Jan. 10, 1967 R. R. BAUMAN 3,296,820

WINDOW MOUNTED AIR CONDITIONING UNIT

Filed Oct. 23, 1965

Fig. 1

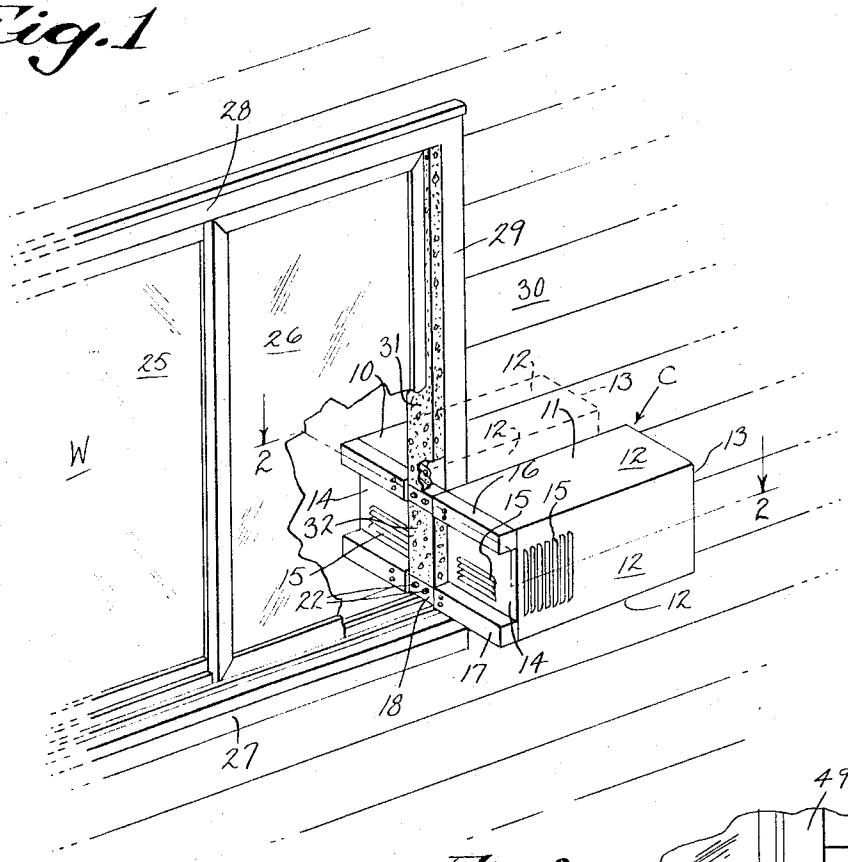


Fig. 2

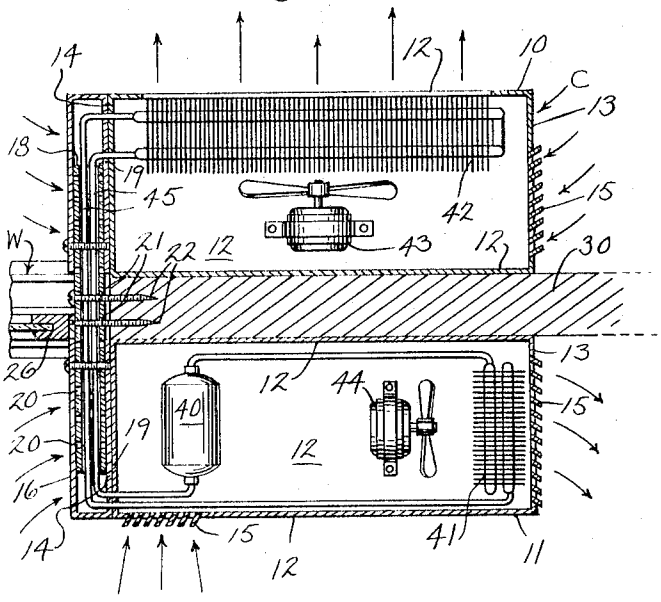


Fig. 3

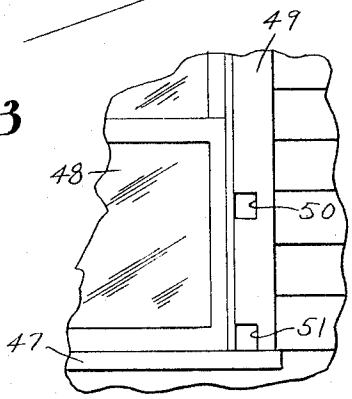
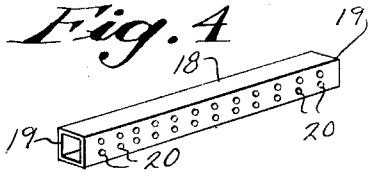


Fig. 4



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WINDOW MOUNTED AIR CONDITIONING UNIT

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This invention appertains to refrigerating apparatus, and more particularly to new and useful improvements in a window mounted air conditioning unit.

