June 21, 1955 J. L. RUSSELL 2,711,287

AIR CIRCULATOR

Filed March 27, 1951

Fig. 1.

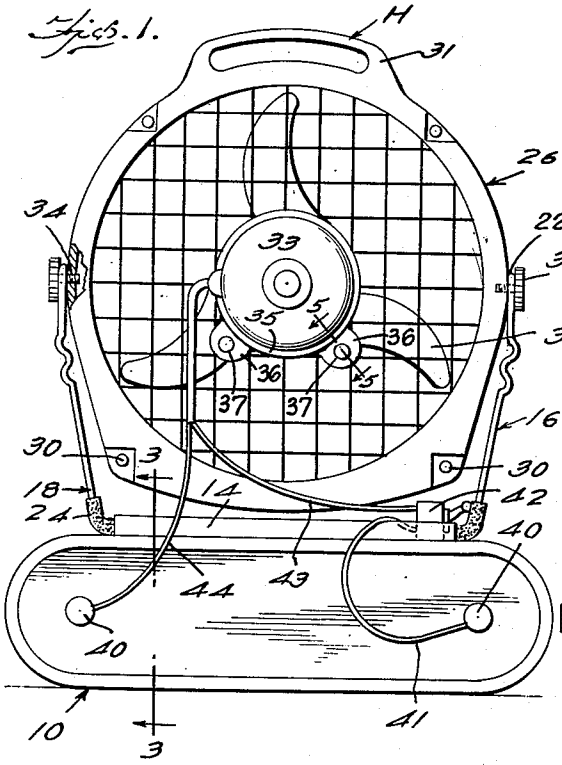



Fig. 2.

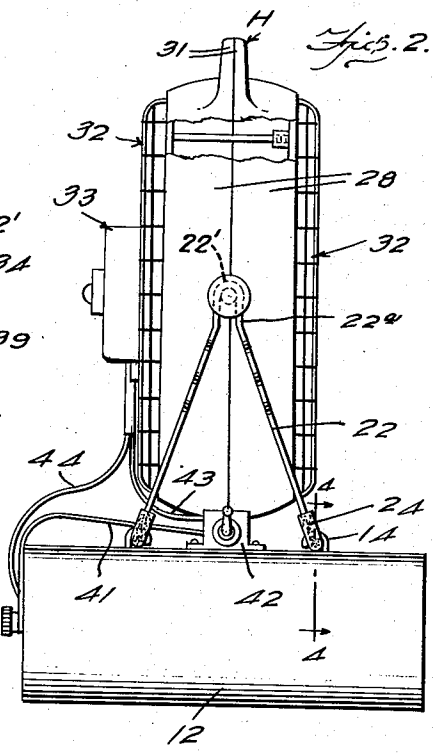



Fig. 3.

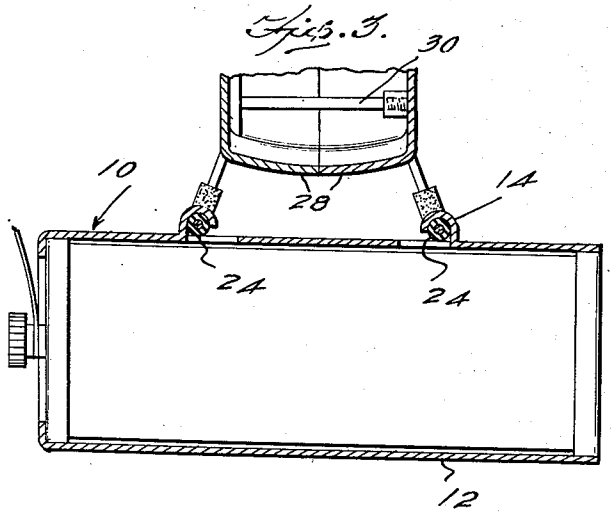
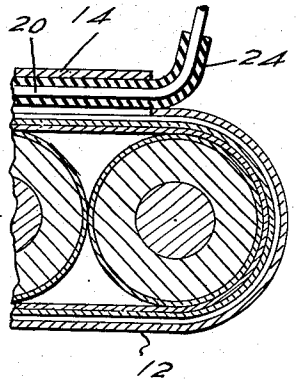



Fig. 4.



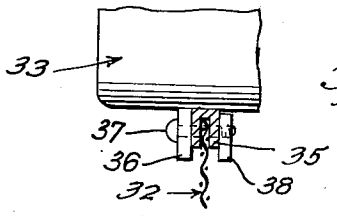




Fig. 5.

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# AIR CIRCULATOR

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2 Claims. (Cl. 230—259)

This invention relates generally to improvements in air conditioning devices and is directed particularly to an improved and novel air circulator.

It is often desirable to have an air circulator in locations where electric current for the operation of a motor is not available and it is an object of the present invention to provide a novel combination fan and battery carrier upon which the fan is mounted, which can be carried about from place to place and by means of which an enjoyable circulation of air can be maintained for a long period of time at small expense.

A further and more specific object of the invention is to provide a readily transportable fan unit with a dry cell operating means, wherein the fan operating motor is of a small current consuming type which makes possible the operation of the fan with a minimum of three primary cells.

A still further object of the invention is to provide a convenient readily transportable fan comprising a dry cell unit having a supporting frame work mounted upon the side of the casing therefor, upon which is carried a fan enclosing structure and a small low current consuming electric motor, the fan enclosing portion of the device being provided with convenient means for lifting and carrying the complete device from place to place.

Other objects and advantages of the invention will become apparent as the description of the same proceeds and the invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawing forming a part of the specification, with the understanding, however, that the invention is not to be limited to the exact details of construction shown and described since obvious modifications will occur to a person skilled in the art.

