May 6, 1947. C. M. STROM 2,420,209

ELECTRIC FAN

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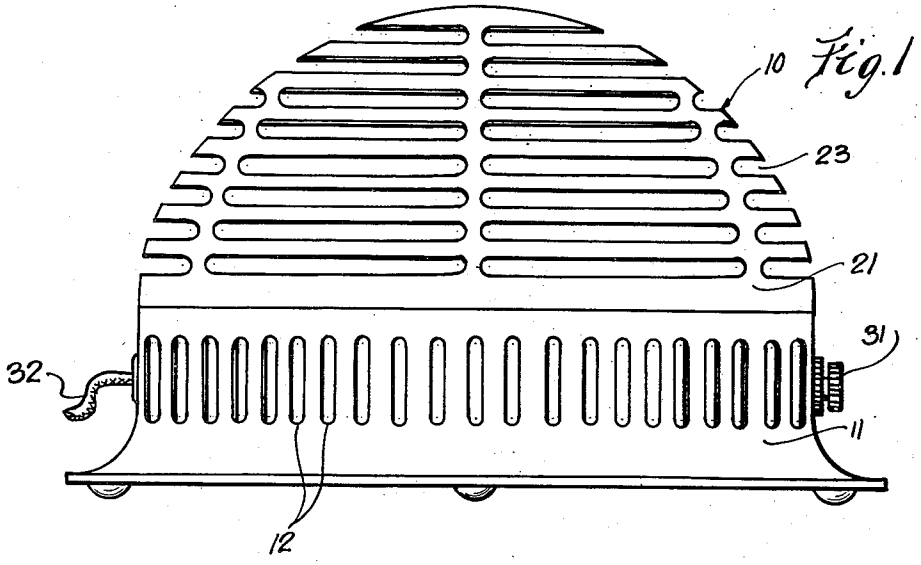


Fig. 1

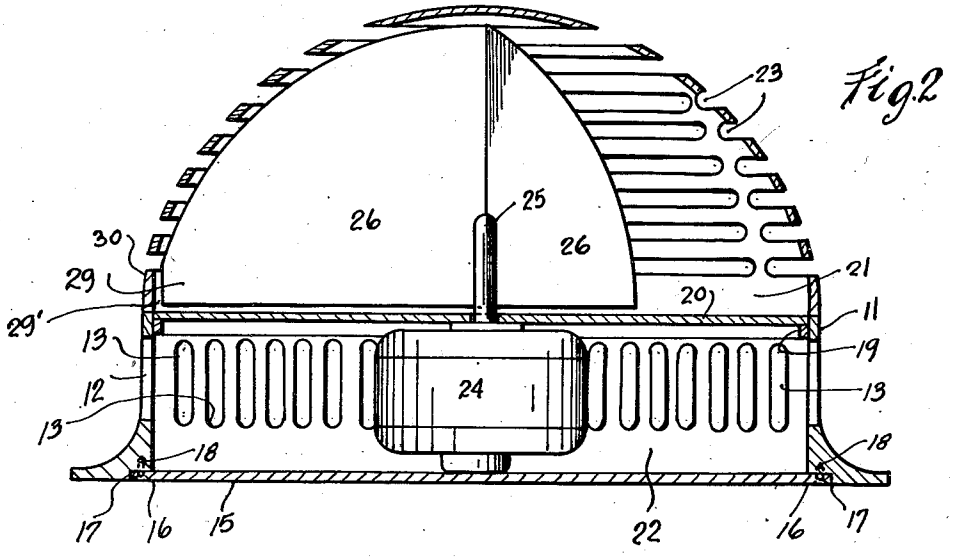


Fig. 2

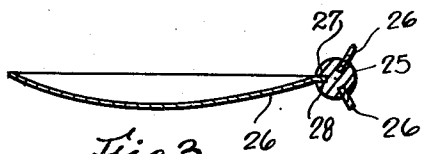


Fig. 3

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ELECTRIC FAN

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2 Claims. (Cl. 230—259)

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This invention relates to certain new and useful improvements in electric fans, and an object of the invention is the provision of a fan constructed in a compact manner such that the same may be placed upon one's desk or other fixture to create an air circulation as distinguished from a forced draft. This is accomplished, as will be more fully apparent hereinafter, by virtue of the arrangement in the fan housing of fan blades, the contour of which substantially corresponds to the contour of the fan housing, with their base revolving within the area defined by a deflecting ring.

