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2,115,527

MOUNTING FOR EXHAUST FANS

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2 Sheets-Sheet 1

Fig. 1.

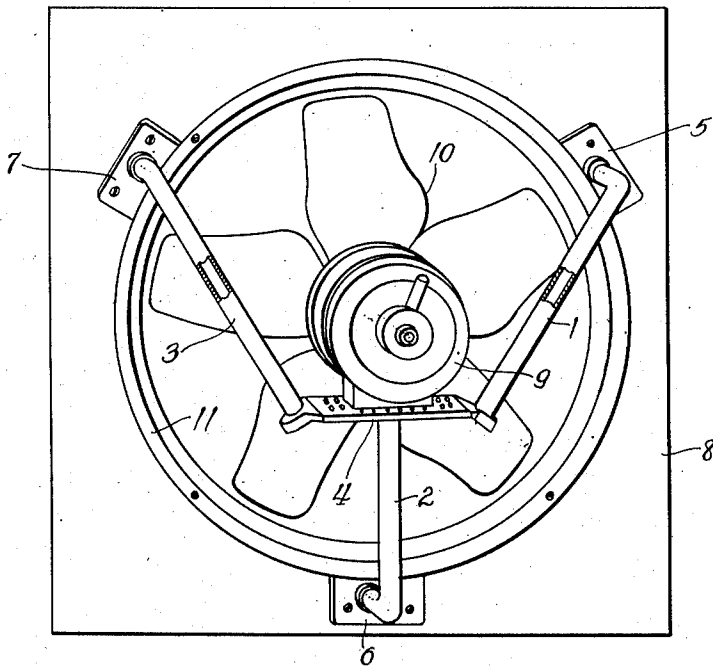
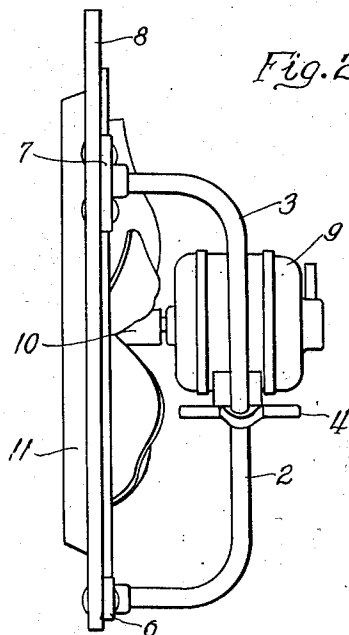


Fig. 2.



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Fig. 3.

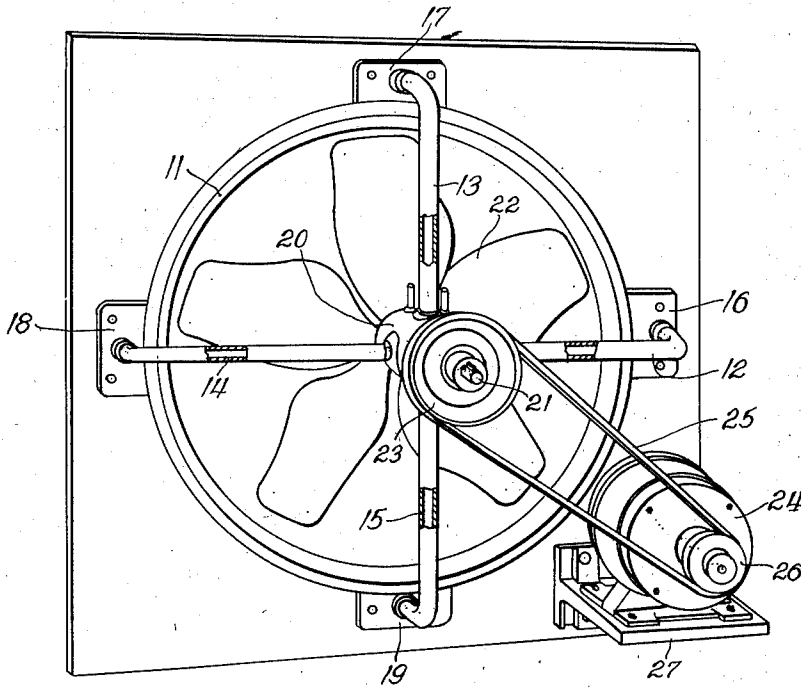
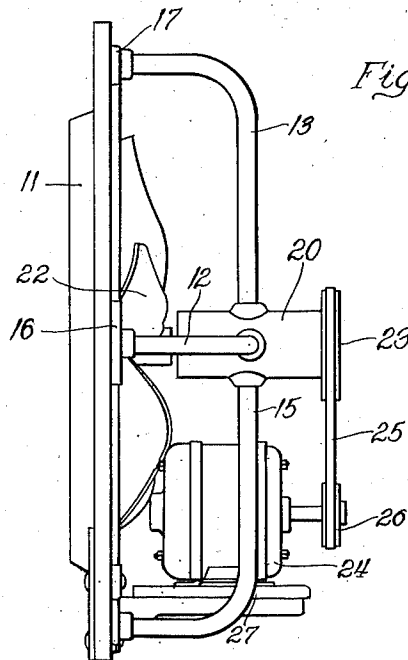


