Aug. 31, 1926. 1,597,871

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FAN MOTOR MOUNTING

Filed August 14, 1924

Fig. 1.

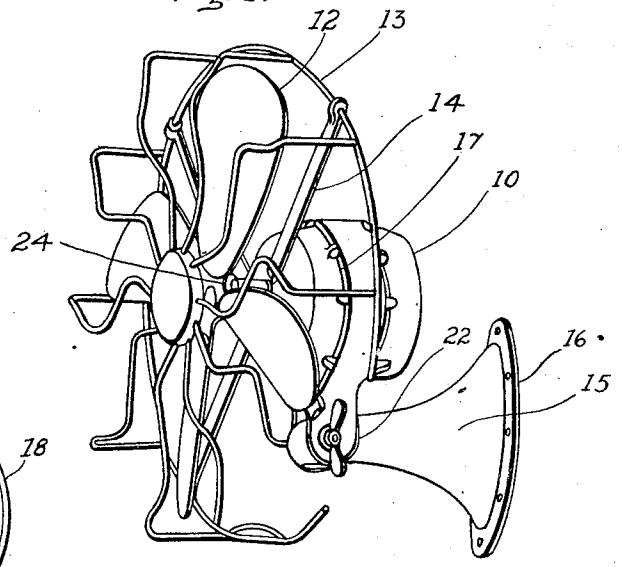


Fig. 3.

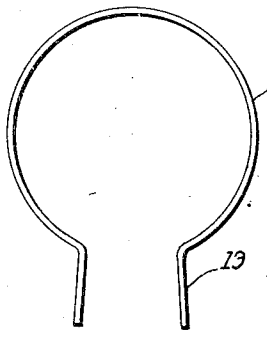


Fig. 4.

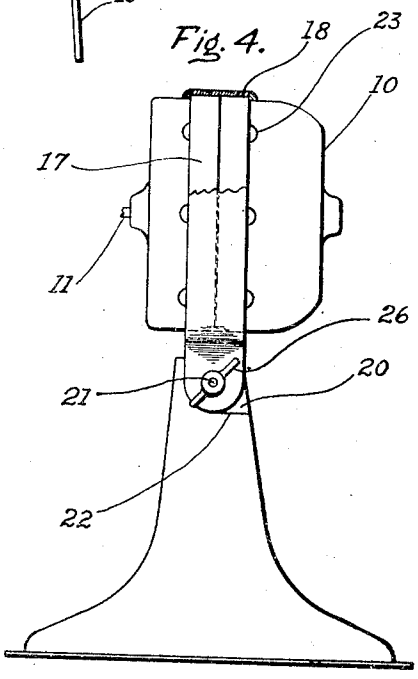
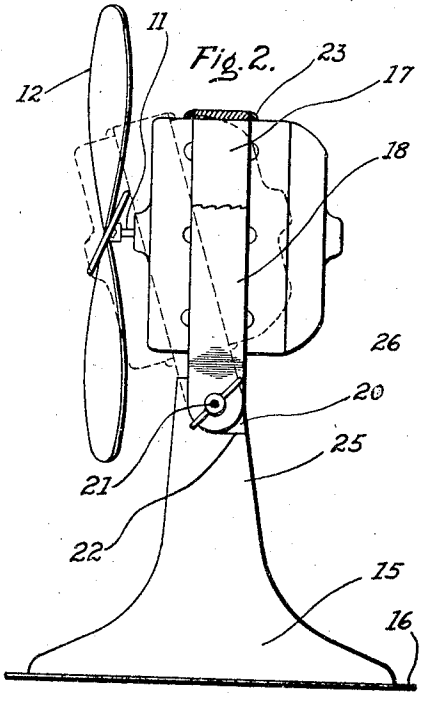


Fig. 2.



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Patented Aug. 31, 1926. 1,597,871

UNITED STATES PATENT OFFICE.

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FAN-MOTOR MOUNTING.

Application filed August 14, 1924. Serial No. 731,943.

My invention relates generally to improvements in fans and more particularly to fan-motor mountings.

The object of the invention, generally stated, is the provision of a fan-motor mounting that shall be simple and efficient in operation and readily and economically manufactured.

