

Oct. 13, 1942.

J. T. WREN

2,298,606

FAN

Filed Nov. 4, 1941

3 Sheets-Sheet 1

Fig. 1.

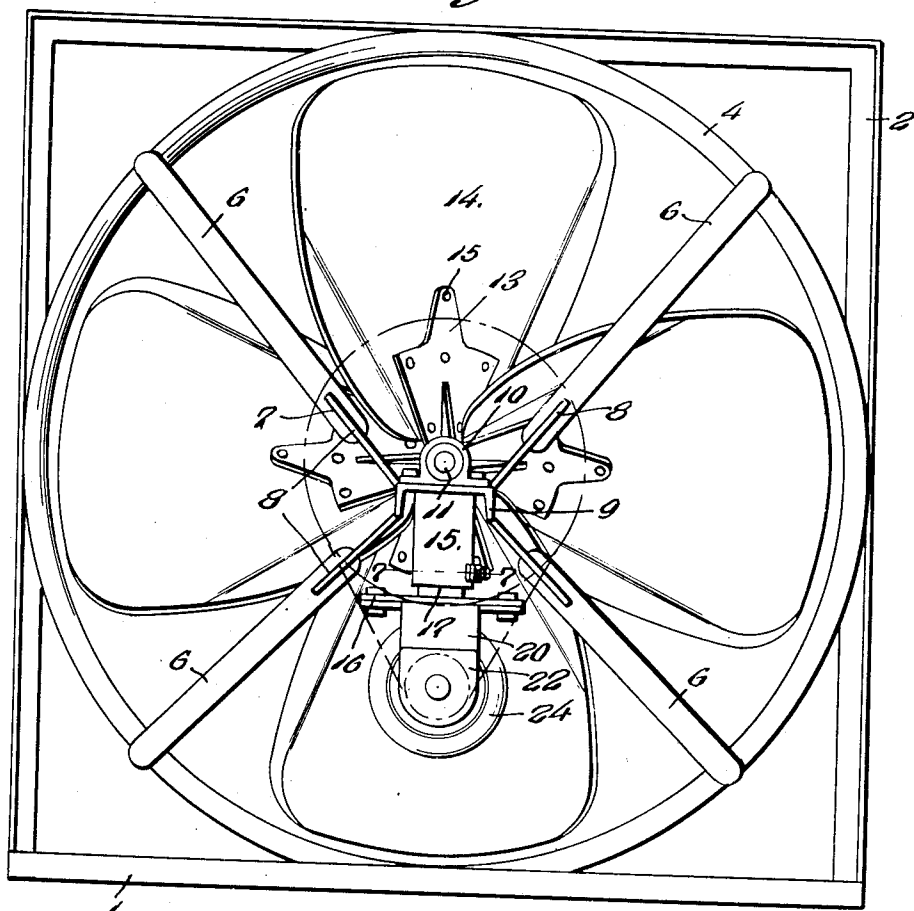
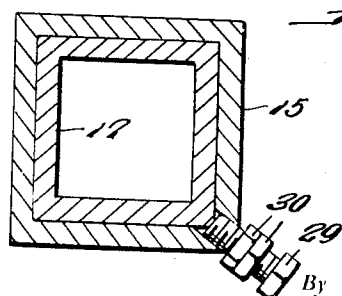


Fig. 2.



