March 8, 1949. L. N. DE CUIR, SR., ET AL 2,463,752

PORTABLE EXHAUST FAN

Filed March 11, 1947 2 Sheets-Sheet 1

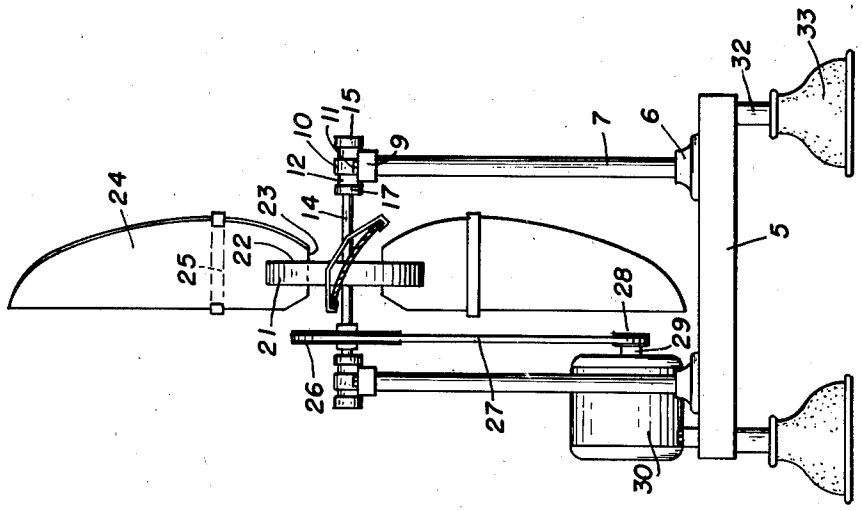


Fig. 2.

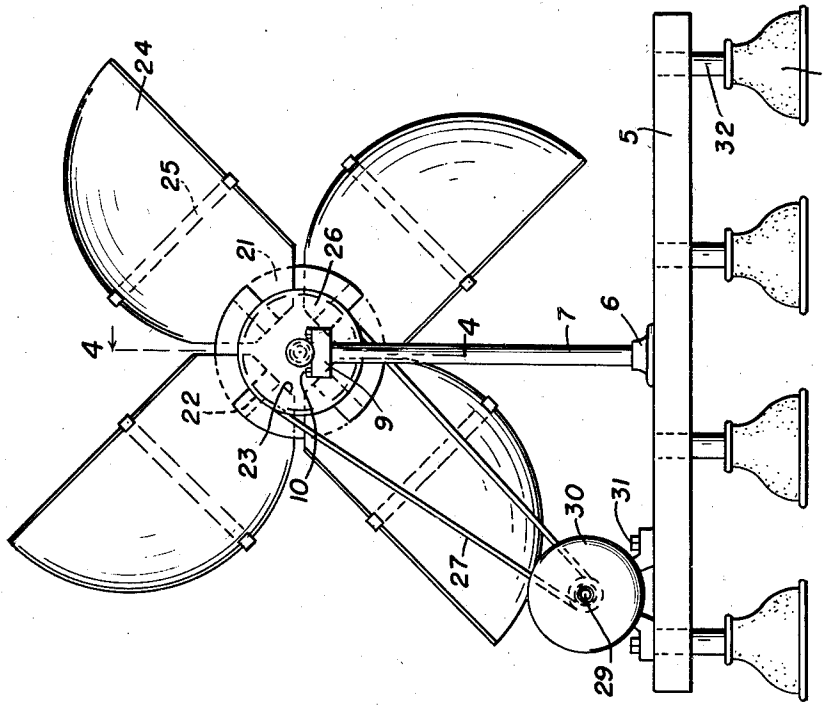


Fig. 1.

