June 25, 1957 S. M. NIKOLAJEVIC 2,796,822

AIR CONDITIONING APPARATUS

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Fig. 1

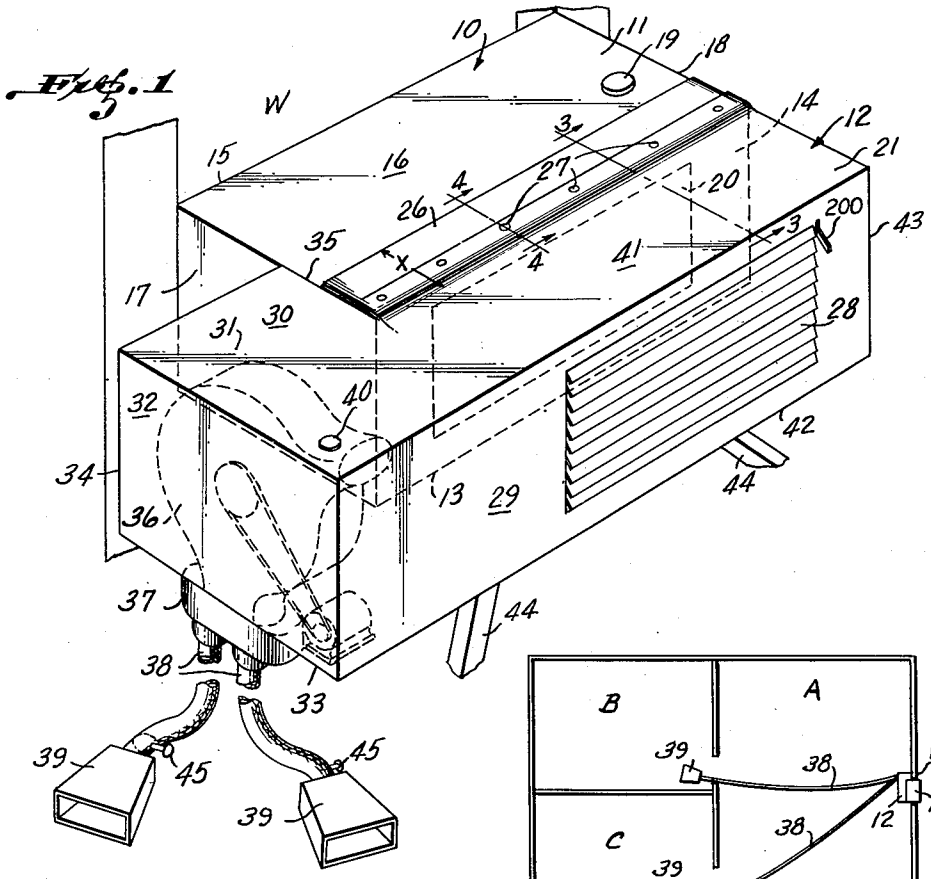


Fig. 2

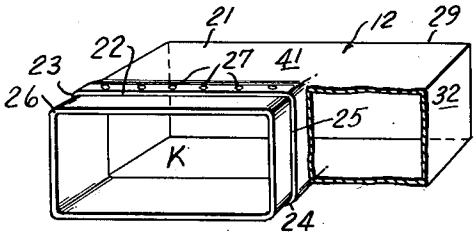


Fig. 5

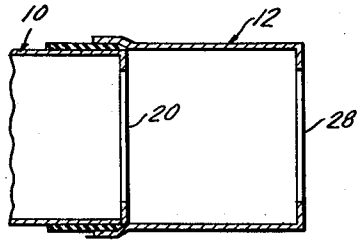


Fig. 3

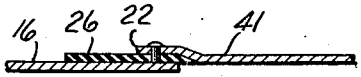


Fig. 4

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AIR CONDITIONING APPARATUS

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5 Claims. (Cl. 98—94)

This invention relates to a distributor unit capable of simple attachment to and detachment from the ordinary well-known conventional portable window mounted air conditioning units and to air conditioning apparatus comprising, in combination, an ordinary well-known portable window mounted air conditioning unit and said distributor unit, whereby an air conditioning unit may be mounted in the window of one room and be utilized to cool an adjacent room without a change in position thereof.

The distributor unit comprises a casing which has an opening of an area equal to at least the area of the wall of the air conditioning unit having the grille therein, means at the edges of said opening for easily attaching and detaching the casing to and from the air conditioning unit, an adjustable grille in the wall of the casing, a booster means mounted in the casing for moving the conditioned air entering the casing from the air conditioning unit to the room to be conditioned, and pipes, which may be flexible, attached to the casing wall adjacent to the booster and through which the conditioned air is directed from the casing by the booster to the room to be conditioned.

