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2,702,175

PORTABLE SUPPORT FOR WINDOW AIR CONDITIONING UNITS

Filed Oct. 23, 1953

2 Sheets-Sheet 1

Fig. 1

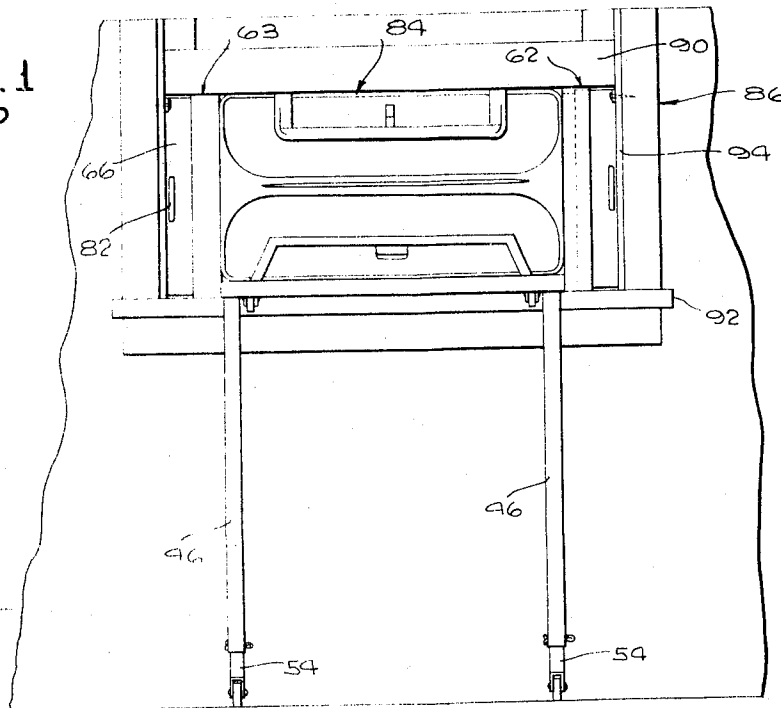
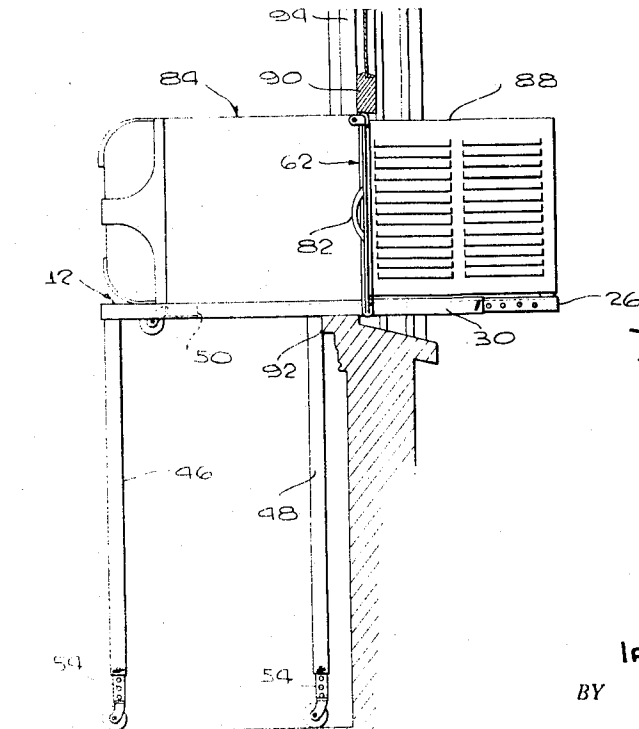