It is recognized that applicant is not the first to provide a portable room air conditioning unit of the type wherein the evaporator is mounted on the inside of the room to be cooled and the condenser unit is mounted on the outside of the building structure. Conventional window type air conditioning units usually provide a cabinet which is positioned on the window sill and protrudes half into the room and half out of the room, and elaborate means have been provided in the past to block off the openings left between the unit and the casing and sill of the ordinary window.

Thus, it has been suggested that advantages could be obtained by separating the unit into two cabinets, one housing the evaporator unit and the other the condenser unit, and connecting these cabinets by means of channels and brace members resting on the sill. While this type of unit presents advantages over the cumbersome one cabinet style, the inside cabinet is still in the way of drapes and curtains, and further is not suited for the horizontal slide-by windows.

It is, therefore, a primary object of my present invention to provide a novel room air conditioning unit that is particularly adapted to be used with the vertical slide-by windows but which can be readily adapted to be used with horizontal regular window sash construction.

Another important object of my present invention is to provide a novel means for mounting a window air conditioning unit wherein the evaporator unit is positioned inside the room and the condenser unit is positioned outside of the window and wherein the cabinet structures are completely clear of the window opening so that curtains and the like can be hung without interference with the unit.

A salient feature of my present invention resides in providing a novel air conditioning unit wherein the two cabinets are firmly anchored to the vertical casing of the window and extend away from the casing and window sash construction.

A further object of my present invention is to provide a novel air conditioning unit of the above character wherein channels are secured to the forward end of each unit and joined by a strong channelled bracing unit which is provided with means for adjusting the space between the unit to compensate for various wall thicknesses.

A more specific object of the present invention resides in providing grooves or notches in the vertical window casing to receive the channelled bracing member so that the outer surface thereof lies flush with the stile to allow vertically moving window sashes to be raised and lowered without interference with the air conditioning units and also facilitates the use of the unit with horizontal slide windows.

A further object resides in providing a two cabinet air conditioning unit, one extending into the room and one on the outside thereof which may be quickly and easily securely mounted to the vertical window casing, and wherein means is provided for sealing the space between the channel members and the jamb of the window so that in the horizontal slide-by window a complete seal is had whether or not the channel brace member is received in the grooves or recesses.

A still further object of the invention is to provide a window air conditioning unit which is simple in construction, reliable in its operation and not liable to get out of order.

With the above and other objects in view and to the end of attaining any other advantage hereinafter appearing, the invention consists in certain features of construction and with the arrangement and combination of parts hereinafter described, pointed out in the claims and illustrated in the accompanying drawing, in which

FIGURE 1 is an elevational view in perspective showing one means for mounting my novel air conditioning unit to the vertical casing of a slide-by window, parts of the window and sealing means being broken away to illustrate further details in its construction;

FIGURE 2 is a horizontal section through the air conditioning unit and the respective window and wall construction, taken on the line 2—2 of FIGURE 1 of the drawings, and looking in the direction of the arrows;

FIGURE 3 is a fragmentary front elevational view of a window opening in a home showing a modified vertical casing wherein the channel brace members may be recessed within the stile to particularly adapt the unit for mounting with vertical sliding sashes, and

FIGURE 4 is a perspective view of one of the channel bracing members used to adjustably secure the units in place.

Referring now to the drawing in detail, wherein similar reference characters designate corresponding parts throughout the several views, the letter C generally indicates my novel air conditioning unit, and the same includes broadly a housing or cabinet **10** for the evaporator unit and a housing or cabinet **11** for the condenser unit and these units are of the conventional air conditioner window structure except as mentioned, the evaporator portion is mounted in cabinet **10**, and the condenser portion of the system is mounted in cabinet **11**. Thus, each cabinet is substantially rectangular in shape, and each includes top, bottom and side walls **12**, a rear wall **13** and front walls **14** and each cabinet is provided with vanes **15** for the ingress and egress of air, for either cooling the unit per se or more importantly for conditioning the air within the room properly. To the forward wall **14** of each unit **10** and **11** in the preferred form of the invention, I secure by welding or otherwise, aligned box-like channel members **16** and **17** respectively to provide the upper member **16** and lower member **17** as shown more particularly in FIGURE 1 of the drawings. Telescopically received within the aligned upper box-like channel member **16** and within the lower member **17** is an identically formed channel brace member **18** and each brace member **18** is substantially rectangular in shape (FIGURE 4), open at each end **19** and the longitudinally extending side walls are provided with a number of aligned apertures **20** to provide for the aforementioned adjustment between the cabinets **10** and **11**. Apertures **20** are provided in aligned vertical rows as shown and between these aligned vertical rows of apertures **20** are a pair of aligned horizontally positioned apertures **21** formed adjacent the axial center of the channel brace member **18**. The two horizontally disposed apertures **21** formed on both side walls, receive a pair of bolts or wood screws **22** to firmly secure the members **18** to the vertical casing of the window.