In conditioning the various rooms of dwelling quarters by using any one of the well known window mounted portable air conditioning units, especially those which are used for cooling, the problem of moving said units from one room to another room has become rather expensive and burdensome. For example, during the warm summer months, it is desirable to utilize the air conditioning unit for one room of the living quarters during a portion of the day and for the bedroom or bedrooms during the night. What is usually the case is that a large expensive air conditioning unit costing several thousands of dollars is installed to take care of the entire dwelling quarters or that several individual window mounted air conditioning units are installed separately in each room of said quarters. In both instances, the equipment and installation costs are great. With my distributor unit it is possible to utilize but one ordinary portable window mounted air conditioning unit to cool that room of the dwelling quarters which is required to be cooled. For example, in dwelling quarters including two bedrooms, a parlor, and dining room, my distributor unit will enable a window mounted air conditioning unit positioned in the window of the parlor to cool a bedroom or both bedrooms during the night without cooling the parlor in which it is situated. The distributor unit may be economically made and easily attached to and detached from the ordinary well-known window mounted air conditioning units. If desired one air conditioning unit may be used to cool both the room in which it is positioned and a room or rooms adjacent thereto.

An object of this invention is to provide a distributor unit easily attachable to and detachable from an ordinary window mounted air conditioning unit for utilizing

said air conditioning unit positioned in one room to cool a room adjacent thereto.

A further object of this invention is to provide air conditioning apparatus including an air conditioning unit and a distributor unit easily attachable to and detachable from said conditioning unit for enabling the air conditioning unit to be used to cool one room while positioned in another room.

Another object of this invention is to provide a distributor unit for an air conditioning unit, which distributor unit is easily attached to and detached from said air conditioning unit and is so constructed that it is capable of being rigidly attached to said air conditioning unit.

Still another object of this invention is to provide a distributor unit for an air conditioning unit which can be economically produced.

Another object of this invention is to provide a distributor unit for an air conditioning unit for enabling the use of said air conditioning unit as a cooling means for one room while mounted in an adjacent room, which distributor unit is capable of easy construction and comprises a minimum number of component parts.

Other objects and features of this invention will become apparent from the following detailed description.

Figure 1 is a view in perspective of the air conditioning apparatus including the air conditioning unit and the distributor unit.

Figure 2 is a plan view of two rooms of a dwelling unit depicting the air conditioning apparatus positioned in one room and two rooms adjacent thereto which are capable of being cooled by said apparatus.

Figure 3 is a sectional view taken on line 3—3 of Figure 1.

Figure 4 is a sectional view taken on line 4—4 of Figure 1.

Figure 5 is a view in perspective taken looking at the rear portion of the long leg of the distributor unit.

Mor specifically, the air conditioning apparatus consists of an air conditioning unit **10** and a distributor unit **12**. The air conditioning unit **10** includes a casing **11** having the shape of a substantially rectangular prism of six sides or walls, four long rectangular sides or walls **13**, **14**, **15**, and **16**, and two short rectangular sides or walls **17** and **18**. On side **16** is a control device **19** for regulating the air output of the unit **10** in volume of air per unit of time, viz. cubic feet per minute. In some air conditioning units presently available the air output may be regulated to either 145 cubic feet per minute or 95 cubic feet per minute. In the front side **14** of unit **10** is positioned the grille **20** which may or may not be adjustable, the cool air being forced from the unit **10** through the grille **20** into the room to be cooled. The air conditioning unit **10** is mounted in window W of room A, as clearly shown in Figures 1 and 2. The distributor unit **12** comprises a substantially reversed L-shaped casing having an opening K equal to at least the area of the side **14** of the air conditioning unit **10**. The opening K is situated in the leg portion **21** of the distributor **12**. At the edges **22**, **23**, **24**, and **25** of said opening K, and at all points thereof, is attached a continuous strip of material **26** in a fixed manner, by such means as rivets **27** and/or a resin adhesive which will make a tight bond between said strip material and said distributor unit material. The strip material **26** is formed of sheet rubber, of rubberized plastic, or of other suitable material which is flexible and resilient, which will find its own shape upon flexing and stretching, and which is waterproof and air-tight. The edges **22**, **23**, **24**, and **25** are bent outwardly, as clearly shown in Figure 4, and the strip material is attached thereto as clearly shown in