Fig. 4.



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UNITED STATES PATENT OFFICE

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MOUNTING FOR EXHAUST FANS

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8 Claims. (Cl. 230-273)

The present invention relates to improvements in mountings for exhaust fans.

One of the objects of my invention is to provide mountings for exhaust fans of simple and inexpensive construction, which are light in weight, easily assembled, and, when assembled, are strong, rigid and permanent, insuring smooth and quiet operation of the fans.

Further objects and advantages of my invention will appear from the detail description, taken in connection with the accompanying drawings, in which:

Figure 1 is a perspective rear view of an exhaust fan embodying my invention in assembled condition;

Figure 2 is a side view thereof;

Figure 3 is a perspective rear view of another form or embodiment of my invention; and

Figure 4 is a side view of the latter construction.

The brackets 1, 2 and 3 in the embodiment of the invention disclosed in Figures 1 and 2 are made of tubing of any suitable material, such as iron or aluminum. They are preferably threaded at both ends, at one end for attachment to the motor platform 4, and at the other end for attachment to the plates 5, 6 and 7, suitably secured to the rear face of the supporting panel 8. The brackets preferably are L-shaped, with the longer legs thereof being secured to the motor platform.

The plates 5, 6 and 7 may be made of any suitable material, such as iron or aluminum, and are provided with thickened bosses threaded for receiving the ends of the brackets 1, 2 and 3. The plates may be fastened to the panel 8 or to a wall, window frame, or other place where the exhaust fan is to be installed, by screws or any other suitable means. In the present embodiment they are fastened by through bolts or rivets to the margin of the board 8 just outside the ring 11.

The motor platform 4 is of skeleton or grid construction, slotted or perforated with bolt holes to receive fastening bolts for the bases of various kinds or sizes of motors, and has angularly disposed end portions threaded to receive the ends of the brackets 1 and 3. A similar threaded socket is formed on the central bottom part of the platform 4 to receive the threaded end of bracket 2. The motor 9 is secured to the motor platform 4 by means of bolts or any other suitable means. The fan 19 is mounted on the shaft of the motor in any conventional manner. A metallic reinforcing ring 11 of angular cross section and defining the fan opening is fastened about the edge

of the opening in the panel or wall, as by means of wood screws. Through bolts may be employed. This ring serves to impart rigidity to the panel and prevents warping and the like. This ring 11 has a planar flange fitting flat against the margin about the opening in the supporting board and a cylindrical flange extending through the opening, giving a finished effect and strongly supporting the board 8, so that the bracket plates 7 are, in effect, rigidly supported, as it were, by a common frame member.

Figures 3 and 4 illustrate another form or embodiment of my invention. In this arrangement there are four brackets, 12, 13, 14 and 15, preferably threaded at both ends, at one end for attachment to the plates 16, 17, 18 and 19, and at the other end for attachment to the bearing housing 20 positioned centrally of the panel. The shaft 21, which extends through the housing 20, has the fan 22 secured to one end thereof and the pulley 23 secured to the other end. A motor 24 is suitably mounted on a bracket 27 secured to the wood panel or the wall a short distance from the pulley 23 and outwardly of the fan opening. A belt 25 is connected from the motor pulley 26 to the fan pulley 23 for driving the fan upon actuation of the motor. In other respects this modified form is the same as the embodiment shown in Figures 1 and 2.

By selecting brackets such as 1-2-3 or 12-13-14-15, of different radial length, and a ring 11 to correspond, various sizes of fans may be mounted.

I wish to call attention to the quieting or silencing character of the mounting, which is one of its valuable characteristics. The plates 5, 6, 7 in Fig. 1, and 16, 17, 18, 19 in Fig. 3, are independent of each other and of the ring 11. As the ring 11 and the said bracket plates 5, 6, 7 are not in metallic connection, but connected through the body of the panel 8, any vibration of the arms is not directly transmitted to the ring 11, nor is it free to vibrate the panel, because of the deadening effect of the ring 11.

