Sept. 30, 1969 D. A. McDONALD 3,469,772

AIR MOVING APPARATUS

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FIG. 1.

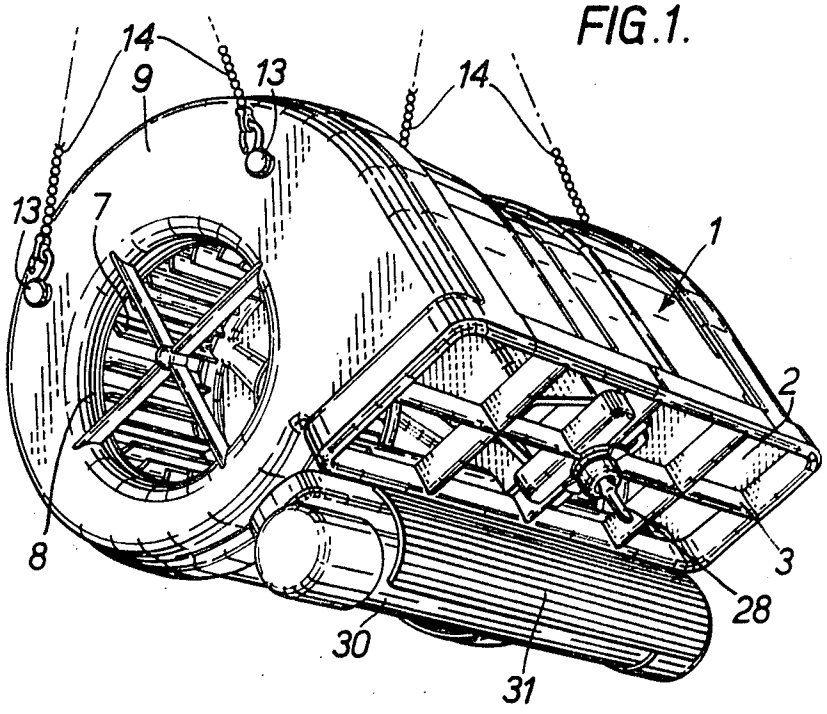
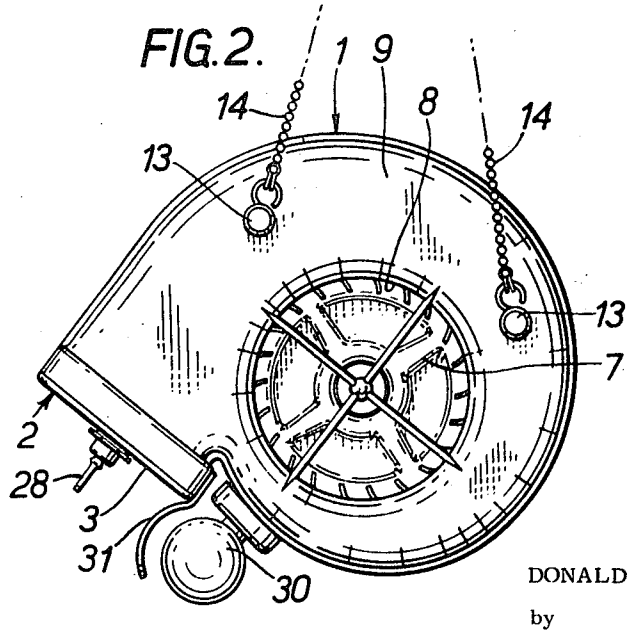



FIG. 2.




