

April 18, 1961

A. GREENSTEIN ET AL

2,980,181

WINDOW STRUCTURE

Filed June 27, 1958

2 Sheets-Sheet 1

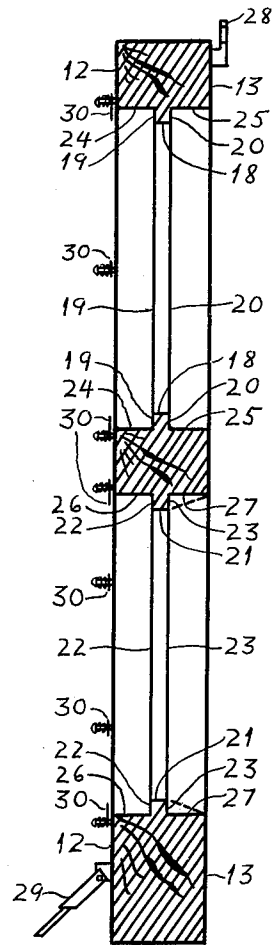
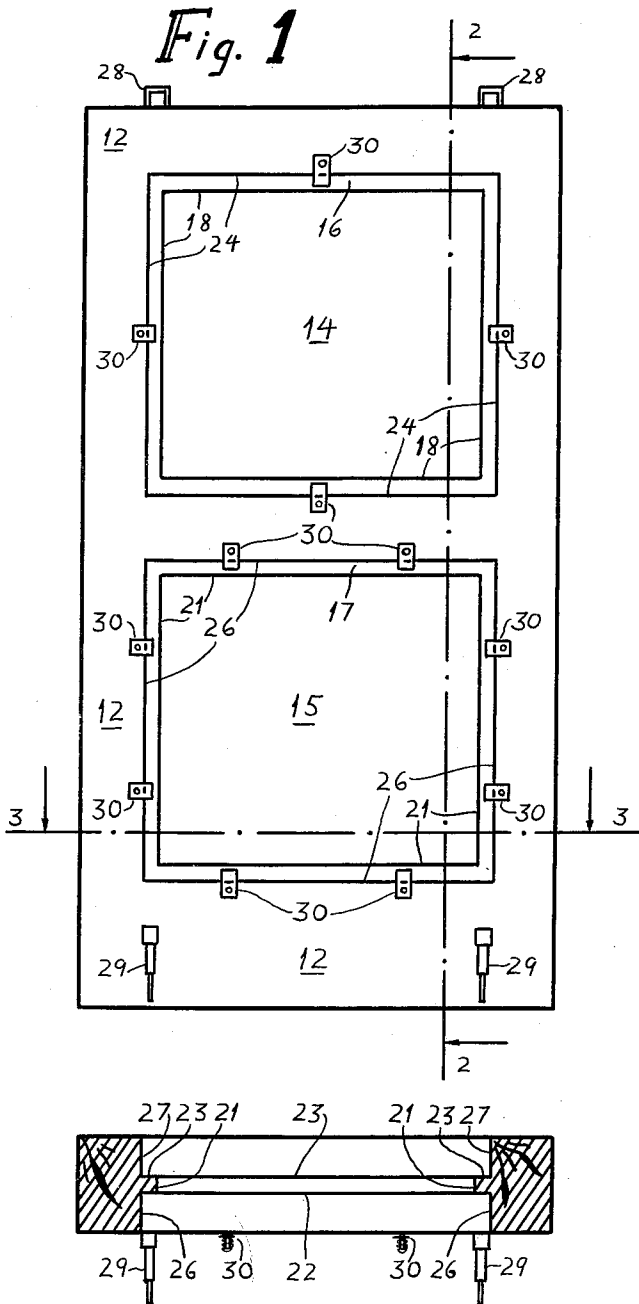