Figure 4. The width X of said strip should be at least one quarter of the width of the side 16 of the air conditioning unit in order that the distributor unit 12 will be fixed rigidly to the said unit 10 upon attachment thereto. An adjustable grille 28 is located in side 29 of the leg portion 21. Positioned in side 29 and operatively connected to the adjustable grille 28 is the grille adjusting means 200, which is shown to be a well-known lever type adjusting means. The distributor unit 12 also comprises a base portion 30 which is contiguous with said leg portion 21 and which is so formed as to rest substantially flush at its side 35 with the side 17 of the unit 10 when the distributor unit 12 is attached to said unit 10. The walls 31, 32, 34, and 35 have no openings therein. Mounted within said base portion 30 is a booster means 36, which may be of the well-known suction blower type of booster or the well-known suction fan type of booster which have a maximum capacity in volume of an equivalent to the maximum capacity of the air conditioning unit 10. Operatively connected to said booster means 36 is a header means 37 which is fixedly attached to said unit 12 at the side 33 of the face portion 30. Attached to said header means are the flexible pipes 38, 38, said pipes being also operatively connected to said booster means 36. Attached to the pipes 38, 38 are the nozzles 39, 39, as clearly shown in Figure 1. Positioned in the pipes 38, 38, are dampers 45, 45. If desired, the pipes may be attached to the base portion 30 of the unit 12 at the wall 33 and operatively connected to the booster means 36, thereby dispensing with the header 37. On the wall 32 is positioned a control means 40 for the booster 36 and is operatively connected thereto. Said control means 40 is used to control the capacity of the booster 36 in accordance with the amount of cool air desired to be directed from the distributor unit 12 to the room or rooms to be cooled. There may be one or several pipes 38 leading from the unit 12 leading to one or several rooms, viz. room A or rooms A and B (Figure 2), to be cooled. The distributor unit 12 may be fabricated wholly from light gauge sheet metal or from a rigid plastic material such as Bakelite. Also, the unit 10 may be formed in part from light gauge sheet metal and in part from Bakelite, the leg portion 21 or the base portion 30 being of light gauge sheet metal or Bakelite and the base portion 30 or the leg portion 21 being of light gauge sheet metal or Bakelite. The leg portion 21 of the unit 10 comprises the sides or walls 29, 41, 42, and 43, and attached to said leg portion at side 42 and/or to the base portion 30 at side 33 may be support legs 44, which may be of the collapsible type.

The distributor unit and the air conditioning apparatus of which said unit is a component are utilized in the following manner:

The air conditioning unit 10 is mounted in the window W of the room A. By manipulaation of the control 19, the unit 10 can be adjusted to deliver either 145 cubic feet of cool air per minute or 95 cubic feet of cool air per minute. The distributor unit 12 is then attached to unit 10 by means of the strip material 26, as shown clearly in the drawings. Thus, room A and room B and room C or room A and room B or rooms B and C or room B or room C may receive cooled air from unit 10 through unit 12 without necessitating the moving of unit 12 from window W in room A. This may be done by positioning the respective pipes 38, 38 in the rooms B and C as shown in Figure 2. The pipes may be fastened to the walls of the respective rooms at the baseboards thereof or may be merely placed on the floors. By manipulation of the respective dampers 45, 45 and of the adjustable grille 28 the flow of cooled air into the respective rooms may be controlled. For example, should it be desired to pass cool air into room B only, the grille 28 is closed, the damper 45 in one pipe 38 is closed, the damper in the other pipe 38 is opened fully, and the booster 36 is adjusted by means of control 40 so that all of the cool air from the unit 10 is taken thereby from unit 10 through unit 12 and then through pipe 38 and nozzle 39 into room B. If it is desired that both room A and room B receive cool air, the grille 28 may be opened as desired and the damper 45 in pipe 38 in room B may be opened as desired. Because of the fact that the booster 36 does have a maximum capacity in volume of air per unit of time equivalent to the maximum capacity of the air conditioning unit 10, all of the air entering the distributor unit 12 from unit 10 will be removed therefrom in any event should the grille 28 be fully in closed position.

Because of the novel structure of the distributor unit 12 and the combination of the air conditioning unit 10 and the distributor unit 12 it is now possible to utilize any one of the ordinary window mounted air conditioning units presently available to cool any one or several rooms thereby without moving said air conditioning unit from that room in which it is positioned. The distributor unit so utilized is of such construction that it can be fabricated economically and that it has a minimum of parts and that it can be easily attached to and detached from the respective air conditioning unit. Further the overall dimensions of said distributor unit is, of course, controlled by the dimensions of the air conditioning unit to which it is to be attached. It is readily seen that the distributor unit can be made smaller or larger depending upon the size of the air conditioning unit to which it is to be attached.

Many alterations and changes may be made without departing from the spirit and scope of this invention which is set forth in the appended claims which are to be construed as broadly as possible in view of the prior art.