A still further object of the invention is the provision of an electric fan which will be simple in construction, highly efficient in use, and one which may be manufactured at an economical cost.

Other objects will appear hereinafter.

The invention consists in the novel combination and arrangement of parts to be hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawings showing the preferred form of construction, and in which:

Fig. 1 is a typical side elevational view of the invention; and

Fig. 2 is a vertical sectional detail view of the same; and

Fig. 3 is a fragmentary sectional detail view showing the method of mounting the fan blades.

In the drawings I have illustrated the preferred form of construction by which the several hereinbefore mentioned and other objects of the invention are accomplished. In this connection my improved electric fan includes an enclosure 10. The lower or base portion 11 of this enclosure is formed substantially cylindrical and the side walls 12 thereof are provided with suitable ventilating slots 13. This base portion comprises a bottom wall 15, the peripheral edges 16 of which are seated in a seat 17 and secured to the side walls by means of suitable screw elements 18. A supporting ring 19 is arranged within the base, and mounted on this supporting ring 19 is a partition 20.

This partition 20 divides the enclosure 10 into a fan housing 21 and a motor compartment 22, the fan housing 21 being substantially semi-globular in form and provided with a plurality of vents or slots 23.

In the compartment 22 is arranged a motor 24 of any standard construction, having an armature 25. This armature 25 carries the fan blades 26. In the present instance, these fan blades 26

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have vertical flanges 27 snugly fitting into slots 28 formed in the armature 25.

The base 29 of each of the fan blades operates within a well 29' provided by an upstanding flange 30 integrally connected in any suitable manner with the base of the enclosure with the fan housing. Each of the fan blades coincides to the shape of the fan housing 21. In the present instance three of such blades are employed and as shown, each of the blades 26 is substantially segmental in side elevation with outer edges curved upon substantially the same radius as that of the fan housing 21 and with vertical edges in abutting relation with respect to each other.

Carried by the enclosure 10 is a suitable switch 31 having connection with the motor 24 in a manner well known in the art, to control the electric circuit 32 to the motor.

As seen from the drawings, the enclosure 10 is relatively small, thus enabling the enclosure to be placed upon one's desk or other fixture. When the motor is energized, the fan blades will be revolved about a vertical axis and as the base 29 of each of these fan blades operates within the area provided by the flange 30 the movement of air from the blades will be directed by the flange 30 upwardly and out through the various vents 23, comingling with other air currents being forced through these vents, thus creating a swirling movement of the air currents, as distinguished from a forced, direct blow. This swirling movement of the air currents will cause the air in the room in which the electric fan is operating, to likewise start a swirling motion, thus resulting in substantial air movement within the room. If the air currents created by the fan were allowed to leave the fan housing in blast form, it is obvious that articles of paper or other light articles upon the desk or fixture, would be blown about. Also the user would receive the air current as a blast, as distinguished from gradual circulation of the air.

By reason of this fact, the electric fan constituting the subject matter of my invention is more efficient than those now upon the market.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to protect by Letters Patent is:

1. An electric fan comprising an enclosure having a cylindrical base portion of relatively short height and a fan housing substantially semi-globular in form with the walls thereof provided with a plurality of vents, a flange circular in plan view formed integral with the housing, a partition separating the fan housing from the base portion and providing together with said flange a well, a motor mounted in the base portion and having an armature projecting into the fan housing, blade elements carried by and arranged radially about said armature in said fan housing and each of said blade elements being substantially segmental in side elevation with their vertical edge portions in abutting relation with respect to each other and with the base portion of the blade elements disposed in substantially parallel spaced relation with respect to the top surface of the partition for rotation in said well, the edge portion of each of said blade elements extending between the base and the vertical edges thereof having a curvature defined by a radius coinciding with the radius defining the curvature of the fan housing, substantially as described.

2. An electric fan comprising an enclosure having a cylindrical base portion and an apertured fan housing and a base flange circular in plan view at the point of juncture between the fan housing and the base portion, a substantially flat partition arranged in a horizontal plane in the enclosure at said point of juncture between the fan housing and the base portion and separating the fan housing from the base portion and providing together with the flange an air well, a motor mounted in said base portion and having an armature projected into the fan housing through an opening formed in said partition, blade elements carried by and arranged radially about said armature, each of said blade elements being substantially segmental in side elevation and having their vertical edge portions in abutting relation with respect to each other and their base edge portions disposed in parallel spaced relation with respect to the top surface of said partition for rotation in said well, substantially as described.

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