Fig. 2

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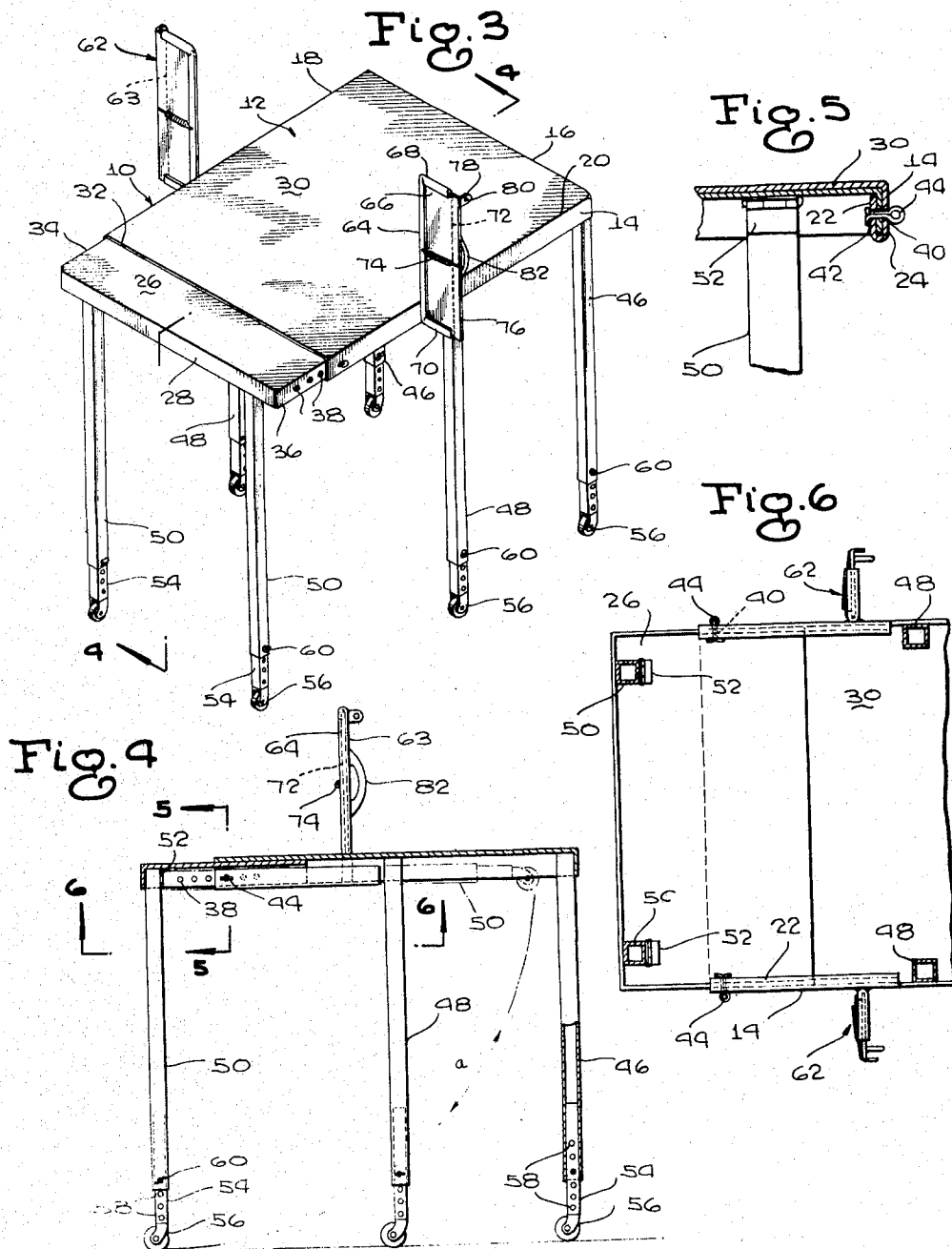
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PORTABLE SUPPORT FOR WINDOW AIR CONDITIONING UNITS

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5 Claims. (Cl. 248—236)

This invention relates to supports for window air conditioning units and more particularly to a portable and adjustable support for air conditioning units.

It is an object of this invention to provide a portable support for window air conditioning units which will eliminate the necessity for semi-permanent insulation of the air conditioning units within a window, will save the cost of installation of the unit as well as the cost of removal of the unit for winter storage and the cost of its subsequent reinstallation.

It is another object of this invention to provide a support whereby an air conditioning unit may be installed in a window without damage to or defacing of the window frame.

With the use of the portable support of the present invention, the use of smaller air conditioning units will be possible since the units can be moved from one room of a house or an apartment to another, thereby doing away with the necessity for a larger unit. In this latter regard, the building codes in many areas specifically prohibit the use of an air conditioning unit larger than one-half horsepower on the existing electrical circuits, and therefore to install an air conditioning unit of three-quarter horsepower or larger requires extensive rewiring to conform to the building codes. It therefore follows, that with the present portable support, a window type air conditioning unit of one-half horsepower or less may be used in place of the larger unit since the portable support will enable a quick and easy way to move the smaller size air conditioner from one room to another so that the entire house or apartment may be benefitted from the operation of the unit, and the smaller unit may be placed in operation with the existing electrical circuits and yet efficiently cool the house or apartment.