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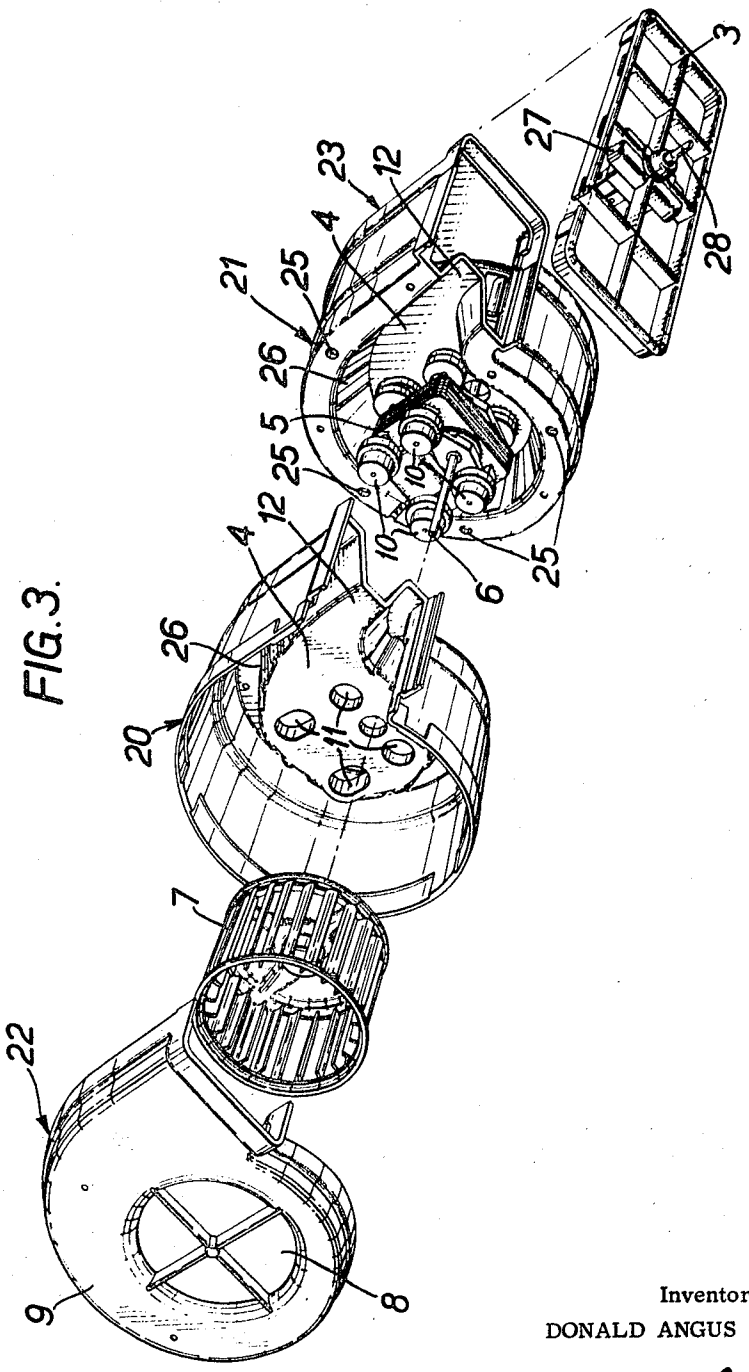



FIG. 3.

