

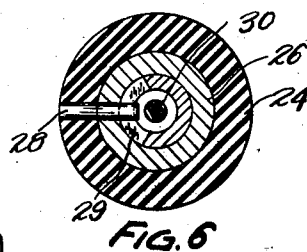
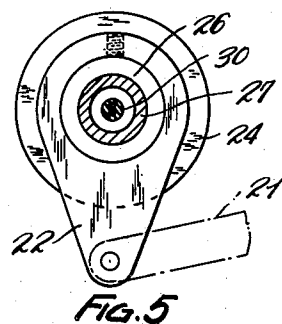
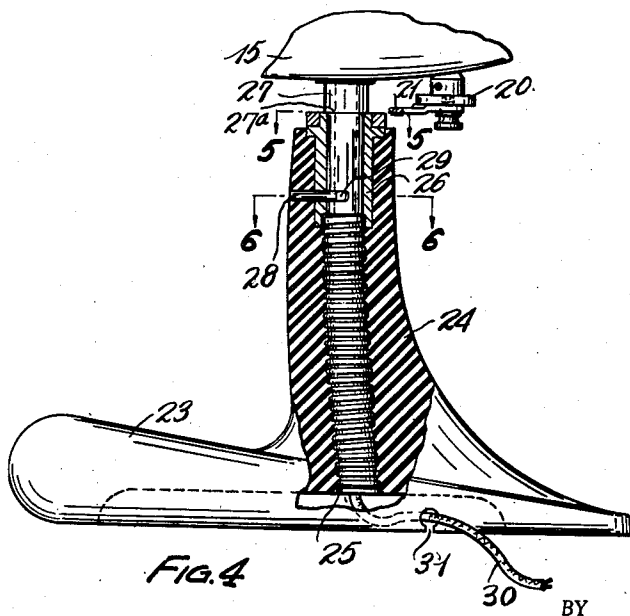
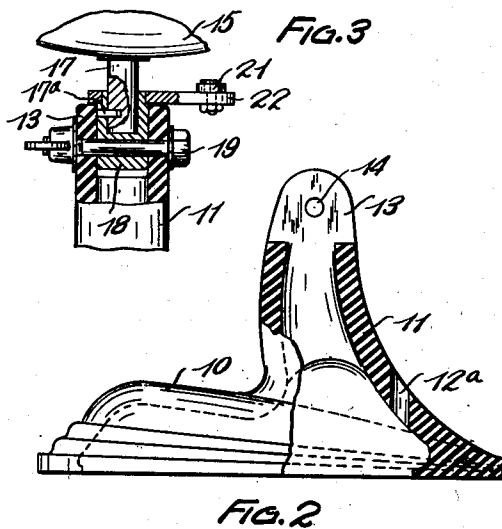
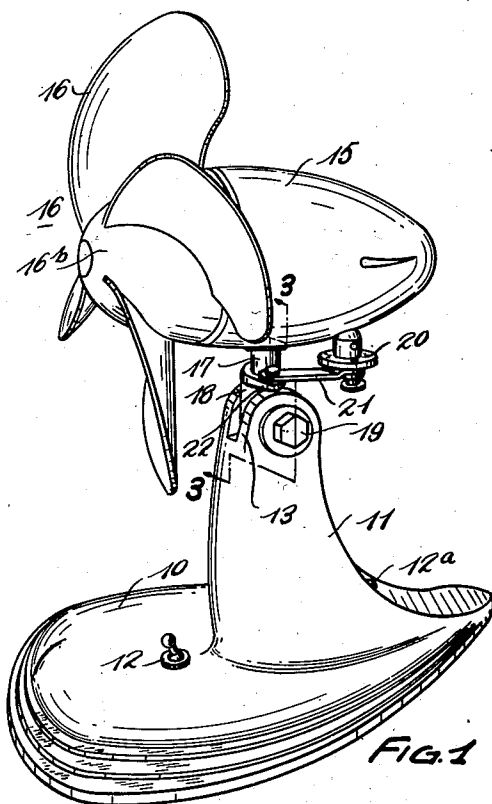
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FAN SUPPORT

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FAN SUPPORT

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4 Claims. (Cl. 248—13)

This invention relates to fans, that is to say, motor driven fans generally known as the household type of fan, and, in certain of its aspects, is an improvement on the construction shown in my prior application Serial No. 240,302 filed November 16, 1938.

In my prior application I have disclosed a fan wherein the base, standard, motor housing, and blade unit are all formed of rubber with the base, standard, and housing constituting a unit which may be molded from rubber in one piece or part with the housing of this unit receiving the motor. The blade unit is also preferably molded in one piece and is composed of a series of blades integral with the blade carrier which is adapted to be fastened to a disk, shaft, or other blade rotating member of the motor.

The unit of my prior application composed of the base, standard, and housing is made of semi-soft rubber, and the standard portion of the unit has preferably embedded therein a flexible hollow shaft through which the conductors may be led from a point beneath the base up to the motor. There is thus provided a fan which is quiet in operation since it does not transmit, to any material extent, sound or mechanical vibrations to the table or other support on which the fan is placed. Furthermore, since the standard is flexible, it can be bent to any position and at any angle so that a wide latitude is afforded in varying the direction in which the air currents are directed without requiring a pivot point to be tightened and loosened by adjusting a thumb nut.