It is still another and further object of this invention to provide a portable support which may be employed to support window air conditioning units of various makes, so that, in effect, the portable support is universal with respect to the window type air conditioning unit.

One of the principal objections that landlords have to their tenants' installation of window air conditioning units is the need for additional electrical wiring and circuits when units of three-quarter horsepower or more are used, and also, there is the damage to the windows which result from the ordinary type of window air conditioning installation. With the present air conditioning support, it is proposed that these objections of the landlord will be sufficiently overcome so that the landlords will interject no objection to the use of window type air conditioning units of one-half horsepower or less by their tenants.

Yet another object of this invention is to provide a portable support which is simply and ruggedly constructed of sheet metal material, particularly adaptable to stamping operations so as to result in low cost manufacture.

Still another object of this invention is the provision of a portable support upon which a window type air conditioning unit may be placed and which may be installed by the ordinary householder, thus eliminating the need and cost of the services of a skilled technician.

Another object of this invention is to provide the portable window type air conditioner unit support which facilitates winter storage of the unit by simple removal of the unit from the window and supportingly carried upon the present device to the desired storage place.

Other objects and advantages will become apparent from the following detailed description, forming the

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specification, and taken in conjunction with the accompanying drawings, in which:

Figure 1 is a rear elevational view of the portable support embodying this invention showing an air conditioner unit supported thereon and installed in a window;

Figure 2 is a side elevational view of Figure 1, parts of the building structure being shown in section;

Figure 3 is a perspective view of the portable support;

Figure 4 is a cross sectional view taken on line 4—4 of Figure 3;

Figure 5 is a cross sectional view taken on line 5—5 of Figure 4 and shown on an enlarged scale; and

Figure 6 is a cross sectional view taken on line 6—6 of Figure 4 and shown on the somewhat enlarged scale.

With continued reference to the drawings, the portable support is shown in Figure 3 and is generally designated by the reference numeral 10. The support 10 includes a supporting surface 12 which is horizontally disposed with reference to the floor or other surface and is made of narrow gauge sheet metal. A depending flange 14 extends across one end of the generally rectangular support surface 12, this end being indicated at 16, and along the opposite sides 18 and 20. The flange 14 is turned back on itself so that a leg 22 is formed which is generally parallel to and spaced from the depending flange section formed with the supporting surface 12, and the free end of the spaced parallel leg portion terminates a short distance below the support surface 12. The leg 22 extends along each of the opposite sides of flange 14 from the end 32 of the main portion 30 of surface 12 to a point intermediate the ends of sides 18 and 20, as seen in Figure 6. The flange 14 along with the turned and upwardly directed leg 22 defines a channel 24 adapted to receive an extension 26 of the support surface 12. The extension 26 is provided with a depending peripheral flange 28 which is telescopically received within the channel 24 and the top surface of the extension 26 will, of course, slide beneath the top surface of the main portion 30 of the support surface 12. As clearly seen in Figures 3 and 4, the extension 26 will be telescopically received in the end 32 of the main portion 30, since this end is open, that is, there is no depending flange provided therealong. The sides 34 and 36 of the flange 28 are provided with a single row of longitudinally extending spaced openings there-through, the openings being indicated at 38, which are adapted to register with an opening 40 provided in each of the flanges 14 on the sides thereof and adjacent the end 32 of the main portion 30 of the support surface 12, and the aligned opening 42 is similarly provided in the leg 22, so that when a desired length of the support surface 12 is required, the extension 28 may be moved relative to the main portion 30 until one of the openings 36 are in register with the openings 40 and 42 and held in this desired extension length by inserting a pin, such as the cotter pin 44, through the aligned or registering openings. From the foregoing, it will be evident that the length of the supporting surface 12 is selectively adjustable in length.