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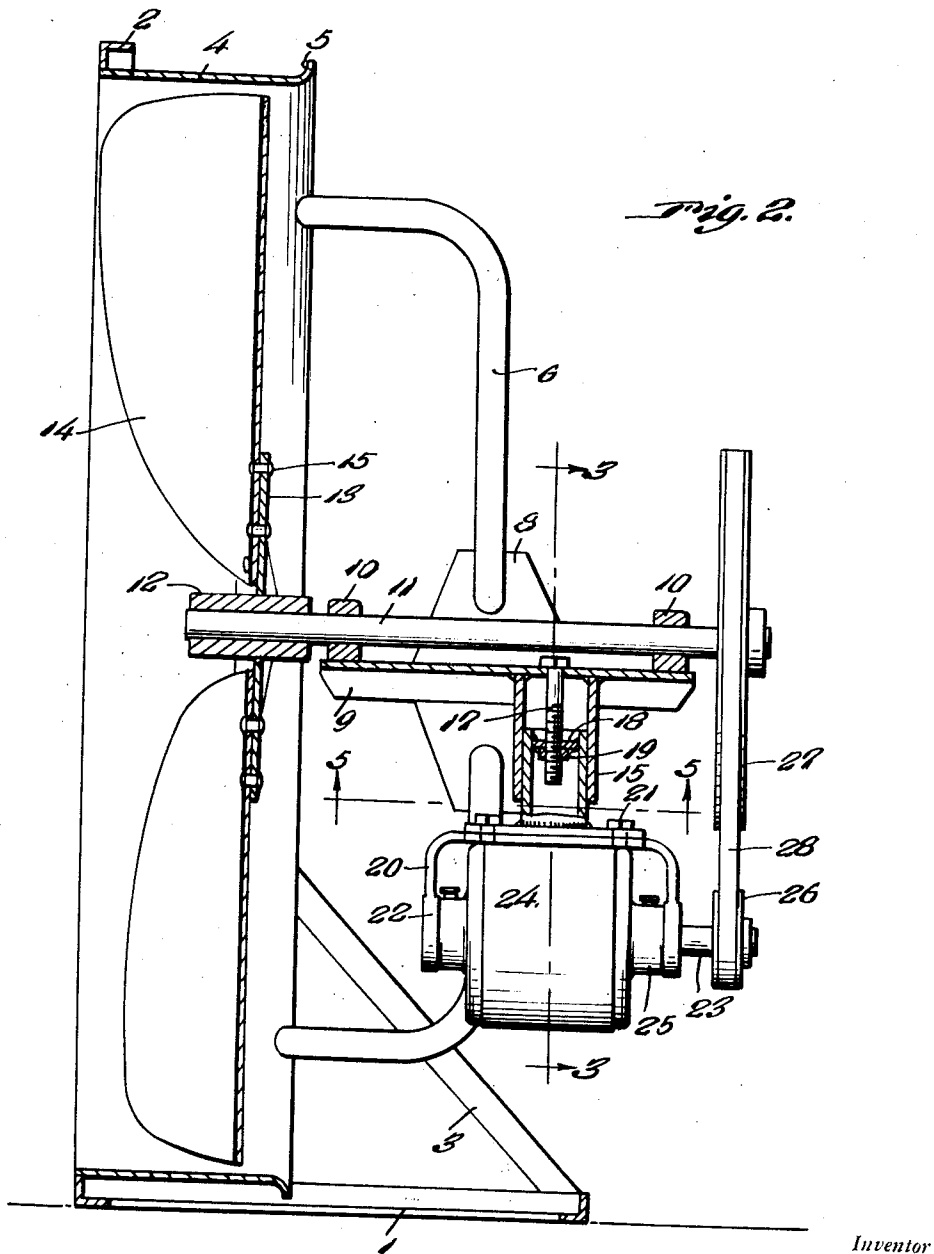
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3 Sheets-Sheet 2



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3 Sheets-Sheet 3

Fig. 3.