Fig. 2

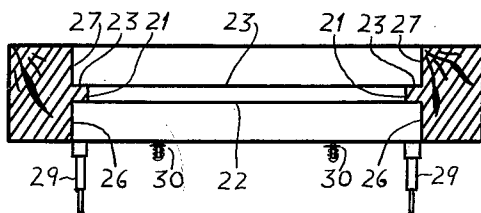


Fig. 3

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2 Sheets-Sheet 2

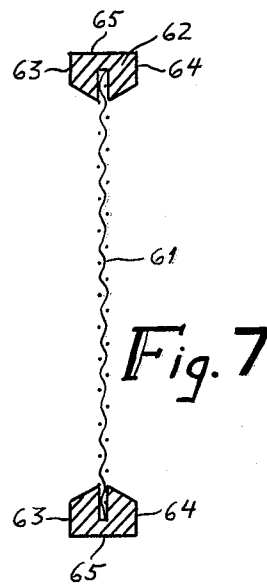
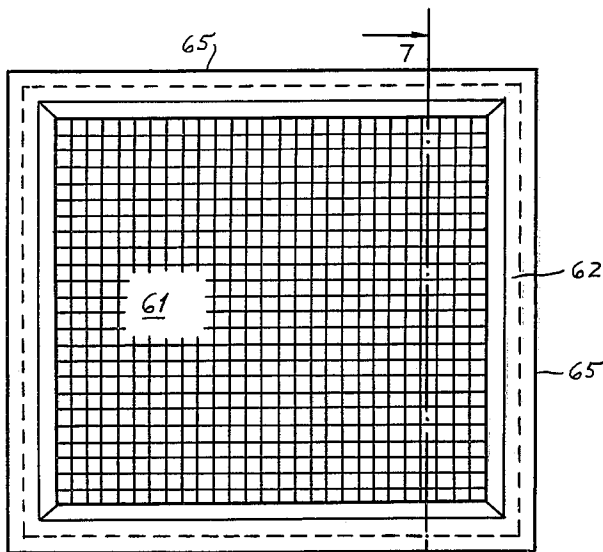
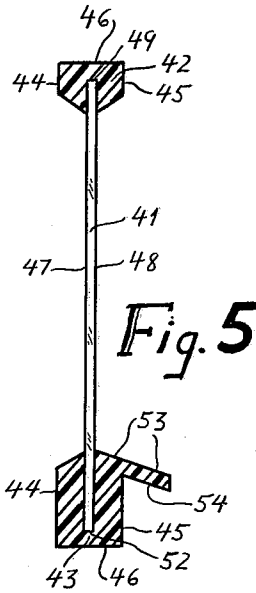
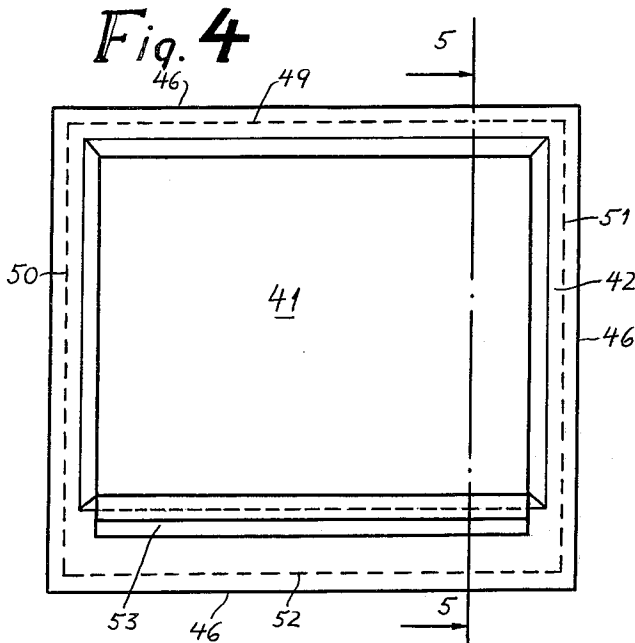


Fig. 6

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2,980,181

WINDOW STRUCTURE

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1 Claim. (Cl. 160—91)

The present invention relates to a combination window. More particularly, the invention relates to a combination window of a type having a plurality of inserts, at least two of which are removable.