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PORTABLE EXHAUST FAN

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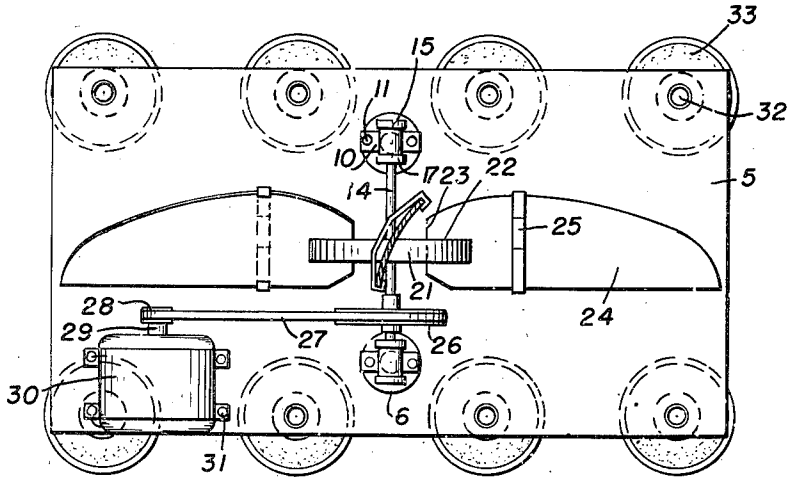


Fig. 3.

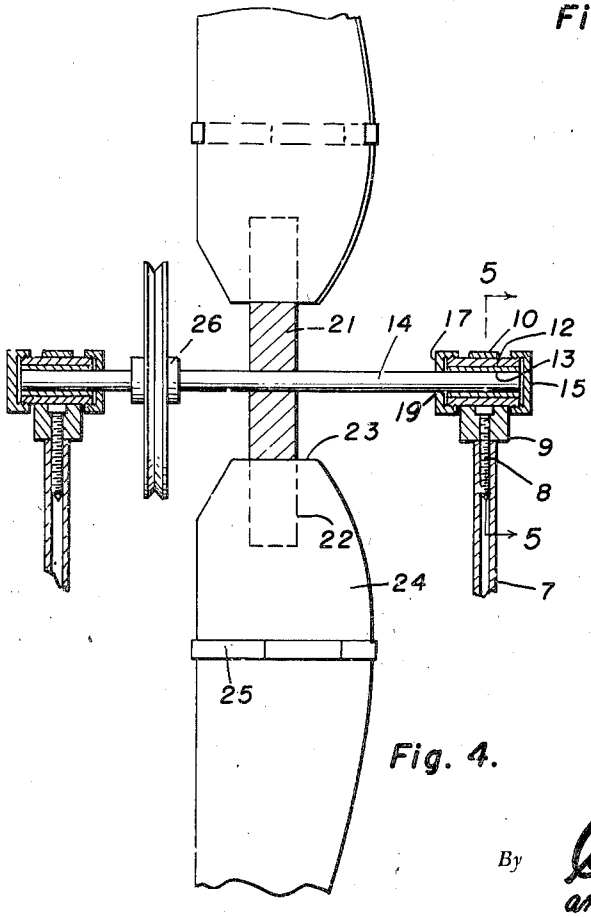


Fig. 4.

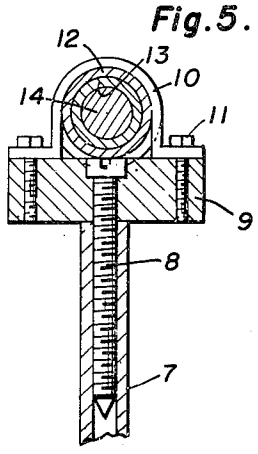


Fig. 5.

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UNITED STATES PATENT OFFICE

2,463,752

PORTABLE EXHAUST FAN

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Application March 11, 1947, Serial No. 733,812

5 Claims. (Cl. 230—259)

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This invention relates to new and useful improvements in portable exhaust fans and more particularly to a fan adapted to ventilate a desired enclosure such as an attic or the like.

The primary feature of the present invention is to provide a device of the character referred to mounted on a platform which is supported by rubber suction cups which are adapted to silence the operation of said fan.

Another important feature of this invention is to provide a device of the class described including an improved blade means which are adapted to increase the efficiency in drawing air into the center of said fan and to expel it directly forwardly from the fan.

A further feature of this invention is to provide an exhaust fan having a hub and blades constructed of fibrous material whereby the device is light and inexpensive in construction.

A still further feature of the present invention is to provide a device of the character referred to that is simple and practical in construction, efficient and reliable in operation, relatively inexpensive to manufacture and otherwise well adapted for the purposes for which the same is intended.

Other objects and advantages reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a front elevational view of the improved exhaust fan constructed in accordance with the present invention.

Figure 2 is a side elevational view thereof.

Figure 3 is a top plan view.