The main portion 30 of the supporting surface 12 is carried by pairs of depending legs 46 and 48, each of the pair of legs 46 being disposed at the juncture of the sides 18 and 20 with the ends 16, respectively, while the other pair of legs 48 are disposed with one leg adjacent the flange 14 on opposite sides 18 and 20 and intermediate the ends thereof. A pair of legs 50 are provided for the support surface extension 26 and are disposed adjacent the end of the extension remote from the end 16 of the support surface and are spaced inwardly from the sides 34 and 36 of the extension 26. Each of the legs 50 is secured to the bottom surface of the horizontal portion of the extension 26 by a butt hinge 52, one leg of which is secured to the depending leg 50 and the other leg of which is, of course, secured to the underneath or bottom surface of the extension 26, so that each of the legs 50 is mounted for arcuate movement, in the direction shown by the dot-dash line in Figure 4 and the arrows *a*. As a result of this hinged mounting of the legs 50, the legs are capable of movement to a position beneath the supporting surface 12 and generally parallel with the sides 18 and 20 thereof, as shown in broken lines in Figure 4. Each of the legs 46,

48 and 50 are similar in construction, each of the legs being formed of narrow gauge sheet metal material, similar to the material from which the supporting surface 12 is formed, and are formed into hollow tubes, which in the present case are rectangular or square in cross section. Each leg has lower extensible section 54 which is telescopically received within the respective leg and the open bottom end thereof. Each of the lower extensible sections 54 carry at their lower ends a wheeled caster 56 and are provided with a row of aligned openings 58, spaced along opposite sides of the section 54. A pair of aligned apertures are provided on opposite sides of each of the legs adjacent the open end thereof wherein the section 54 is received and on the corresponding sides to the side of the section wherein the openings 58 are provided so that the height of the legs 46, 48 and 50 is selectively adjustable by aligning the openings in the major portion of the leg with a selected pair of openings 58 in the section 54 and securing the section 54 at that location by inserting a cotter pin 60. In order for the supporting surface 12 to remain in a horizontal plane, it will be necessary for each of the pairs of legs to have the extensible sections 54 secured thereto at the same location. A pair of extensible shields, generally indicated at 62, which are generally rectangular in outline, are secured to the support surface 12, with one of the pair of shields 62 secured on opposite sides 18 and 20 of the supporting surface 12. The shields 62 are secured adjacent one corner thereof to the respective sides 18 and 20 as by welding, brazing, etc., and are disposed with the longer axis disposed perpendicularly to the horizontal plane of the support surface 12, the shields being secured at their lowermost vertical edge to the flange 14 so that the lower end 70 generally terminates in a horizontal plane parallel with the lower edge of the bight portion of the channel 24 formed in the flange 14. The shields 62 are transversely aligned and project outwardly from the support surface 12 and extend thereabove. Each of the shields 62 comprise two principal components, namely, a frame 63 and a rectangular plate 66. The frame 63 is generally rectangular in outline and is provided with an interned peripheral flange 64 which extends along the end 70, the side of the frame adjacent the support surface 12 and along the top end portion 68 so that there is formed a channel along three sides of the frame 63 opening to the side of the frame remote from the support surface 12, the channel thus formed being adapted to receive slidably therein to the plate 66 which enters the channel defined by the flange 64 at the open side thereof 72. With the plate 66 telescopically received in the channel defined by the flange 64, a spring 74 having one end secured in the flange 64 on the side of the frame adjacent the support surface 12 and the other end secured at the side 76 retains the plate 66 within the defined channel under the resilient bias of the spring 74. At the upper end of the vertical side 76 of the plate 66 there is provided a laterally extending ear 78 having an opening 80 there-through, and one face of the plate 66 remote from the face across of which the spring 74 extends, there is provided a handle 82 secured on this face of the frame 63 adjacent the vertical side 76 thereof and intermediate the ends 68 and 70 of the frame 63.

With the foregoing portable support structure provided, an air conditioning unit of the window type, generally indicated at 84, may be placed upon the portable support 10, as shown in Figure 2. The width of window type air conditioning units is substantially the same regardless of make for a particular size or capacity, so that when the unit 84 is placed on the support 10, vertical sides of the unit will be in abutting relation to the respective extensible shield 62 secured upon the support 10 at opposite sides thereof, the shield 62 when in abutting relation with the unit 84 will form an air stop when the unit is installed in the window, generally indicated at 86. In this connection, a seal gasket may be carried by the vertical side 64 of each of the shields 62 to insure a tight air seal between the shields and the unit 84 placed upon the support 10.