In the assembly of the device the panel 8 with the opening therethrough has the channel-shaped ring 11 bolted to the margins of the opening by a plurality of screws or bolts. The arms 1, 2, 3 are firmly threaded into the sockets in motor base plate 4. Either before this or thereafter, the plates 5, 6, 7 are threaded firmly upon the outer ends of the bracket arms 1, 2, 3. These bracket arms 1, 2, 3 are made of pipe, for example, 1/2" conduit pipe, and the threads are pipe threads by virtue of which they may be

drawn up to a tight wedging fit, making the bracket as a whole firm and stable.⁶ Whether they are pipe threads or cylindrical threads, after the plates 5, 6, 7 are bolted upon the panel the arms 1, 2, 3 cannot rotate on their threads, no matter how severely the structure may be vibrated or stressed, and hence will remain rigid and free of any danger of unscrewing or becoming loose.

The panel 8 is preferably a piece of plyboard or the like cut to a suitable size. The board shown in Figure 1 is, for example, 36" square, the blade being a 20" fan and the motor a $\frac{1}{8}$ H. P. motor running at 1140 R. P. M. These specific dimensions are given by way of explanation, and not as of limitation.

While I have shown and described above what I regard to be the preferred embodiments of my invention, nevertheless it will be understood that such embodiments are merely exemplary, and that various modifications and rearrangements may be made without departing from the essence of the invention.

What I claim, therefore, and desire to secure by Letters Patent, is:

1. A mounting for an exhaust fan, comprising a motor, a fan driven by said motor, a motor platform upon which said motor is mounted, a panel of material suitable for absorbing vibration and having an opening therein, plates attached to said panel, hollow L-shaped brackets attached to said plates and to said motor platform by means of threaded socket joints so that the fan is positioned adjacent to the opening in said panel, and a ring secured to the panel about said opening independent of said plates for reinforcing said panel.

2. A mounting for an exhaust fan, comprising a panel of material suitable for absorbing vibration and having an opening therein, plates attached to said panel, a bearing housing, a fan rotatably mounted in said bearing housing, hollow L-shaped brackets attached to said plates and to said bearing housing by means of threaded socket joints so that the fan is positioned adjacent to the opening in said panel, and a ring secured to the panel about said opening independent of said plates for reinforcing said panel.

3. A mounting for an exhaust fan, comprising a panel of material suitable for absorbing vibration and having an opening therein, a motor attached to said panel, plates attached to said panel, a bearing housing, a fan rotatably mounted in said bearing housing, hollow L-shaped brackets attached to said plates and to said bearing housing by means of threaded socket joints so that the fan is positioned adjacent to

the opening in said panel, means for transmitting motion from the motor to the fan, and a ring secured to the panel about said opening independent of said plates for reinforcing said panel.

4. A mounting for an exhaust fan comprising a motor receiving platform having the end portions extending outwardly and downwardly, a hollow L-shaped bracket having the longer leg thereof attached to the central portion of said platform by means of a threaded socket joint and disposed substantially at right angles, and hollow L-shaped brackets connected to each of the end portions of said platform by means of threaded socket joints, the longer portion of each of said brackets being disposed at substantially right angles to said end portions.

5. A mounting for an exhaust fan comprising a motor receiving platform of skeleton or grid construction to receive various kinds of motors and having the end portions extending outwardly and downwardly, a hollow L-shaped bracket having the longer leg thereof attached to the central portion of said platform by means of a threaded socket joint and disposed substantially at right angles, and hollow L-shaped brackets connected to each of the end portions of said platform by means of threaded socket joints, the longer portion of each of said brackets being disposed at substantially right angles to said end portions.

6. A mounting for an exhaust fan comprising the combination of a platform member having threaded sockets the axes of which extend in different directions, L-shaped legs each having a threaded stud portion at one end, said stud portions being threaded into said sockets and each having a flat foot at its opposite end, said flat feet being brought into substantially a common plane, and a panel with a central opening for a fan supported on the platform, the flat feet being clamped to said panel at points adjacent the margin of the opening.

7. The combination of claim 6, wherein the panel is a fibrous, sound-deadening panel of inadequate rigidity to support the said platform, and a reinforcing ring clamped to the panel independently of said feet whereby the desired rigidity is secured without metallic connection of the ring and the said feet.

8. The combination of claim 6, wherein the feet are formed of plates having threaded sockets and the corresponding ends of the L-shaped legs are threaded into said sockets, the threads at each end of the legs being prevented from turning by the attachment of the feet to the panel.

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