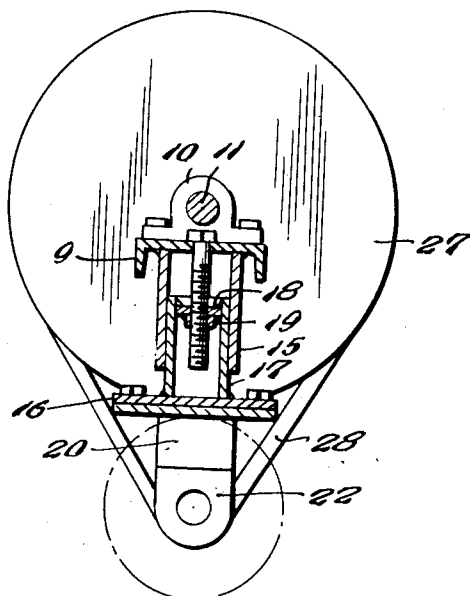
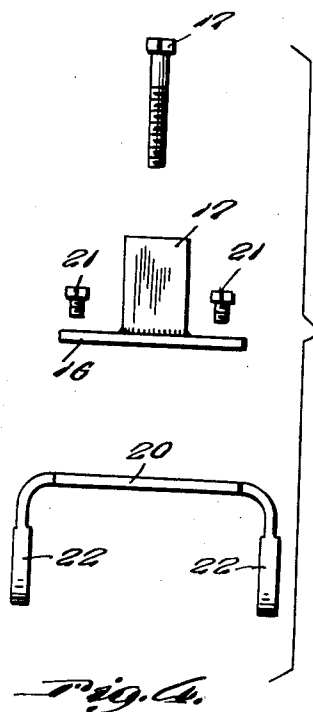
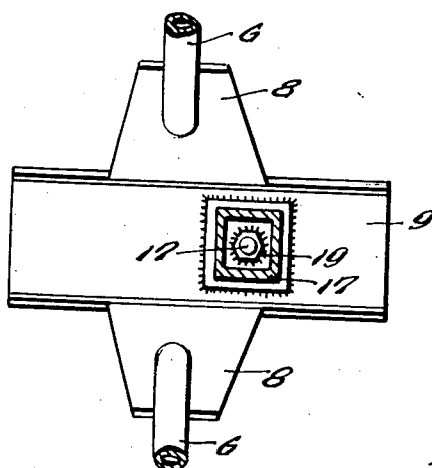


Fig. 5.

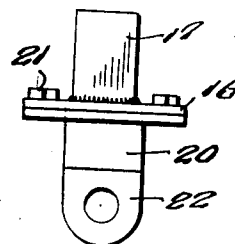


Fig. 6.

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Application November 4, 1941, Serial No. 417,821

2 Claims. (Cl. 230—273)

My invention relates to improvements in fans of the general type forming the subject matter of my co-pending application Serial No. 309,460, filed December 15, 1939.

The invention is designed with the particular object in view of equipping motor-driven exhaust fans with improved means for mounting the motor so that such motor is variably adjustable to take up wear in a belt drive and so that a short belt may be utilized.

Another object is to simplify the construction and arrangement of parts and provide an exhaust fan unit which is economical to manufacture.

Other and subordinate objects are also comprehended by my invention, all of which, together with the precise nature of my improvement, will be readily understood when the succeeding description and claims are read with reference to the drawings accompanying and forming part of this specification.

In said drawings:

Figure 1 is a view in rear elevation of my improved fan in its preferred embodiment,

Figure 2 is a view in vertical central section drawn to an enlarged scale,

Figure 3 is a view in vertical section taken on the line 3—3 of Figure 2,

Figure 4 is a disassembled view of the motor carrier, motor yoke, and associated parts,

Figure 5 is a view in horizontal section taken on the line 5—5 of Figure 2,

Figure 6 is a view in side elevation of the motor carrier and yoke, and

Figure 7 is a detail view in horizontal section taken through the sleeve and stem of the motor carrier and illustrating the locking bolt.

Referring to the drawings by numerals, my improved fan comprises a rectangular skeleton base 1 having at the front edge thereof an upright rectangular frame 2 and formed of channel iron. Side brace members 3 extend diagonally from the frame 2 downwardly to the rear edge of the base 1.

Suitably secured within the frame 2 to extend rearwardly therefrom is an annular sheet metal guard 4, the front edge of which is suitably secured in the frame 2 and the rear edge of which is flared as at 5.

