Jan. 12, 1943. H. W. MACKEY ET AL 2,308,335

ELECTRIC FAN

Filed May 26, 1941

FIG.1.

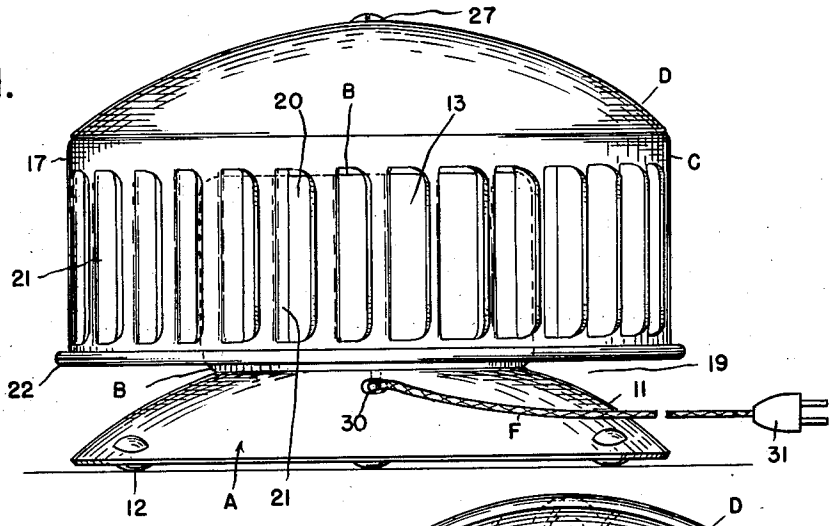


FIG.2.

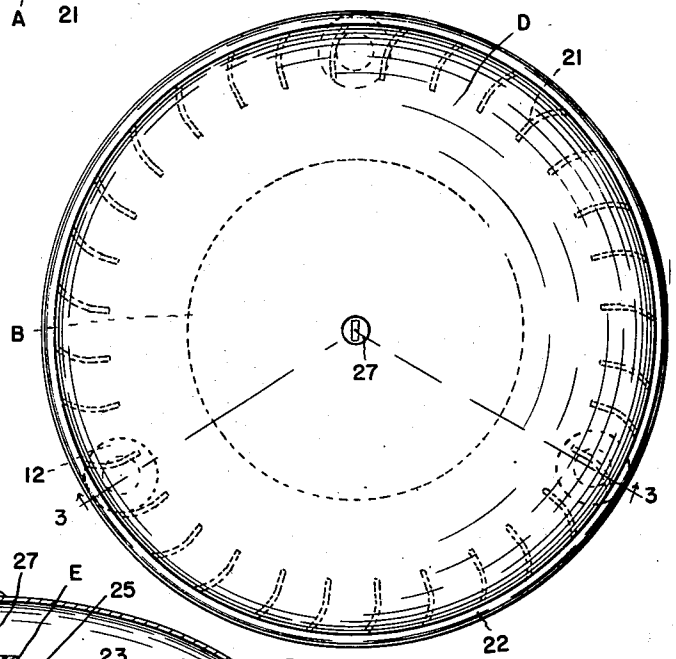
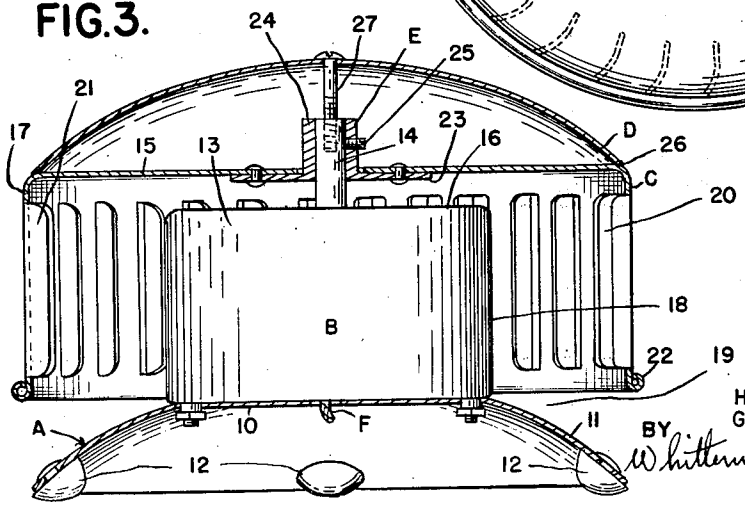


FIG.3.