In the drawing:

Figure 1 is a view in rear elevation of an air circulating device constructed in accordance with the present invention.

Figure 2 is a view in elevation of one side of the device.

Figure 3 is a detail sectional view through a portion of the battery housing or casing and the lower portion of the fan enclosing cell, showing the connection between the cell and the battery casing and the connecting means between two sections of the cell, the sectional view being taken substantially on the line 3—3 of Figure 1.

Figure 4 is a detail section taken substantially on the line 4—4 of 2.

Figure 5 is a detail section taken substantially on the line 5—5 of Figure 1.

Referring now more particularly to the drawing the numeral 10 generally designates a dry cell or primary battery unit of a type commonly sold on the market and familiarly known as a "hot-shot" battery, such battery consisting of a metal housing or casing 12 in which are enclosed three two-volt dry cell units, connected in series to give a total voltage output of approximately six volts.



In accordance with the present invention one side of the casing 12 which is relatively long and flat, is provided with two spaced parallel retaining elements 14 which are in the form of a strip of metal turned over to present, in cross section, as shown in Figure 3, a substantially hook form. These retainers may be struck directly from the metal of the casing 12 or may be secured thereon as desired.

The numeral 16 generally designates a supporting frame comprising front and rear substantially U-shaped elements 18 each of which comprises an elongate bottom portion 20 and an upwardly extending end portion 22, the end portions of one U frame being upwardly convergent with those of the adjacent frame and integrally united at 22' as shown in Figure 2, and forming at the top the two closely positioned parallel portions 22*a* which may be defined as mounting ears.

The horizontal bottom portions 20 of the two frames 18 are enclosed in insulation tubes of rubber, designated 24 and particularly illustrated in Figures 3 and 4.

The supporting structure 16 carries between the upwardly disposed end portions 22, a fan housing or cell which is generally designated 26 and which comprises the two annular portions 28 which are disposed in edge to edge relation and are secured together in any suitable manner as, for example, by the transverse bolts or screws 30. Each of these annular portions 28 includes a section or part of a handle 31, such handle parts being brought into butting relation as shown in Figure 2 when the annular portions 28 are secured together, to provide a complete handle which is generally designated H.

The two halves 28 of the fan casing each carries a heavy screen wire wall 32 which covers the outer side thereof or which is connected with the edge thereof remote from the other section 28 as shown in Figure 2. Thus there is provided a completely closed cell having a circular solid wall portion made up of the two halves 28 and the front and rear wall portions 32 made up of circular sections of heavy mesh wire of a type commonly employed in devices of this character and of sufficient strength to support a small electric motor such as that indicated at 33.

The fan housing or cell is disposed vertically between the upright end portions of the support 16 and there is extended through each of the ears 22*a* a screw 34 which is threaded into one of the two portions 28 of the fan housing so as to support the housing in an elevated condition above the battery casing 12.

One of the wire screen walls is provided with a circular opening which is bordered by a frame 35 in which the electric motor 33 is secured in a suitable manner. The means here shown for securing the motor 33 in the frame 35 comprises a pair of ears 36 which are integral with the motor housing and through which extend screws 37 which are threaded into holding plates 38 positioned upon the opposite side of the screen wall 32 from the ear 36, the screw 37 passing through the screen wire as will be readily understood.

The motor 33 is of a six volt type having approximately 2100 R. P. M.'s and drawing approximately ⅞ of an ampere of current. On the shaft of the motor 33 there is supported in the center of the casing or cell the air circulating blades 39.

The numeral 40 designates the terminals for the series connected batteries of the unit 10. One conductor 41 leads from a terminal 40 to a switch 42, a second conductor 43 leading from the switch to one side of the motor while the other side of the motor is connected to the opposite side of the battery by the conductor 44.

It has been found that with a motor of the character stated the fan can be kept in operation continuously for

better than twenty-four hours on the three dry cell batteries contained in the unit **10**.

From the foregoing it is believed that it will be readily obvious that there is provided in the present invention a very desirable type of readily transportable air circulator which can be used in many locations where necessary electric current would not otherwise be available and such unit is economical to operate and can have the current supply source replaced without difficulty when necessary.

I claim:

1. In a battery operated air circulator, a rectangular hollow housing for the battery having a flat top wall constituting the supporting base for the circulator, said circulator comprising a substantially cylindrical frame having open sides, inverted U-shaped supporting elements for said frame, elongated retaining members mounted in spaced parallel relation lengthwise on said top wall and having the horizontal medial portions of said elements engaged therewith, means for securing the free ends of the arm portions of said elements centrally of the outer side of said frame at diametrically opposite points thereon, grills covering the open sides of said frame, an electric motor mounted centrally of one of said grills and having its rotor shaft projecting axially into said frame, a multi-blade fan mounted on said rotor shaft, a control switch in circuit with the battery and said motor mounted on the base, and a hand grip mounted centrally on the top of said frame.



2. The invention as defined in claim 1, with each of said retaining members for the horizontal medial portions of said supporting elements constituted in a metal strip struck up from the said top wall and overturned into substantially hook form in cross-section and into overlying relation with respect to the said horizontal portions to maintain the elements rigidly in position.

**References Cited** in the file of this patent

UNITED STATES PATENTS

| | | |
|---|---|---|
| 1,390,266 | Armstrong | Sept. 13, 1921 |
| 2,544,281 | Seil | Mar. 6, 1951 |

FOREIGN PATENTS

| | | |
|---|---|---|
| 557,890 | Great Britain | Dec. 9, 1943 |