The combination window of the present invention has the new and improved features of providing for self-storing of the inserts, permitting easy changeability of the inserts from the inside without the need for tools, having no sliding parts to lock, jam, or rattle, having a wooden window frame to afford maximum heat insulation, being easily installable as a house fixture, and having an insert with a substantially leakproof frame having maximum heat insulation.

The principal object of the present invention is the provision of a combination window of great durability.

An object of the present invention is the provision of a combination window of great structural strength.

Another object of the present invention is the provision of a combination window of great flexibility and adaptability.

Another object of the present invention is the provision of a combination window which is substantially leakproof.

Another object of the present invention is the provision of a combination window affording maximum heat insulation.

Another object of the present invention is the provision of a combination window which is self-storing for its inserts.

Another object of the present invention is the provision of a combination window which may be facily changed from the inside.

Another object of the present invention is the provision of a combination window which is substantially lock proof, jam proof and rattle proof.

Another object of the present invention is the provision of a combination window which is easily installable as a house fixture.

Another object of the present invention is the provision of a combination window having a removable insert which is substantially leak proof.

Another object of the present invention is the provision of a combination window having a removable insert which affords maximum heat insulation.

Another object of the present invention is the provision of a combination window having a removable insert of great structural strength.

Still another object of the present invention is the provision of a combination window of relatively simple construction which may be manufactured with great economy.

These and other objects and features of the invention will be apparent from a consideration of the following detailed description taken in connection with the accompanying drawing, wherein:

Fig. 1 is a schematic diagram of an embodiment of a combination window of the present invention;

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Fig. 2 is a sectional view of the embodiment of Fig. 1, taken along the line 2—2 of Fig. 1;

Fig. 3 is a sectional view of the embodiment of Fig. 1, taken along the line 3—3 of Fig. 1;

5 Fig. 4 is a front view of an embodiment of an insert of the embodiment of Fig. 1;

Fig. 5 is a cross-sectional view of the embodiment of Fig. 4, taken along the line 5—5 of Fig. 4;

10 Fig. 6 is a front view of another embodiment of an insert of the embodiment of Fig. 1; and

Fig. 7 is a cross-sectional view of the embodiment of Fig. 6, taken along the line 7—7 of Fig. 6.

In Figs. 1, 2 and 3, as well as in Figs. 4 and 5 and Figs. 6 and 7, the same components are identified by the same reference numerals.

In Figs. 1, 2 and 3, a combination window frame 11 has an inside face 12 and an outside face 13. The combination window frame 11 is preferably of wooden construction and preferably comprises Western Ponderosa pine which is kiln-dried and treated with a preservative and water repellent such as, for example, any preservative or toxic water repellent approved by the American Wood Window Institute or by the Ponderosa Pine Woodwork Institute. Although the combination window frame may be of any suitable material, wood is preferred because it affords maximum insulation as well as great structural strength and great durability. The combination window frame 11 has an upper section 14 and a lower section 15 which are adapted to receive window inserts of the type shown in Figs. 4, 5, 6 and 7.

The sections 14 and 15 may be of any desired configuration such as, for example, triangular, rectangular, pentangular, hexangular, etc. In the illustration used to describe the present invention, however, a preferred rectangular configuration is presumed for the sections 14 and 15.

A continuous strip 16, which is preferably formed of wood and which is preferably integral with the combination window frame 11, is positioned around the inside of the upper section 14 and may be spaced substantially equidistantly from the inside and outside faces 12 and 13. A similar continuous strip 17, which is preferably formed of wood and which is preferably integral with the combination window frame 11, is positioned around the inside of the lower section 15 and may be spaced substantially equidistantly from the inside and outside faces 12 and 13.