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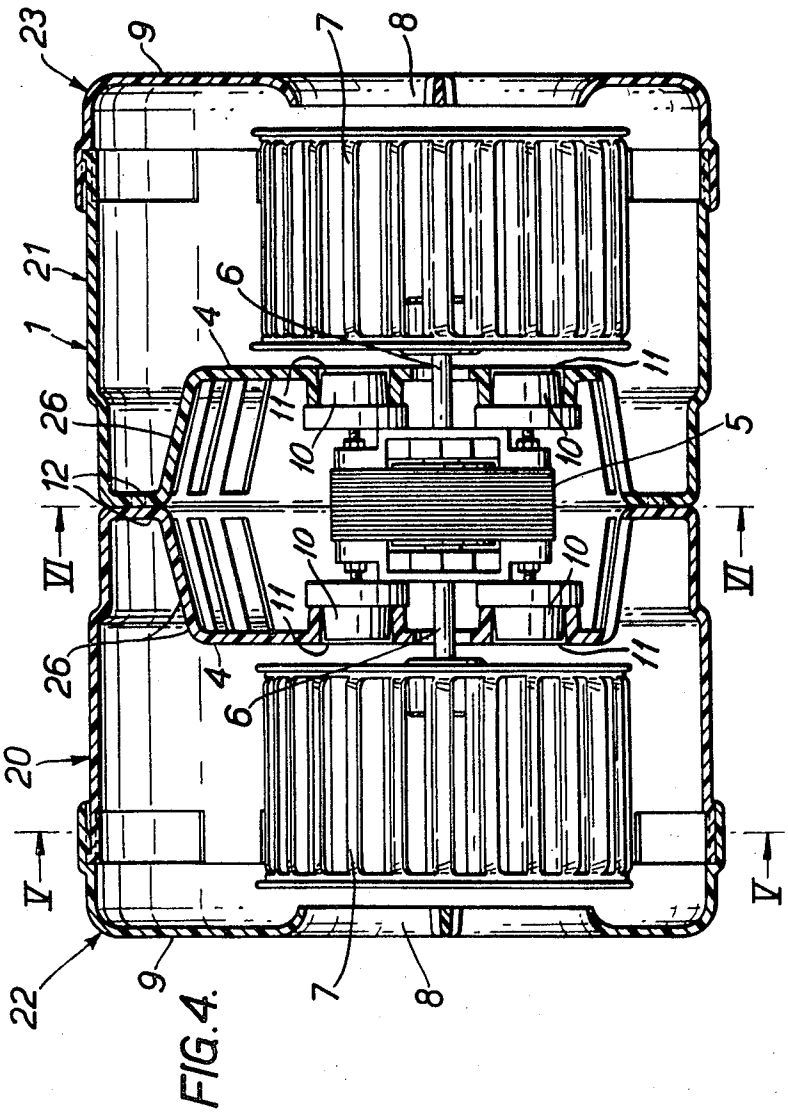



FIG. 4.

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FIG.5.

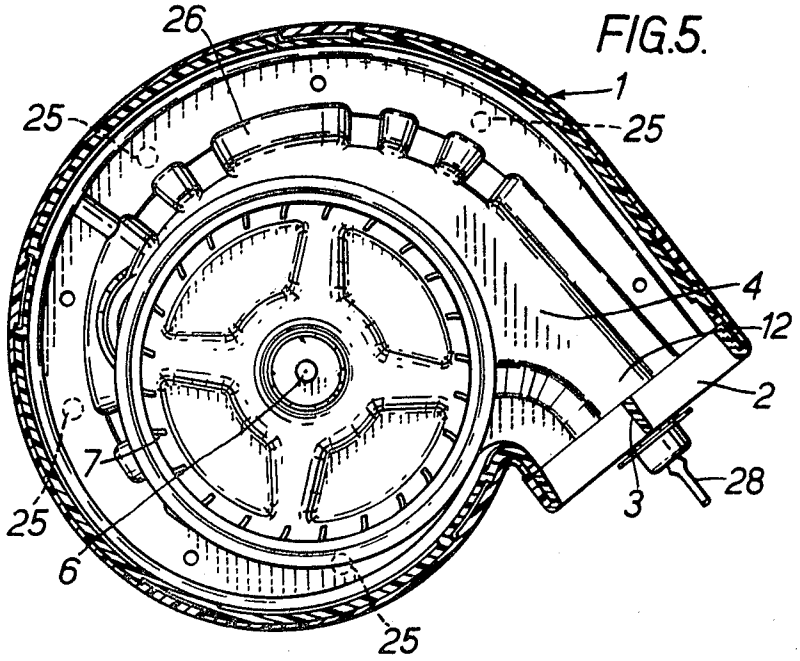
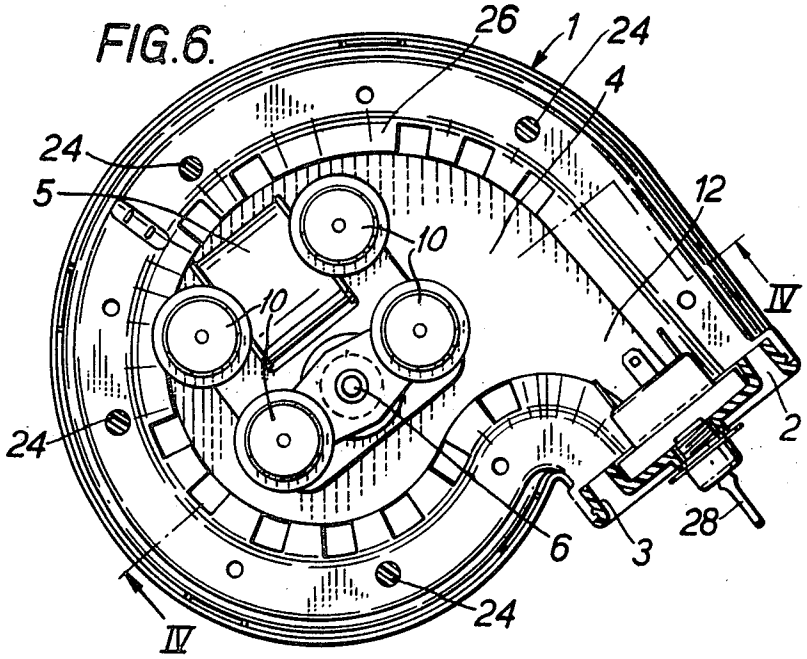



