Sept. 4, 1962 A. CARINI 3,052,104

AIR CONDITIONER SUITED FOR APPLICATION TO WINDOWS OF CIVIL AND INDUSTRIAL BUILDINGS WITHOUT PRECLUSION OF THE MOVEMENTS OF OPENING AND CLOSING THE PRE-EXISTING WINDOW

Filed April 10, 1961

Fig.1

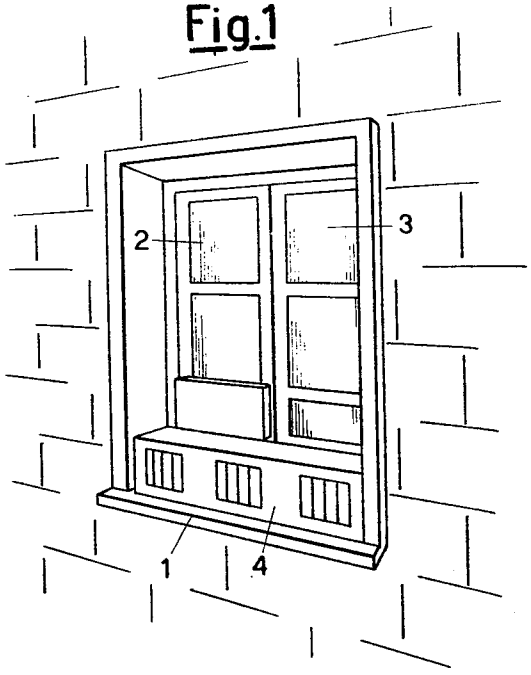


Fig.2

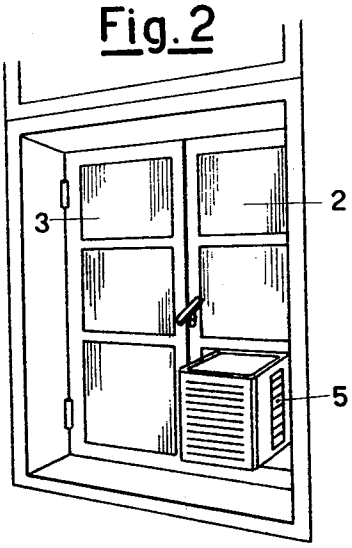


Fig.3

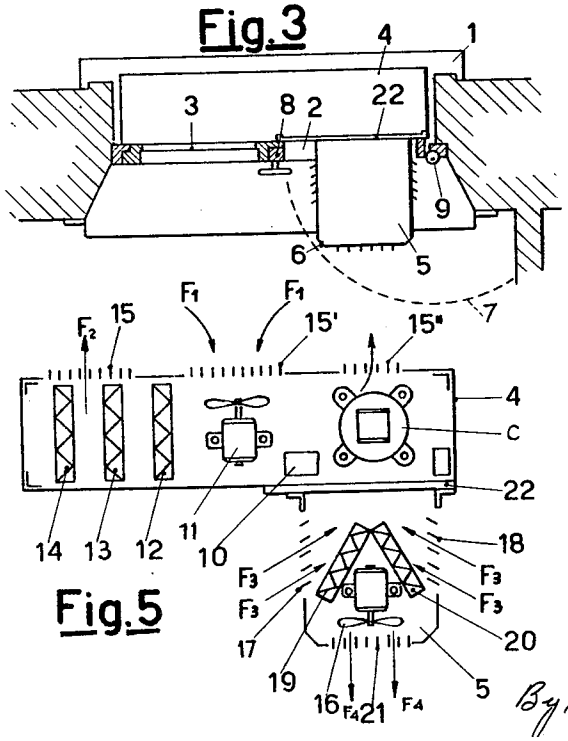


Fig.4

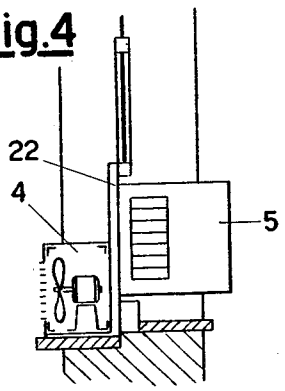
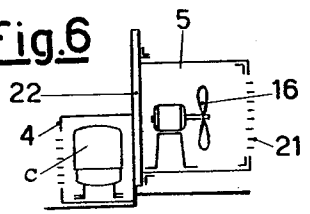


Fig.6



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AIR CONDITIONER SUITED FOR APPLICATION TO WINDOWS OF CIVIL AND INDUSTRIAL BUILDINGS WITHOUT PRECLUSION OF THE MOVEMENTS OF OPENING AND CLOSING THE PRE-EXISTING WINDOW

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1 Claim. (Cl. 62—262)

One of the greatest difficulties met in arranging an air conditioner of small power rating, suitable for one or two rooms, consists in the difficulty of applying it without excessive work of bricklaying or carpentry, to a wall or to a window in such a manner that outside the room there remains the part destined to disperse the heat and that inside there remains the part destined to absorb heat from the room thereby causing it to become cooled down.