In the embodiment illustrated, the continuous strip 16 has a continuous (four sided) top surface 18, a continuous (four sided) inside surface 19 and a continuous (four sided) outside surface 20. The continuous strip 17 has a continuous (four sided) top surface 21, a continuous (four sided) inside surface 22 and a continuous (four sided) outside surface 23. Each of said strips is composed of a lower portion, an upper portion and two side portions.

The upper section 14 of the combination window frame 11 has a continuous (four sided) inside section surface 24 and a continuous (four sided) outside section surface 25, each of said section surfaces being composed of a lower portion, an upper portion and two side portions. The lower section 15 of the combination window frame 11 has a continuous (four sided) inside section surface 26 and a continuous (four sided) outside frame surface 27, each of said section surfaces being composed of a lower portion, an upper portion and two side portions. A tapered molding is preferably affixed around the outside frame surface 27, as shown in dotted lines in Fig. 2, to provide an inclined surface from the top surface 21 of the strip 17 to the combination window frame.

Hinge means 28 are preferably affixed to the combina-

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tion window frame 11 on the outside face 13 thereof at points where they may readily coact with cooperating hinge members affixed to the outside casing of a window frame of a house and positioned to support said combination window frame. Any suitable hinge means may be utilized which permits the combination window frame 11 to open outward from the side of a house whereon it is supported. A suitable hinge means 28 may compose, for example, a pair of spaced members each having a slot or a hole therein adapted to fit on a cooperating extending member affixed to the outside window frame casing of a house; the extending members supporting the combination frame member 11 by passing through the slots of the member 28, said combination frame member being readily insertable on and removable from said extending members by lifting to provide engagement or disengagement between the said extending members and said slots of the members affixed to said combination frame member. The use of hinge member 28 permits the easy installation of the combination window as a house fixture.

Extendable arms 29 are preferably affixed to the combination window frame 11 on the inside face 12 thereof at points where they may provide means for holding said combination window frame in an open position away from the outside casing of a window frame of a house to which it is attached. Any suitable means may be utilized which permit the combination window frame 11 to open outward from the side of the house due to an operation by someone inside the house. Suitable extendable arms 29 may comprise, for example, a pair of spaced folding or telescoping rod-like members each having one end affixed to the combination window frame 11 and the other end affixed to the window frame of the house in a manner whereby the rod-like members may be folded or telescoped together to permit the combination window frame to be held flush with the side of the house, and unfolded or extended to permit the combination window frame to move about the hinge means 28 and extend a desired distance from the side of the house. The easy opening of the combination window provides the advantages of preventing ruttng of the sill due to accumulated rain water, permitting cleaning of the sill, permitting the window unit and the window frame of the house to be painted or repaired, and permitting full ventilation without allowing rain to enter the house.

The inserts shown in Figs. 4, 5 6 and 7 are removably held in the sections 14 and 15 by any suitable fastening means. Suitable fastening means may comprise, for example, spring clips 30 positioned on the inside face 12 of the combination window frame 11 adjacent the sections 14 and 15 in a manner whereby an insert may be positioned in either of said sections and held in a manner whereby the outside surface of the frame of the insert is in substantially continuous contact with the inside surface 19 of the strip 16 or the inside surface 22 of the strip 17, the top surface of the frame of the insert is in substantially continuous contact with the inside section surface 24 of the upper section 14 or the inside section surface 26 of the lower section 15, and the inside surface of the frame of the insert is substantially flush with said inside face of said combination window frame. Each of the spring clips 30 may comprise a movable arm adapted in some selected positions to hold the insert positioned in the section and in other selected positions to permit the insertion and removal of the insert from the section. Each of the spring clips 30 preferably comprises spring means normally urging the movable arm towards the combination window frame, but which may be overcome by applied force to permit the movable arm to be moved to the selected positions permitting insertion and removal of the insert.