I claim:

1. A distributor unit adapted to be attached to and detached from a conventional air conditioning unit having a discharge grille, comprising a casing having an opening of an area equal to at least the area of the wall of said air conditioning unit having said grille, means on said casing at the edges of said opening for easily attaching and detaching said casing to and from said air conditioning unit, said means including flexible, resilient material fixedly attached to said casing along the entire lengths of said edges, whereby an air-tight seal may be formed between said casing and said air conditioning unit, an adjustable grille in a wall of said casing, means mounted in said casing for forcing air out of said casing, pipe means attached to said casing at a wall thereof adjacent said air forcing means for directing the air forced by said air forcing means to a room at a distance from said unit and casing attached thereto, said pipe means including a header and at least one pipe attached to said header, whereby said air conditioning unit may be utilized to condition a room other than the room in which said unit is positioned.

2. A distributor unit adapted to be attached to and detached from a conventional air conditioning unit having a discharge grille and having the shape of a substantially rectangular prism, said prism having four long walls and two short walls, comprising a substantially reversed L-shaped casing having an opening of an area equal to at least the area of the long wall of said air conditioning unit having the grille therein, said latter opening being in the leg portion of said reversed L-shaped casing, means on said casing at the edges of said opening for easily attaching and detaching said casing to and from said air conditioning unit, an adjustable grille in a wall of said casing, means mounted in the base portion of said reversed L-shaped casing for forcing air out of said casing, pipe means attached to said casing at a wall thereof adjacent said air forcing means for directing the air forced by said air forcing means to a room at a distance from said unit and casing attached thereto, whereby said air conditioning unit may be utilized to condition a room other than the room in which said unit is positioned.

3. A distributor unit adapted to be attached to and detached from a conventional air conditioning unit having a discharge grille and having the shape of a substantially rectangular prism, said prism having four long walls and two short walls, comprising a substantially reversed L-shaped casing having an opening of an area equal to at least the area of the long wall of said air conditioning unit having the grille therein, said latter opening being in the leg portion of said reversed L-shaped casing, means on said casing at the edges of said opening for easily attaching and detaching said casing to and from said air conditioning unit, said means including flexible, resilient material fixedly attached to said casing along the entire lengths of said edges, whereby an air-tight seal may be formed between said casing and said air conditioning unit, an adjustable grille in a wall of said casing, means mounted in the base portion of said reversed L-shaped casing for forcing air out of said casing, pipe means attached to said casing at a wall thereof adjacent said air forcing means for directing the air forced by said air forcing means to a room at a distance from said unit and casing attached thereto, whereby said air conditioning unit may be utilized to condition a room other than the room in which said unit is positioned.

4. An air conditioning apparatus comprising, in combination, a conventional air conditioning unit being in the shape of a substantially rectangular prism having four long walls and two short walls, a discharge grille in a long wall of said unit, and a distributor unit removably attached to said air conditioning unit at said long wall having said grille, said distributor unit including a substantially reversed L-shaped casing having an opening of an area equal to at least the area of said long wall of the air conditioning unit having said grille therein, said opening being in the leg portion of said reversed L-shaped casing, means on said casing at the edges of said opening for easily attaching and detaching said casing to and from said air conditioning unit, the base of the L extending along one of the short walls of the air conditioning unit, an adjustable grille in a wall of said casing, means mounted in the base portion of said reversed L-shaped casing for forcing air out of said casing, pipe means attached to said casing at a wall thereof adjacent said air forcing means for directing the air forced by said air forcing means to a room at a distance from said air conditioning unit and said distributor unit attached thereto, whereby said air conditioning unit may be utilized to condition a room other than the room in which the apparatus is positioned.

5. A distributor unit adapted to be attached to and detached from a conventional air conditioning unit having a discharge grille and having the shape of a substantially rectangular prism, said prism having four long walls and two short walls, comprising a substantially reversed L-shaped casing having an opening of an area equal to at least the area of the long wall of said air conditioning unit having the grille therein, said latter opening being in the leg portion of said reversed L-shaped casing, means on said casing at the edges of said opening for easily attaching and detaching said casing to and from said air conditioning unit, said means including flexible, resilient material fixedly attached to said casing along the entire lengths of said edges, whereby an air-tight seal may be formed between said casing and said air conditioning unit, means mounted in the base portion of said reversed L-shaped casing for forcing air out of said casing, and pipe means attached to said casing at a wall thereof adjacent said air forcing means for directing the air forced by said air forcing means to a room at a distance from said unit and casing attached thereto, said pipe means including a header and at least one pipe attached to said header, whereby said air conditioning unit may be utilized to condition a room other than the room in which said unit is positioned.

References Cited in the file of this patent

UNITED STATES PATENTS

1,966,882	Bucklen	July 17, 1934
2,018,900	Rose	Oct. 29, 1935
2,045,826	Benolken	June 30, 1936
2,124,925	McNeal	July 26, 1938