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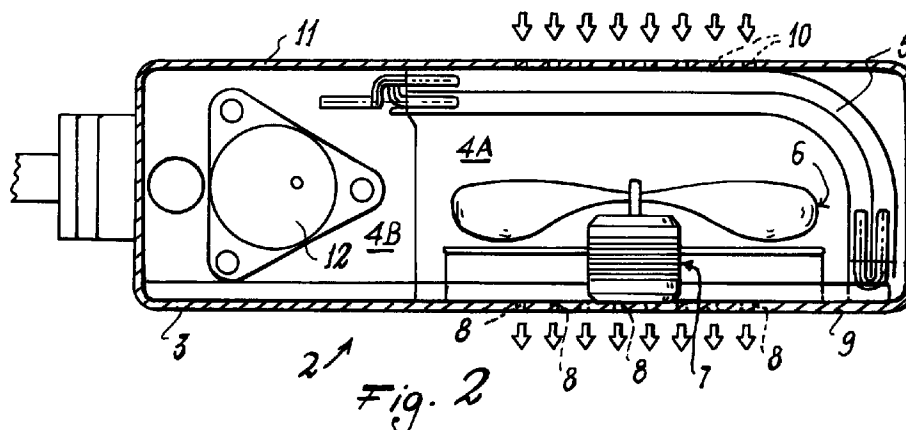
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(54) Air conditioner of split type with units transportable on wheels

(57) A device for treating environmental air, such as an air conditioner of split type, comprising an evaporating unit (1) and a condensing unit (2) separated from each other but connected together by a flexible connection (15), the evaporating unit (1) being positioned within the room to be air conditioned and the condensing unit (2) being positioned external thereto, said device com-

prising an evaporator (21), a compressor (12) and a condenser bank (5). The compressor is positioned within the condensing unit, this latter and the evaporating unit being separable and being positioned on rotating members enabling them to be moved along a support surface.



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Description

This invention relates to a device for treating environmental air for domestic use, such as an air conditioner of split type, in accordance with the introduction to the main claim.

It is known that such a device (for example an air conditioner) for domestic use has its compressor associated with the evaporating unit. This unit is therefore of considerable size as it has to house within itself both the evaporator and the compressor (plus other usual unit members, such as the fan for feeding air to the evaporator. In addition, the presence of the compressor in this unit, which is positioned within the room in which the air is to be treated, results in considerable air conditioner operating noise within the room in which said unit is positioned.

In addition the condensing unit usually rests on a support plate and can be moved only by lifting it.

Furthermore, known air conditioners of split type are sold with their units separated from each other, to be connected (fixed) together when initially used, by a specialized installer.

An object of the present invention is to provide an air treatment device (air conditioner) of improved type compared with analogous known devices.

A particular object of the invention is to provide a device of said type which is of ready use after purchase and is easily moved. A further object is to provide a device of said type which generates a low noise level within the room in which it is used, even if of high power.

A further object is to provide a device of the stated type which can also be used as a convection heater and can be easily transported into the room in which it is to be used.

These and further objects which will be apparent to the expert of the art are attained by a device for treating environmental air, ie an air conditioner, in accordance with the accompanying claims,

The present invention will be more apparent from the accompanying drawing, which is provided by way of non-limiting example and on which:

Figure 1 is a front view of a condensing unit of a device according to the invention;

Figure 2 is a section on the line 2-2 of Figure 1; and

Figure 3 is a cross-section through an evaporating unit of a device according to the invention.

Said figures show an air conditioner of split type, comprising an evaporating unit 1 (Figure 3) and a condensing unit 2 (Figures 1 and 2). This latter comprises a casing 3, with a hollow interior 4, containing a condenser bank 5 and a fan 6 driven by its own electric motor 7. The fan is positioned in front of a grille 8 provided on one side 9 of the unit 2, a second grille 10 being provided on the side 11 opposite the grille 9 and in front of the condenser bank 5.

The hollow interior 4 of the casing 3 is divided sub-

stantially into two parts 4A and 4B. The first houses the condenser bank 5 and the fan 6, whereas the second houses a compressor 12.

The casing 3 is supported on wheels 13 which enable it to be easily moved along a support surface 14.