A plurality of removable inserts of the type shown in Figs. 4, 5, 6 and 7, form a part of the combination window of the present invention. The inserts are of the same configuration as the sections 14 and 15 of the com-

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bination window frame 11 and each insert is adapted to fit in each of said sections. In Figs. 4 and 5, a glass pane 41 has a pane frame 42 consisting of any suitable material having satisfactory strength, durability and heat insulation characteristics. A preferred material for the pane frame 42 is hard vinyl plastic which affords maximum heat insulation, is readily shaped to form a substantially leak proof configuration and has great structural strength and durability. The glass pane 41 and the pane frame 42 together form a framed independent unit. The pane frame 42 is of new and improved configuration. Although the entire pane frame 42 is preferably of the new and improved configuration described hereinafter, only the lower member 43 is illustrated as being of such configuration, in order to enhance the clarity of presentation. Of course, if desired only the lower member 43 may be made in the new configuration described hereinafter. In the simplified embodiment illustrated in Figs. 4 and 5, the pane frame 42 has a continuous (four sided) inside surface 44, a continuous (four sided) outside surface 45, and a continuous (four sided) main top surface 46; the frame being comprised of the lower member 43, an upper member, and two side members, in the illustrated example, wherein the upper and lower sections 14 and 15 of the combination window frame are of rectangular configuration.

The pane and frame of each of the removable inserts are of the configuration of the sections 14 and 15 of the combination window frame 11. In the preferred embodiment, in which the entire pane frame is of said new and improved configuration, the glass pane 41 has an inside face 47, an outside face 48 and a plurality of edges 49, 50, 51 and 52. The continuous pane frame 42 comprises a main top surface 46 spaced from the corresponding edges of the pane and substantially parallel to said corresponding edges. The main top surface 46 has a width extending a predetermined distance beyond the outside face 48 of the pane and a predetermined distance beyond the inside face 47 of said pane. A substantially inclined ledge 53 extends from the outside face 48 of the pane for a predetermined distance from said outside face and forms an auxiliary top surface 54 at an angle with the outside surface 45. The inclined ledge 53 has a width extending away from the outside face 48 of the pane from a line spaced from said outside face and parallel to the said outside face and parallel to the edges of said pane lying in a plane through the outside edge of the main top surface 46; said plane being parallel to the said outside face. The outside surface 45 is coplanar with the last-mentioned plane and joins the outside edge of the main top surface 46 with said line, and the inclined ledge 53 extends from the outside face 48 of the pane to a predetermined distance from the outside face 48 of the pane; said ledge being inclined at an angle to said face and therefore to said plane. The ledge 53 is inclined at a substantially acute angle with the outside surface 45.

In the case where only the lower member 43 is of said new and improved configuration, as shown in Figs. 4 and 5, the lower member 43 of the pane frame 42 comprises the main top surface 46 adapted to seat in substantially continuous contact with the lower inside section surface 24 of the upper section 14 or the lower inside section surface 26 of the lower section 15 of the combination window frame 11. The auxiliary top surface 54 of the lower member 43 is adapted to clear the lower top surface 18 of the strip 16 or the lower top surface 21 of the strip 17 by a suitable margin; the outside surface 45 of the pane frame 42 being adapted to seat in substantially continuous contact with the inside surface 19 of the strip 16 or the inside surface 22 of the strip 17.

It is thus seen that when the removable insert 41, 42 is positioned in one of the sections 14 and 15 and held in position by the fastening means 30, the inside surface 44 of the said insert is substantially flush with the inside face 12 of the combination window frame 11

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and the pane frame 42 is so positioned as to provide a substantially leak proof window arrangement. This is due to the fact that the contacting surfaces 19 or 22 of the strip 16 or 17 and 45 of the pane frame 42 are covered by the ledge 53 of said pane frame, and rain, hail, snow or the like merely flows down the inclined surface of said ledge from the pane 41 to the outside of the combination window unit.

