

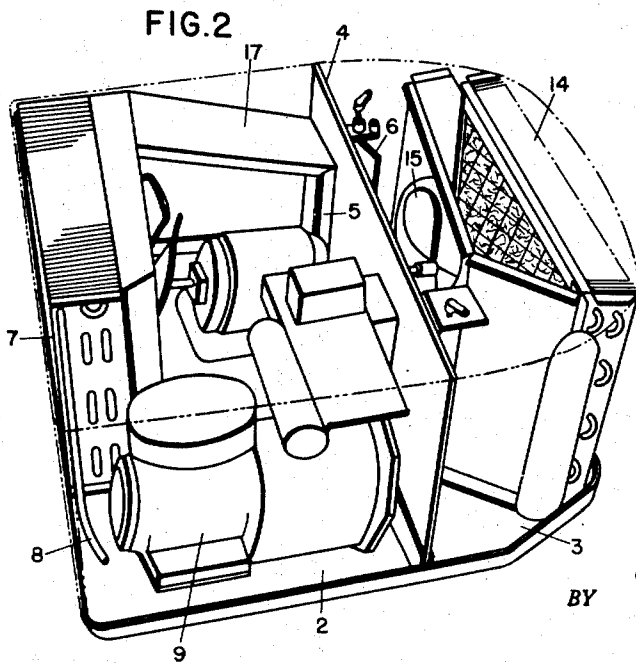
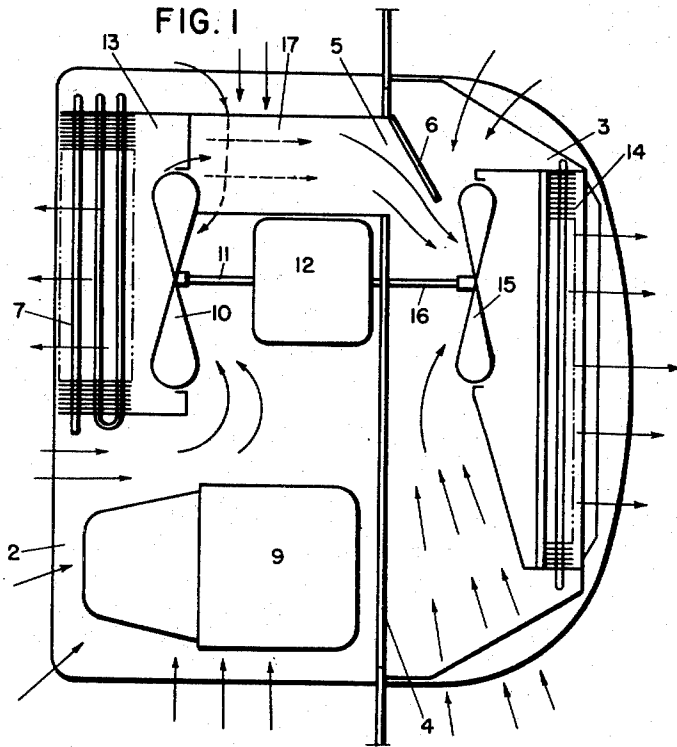
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SELF-CONTAINED AIR CONDITIONING UNIT

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SELF-CONTAINED AIR CONDITIONING UNIT

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5 Claims. (Cl. 62-129)

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This invention relates to self-contained air conditioning units of the window type, and, more particularly, to self-contained units provided with means to assure that a desired volume of exterior air is supplied to a room being conditioned.

Heretofore in units of this type it was well nigh impossible to assure a predetermined amount of fresh or exterior air being supplied to the room being conditioned. It was found upon changes in the direction of the wind outside the area being conditioned, frequently, the evaporator fan was unable to draw fresh air within the room.

The chief object of the present invention is to provide a self-contained air conditioning unit in which this disadvantage is eliminated, the structure being so designed as to assure at any desired time a suitable volume of fresh air for supply to the room being conditioned.

An object of the present invention is to provide a self-contained air conditioning unit of the window type in which a duct is provided so designed as to permit the condenser fan to move a desired volume of fresh air therethrough to the zone of influence of the evaporator fan. Other objects of my invention will be readily perceived from the following description.

This invention relates to a self-contained air conditioning unit comprising in combination a condenser compartment, a condenser in the compartment, a fan in the compartment to pass fresh or exterior air through the condenser, an evaporator compartment, an evaporator therein, a second fan in the evaporator compartment to pass room air through the evaporator, and means connecting the compartments to permit the first fan to pass the exterior air within the zone of influence of the second fan.

The attached drawing illustrates a preferred embodiment of the invention, in which

Figure 1 is a plan view of the self-contained air conditioning unit with the casing removed to display the arrangement of the various elements in the structure; and

Figure 2 is an isometric view of the unit shown in Figure 1.