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Patented Jan. 12, 1943 2,308,335

UNITED STATES PATENT OFFICE

2,308,335

ELECTRIC FAN

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Application May 26, 1941, Serial No. 395,278

11 Claims. (Cl. 230—259)

This invention relates generally to electric fans and refers more particularly to portable motor driven rotary fans.

One of the essential objects of the invention is to provide a compact fan of this type wherein the vanes for producing currents of air are arranged in a circular series in the annular part of an inverted cup-shaped member that serves as an enclosure for the motor.

Another object is to provide a fan wherein the cup-shaped member and a hood therefor are carried by and rotatable with the drive shaft of the motor.

Another object is to provide a fan wherein the motor and drive shaft thereof are substantially concealed by the cup-shaped member and hood.

Another object is to provide a fan wherein the housing of the motor is secured directly to the top of a supporting base that is capable of resting upon any suitable supporting surface such, for example, as on top of a desk, table and the like and that is provided with pads of felt, rubber or other relatively soft sound-deadening material for cushioning the base, motor, etc., and for preventing the base from scratching or otherwise marring the supporting surface.

Another object is to provide a fan that is simple in construction and comparatively inexpensive to manufacture.

Another object is to provide a fan that is neat and ornamental in appearance, comparatively light in weight, and efficient in operation.

Other objects, advantages and novel details of construction of this invention will be made more apparent as this description proceeds, especially when considered in connection with the accompanying drawing, wherein:

Figure 1 is a side elevation of a fan embodying our invention;

Figure 2 is a top plan view thereof;

Figure 3 is a vertical sectional view taken substantially on the line 3—3 of Figure 2.

Referring now to the drawing, A is the base, B is the electric motor, C is the inverted cup-shaped member, and D is the hood of a fan embodying our invention.

As shown, the base A is a hollow relatively shallow circular member having a substantially flat top 10 and downwardly flaring side walls 11. Any suitable means such as three or more pads 12 of felt, rubber or other relatively soft sound-deadening material secured to the underside of the walls 11 at the lower edges thereof may be employed for cushioning the base A, motor B, etc., and for preventing the base from scratching or otherwise marring a supporting surface (not shown) upon which it may be placed.

The electric motor B may be any standard form suitable for rotating the cup-shaped member C and hood D and has a circular housing 13 and an upstanding centrally disposed drive shaft 14. Such housing 13 is preferably substantially equal in area and is bolted directly to the top 10 of the base A.

The inverted cup-shaped member C is preferably formed of sheet material such as sheet metal and forms an enclosure for the electric motor B. Preferably the horizontal part 15 of said member is above and substantially parallel to the top 16 of the motor housing 13, while the annular part 17 thereof constitutes a depending skirt and is substantially concentric with the circular upright sides 18 of the motor housing. By referring to Figure 1, it will be noted that the annular part 17 of the cup-shaped member has an area substantially equal to the surface engaging area of the base A, but is disposed above said base so as to provide an intermediate space 19 for air. In the present instance, a series of circumferentially spaced upright elongated openings 20 are formed in the annular part 17 of the cup-shaped member and are provided at opposite side edges thereof with inwardly projecting transversely curved upright vanes 21 for producing currents of air. If desired, the lower edges of the annular part 17 may be rolled outwardly to provide an ornamental bead 22.

An inverted T-shaped member E is used to support the cup-shaped member C on the motor drive shaft 14. As shown, the base 23 of the T member is beneath and riveted or otherwise rigidly secured to the horizontal part 15 of the cup-shaped member, while the stem 24 of the T member extends upwardly through a central opening in the horizontal part 15 of the cup-shaped member and is tubular in form. Preferably this tubular stem 24 is sleeved upon the drive shaft 14 so as to be substantially flush with the upper end thereof and is held in place thereon by a suitable set screw 25.

The hood D is preferably concavo-convex in configuration and is formed from sheet material such as sheet metal. Such hood opens downwardly toward and serves as a cover for the cup-shaped member C. Preferably the area of the hood is substantially equal to the area of the cup-shaped member C so that the lower edges 26 of the hood are substantially flush with the edges of the horizontal part 15 of said member. A

screw 27 extending through the center of the hood D and threadedly engaging the drive shaft 14 of the motor is used to hold the hood D upon the cup-shaped member.