A more specific object of the invention is the provision of a fan-motor mounting which will permit the setting of the fan motor in different positions on the base to adapt the fan for attachment to vertical, horizontal and oblique supports.

It is also an object of the invention to provide a fan-motor mounting, parts of which may be forced to conform in shape to other parts to give a proper fitting of all the parts.

Other objects of the invention will, in part, be obvious and, in part, appear hereinafter.

The invention, accordingly, is disclosed in the embodiment thereof shown in the accompanying drawing and comprises the features of construction, combination of elements and arrangement of parts which will be exemplified in the construction hereinafter set forth, and the scope of the application of which will be indicated in the claims.

For a fuller understanding of the objects of the invention, reference may be had to the following detailed description, taken in connection with the accompanying drawing in which:

Figure 1 is a perspective view of a fan showing an embodiment of the fan-motor mounting in accordance with this invention;

Fig. 2 is a side elevation of the fan showing the fan-motor mounting, parts being broken away to show its construction;

Fig. 3 is an end view of a band forming a part of the motor mounting; and

Fig. 4 is a side elevational view with parts broken away to show the mounting applied to a fan motor provided with a sectional casing.

Referring now to the drawing, 10 designates a fan motor provided with a shaft 11 that extends beyond the casing, presenting an end for the reception of the fan wheel or blades 12. As shown in Fig. 2, the fan blades are fixed on the extended end of the shaft 11 by a set screw 24 and are enclosed by a fan guard 13, carried by the motor casing. In mounting the fan guard 13, a plurality of radially extending arms 14 are attached to the motor casing and have slots formed in their outer ends to receive the base member of the fan guard.

In order that the motor may be mounted on supports extending in different planes, a base 15, having a vertical shank 25, is provided. As will be observed, a flange 16 is formed on the base and has a plurality of openings drilled therein so that the base may be attached to such supports as a vertical wall or a ceiling.

Since the base 15 may be mounted on a wall or suspended from a ceiling, the motor is attached thereto in such a manner that it may be set in different positions relative to the base so as to deliver a current of air in the desired direction. Accordingly, an open band 18, having its ends turned outwardly, forming depending lugs 19, is provided. As will be observed, the lugs 19 extend substantially parallel to one another and are spaced apart to permit the projection of the upper end of shank 25 between them. Formed on opposite sides of the shank are faces 20, great enough in area to receive the lugs 19.

In order to secure the lugs in position on the shank, openings, which may be set in register with one another, are drilled in these members, and a bolt is projected through them. Mounted on the bolt 21 is a wing nut 26 which may be adjusted to clamp together the lugs and shank to establish frictional engagement and to fix them in any predetermined relative positions.

As shown in Fig. 2, the faces 20 are defined on two sides by shoulders 22, which serve to restrict the rotation of the band 18 about the bolt 21. The drawing shows that these shoulders permit the backward movement of the motor through an angle of substantially 90° from the vertical, while the forward movement permitted is considerably less than 90°. By thus providing for adjustment of the motor on the base, the fan is adapted for mounting on a desk, a wall, or a ceiling.

With a view to holding the motor against rotation during operation, it is necessary to

provide for the engagement of the motor casing by the band 18. In order to provide for such engagement, an annular bed 17 is formed on the casing for the reception of the band 18. Accordingly, when the band is placed in position, it engages frictionally the bed, and the motor is held against rotation. It will be readily understood that the frictional grip of the band may be varied to meet conditions by altering the gripping area, the coefficient of friction of the contacting surfaces or the pressure forcing the surfaces into engagement. Since the band is attached to the base by means of a bolt and a wing nut which serve to draw together the lugs, the gripping pressure of the band is effected by the adjustment of the nut.

It is preferable to make the band from a resilient metal plate and, when such a resilient band is used, it permits the drawing of the band to the exact shape of the annular bed, so that possible inaccuracies in construction do not affect the frictional engagement. Further, the band, or account of its resilience, may be continually urged toward the bed by spring pressure when the wing nut is operated to force the lugs 19 together.

Since there is a possibility of the band moving axially on the motor casing, due to the forces exerted during the operation of the motor, a plurality of projections or lugs 23 are formed integrally with the casing and disposed in circumferential rows along each side of the bed 17.