In Figs. 6 and 7, a wire screen panel 61 of any suitable material has a screen frame 62 of any suitable material having satisfactory strength and durability. A preferred material for the screen panel 61 and the screen frame 62 is aluminum. Although aluminum has poor heat insulation characteristics, a consideration of such characteristics is unnecessary, because when the screen insert 61, 62 is utilized, heat insulation is not desired or possible, the screen being merely an open air connection from the inside of the house to the outside. The screen panel 61 and the screen frame 62 together form a framed independent unit. The screen frame 62 has a continuous (four sided) inside surface 63; a continuous (four sided) outside surface 64, and a continuous (four sided) top surface 65; the frame being composed of a lower member, an upper member and two side members, in the illustrated example, wherein the upper and lower sections 14 and 15 of the combination window frame is of rectangular configuration.

The combination window of the present invention may comprise an insert comprising a glass pane permanently positioned in one of the sections 14 and 15 or it may comprise an insert comprising a wire screen permanently positioned in one of the sections 14 and 15. Of course, there need be no such permanently positioned insert, although in a preferred embodiment of the invention, a glass pane insert is permanently positioned in one of the sections 14 and 15. If an insert is permanently positioned in one of the sections 14 and 15, it is placed so that the inside surface of the frame of such insert is seated in substantially continuous contact with the outside surface 20 of the strip 16 or the outside surface 23 of the strip 17; the outside surface of such permanent insert being substantially flush with the outside face 13 of the combination window frame 11, and the top surfaces of such permanent insert being in substantially continuous contact with the outside section surface 25 or 27.

When an insert is thus permanently positioned in one of the sections 14 and 15, there is a place adjoining such insert in the same section for removably storing a removable insert, and another removable insert may be removably positioned in the other section. If, for example, an insert comprising a glass pane and a pane frame is permanently positioned in the upper section 14, the inside surface of said frame seats in substantially continuous contact with the outside surface 20 of the strip 16 and the outside surface of said insert is substantially flush with the outside face 13 of the combination window frame 11; the top surfaces of the insert being in substantially continuous contact with the outside section surface 25.

A removable insert, such as that of Figs. 4 and 5 or Figs. 6 and 7, may then be removably inserted in the lower section 15. If the insert of Figs. 4 and 5 is removably inserted in the lower section 15, the spring clips 30 positioned on the inside face 12 of the combination window frame 11 around the section 15, are selectively moved to permit the insert to be fitted or positioned in said section and are then moved to selected positions in which they hold said insert in position by their spring action. Thus, the insert is securely held in a manner whereby the inside surface 45 of said insert is substantially flush with the inside face 12 of the combination window frame 17 and the surfaces 46, 45 and 54 of the pane frame 42 of the insert are seated flush with the surfaces 26 and 22 and positioned above the surface

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21, respectively, as previously described, to form a leak proof, tight unit, and the outside surface 45 of the pane frame 42 snugly contacts the inside surface 22 of the strip 17 of the section 15; the top surface 46 of the pane frame 42 snugly contacting the inside section surface 26. If the insert of Figs. 6 and 7 is removably inserted in the lower section 15, said insert is placed in said section and is securely held in position therein by the spring clips 30 in a manner whereby the inside surface 63 of the screen frame 62 of said insert is substantially flush with the inside face 12 of the combination window frame 11 and the outside surface 64 of the screen frame 62 snugly contacts the inside surface 22 of the strip 17 of the section 15; the top surface 65 of the screen frame 62 snugly contacting the inside section surface 26. The spring clips 30 positioned on the inside face 12 of the combination window frame 11 around the section 14 may then be moved to permit a second removable insert to be placed in said section and are then moved to positions in which they hold said insert securely in position by their spring action. Thus, the second removable insert is securely held in a manner whereby the inside surface of said insert is substantially flush with the inside face 12 of the combination window frame 11 and the outside surface of its frame snugly contacts the inside surface 19 of the strip 16; the top surface snugly contacting the inside section surface 24 of the section 14.