FIG.6.




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United States Patent Office 3,469,772 Patented Sept. 30, 1969



3,469,772

# AIR MOVING APPARATUS

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U.S. Cl. 230—117 1 Claim

## ABSTRACT OF THE DISCLOSURE

A cased in air moving apparatus including a pair of coaxial centrifugal fan elements driven by a motor mounted therebetween and in the casing, which is adapted to be suspended from above at various angles, an outlet tangential of the fan elements and dispelling air outwardly in desired different directions.

### Background of invention

This invention relates to air moving apparatus and has for its object the provision of an apparatus of simple construction which is capable of producing an effective but comfortable cooling action on a person seated or lying down.

### Summary and description of invention

According to this invention there is provided air moving apparatus comprising a casing having mounted therein a pair of coaxially disposed centrifugal fan elemnts, with a single motor mounted between said fan elements and adapted to rotate same to cause air to be dispelled through an outlet disposed tangentially of the fan elements, said casing having means thereon whereby it can be suspended from above at various angles so that air can be dispelled downwardly in different directions as required.

The motor is preferably mounted between spaced transverse walls disposed centrally of the casing by means of rubber or the like resilient means so that the motor is substantially quiet and vibration free in operation. Moreover these walls are apertured or otherwise arranged to permit a good circulation of air around the motor, thereby enabling it to run at a very low temperature, and thus prolonging its life.

The casing may be of generally elongated cylindrical shape with a tangential outlet duct. This duct would, in use, normally be directed downwardly at a required angle.

The suspension means may comprise hooks or the like disposed in the opposite ends of the casing which can selectively be engaged with links of suspension elements such as chains, apertured straps or the like.

A light fitting may also be incorporated in the apparatus.

### Brief description of drawings

Air moving apparatus in accordance with one embodiment of this invention will now be described, by way of example, with reference to the accompanying drawings, in which:

FIGURE 1 is an underneath perspective view of the apparatus,

FIGURE 2 is an end view of the apparatus,

FIGURE 3 is an exploded view of the apparatus being drawn on a somewhat smaller scale,

FIGURE 4 is an enlarged longitudinal sectional view through the apparatus on the line IV—IV in FIGURE 6,

FIGURE 5 is a section on the line V—V in FIGURE 4 and

FIGURE 6 is a view in the direction of the arrows VI—VI in FIGURE 4, the left hand half of the casing, as viewed in FIGURE 4, and the fan element therein having been removed.



### Description of shown embodiments

For convenience a light fitting has only been shown in FIGURES 1 and 2.

The air moving apparatus shown in the drawings includes an elongated casing **1** of generally cylindrical shape with a tangential outlet duct **2** extending the whole length thereof, the outer end of this duct being closed by a grille **3**, which may be of any desired form.