In mounting a motor of this type, when it is required to adapt it for suspension from a ceiling, the wing nut 21 is released and the band rotated about the bolt to the position shown in Fig. 1, when the wing nut is tightened, establishing the frictional grip of the band on the motor casing, and of the lugs 19 on the base 15. When the fan motor is set as shown in Fig. 1, and mounted on a ceiling, the fan blades are positioned to deliver a current of air downward. The setting of the motor as described above also adapts the fan for attachment to a vertical support.

In some cases, it may be desirable to obtain a more positive engagement between the band and bed or the lugs 19 and faces 20. Such engagement may be accomplished by the serration of the contacting faces. When such a practice is adopted, the tightening of the wing nut 26 draws the opposite serrated faces firmly into engagement with each other.

Sometimes, in order to meet certain commercial and manufacturing conditions, the fan motors may be provided with pressed-steel casings. When such practice is adopted, the assemblage of the casing is facilitated by making it in two sections, each of which is shaped to enclose an end of the motor.

It will be readily understood that, when such construction is adopted, the inner edges of the casing sections may be so shaped that, when they abut, they form the bed 17. Then, since the bed is enclosed by the band 18, the joint in the casing is covered, giving the structure a finished appearance.

It is also pointed out that the date usually stamped on name plates which are attached to motor casings may be marked on the band 18.

I would state, in conclusion, that, while the illustrated example constitutes a practical embodiment of my invention, I do not limit myself strictly to the exact details herein illustrated, since modifications of the same may be considerably varied without departing from the spirit of the invention, as defined in the appended claims.

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

1. A fan-motor mounting comprising, in combination, a band shaped to encircle and grip the motor, a support adapted to receive the band, and means for attaching the band to the support and to effect the gripping of the motor by the band, said attaching means being adjustable to permit the setting of the motor in different positions realtive to the base.

2. In a fan-motor mounting, in combination, a band adapted to grip the motor, a friction face formed on said motor to receive the band, a base to carry the band, and means adapted to attach the band to the base, said means being adapted to effect the gripping of the motor by the band.

3. In a fan-motor mounting, in combination, an open band adapted to grip the motor, an annular bed formed on the motor to receive the band, a base to support the band, and means for attaching the band to the base, said means being adapted to contract the band to cause it to grip the motor.

4. In a fan-motor mounting, in combination, an open band adapted to grip the motor, an annular bed formed on the motor to receive the band, a base to support the band, and means to attach the band to the base, said means being adapted to develop a spring pressure to urge the band against the bed.

5. In a fan-motor mounting, in combination, an open band adapted to grip the motor, an annular bed formed on the motor to receive the band, a base to carry said band, lugs formed on the ends of the band to be seated on the base, and means operable to attach said lugs to the base in different positions.

6. In a fan-motor mounting, in combination, an open band adapted to grip the motor, an annular bed formed on the motor to receive the band, a base to carry said band, lugs

formed on the ends of the band to be seated on the base, and means operable to attach said lugs to the base in different positions, said base being provided with friction faces to receive the lugs.

7. In a fan-motor mounting, in combination, an open band adapted to grip the motor, an annular bed formed on the motor to receive the band, a base to carry said band, lugs formed on the ends of the band to be seated on the base, means operable to attach said lugs to the base in different positions, said base being provided with friction faces to receive the lugs, and shoulders formed on the base to limit the movement of the lugs.

8. In a fan-motor mounting, in combination, an open band adapted to encircle the motor, an annular friction face formed on the motor to receive the band, a base provided with a shank to carry the band, lugs depending from the ends of the band to be seated on opposite sides of the shank, said shank being provided with friction faces to receive the lugs, and means to draw the lugs into engagement with said faces to fix the band in different positions relative to the base and to effect the gripping of the motor by the band.

9. In a fan-motor mounting, in combination, an open band adapted to encircle the motor, an annular friction face formed on the motor to receive the band, a base provided with a shank to carry the band, lugs depending from the ends of the band to be seated on opposite sides of the shank, said shank being provided with friction faces to receive the lugs, means to draw the lugs into engagement with said faces to fix the band in different positions relative to the base and to effect the gripping of the motor by the band, and circumferential rows of projections formed on the motor adjacent said friction face to retain the band in position.

In testimony whereof, I have hereunto subscribed my name this fourth day of August, 1924.

ARTHUR B. REYNDERS.