It is thus seen that since the combination window of the present invention has no moving parts, it is substantially lock proof, jam proof, and rattle proof, besides being of great flexibility and adaptability. Furthermore, the combination window of the present invention is seen to provide for self-storing of an insert and to permit facile changing of its inserts from the inside, besides being of relatively simple construction.

While the invention has been described by means of a specific example and in a specific embodiment, we do not wish to be limited thereto, for obvious modifications will occur to those skilled in the art without departing from the spirit and scope of the invention.

What we claim is:

A window structure, comprising a frame having an inside face, an outside face, an upper section of rectangular form, a lower section of rectangular form, and a continuous strip around each of said sections spaced substantially equidistantly from said inside and outside faces, each of said strips having an inside surface substantially parallel to said inside face, an outside surface substantially parallel to said outside face and a top surface substantially perpendicular to said inside and outside faces, each of said sections having a continuous inside section surface between said inside face of said frame and said inside surface of said strip and a continuous outside section surface between said outside face of said frame and said outside surface of said strip, a permanent glass insert having an inside surface, an outside surface and a top surface forming an edge between said inside surface and said outside surface, means positioning said insert in one of said sections in a manner whereby the area adjacent the edge portion of the inside surface of said insert is seated in substantially continuous contact with the outside surface of the strip of said section and the outside surface of said insert is seated substantially flush with the outside face of said combination window frame, the top surface of said insert being seated in substantially continuous contact with the outside section surface of said section, a first removable insert adapted to fit in each of said sections comprising a rectangular glass pane having an inside face, an outside face and four edges between said faces and a continuous first insert frame consisting of a vinyl plastic material, said first insert frame comprising an inside surface, an outside surface and a main top surface spaced from the corresponding edges of said pane and substantially parallel to said

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corresponding edges, said main top surface having a width extending beyond each face of said pane, an inclined ledge integrally formed with said first insert frame and having an auxiliary top surface extending away from the outside face of said pane from a line spaced from said outside face of said pane and parallel to the said outside face of said pane and parallel to said edges lying in a plane through an edge of said main top surface and parallel to the said outside face of said pane, an outside surface coplanar with said last-mentioned plane joining said edge of said main top surface with said line and an inclined surface, said ledge being inclined at a substantially acute angle with said outside surface and extending a substantial distance beyond the said last mentioned outside surface, a second removable insert adapted to fit in each of said sections, said second removable insert having a rectangular second insert frame consisting of aluminum, said second insert frame comprising an inside surface, an outside surface and a top surface, fastening means positioned on said inside face of said combination window frame around each of said sections in a manner whereby each of said removable inserts may be removably fitted in each of said sections with the outside surface of said first and second insert frames seated in substantially continuous contact with the inside surface of the strip of the corresponding section and the inside surface of said first and second insert

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frames seated substantially flush with the inside face of said combination window frame, the inclined ledge of said first insert frame being positioned above the top surface of the strip of the corresponding section and the main top surface of said first insert frame and the top surface of said second insert frame being seated in substantially continuous contact with the inside section surface of the corresponding section, hinge means affixed to said outside face of said combination window frame substantially adjacent the top of said upper section, and extendable arms affixed to said inside face of said combination window frame substantially adjacent the bottom of said lower section.

References Cited in the file of this patent

UNITED STATES PATENTS

956,766	Humphrey et al. -----	May 3, 1910
1,503,018	Beechler et al. -----	July 29, 1924
1,800,800	Kerby -----	Apr. 14, 1931
2,013,824	Ensminger -----	Sept. 10, 1935
2,107,775	Axe -----	Feb. 8, 1938
2,254,028	Cheston -----	Aug. 26, 1941
2,548,556	Ogren -----	Apr. 10, 1951
2,569,941	Mastrangelo et al. -----	Oct. 2, 1951
2,571,846	Digallerenzo -----	Oct. 16, 1951
2,687,557	Ribaldo -----	Aug. 31, 1954