Referring to the attached drawing, there is shown a self-contained air conditioning unit of the window type, the casing being removed to disclose the interior of the unit. Such unit includes a condenser compartment 2 and an evaporator compartment 3 separated by a partition 4. An opening 5 is formed in partition 4 and is adapted to be closed by a damper 6 for a purpose hereinafter described.

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A condenser 7 is placed in compartment 2 and is connected by a suitable line 8 to the compressor of a semi-hermetic or hermetic motor-compressor unit 9. A fan 10 mounted on shaft 11 of motor 12 is placed in compartment 2 rearwardly of condenser 7 and serves to draw exterior air through grilles (not shown) in the casing and to pass such air through the condenser. A chamber 13 is placed between condenser 7 and fan 10, air in chamber 13 being under slight compression (higher pressure than without the chamber).

An evaporator 14 is placed in compartment 3, fan 15 serving to draw room air through grilles in the casing and to pass such air through the evaporator to condition the same. The evaporator 14 is connected to condenser 7 and unit 9 of the refrigeration system. Fan 15 is mounted on shaft 16 of motor 12 in substantial alignment with fan 10. Preferably fan 10 is more powerful than fan 15.

A duct 17 extends within compartment 2 and serves to connect chamber 13 with compartment 3. Since air in chamber 13 is under slight pressure, such air is forced through duct 17, when damper 6 is open, to compartment 3 within the zone of influence of fan 15 thereby permitting the supply of a regulated amount of exterior or fresh air to the room being conditioned at all times. In effect, fans 10 and 15 are placed in series to supply the desired fresh air to the room being conditioned.

In operation, it will be appreciated condenser fan 10 maintains air in chamber 13 under slight compression. Duct 17 connects chamber 13 with compartment 3. Thus, when damper 6 is open, operation of the condenser fan forces or urges a desired quantity of fresh air under compression through duct 17 to the evaporator compartment 3 where it is brought within the zone of influence of evaporator fan 15, picked up by such fan, passed through the evaporator 14 with room air and distributed to the room.

The present invention provides a ready and simple means of assuring a desired supply of exterior air to a room being conditioned without regard to changes in the direction of the wind exteriorly of the area being conditioned. The means so provided do not increase the operating expenses of unit while the initial cost of the unit is increased only a slight degree.

While I have described and illustrated a preferred embodiment of my invention, it will be understood my invention may be otherwise embodied within the scope of the following claims.

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I claim:

1. In a self-contained air conditioning unit, the combination of a condenser compartment, a condenser in said compartment, a fan in the compartment to pass exterior air through the condenser, a chamber disposed between the condenser and the condenser fan, air in said chamber being under compression created by the condenser fan, an evaporator compartment, an evaporator therein, a second fan in the evaporator compartment to pass room air through the evaporator, a duct extending within the condenser compartment connecting the chamber and the evaporator compartment, pressure of air in said chamber being sufficient to force air through the duct into the evaporator compartment, said second fan being located with respect to the outlet of said duct in a position to receive air passing through the duct.

2. In a self-contained air conditioning unit, the combination of a condenser compartment, a condenser in said compartment, a fan in the compartment to pass exterior air through the condenser, a chamber disposed between the condenser and the condenser fan, air in said chamber being under compression created by the condenser fan, an evaporator compartment, a partition having an opening therein separating the compartments, a damper movable to open and to close the opening, an evaporator in the evaporator compartment, a second fan in the evaporator compartment to pass room air through the evaporator, a duct extending within the condenser compartment connecting the chamber and the evaporator compartment, pressure of air in said chamber being sufficient to force air through the duct into the evaporator compartment, said second fan being located with respect to the outlet of said duct in a position to receive air passing through the duct.

3. A self-contained air conditioning unit according to claim 2 in which the first fan is more powerful than the second fan, the fans being dis-

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posed in substantial alignment in the structure, and a motor is provided to actuate the fans.

4. In a self-contained air conditioning unit, the combination of a first compartment, a condenser in said compartment, a fan in said compartment to pass exterior air through said condenser, a compressor in the compartment connected to the condenser, means for actuating the compressor, a chamber disposed between the condenser and the fan, air in said chamber being under compression created by the condenser fan, a second compartment, a partition having an opening therein separating the compartments, a damper disposed in the second compartment movable to open and to close the opening in the partition, an evaporator disposed in the second compartment, a second fan in the second compartment to pass room air through the evaporator, said fans being disposed in substantial alignment, the first fan being more powerful than the second fan, a motor to actuate said fans, a duct in the first compartment connecting the chamber and the second compartment, pressure of air in the chamber forcing air through the duct into the second compartment, said second fan being located with respect to the outlet of said duct in a position to receive air passing through the duct.

5. A self-contained air conditioning unit according to claim 1 in which the fans are disposed in series to supply fresh air to the area being conditioned.

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