Extending rearwardly from the rear edge of the guard 4 is a plurality of L-shaped tubular spider-forming members 6 having one end suitably secured to said guard and arranged so that portions thereof extend inwardly radially of the guard in the rear thereof. Said portions are

provided with bifurcated ends, as at 7, for receiving one edge of attaching plates 8 the other edges of which are suitably secured to the upper and lower longitudinal edges of an elongated channel type support 9 of plate-like form extending endwise rearwardly of the guard 4.

A pair of pillow blocks 10 are secured on the support 9 at opposite ends thereof and in which is journaled the fan shaft 11 having a front end extending into the guard 4 and a rear end extending beyond the rear end of the support. A hub 12 is fast on the front end of the shaft 10 and is provided with suitable blade brackets 13 to which the fan blades 14 are attached, as at 15, to rotate in the guard 4.

Depending from the support 9 adjacent the rear end thereof and in the longitudinal center of the same is a square bearing sleeve 15 preferably welded at its upper end to said support.

Below the sleeve 15 is a plate-like motor carrier 16 having a central square hollow shank 17 upstanding therefrom and which is slidably fitted in the sleeve 15.

A bolt 18 extending downwardly through the support 9, and through the sleeve 15 into the shank 17 is threaded through a web 18 and nut 19 below the web so that by turning the bolt, the carrier 16 may be adjusted vertically. The web 18 is welded in the shank 17 and the nut 19 is welded to said web.

The usual motor-supporting yoke 20 of inverted U-shape is bolted to the bottom of the carrier 16, as at 21, said yoke having a pair of terminal bearing members 22 through which the armature shaft 23 of the motor 24 extends and between which the shaft bearings 25 on opposite sides of the motor are fitted. The motor casing 24 may be fixed against rotation in the yoke 20 in any desired manner. As will be understood, the yoke 20 supports the motor 24 with the armature shaft 23 parallel with the fan shaft 11.

A pair of small and large pulleys 26, 27 fast on the armature and fan shafts 23, 11, respectively, and a belt 28 operatively connect the motor 24 to the fan shaft 11.

For locking the shank 17 in the sleeve 15 a locking bolt 29 extending laterally through one corner of the sleeve 15 may be provided and equipped with locking nuts 30.

As will be manifest, by turning the bolt 29 the motor carrier 16 may be adjusted vertically to correspondingly adjust the motor 24 and tighten or loosen the fan belt 28.

The foregoing will, it is believed, suffice to im-

part a clear understanding of my invention without further explanation.

Manifestly the invention, as described, is susceptible of modification without departing from the inventive concept and right is herein reserved to such modifications as fall within the scope of the subjoined claims.

What I claim is:

1. A fan comprising an annular upright fan guard, supporting rods extending rearwardly from said guard and having end portions extending radially inwardly of said guard, a horizontal support secured to the end portions of said rods, a fan in said guard, a fan shaft journaled on said support and having the fan fast thereon, a motor including an armature shaft, means to suspend said motor from said support for variable adjustment vertically into different set positions, and a belt and pulley drive from the armature shaft to the fan shaft, said means including a transversely square sleeve depending from said support and fixed thereto, a plate-like motor carrier having a hollow upstanding shank slidably fitted in said sleeve and provided with an internal cross web, and a bolt extended down-

wardly through said support into said sleeve and shank and through said web.

2. A fan comprising an annular upright fan guard, supporting rods extending rearwardly from said guard and having end portions extending radially inwardly of said guard, a horizontal support secured to the end portions of said rods, a fan in said guard, a fan shaft journaled on said support and having the fan fast thereon, a motor including an armature shaft, means to suspend said motor from said support for variable adjustment vertically into different set positions, and a belt and pulley drive from the armature shaft to the fan shaft, said means including a transversely square sleeve depending from said support and fixed thereto, a plate-like motor carrier having a hollow upstanding shank slidably fitted in said sleeve and provided with an internal cross web, and a bolt extended downwardly through said support into said sleeve and shank and through said web, said carrier having a yoke suspended therefrom the armature shaft of the motor being journaled in said yoke to support the motor.

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