With the unit 84 placed on the support 10, the unit may now be transported to any desired location with relative ease for either the purpose of storing the unit or for the purpose of installing the unit in a window, such as window 86. To install the unit 84, after it has been placed upon the support 10 in the manner hereinbefore indicated, the support 10 is wheeled to the window into which it is to be installed, with the part of the unit hous-

ing 88 in which is housed the condenser fan and coil overlying the extension 26 which has been adjusted to the length of the unit 84. The support 10 is then wheeled to the window 86 to which is to be installed, the lower sash 90 having been raised to provide an opening through which the part of the housing 88 in which the condenser units are contained may enter the window and project therethrough. As the unit is so wheeled to have a portion thereof project through the open window, the legs 50 will be engaged by the window stool 92, thereby forcing the legs 50 to pivot about the hinges 52 and move in the arcuate path indicated by the arrow *a*. It will, of course, be realized that the height of the legs has been so adjusted that the lower edge of the flange 14 will rest upon the upper horizontal surface of the window stool 92. Upon continued insertion of the unit 84 into the open window 86, the intermediate legs 48 will abut the interior vertical edge of the window stool 92, as clearly shown in Figure 2, and the legs 50 will be folded underneath the supported surface 12 and lie generally parallel thereto. Each of the extensible shields 42 will now be manipulated so that the plate 66 may be extended therefrom by gripping the handle 82 and moving the plate 66 against the resilience of the spring 74 to such an extent that the side 76 will be in abutting relation with the respective vertical stiles or beads 94 of the window 86 and the respective plates 66 secured in this relation by inserting a screw through the opening 80 and the respective ears 78 so as to engage into the stiles or beads on the respective sides of the support 10. The lower sash 90 is then lowered so as to rest upon the top of the unit and on the ends 68 of the shields 62 so that a complete air stop between the interior of the room and the outside will result. Thus, with these simple foregoing steps, the installation of the window type air conditioner unit 84 is completed except for plugging the usual cord provided therewith into a convenient outlet.

To remove the unit 84 from the window 86, it is merely necessary to remove the screws from the openings 80, whereupon the plate 66 will be urged by the spring 74 back into the channels provided on the respective frame 63 of the shields 62. Then, as the support 10 is pulled rearwardly upon the casters 56 on the legs 46 and 48, the legs 50 will tend to drop by gravity and ultimately assume the vertical position shown in Figure 4, so that the unit will still be supported upon the surface 12 of the support 10 and may be transported to any other desirable location either for the purposes of installation in another window or for winter storage.

It will be evident, that with the use of the present portable support 10, the usual window adaptor, more or less permanently installed in the window, will be eliminated as well as avoiding the necessity for lifting the rather heavy and bulky unit 84 from its installed window position. In addition, the usual bead clamps, inside reinforcing angle irons, outside reinforcing angle irons and the outside mounting arms of the usual window adaptor will not be required. Thus, simple and easy installation can be made by persons other than those skilled technicians and normally employed to install such air conditioning units.

From the foregoing, it will be apparent that there has been provided a portable support for an air conditioning unit which is adapted for installation in a window having a stool, stiles and a vertically movable sash, in other words, the air conditioning unit 84 is particularly adapted for installation in windows of the double-hung type. The support comprises a horizontal support surface 12 which includes the main portion 30 and the extension 26, the supporting surface 12 maintained in spaced parallel relation above the floor by a plurality of pairs of spaced depending legs carried by the supporting surface 12, each of the legs having means, extensible section 54, whereby the height of said surface above the floor may be selectively adjusted so that the unit 84 may be installed in the window 86 with the supporting surface 12 resting upon the stool of the window and projecting partially through the window, and a pair of extensible shields carried by the supporting surface 12, intermediate its ends with one of the shields 62 carried at opposite sides of the supporting surface 12 and in transverse alignment one with the other, the shields 62 extending laterally from and perpendicularly to the surface and adapted to extend between the opposite vertical sides of the unit 84

and the stiles or beads 94 of the window 86 so that when the movable sash 90 is lowered to rest upon the top of the shields 62 and on the top of the unit 84, an air stop will be formed.

While there is shown and described the preferred embodiment of the invention, it is to be understood that the structure is susceptible to change and modification within the practicability of the invention and therefore should be limited only by the scope of the claims appended hereto.