Thus, from the foregoing it will be apparent that the cup-shaped member C and hood D are both secured to and rotatable with the drive shaft 14 of the motor. Consequently, when the motor B is operating, the vanes 21 in the annular part 17 of the rotating cup-shaped member C will produce the desired currents of air for circulation purposes. In this connection the motor B may be provided with any suitable electric conductor such as the flexible cord 7 extending through a hole 30 in the base A and having a plug 31 for connection with a wall socket or other suitable fixture (not shown) of an electric circuit, and any suitable electric switch (not shown) may be used in the circuit for controlling the operation of the motor.

What we claim as our invention is:

1. An electric fan having a base, an electric motor, an enclosure for the motor, and a hood, the motor having a housing mounted on the base and having an upstanding drive shaft, the enclosure for the motor being secured to the drive shaft above said housing and having vanes operable when the motor is operating to produce currents of air, and the hood being a cover for the enclosure and also secured to the motor drive shaft.

2. An electric fan having an electric motor, an enclosure for the motor, and a hood for the enclosure, said motor having a housing and an upstanding drive shaft, the enclosure having a part above the housing secured to said shaft, and anchorage means for the hood secured to said shaft.

3. An electric fan having an electric motor, an enclosure for the motor, and a hood for the enclosure, said motor having a housing and an upstanding drive shaft, the enclosure having a part above the housing secured to said shaft and having an annular part substantially concentric wth the housing and provided with circumferentially spaced vanes, and anchorage means for the hood carried by said shaft.

4. An electric fan having an electric motor, an enclosure for the motor, and a hood for the enclosure, said motor having a housing and an upstanding drive shaft, a member mounting the enclosure on said shaft, and a member mounting the hood on said shaft.

5. An electric fan having an electric motor provided with a drive shaft, an enclosure for the motor carried by and rotatable with the drive shaft, and a hood for the enclosure carried by and rotatable with the drive shaft and enclosure.

6. A fan having an electric motor provided with a drive shaft, an enclosure for the motor mounted on the drive shaft, and a hood for the enclosure cooperating therewith to conceal the motor shaft, said hood being substantially equal in area to the enclosure and being secured to the drive shaft.

7. An electric fan comprising an electric motor having a drive shaft and having a housing, means supporting the motor housing with the drive shaft extending vertically in an upward direction from the housing, a member having an annular wall surrounding the motor housing and operatively connected to the drive shaft for rotation by the latter, a series of air circulating vanes carried by the annular wall in circumferentially spaced relationship, and a hood rotatable as a unit with said member and supported above the member with the outer edge thereof extending to a position adjacent the annular side wall of said member.

8. An electric fan comprising an electric motor having a drive shaft and having a housing, means supporting the motor housing with the drive shaft extending vertically in an upward direction from the housing, a fan member having an annular side wall provided with circumferentially spaced slots and having vanes associated with the slots to circulate air, means supporting the annular side wall in concentric relation to the motor housing and operatively connecting the fan member to the drive shaft of the motor, and a concavo-convex hood rotatable as a unit with the fan member and supported above the latter with the peripheral edge portion extending to a position adjacent the annular side all in a manner such that the hood forms in effect a continuation of the annular side wall of the fan member.

9. An electric fan comprising an electric motor having a drive shaft, means supporting the motor with the drive shaft extending vertically in an upward direction from the motor, a fan member having an annular side wall surrounding the motor in concentric relation to the drive shaft and operatively connected to said drive shaft for rotation thereby, said fan member having circumferentially spaced slots in the annular wall thereof and having vanes associated with the slots to circulate air, a concavo-convex hood positioned above the fan member with the periphery thereof engaging the fan member adjacent the top of the annular wall aforesaid, and means operatively connecting the hood to the drive shaft.

10. An electric fan comprising an electric motor having a drive shaft, means supporting the motor with the drive shaft extending vertically in an upward direction from the motor, an inverted cup-shaped fan member having the base portion coupled to the drive shaft for rotation with the latter as a unit and having the annular side wall thereof surrounding the motor, and a hood rotatable as a unit with the cup-shaped member and supported above the latter in a manner to conceal both the base portion of said member and the drive shaft.

11. An electric fan comprising an electric motor having a drive shaft, means supporting the motor with the drive shaft extending vertically in an upward direction from the motor, an inverted cup-shaped fan member having the base portion coupled to the drive shaft for rotation by the latter and having the annular side wall thereof surrounding the motor in concentric relation to the axis of the drive shaft, and a concavo-convex hood rotatable as a unit with the cup-shaped member and supported above the latter with the periphery thereof extending to a position adjacent the periphery of the base portion of the cup-shaped member to form in effect a continuation of the annular side wall aforesaid.

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