The principal object of the present invention is to provide a fan which possesses most if not all the advantages of the fan of my prior application particularly in the respects that it is quiet in operation and serves as an insulator of sound and mechanical vibrations between the motor part and the support on which the fan is placed, and which has the additional advantage not possessed by the fan of my prior application in the respect that provision is made for the automatic oscillation of the motor and the blade unit.

The above and other objects are attained by the present invention which may be briefly summarized as consisting in certain novel details of construction and combinations and arrangements of parts hereinafter described and claimed.

In the accompanying sheet of drawings wherein I have shown two forms of my invention,

Fig. 1 is a perspective view showing one embodiment of my invention;

Fig. 2 is a partial side elevation and a partial

section through the base and standard of the fan of Fig. 1;

Fig. 3 is a fragmentary vertical sectional view taken through the bifurcated joint at the top of the standard;

Fig. 4 is a view partly in side elevation and partly in section showing a modification, only a fragment of the motor being here illustrated; and

Figs. 5 and 6 are transverse sectional views substantially along the lines 5—5 and 6—6 respectively of Fig. 4.

Referring now to the drawing and first to the construction shown in Figs. 1, 2, and 3, the base and standard unit is composed of a base 10 and a standard 11 formed of semi-soft rubber and preferably molded in one piece. Both the base and the standard may be formed of solid rubber but they are preferably hollowed to conserve rubber and thereby reduce the cost and weight. The motor switch may be mounted on a suitable part of the base 10 or elsewhere, as on the standard 11 and in Fig. 1 I have shown the switch 12 mounted on the base 10. If desired, the conductors may be brought into the interior of the base or standard to terminals of the switch and then brought out from the hollow portion of the unit through one or more openings such as shown at 12a in Fig. 2.

In the form of the invention shown in Figs. 1, 2, and 3 a pivot joint is provided between the top of the standard 11 and a part connected with the motor, and in this instance the top of the standard is bifurcated as shown at 13 and through the arms of the fork or bifurcation holes 14 are formed to receive a pivot bolt. The motor itself may be of any suitable construction and hence the details of the same are not illustrated. The motor housing is illustrated in Fig. 1 at 15 and as here shown is somewhat projectile shaped. The rotor of the motor (not shown) is adapted to drive the blade unit designated as a whole by the reference character 16. This blade unit is preferably made like the blade unit in my prior application in which case it will be composed of a plurality of flexible blades 16a and a blade carrier 16b which together with the blades may be molded as a unit and is preferably formed from semi-soft rubber. The blade carrier 16b may be in the form of a thin conically shaped elastic member conforming to the curvature of the housing 15 and the part adjacent the housing may be stretched and snapped over a disk driven by the motor as in my prior application.

As the fan herein illustrated is of the oscillat-

ing type, the housing 15 of the motor is provided on the lower side with a fixed depending pin 17 which is journaled in the socket of a joint member 18 which fits between the arms of the bifurcation or fork at the upper end of the standard 11 and is pivotally connected thereto by means of a transverse bolt 19 passing through the aligned openings of the fork and the joint member 18. Thus the motor and the blade unit can be tilted to any desired position, but inasmuch as the standard is formed of semi-soft rubber, the joint member 18 may be held frictionally between the arms of the fork or bifurcation 13 so that when it is desired to change the position of the motor and blade units this can be done without the necessity of loosening the joint by turning a thumb nut on the threaded end of the bolt 19 as is customary in standard constructions. In other words, the nut on the bolt 19 may be adjusted to give the desired fit or frictional engagement between the arms of the fork 13 and the joint member 18, and when it is desired to change the angle of the motor and the blade unit this can be done by simply grasping the motor in one hand and tilting it to the desired position, thus turning the joint member 18 between the rubber arms of the fork or bifurcation 13 and without the necessity of changing the frictional grip between the parts of the joint.

The oscillating mechanism may be of standard construction commonly used in oscillating fans and therefore the same need not be illustrated in complete detail. It will be sufficient to state that this oscillating mechanism includes the usual motor driven disk 20 to which is connected at an off-center point a link 21 pivotally connected to a fixed arm 22 secured to the top of the joint member 18. Thus the rotation of the motor slowly rotates the disk 20, and by the connection between the link 21 and the arm 22 causes the usual oscillation of the fan. Any suitable means may be provided for preventing endwise movement of the pin 17 in the socket of the joint member 18 as by means of a fixed radial pin whose inner end extends into an arcuate slot of the pin 17 as fully illustrated in Fig. 6. In Fig. 3 I have shown such a pin 17a fixed in the joint member 18 with its inner end extending into a slot of the pin 17 which slot will be of sufficient arcuate length or extent to permit the full oscillating stroke of the motor.