What is claimed is:

1. A portable support for an air conditioning unit adapted for installation in a window having a stool, stiles and a vertically moving sash; said support comprising a horizontal support surface upon which the air conditioning unit is supported, a plurality of spaced depending legs carried by said supporting surface to maintain said unit in spaced relation above the floor so that said unit may be installed in the window with said supporting surface resting upon the stool of said window and projecting partially through said window, and a pair of extensible shields carried by said supporting surface intermediate its ends and having one of said shields carried at opposite sides thereof in transverse alignment, said shields extending laterally from and perpendicularly to said surface and adapted to extend between the opposite vertical sides of said unit and the stiles of said window so that when said movable sash is lowered to rest upon the top of said shields and said unit an air stop is formed.

2. A portable support for an air conditioning unit adapted for installation in a window having a stool, stiles and a vertically moving sash; said support comprising a horizontal support surface upon which the air conditioning unit is supported, a plurality of spaced depending legs carried by said supporting surface to maintain said surface in spaced relation above the floor so that said unit may be installed in the window with said supporting surface resting upon the stool of said window and projecting partially through said window, and a pair of extensible shields carried by said supporting surface intermediate its ends and having one of said shields carried at opposite sides thereof in transverse alignment, said shields extending laterally from and perpendicularly to said surface and adapted to extend between the opposite vertical sides of said unit and the stiles of said window so that when said movable sash is lowered to rest upon the top of said shields and said unit an air stop is formed, said supporting surface comprising a generally rectangular main portion having a depending flange peripherally about two sides and one end thereof, said flange having intumed and upwardly extending leg to define a channel between said flange and said leg; and a support surface extension telescopically received in said channel at the other end of said main portion whereby said supporting surface may be selectively adjusted in length to conform to the length of said unit, and means to secure said extension and said main portion in the selected adjusted position.

3. A portable support for an air conditioning unit adapted for installation in a window having a stool, stiles and a vertically moving sash; said support comprising a horizontal support surface upon which the air conditioning unit is supported, a plurality of spaced depending legs carried by said supporting surface to maintain said surface in spaced relation above the floor so that said unit

may be installed in the window with said supporting surface resting upon the stool of said window and projecting partially through said window, and a pair of extensible shields carried by said supporting surface intermediate its ends and having one of said shields carried at opposite sides thereof in transverse alignment, said shields extending laterally from and perpendicularly to said surface and adapted to extend between the opposite vertical sides of said unit and the stiles of said window so that when said movable sash is lowered to rest upon the top of said shields and said unit an air stop is formed, said plurality of legs being arranged in pairs, one of said pairs being hingedly carried by said supporting surface adjacent one end thereof so that said legs will fold as they contact the window stool when said support is moved so as to install said unit in said window.

4. A portable support for an air conditioning unit adapted for installation in a window having a stool, stiles and a vertically moving sash; said support comprising a horizontal support surface upon which the air conditioning unit is supported, a plurality of spaced depending legs carried by said supporting surface to maintain said surface in spaced relation above the floor so that said unit may be installed in the window with said supporting surface resting upon the stool of said window and projecting partially through said window, and a pair of extensible shields carried by said supporting surface intermediate its ends and having one of said shields carried at opposite sides thereof in transverse alignment, said shields extending laterally from and perpendicularly to said surface and adapted to extend between the opposite vertical sides of said unit and the stiles of said window so that when said movable sash is lowered to rest upon the top of said shields and said unit an air stop is formed, each of said shields comprising a rectangular frame having a peripheral flange about two sides and one end thereof to define a channel and a rectangular plate telescopically receivable in said channel, a laterally extending ear having an opening therethrough carried by said plate on the side thereof remote from said supporting surface, said ear adapted to receive threaded securing means through said opening whereby said plate will be releasably attached to said window stile.

5. A portable support for an air conditioning unit adapted for installation in a window having a stool, comprising a horizontal support surface for said unit, a plurality of spaced pairs of depending legs carried by said supporting surface, one of said pairs of legs being hingedly carried by said supporting surface adjacent one end thereof, a pair of shields carried by said support surface intermediate its ends and at opposite sides thereof, said shields adapted to extend between the vertical sides of said unit and the sides of the window when said unit is installed in said window and said one pair of legs adapted to fold as they contact the window stool and underlie said support surface when said unit is being installed.

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