In that form of the invention illustrated in FIGURES 1 and 2, the window construction W is of the conventional horizontal sliding sash type, in which a pair of sashes **25** and **26** are mounted for horizontal movement between the sill **27** and jamb **28** to provide an opening between the sash and a vertical casing **29**. In the simplest method for mounting the units, the brace members **18** are secured by the screws **22**, as previously described. The lower brace member **18** is secured so that it rests firmly on the sill **27** and obviously, the upper brace member **18** is spaced therefrom so that it will be properly aligned with the box-like

channel members **16** when the lower members **17** are slipped over the lower bracing member. Each unit therefore is fitted on the aligned parallel bracing members **18** so that its inner side wall rests firmly against the building wall structure **30**. A pair of vertically aligned bolts are then threaded through proper apertures in the box-like members **16** and **17** and through aligned pairs of apertures in the bracing member **18**. Thus, it can be seen that the unit is firmly secured to the vertical casing **29** of the window and in this form of the invention sealing strips **31** and **32** are provided between the jamb and the upper bracing member **18** and between the upper bracing member and its corresponding lower bracing member to seal the closure when sash **26** is brought against the channel members and sealing strips.

The type of refrigeration unit utilized forms no particular part of this present invention and may be of any well known construction now on the market but for purposes of illustration the system basically includes a sealed condenser unit **40**, the condenser **41**, evaporator **42** and fans **43**, **44** providing the necessary circulation of air. It should also be noted that the channels provided by basic channel members **18** and aligned integral channel units **16** and **17** provide means for the connecting lines **45** and the necessary wiring etc. It should also be readily apparent that lines **45** could easily extend through the lower channel members **17** rather than the upper channel members **16** as shown, and for purposes of changing the evaporator unit and especially the cabinet **10** thereof, should it be desired to utilize different designs from year to year, I may provide couplers in the lines **45**. Thus, merely by removing the fastening bolts the evaporator unit can be removed and another unit of different design quickly secured in place leaving the major components of the noisy condenser unit primarly in the outside cabinet **11**. Depending on the size of the unit needed, the basic channel member provided by the brace member **18** can be of any desired dimensions but preferably as shown, it is rectangular in shape, and approximately 4″ wide. It can therefore be seen that at the most, the installation of my novel unit will take up not more than 4″ of window space and in most cases a 2″ wide brace member can be used. If desired, I may notch the vertical casing **29** to completely receive each channel brace member **18** and thus no actual window space will be used. In this regard, attention is directed to FIGURE 3 of the drawing, wherein my unit may be mounted in a window construction of the horizontal sliding sash type, and thus the window opening includes broadly a sill **47**, horizontally sliding sash **48** and vertical casing **49**. In the vertical casing **49** I provide the aligned notches or grooves **50** and **51** respectively, and these are of a size and configuration to snugly receive the basic channel supporting members **18** in such a manner that the horizontally sliding sash can be completely closed and will readily move past the entire unit. In this installation, it can be seen that no window space is needed and the entire window opening can be effectively utilized.

From the foregoing, it is believed that the features and advantages of my invention will be readily apparent to those skilled in the art and that I provide a window air conditioning unit which is stable, and which will not fall out of the window and will not interfere with the opening and closing of either horizontal or vertical sliding sash windows. My devices save valuable window space and

give an unobstructed view, and also allow the complete closing of curtains and drapes. Window screens and storms can be left in place without appreciable modification and the noisy condenser unit is completely out of the room.

While I have shown and described certain specific embodiments of my invention, it will be understood that these are merely for the purpose of illustration and description, that various other forms may be devised and that changes may be made in the proportions and minor details of construction, without departing from the spirit of the invention or scope of the appended claims.

What is claimed as new is:

1. A room air conditioning unit adapted to be mounted on the vertical casing of a window frame having a slidable sash, including two separate casings, one casing housing the evaporator unit of a refrigeration apparatus, the other casing housing the condenser unit thereof, each casing being substantially rectangular in shape to provide side bottom top front and rear walls, provided with suitable openings for the circulation of air, a box-like elongated channel member secured to the front wall of each casing having an open end in alignment one with the other, a substantially rectangularly shaped channeled brace member adapted to be slidably received within said open box-like channel member, means for adjustably securing said channelled brace member to a respective portion of a respective channel member, the connecting lines and wiring for said refrigeration apparatus adapted to extend through said channel openings, and means for securing said brace member to said vertical window casing with the evaporator unit casing being positioned in the room and the condenser unit casing outside of the room.

2. A room air conditioning unit as set forth in claim **1**, wherein a pair of spaced parallel box-like channel members are secured to each front wall of each casing, and a pair of brace channel members are provided each received within a respective aligned channel member.

3. A room air conditioning unit as set forth in claim **1**, wherein said adjustable means for securing said channelled brace member to said vertical window casing includes rows of spaced apertures through aligned walls of said rectangularly shaped brace member, and bolts received through respective portions of said channel members and through a pair of aligned apertures in said channeled brace member.

4. A room air conditioning unit as set forth in claim **1**, wherein said means for securing said channelled brace member and said air conditioning unit to said vertical casing of said frame includes a pair of spaced grooves in said vertical casing of a size and configuration to receive a respective portion of said channelled brace member.

5. A room air conditioning unit as set forth in claim **1**, wherein said casing units are extending away from said window frame opening and wherein said evaporator casing unit is of a smaller dimension than said condenser casing unit.

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WILLIAM J. WYE, *Primary Examiner*.