

April 8, 1969

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3,436,930

SYSTEM FOR MULTIPLE ROOM AIR CONDITIONING

Filed Sept. 5, 1967

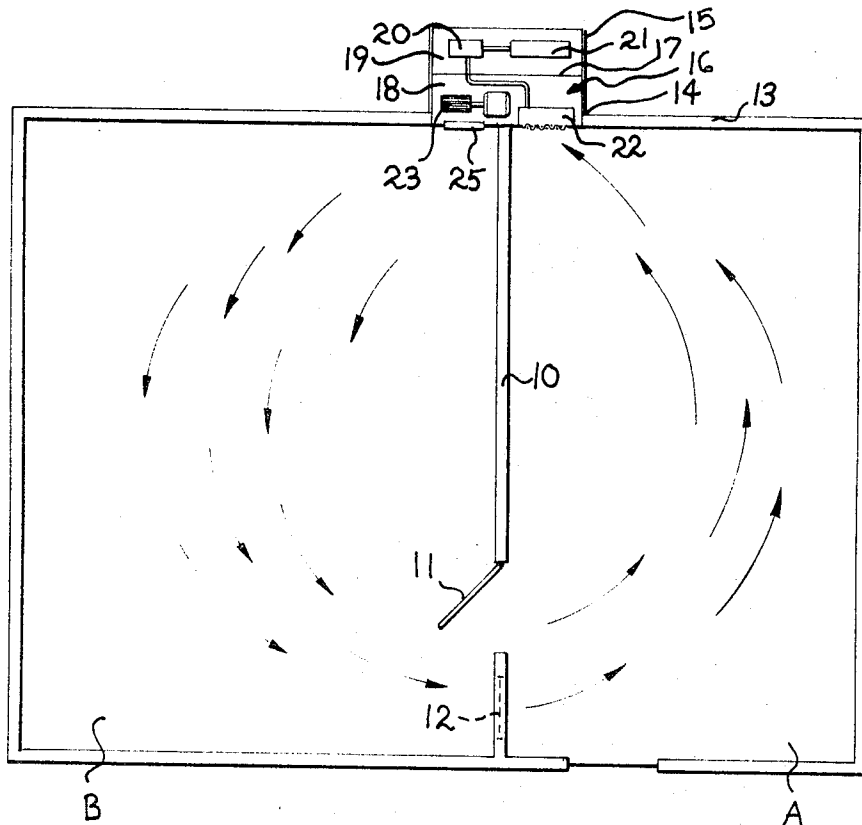


FIG. 1

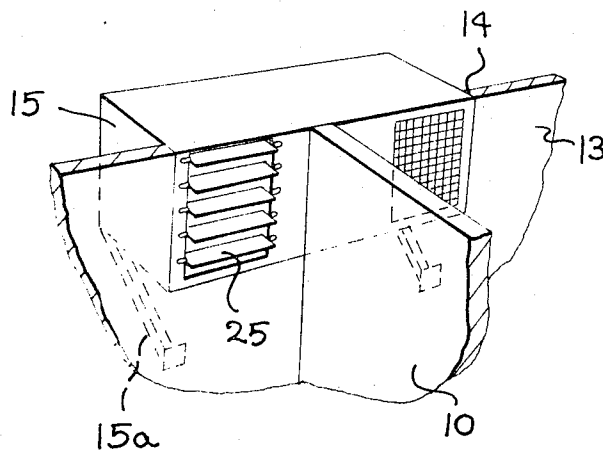


FIG. 2

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3,436,930

SYSTEM FOR MULTIPLE ROOM AIR CONDITIONING

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Filed Sept. 5, 1967, Ser. No. 665,479

Int. Cl. F24f 1/02

U.S. Cl. 62—263

1 Claim

ABSTRACT OF THE DISCLOSURE

A multiple room air conditioner device in which in the region of the partition wall between adjacent rooms is an opening to the outside, one portion being in one room and the other portion in the other room. An air conditioner unit in the opening has a partition dividing it so that the motor compressor unit and condenser are in the outer chamber open to the outside and the evaporator and blower are in the inner chamber. The inner chamber has its components so arranged that air drawn from one room is cooled and forced into the other room. The two rooms at a point remote from the air conditioner are in communication, as by a doorway or wall opening in order to achieve a circulation of air through the rooms.

SUMMARY

Air conditioners which are mounted in window or wall openings are useful in cooling a single room unless the area is too large because the cool air is blown but a relatively short distance and the warmer air outside of that area is not drawn into the air conditioner to be cooled so that only a small area of the room is cooled. Although some cooling is bound to take effect throughout the room it is most inefficient and inadequate because air circulation between the air conditioner and remote areas of the room does not take place. Adjoining rooms, even if in open communication with the room equipped with the air conditioner, secure no appreciable air temperature reduction.