The unit 2 is connected by flexible hoses 15 to the unit 1, which comprises a casing 17 supported on wheels 18 which enable it to be easily moved. This connection already exists when the air conditioner is sold and enables the device to be used for treating the air of a room (in which the evaporating unit 1 is positioned) immediately after purchasing the air conditioner. For this purpose it is necessary merely to connect the device electrical components to the mains electricity in the room by a mains cable (with which the unit is provided).

In an inner cavity 20 of its casing 17, the unit 1 comprises a usual evaporator 21, a usual fan 22, grilles 30 and 31, and a water evacuation system (not shown).

Within the casing 17 there is also provided an electrical resistance element 23 which enables the unit 1 to be used as a convection heater when separated from the condensing unit 2. This is enabled by disconnecting one end 15A of the hoses 15 from a fixed pipe provided in the unit 1 and connected to the evaporator 21, said disconnection being facilitated by a usual separable connector (for example of bayonet and ring nut type) between the end 15A and the pipe 25.

Consequently, after purchasing the air conditioner, the unit 1 is positioned in the room to be air conditioned, while the unit 2 is positioned outside this room (for example on a balcony). By connecting the air conditioner to the mains electricity in this room, the device is immediately usable.

Because of the provision of the compressor in the condensing unit 2, the operation of the air conditioner in said room is very silent. Moreover, this positioning of the compressor in the unit 2 means that the operational noise level of the air conditioner is always very low, even for high power, achievable by suitably dimensioning the unit 2. In this latter case, the evaporating unit 1 is always of small dimensions and of attractive appearance, even though allowing a high refrigeration power to be attained in the room in which it is positioned.

Moreover, the facility for moving the condensing unit 2 on wheels enables this latter to be easily shifted to a storage region when the unit 1 is used as a convection heater, even if the unit 2 is of considerable size.

Claims

1. A device for treating environmental air, such as an air conditioner of split type, comprising an evaporating unit (1) and a condensing unit (2) separated from each other but connected together by a flexible connection (15), the evaporating unit (1) being positioned within the room to be air conditioned and the condensing unit (2) being positioned external thereto, said device comprising an evaporator (21),

a compressor (12) and a condenser bank (5), characterised in that the compressor (12) is positioned within the condensing unit (2), this latter and the evaporating unit (1) being positioned on rotating members (13, 18) enabling them to be moved along a support surface. 5

2. A device as claimed in claim 1, characterised in that the evaporating unit (1) comprises heating means (23) to enable this unit (1) to be used as a convection heater. 10
3. A device as claimed in claim 1, characterised in that the evaporating unit (1) and condensing unit (2) are separable. 15
4. A device as claimed in claim 1, characterised in that the condensing unit (2) comprises a casing (3) with a hollow interior (4), the hollow interior being divided into two portions (4A, 4B), in one of which (4B) there being positioned the compressor (12). 20

