoining, when the section is reversed, the opposite side of the mounting strips, the U-shaped sections remaining in substantial alignment, to adapt the section for use in left and right-hand frame members respectively, each of said members having a channel cut thru the U-shaped section for supporting one edge of a window pane.

7. A storm sash unit for mounting in a window

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frame, comprising a plurality of side members, a plurality of cross-members, the adjoining ends of said side and cross-members being detachably connected to one another, a scribe moulding adjustably attached to each of said side and cross-members, said mounting strips having a plurality of elongated slots formed therein, the cross-section of each of said side and cross-members, comprising a substantially U-shaped section, an intermediate section and a flange formed integral with said U-shaped section, the intermediate section being adapted, when reversed, to abut the intermediate section of the adjoining member, said flange having a plurality of openings formed therein in substantial alignment with the slots formed in the strips, the attaching face of the flange engaging the opposite side of the mounting strip, when the section is reversed, the U-shaped sections being in substantial alignment, to provide for adaptability of the section to left and right-hand frame members, respectively, each of said members having a channel cut thru the U-shaped section for supporting one edge of a window pane, and means fitted thru said mounting strip slots and flange openings for adjustably attaching each of said strips to the corresponding member flange.

8. A storm sash unit for mounting in a window frame, comprising a plurality of side members, a plurality of cross-members, the adjoining ends of said side and cross-members being detachably connected to one another, a scribe moulding adjustably attached to each of said side and cross-members, said mounting strips having a plurality of openings formed therein, the cross-section of each of said side and cross-members comprising a substantially U-shaped section, an intermediate section and a flange formed integral with said U-shaped section, the intermediate section being adapted, when reversed, to abut the intermediate section of the adjoining member, the flange of each of said members having a plurality of elongated slots formed therein, in substantial alignment with the openings in said strips, the attaching face of the flange engaging the opposite side of the mounting strip, when the section is reversed, the U-shaped sections being in substantial alignment, to provide for adaptability of the section to left and right-hand frame members, respectively, each of said members having a channel cut thru the U-shaped section for supporting one edge of a window pane, and means fitted thus said mounting strip openings and flange slots for adjustably attaching each of said strips to the corresponding frame member flange.

9. A storm sash unit for mounting in a window frame, comprising a plurality of side members, a plurality of cross-members, the adjoining ends of said side and cross-members being detachably connected to one another, a moulding strip adjustably attached to each of said side and cross-members, respectively, the cross-section of each of said side and cross-members comprising a substantially U-shaped section, an intermediate section and a flange formed integral with said U-shaped section, the intermediate section being adapted, when reversed, to abut the intermediate section of the adjoining member, the attaching face of the flange engaging the opposite side of the moulding strip, when the section is reversed, the U-shaped sections being in substantial alignment, to adapt the section for use in left and right-hand frame members, respectively, a window supporting channel formed in the U-shaped

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section of each of said frame member, the abutting ends of the U-shaped sections of each side and cross-member, respectively, being mitred, to provide a corner for supporting a window pane.

10. A storm sash unit for mounting in a window frame, comprising a plurality of side members, a plurality of cross-members the adjoining ends of said side and cross-members being detachably connected to one another, a moulding strip adjustably attached to each of said side and cross-members, the cross-section of each of said side and cross-members comprising a substantially U-shaped section, an intermediate section, said intermediate section being offset from the axis of the U-shaped section, and a flange formed integral with said U-shaped section, said intermediate section being adapted, when reversed to abut the intermediate section of the adjoining member, the attaching face of the flange engaging the opposite side of the moulding strip, when the section is reversed, the U-shaped sections being in substantial alignment, to provide for adaptability of the section to left and right-hand

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frame members, respectively, each of said members having a channel cut thru the U-shaped section for supporting the edge of a window pane, and means attached to the frame side members, for supporting said storm sash unit in a window frame.

RALPH KAUFMAN.

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