It is an object of the present invention to provide a conditioner which forming a hole and a transportable unit, laden and effective, permits application thereof to a window pre-existing, by a minimum of adapting work.

Hence the air conditioner according to the present invention is characterized by a part adapted to disperse the heat and to be leaned against the outside sill of the window and a second part adapted to absorb the heat and penetrating into the interior of the room through an aperture provided at a post of said window, there being provided a surface rigid with said parts and such as to determine an abutment from the outside on a position of the post passed through by the very part penetrating into the room.

According to a preferred form of embodiment of the present invention, on the external sill of the window there is made to rest a sort of low and narrow horizontal case containing the compressor, the condenser coil and the fan. To that case there is connected with stability another case of approximately cubic shape which penetrates into the room to be conditioned through a lacking portion of one of the glass panes of a post of the window. The only operation necessary for installation is, therefore, that of taking away part of the glass pane.

This part has such shape and dimension that the post of the pre-existing window can be freely opened and closed.

The accompanying drawing shows diagrammatically an example without limitation of embodiment of an air conditioner according to the present invention and its accommodation on a window; in particular:

FIG. 1 shows the window, seen from outside and in perspective, with the air conditioner applied thereto;

FIG. 2 shows also in perspective view the same window seen from the inside of the room;

FIG. 3 shows a section of the window taken along a horizontal plane; in said figure the air conditioner is visible in plan;

FIG. 4 shows a section of the window taken along a vertical plane wherein there appears in view the part of the conditioner that is placed in the interior of the room and in section, the part of the same conditioner that is placed at the outside;

FIG. 5 shows the conditioner in section taken along a horizontal plane;

FIG. 6 shows the same conditioner in section taken along a vertical plane.

The conditioner comprises a parallelepiped case 4 and a second substantially cubic case 5 rigid with the very case 4; between said two cases there is placed a panel 22.

The case 5 carries inside the elements adapted to absorb the heat from the room and the case 4 carries the elements adapted to pass said heat over to the exterior.

Precisely, in said case 4 there is placed a compressor C with the starting relays 10; in the same case there are noted a fan 11 and the coils 12, 13 and 14 of the condenser; by 15, 15' and 15'' are indicated three grates.

In the case 5 there are provided a fan 16 and the cooling coils or evaporators 19 and 20; said case moreover carries three grates indicated respectively by 17, 18, and 21. The pipes containing the cooling fluid and the electric connections pass from the case 4 to the case 5 through the portion of wall in common 22.

The window, visible in the drawing, comprises an external sill 1 and two posts indicated respectively by 2 and 3, which can be opened towards the interior of the room.

The above described conditioner is applied to the windows in such a way that the case 4 comes to be outside and the case 5 inside the room.

Precisely the case 4 occupies part of the whole of the external sill following the needs of appearance of the front of the house.

The case 5 penetrates into the interior of the room through an aperture provided in the post 2 of the window. Said aperture derives from the elimination of a lower part of the glass pane of the post 2 in correspondence with the case 5.

The edge 6 of the case 5, which is more prominent towards the interior of the room finds itself in such a position as not to hinder the opening of the post 2 towards the inside of the room.

The movement of the post 2 as marked by a dotted line can take place without any interference with the edge 6 of the case when the arc of circle 7 as described by the upright 8, which has its centre in the hinge pintle 9, passes outside the edge 6.

With that arrangement the only modification to be made with the window for the installation of the conditioner is the elimination of the lower part of the glass pane of the post 2, up to the height of the cover of the case 5. The window remains still effective and can be opened and closed at will.

It should be noted that said case 5 being sustained overhangingly by the very case 4, does not rest on any element at the interior of the window, so as to render possible the rotation of the post 2.

In the operation of the conditioner as applied to the window as said above, the fan 11 sucks the external air through the grate 15', according to the arrows F_1, then conveys it through the coils 12, 13 and 14 of the condenser and, finally sends its back to the exterior (according to the arrow F_2).

Said fan 16, in the case 5 at the interior of the room, sucks the air from the latter through the grates 17 and 18 (according to the arrows F_3), makes it pass through the cooling coils 19 and 20 and then introduces it again into the room through the grate 21.

In that way, as set forth, the heat is absorbed from the room through the small case **5** and is then brought to the exterior.

I claim:

An air conditioning unit and mounting arrangement therefor in a casement window comprising a first part adapted to disperse heat and mounted on an external sill of the window and a second part adapted to absorb heat and overhangingly mounted on the said first part by means of a panel therebetween which is adjoining to the external side of the window, said second part penetrating into the interior of a room through an aperture provided by one unglazed light in the lower portion of one sash of the window, with each point of said second part being placed at a distance from the axis of rotation of said sash, smaller than the distance from said axis, of the inner side of the upright post of the said sash whereby said sash can freely accomplish rotations for the opening and closing of the window.

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