This invention makes possible the efficient cooling of adjoining rooms by a single air conditioner. This can be carried out with a minimum of alteration in the air conditioner unit and very little change to the building structure. As to the air conditioner it is desired to have the warm air inlet at one side and the cool air outlet at the other side. As to the building, provision is made to mount the air conditioner in an opening in an outside wall, part of which is in one room and another part is in the adjacent room. Thus the cost factor is kept low so that particularly in apartments and the like, relatively inexpensive full air conditioning is made possible in adjoining rooms.

BRIEF DESCRIPTION OF THE DRAWINGS

FIGURE 1 is a diagrammatic plan view showing adjoining rooms with an air conditioner positioned so as to cool the air in both rooms; and

FIGURE 2 is an enlarged fragmentary sectional view of the face of the air conditioner and associated room walls.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The illustrated embodiment of the invention comprises a pair of adjacent rooms A and B separated by a partition or wall 10 in which is disposed a remote door opening and a door 11 and on the far side of the door is indicated a grille opening 12. For the purpose of description, let us assume that the room B, which is somewhat larger than A, constitutes the living room of an apartment and

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A, the bedroom. The outside wall 13 is common to both rooms and the partition wall 10 joins it as shown. The space outside of the wall 13 should be regarded as being in the open. Formed in the outside wall 13 is an opening 14, approximately one half of which is in the room A and the other half is in the room B, so that the wall 10, dividing the two rooms terminates substantially flush with the inner face of the wall 13 and serves to separate the opening 14 generally into two areas. The opening 14 is generally rectangular in shape and of a size to receive a so-called electrically driven window air conditioner unit.

Fitting this opening with the front edge flush with the inside of the wall 13 and the remainder extending outwardly into the open space on the outer side of the wall 13, is an open ended shell or housing 15, the outwardly projecting portion of the shell or housing being supported by brackets 15a in the usual manner. Fitting within the shell or housing 15 is an air conditioner unit 16 which can be slid into place so that the front face abutts against the adjacent end of the wall 10. The air conditioner assembly 16 has an imperforate dividing wall 17 which separates the interior of the air conditioner into an inner compartment 18 and an outer compartment 19 which is open to the outside. In the outer compartment 19 is the usual electric motor compressor unit 20, a suitable condenser fan, and condenser 21 which are suitably connected to each other through tubing. In the inner compartment is an evaporator 22 which is on the side of the room A so that the air drawn from the room A passes over or through the evaporator, air being drawn there-through by a sirocco-type or squirrel cage blower unit 23, which is driven by a suitable electric motor. Suitable baffles cause the air passing from the evaporator to enter the center of the blower, which then forces the air out through louvered openings 25, leading to the room B. Thus, there is an opening from the room A to the inner compartment 18, which may be a grille opening and constitutes the inlet to the air conditioner and an outlet louvered opening 25 leading to the room B constitutes the outlet or discharge opening.

In operation, it will be manifest that air from the room A is drawn into the air conditioner chamber 18 over the evaporator 22 and thus cooled and then forced therefrom into the room B by the blower 23, through the louvered outlet 25. In the event that the door 11, which connects the two rooms A and B is open, the air may follow the path indicated by the arrows through the door delivering cooled air into the room A whence it is then directed back into the room B, thereby effectively cooling both rooms. In the event that the door 11 is closed, the air from the room B passes to the room A through the grille opening 12. The motor compressor unit 20, the condenser 21 and its fan operate in the usual manner in the outer compartment 19.

The principal noise developed by an air conditioner is created by the blower and since the blower is disposed adjacent the room B, the room A, or the bedroom, will be the quieter of the two rooms. Since the room B, or the living room, is shown as somewhat larger than the room A, the direct draft from the blower will afford an adequate cooling effect to this room since the air is caused fully to circulate therethrough. Essentially, both rooms will be maintained at nearly the same temperature since a constant flow of air is maintained through these. Thus, it will be apparent that by a single air conditioning unit, the multiple room cooling is achieved in an efficient and economical manner with the air maintained in constant movement through both rooms.

Numerous changes in details of constructions, arrangement and operation may be effected without departing

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from the spirit of the invention, especially as defined in the appended claim.

What I claim is:

1. A system for multiple room air conditioning comprising a pair of adjoining rooms having a common partition wall and a common outside wall, an opening in said outside wall in the region of said partition wall, an electrically driven air conditioner unit disposed in said opening so that a portion thereof projects outside of the outer face of said outside wall, a partition separating said unit into front and rear compartments, the rear compartment being disposed outside of said outside wall, an evaporator in the front compartment arranged to be in the path of an air stream from one room and a blower also in the front compartment for drawing a stream of air directly from said one room to pass in contact with the evaporator and then forcing the cooled air stream directly into the other room, a motor compressor and condenser ar-

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ranged in the outer compartment, and means providing a communication between said rooms through said partition wall at a location remote from said air conditioner unit to enable free air circulation therethrough.

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U.S. Cl. X.R.

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