It will be seen that I have provided a fan of the oscillating type connected to the top of the standard by a joint which will permit the motor and blade unit to be tilted to any desired position without loosening any part at the joint and that the oscillatable and tiltable fan is supported on a semi-soft base-and-standard unit of such a shape that it constitutes a stable support for the fan but at the same time substantially insulates the motor and blade unit from the support on which the fan is placed against the transmission of mechanical and sound vibrations which latter provides for quiet or silent operation of the fan when in use. At the same time, the base, being formed of rubber, will not mar a polished surface on which the fan may be supported.

The construction shown in Figs. 4, 5, and 6 has all the advantages of the construction shown in Figs. 1, 2, and 3, and, in addition, provides for the tilting of the motor and blade unit through the flexibility of the standard, and this is accomplished without interfering with the oscillating mechanism. With this form of my invention,

the base and standard unit is of semi-soft rubber, and, as before, may be molded in one piece. It is composed of a base designated 23 and a standard designated 24. In this instance there is molded in the standard a hollow flexible shaft or conduit 25 the lower end of which communicates with a hollow portion of the base 23 and the upper end of which is suitably attached to the lower end of a sleeve 26 which is fitted into the upper end of the standard 24. The hollow flexible shaft 25 and the sleeve 26 may be secured together as by soldering or otherwise, and the unit composed of the two parts may be molded in the standard. The lower part of the motor housing 15 is provided at the bottom with a swivel extension 27 having a shank extending down into and swivelled in the sleeve 26, this extension 27 having a shoulder 27a which engages or rests upon the upper end of the sleeve 26. The swivel extension is hollow and the upper end of the passageway extending therethrough communicates with the interior of the motor. Any suitable means may be provided for preventing endwise movement between the swivel extension and the sleeve should the motor be turned on its side or upside down and this is accomplished in this instance by a pin 28 which extends laterally through the upper part of the standard 24 and through the sleeve, and its inner end engages in an arcuate slot 29 formed in the shank of the swivel extension 27. The arcuate extent of the slot 29 is such as not to limit the oscillation of the motor and blade unit which oscillation is accomplished by mechanism such as illustrated in Fig. 1, the rotating disk 20 being connected as before by a link 21 to an arm 22 which may be fixed or suitably secured to the upper end of the sleeve 26.

As shown in Fig. 4, the conductors here designated 30 pass through an opening 31 at the lower edge of the base 23 and are extended up through the hollow flexible shaft 25 and through the hollow extension 27 and into the motor housing 15. Thus the conductors are wholly concealed from the point where they enter the base through the opening 31 and in no way interfere with the oscillation or tilting of the motor and the blade unit. As in the preceding construction, the motor switch may be mounted either on the base 23 or on the lower part of the standard 24, and the connections will be made with the switch before the conductors are extended up through the hollow flexible shaft 25.

With this construction a swivel bifurcated joint is unnecessary for the reason that the motor and blade unit can be tilted by simply bending the standard 24 by manually applied force, and when this is done the flexible shaft will hold the standard in its bent position. In this connection it might be noted that with the construction first described and in fans generally, the motor and blade unit can be tilted only in a plane at right angles to the axis of the bolt 19 whereas in the construction shown in Figs. 4 to 6 the motor and blade unit can be tilted in any direction. Thus it will be seen that my construction has marked advantages over the usual fan constructions involving the use of a cast metal base and standard and that the construction also has certain advantages over that illustrated in my prior application.

While I have shown two forms of the present invention, I do not desire to be confined to the precise details shown but aim in my claims to cover all modifications which do not involve a departure from the spirit and scope of my inven-

tion. Furthermore, the term "rubber" as used herein is intended to include either natural or artificial rubber, as for example, those materials which are generally known under the trade-names "Neoprene," "Perbunam," "Thiokol," and "Koroseal," and is intended to include also other equivalent plastics which have the essential characteristics of rubber particularly in semi-soft state.

Having thus described my invention, I claim:

1. A support for an electric fan comprising a base and a standard connected therewith and provided at its upper end with means for mounting an electric motor carrying a blade assembly, said standard being formed from semi-soft rubber and being flexible and bendable under manually applied force to permit tilting of the motor, and a flexible element embedded in said standard and serving to retain the standard substantially in the desired position to which it is bent by said manually applied force.

2. A support for an electric motor carrying a blade assembly and also provided with a swivel extension, comprising a base and standard molded from semi-soft rubber, a swivel element carried by the upper end of said standard and adapted to receive said swivel extension of the motor, said standard being flexible and bendable under

manually applied force for supporting the motor in a desired relatively tilted position of fan operation, and a flexible shaft embedded in said standard and serving to retain the standard substantially in the desired position to which it is bent by said manually applied force.

3. A support for an electric fan comprising a base and standard molded from semi-soft rubber, and means on the upper end of the standard for mounting an electric motor carrying a blade assembly, said standard being flexible and bendable under manually applied force for tilting the motor to a desired position of fan operation and having a flexible hollow conduit extending therethrough and molded therein.

4. A support for an electric motor carrying a blade assembly and also provided with a swivel extension, comprising a base and standard molded as a unit from semi-soft rubber, said standard being flexible and bendable under manually applied force for tilting the motor to a desired position of fan operation and having a flexible hollow conduit extending therethrough, and a socket member connected with said conduit and molded in the upper end of the standard and adapted to receive said swivel extension therein.

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