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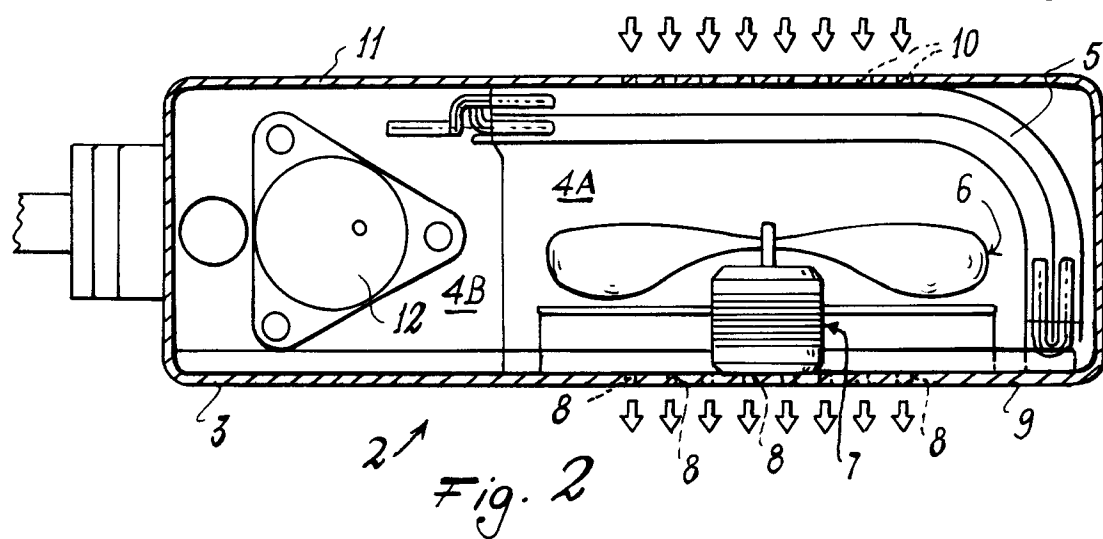
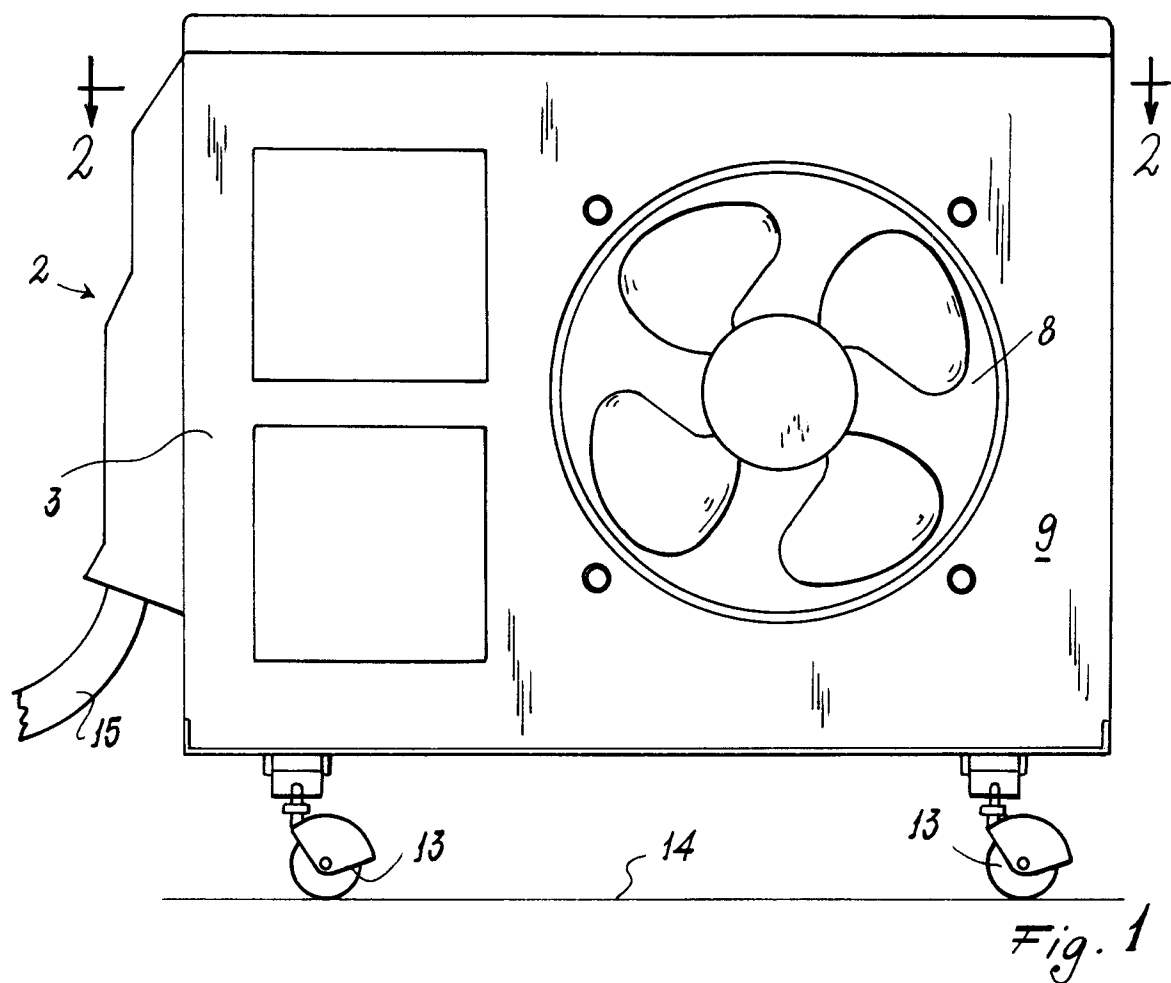