Centrally the casing **1** includes a pair of spaced transverse walls **4** between which is mounted an electric motor **5** with coaxial rotary shafts **6** extending through said walls **4**. Fixed on the shafts **6** in the opposite end halves of the casing **1** are drum like centrifugal fan elements **7**, the open ends thereof registering with apertures **8** in end plates **9** of the casing.

The mounting of the motor **5** includes on each side thereof four rubber or the like resilient support blocks or the like **10** which fit into apertures **11** formed in the walls **4** so that in operation the motor **5** will be quiet or substantially so. Where the walls **4**, between which the motor is mounted, extend into the outlet duct **2** they are narrowed, as at **12**, so that the total effective area of the actual outlet is not reduced. Moreover, good circulation of air is provided around the motor thus ensuring a long life therefor.

On each of the opposite end plates **9** of the casing there are provided a pair of hooks, pins or the like **13** which can be engaged by a suspension element such as a chain **14**, apertured strap or the like.

It is envisaged that, in normal use, the apparatus will be suspended from a wall bracket or the ceiling of a room (as in FIGURE 1) for example above a bed, desk or the like, suspension hooks being secured in the ceiling. By selectively engaging the suspension elements **14** with the hooks, pins or the like **13** on the end plates **9** of the casing **1** the angle at which air will be dispelled downwardly can be varied as required. The dispersion of air downwardly increases progressively so that the overall cooling effect is not limited to one small area. What is more, air is directed towards a person being cooled gently and without the creation of a draught or blast of air which in itself can cause considerable discomfort.

The casing **1** as shown is actually manufactured from synthetic plastics material. It is formed from a plurality of moulded parts adapted rigidly to be fitted together with the motor and fan elements in position therein. A lead for the motor (not shown) is taken off at any convenient point.

Thus, more specifically, the casing **1** is made up, as clearly shown in FIGURE 3, by two central sections **20** and **21** and two end sections **22** and **23**, each two sections being mirror images one of the other. The central sections **20** and **21** however, differ in one slight detail; on the section **20** are provided spigots **24** (as indicated in FIGURE 6) which fit into sockets **25** (FIGURE 3) in the section **21**, thereby securing the two sections together.

The walls **4** are included in the central sections **20** and **21** being joined to the curved peripheral walls thereof by apertured webs **26** which permit circulation of air around the motor as referred to above. The end walls **9**, with apertures **8** therein, are provided by the end sections **22** and **23**.

The tangential outlet **2** is formed on fitting the central and end sections **20** to **23** together and into this fits the grille **3**, which is also moulded as a separate section. Centrally the grille **3** provides a mount **27** for an electric control switch **28**.

The resilient support blocks or the like **10** assist during shipment in protecting the various component parts against breakage.

A light fitting may be incorporated in the apparatus as above described. As shown in FIGURES 1 and 2 this may comprise a tubular lamp **30** mounted adjacent the outlet **2**. A shade **31** may be provided for the lamp **30** and this shade may be fixed (as shown) or adjustable in position.

There may be occasions when it is not desired to have the air cooling apparatus overhead, as described above. Then the apparatus can simply be rested on a pad, block or the like with the outlet duct disposed at any desired angle.

I claim:

**1.** In an air moving apparatus including an electric motor and a fan located at each side thereof and driven thereby, the improvement comprising in combination, two coaxially aligned substantially volute casing bodies in mutually reversed position having a duct for air moving out of the apparatus tangentially to the fans located therein; an end wall closing each casing body at neighboring ends thereof, each end wall mutually complementing the other to house and resiliently support the motor



said end walls provided with apertures, said motor having resilient support members extending into said apertures, and a pair of cover members, each cover member forming with an opposing end wall of said casing bodies a chamber for a fan and having at least one opening for air being sucked in by the rotating fans.

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ROBERT M. WALKER, Primary Examiner

U.S. Cl. X.R.

230—128, 235, 249.5