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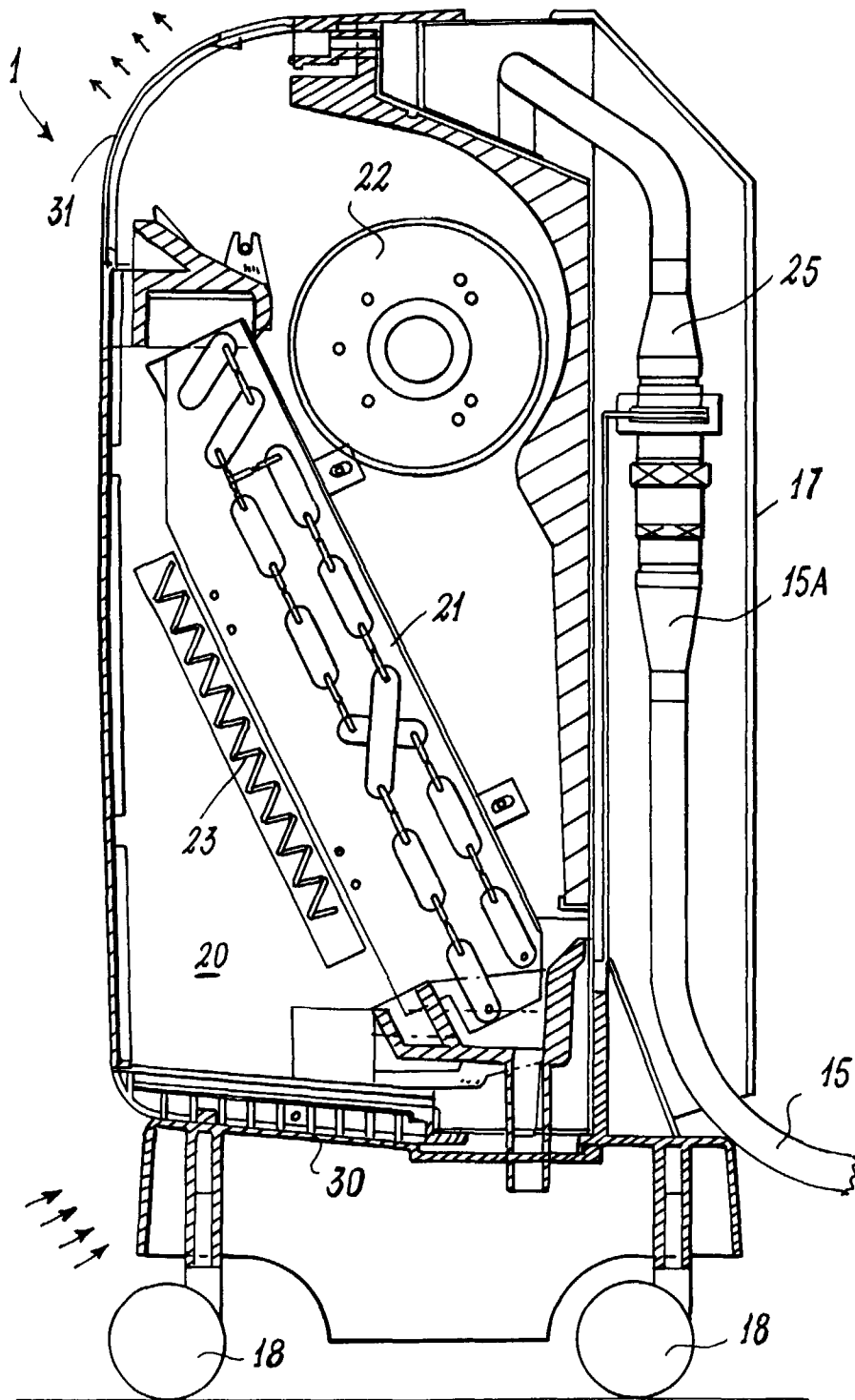


Fig. 3