Figure 4 is an enlarged sectional view taken on line 4—4 of Figure 1, and

Figure 5 is an enlarged sectional view taken on line 5—5 of Figure 4.

Referring now to the drawings in detail, wherein for the purpose of illustration, we have disclosed a preferred embodiment of the present invention, the numeral 5 represents a substantially rectangular platform preferably of wooden material.

Suitably secured to substantially the center of the respective forward and rear edges of said platform are sockets 6 adapted to support a pair of standards 7.

Held by vertical screws or the like 8 to the upper end of standards 7 are bearing blocks 9 on which are secured by inverted U-shaped clamps 10 and bolts or the like 11, a pair of sleeves 12 in

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which sleeve bushings 13 are mounted to rotatably support the outer ends of a horizontally positioned shaft 14.

Caps 15 are fitted at the outer ends of said sleeves 12, and caps 17 are fitted as at 18 to the inner ends of said sleeves, said latter caps 17 having circular bores 19 through which the ends of shaft 14 extend inwardly into the sleeves. The caps 17 are particularly adapted to retain grease to lubricate the shaft.

Suitably secured to the center of shaft 14 is a preferably wooden hub 21 having longitudinal slots 22 therein adapted to receive one edge 23 of a plurality of blades 24 which radiate outwardly from said hub, said edges 23 being suitably secured in said slots.

The blades 24 are preferably of relatively thin wood having braces 25 adapted to support the blades in a transversely curved position. The slots 22 are inclined from the axis of the hub to position the blades at a desired angle.

Suitably secured at one end of shaft 14 is pulley 26 connected by an endless belt 27 to the pulley 28 carried by the drive shaft 29 of a small electric motor 30 which is secured by bolts or the like 31 to one rear corner of the platform.

Extending downwardly from the forward and rear edges of platform 5 is a plurality of legs 32 having rubber suction cups 33 suitably secured at their lower ends.

In operation, the platform supported by legs 32 and cups 33 rests on a supporting surface and said cups are adapted to prevent the platform from moving due to vibration and also absorb the shock of vibration of the fan when in motion.

In view of the foregoing description taken in conjunction with the accompanying drawings it is believed that a clear understanding of the construction, operation and advantages of the device will be quite apparent to those skilled in this art. A more detailed description is accordingly deemed unnecessary.

It is to be understood, however, that even though there is herein shown and described a preferred embodiment of the invention the same is susceptible to certain changes fully comprehended by the spirit of the invention as herein described and the scope of the appended claims.

We claim:

1. An exhaust fan of the class described comprising a portable platform, a pair of standards supported on said platform, sleeves carried at the upper ends of said standards, said sleeves adapted to receive the outer ends of a horizontal positioned shaft journalled in said sleeves, a hub of

fibrous material carried by said shaft and adapted to rotate with the shaft, said hub having inclined slots therein, one edge of a plurality of blades secured in said slots, said blades radiating outwardly from said hub and constructed of a relatively thin fibrous material, brace means supporting said blades in a transversely curved position, and motor means carried by the platform adapted to rotate the shaft.

2. An exhaust fan comprising a portable base, a pair of spaced parallel standards supported on said platform, a horizontally disposed shaft journaled for rotation on the upper ends of said standards, a motor mounted on said platform, means operatively connecting said motor to said shaft, a hub of fibrous material carried by said shaft intermediate its ends, said hub having a plurality of circumferentially spaced inclined slots therein, one edge of a plurality of blades secured in said slots, said blades radiating outwardly from said hub and constructed of a relatively thin fibrous material, brace means for retaining said blades in a transversely curved position, and cushion means supporting said platform.

3. The combination of claim 2 wherein said cushion means includes a plurality of legs carried by said platform and suction caps carried by the lower ends of said legs.

4. An exhaust fan comprising a portable base, a pair of spaced parallel standards carried by said base, bearing blocks at the upper ends of said standards, bearing members removably carried by said bearing blocks, a driven shaft journaled for rotation in said bearing members, a

pulley fixedly carried by said shaft, a motor mounted on said platform, said motor having a drive shaft, a further pulley carried by the drive shaft, an endless belt connecting said pulleys, a hub mounted on said driven shaft between said bearing members, said hub having a plurality of inclined slots, one edge of a plurality of blades secured in said slots, said blades radiating outwardly from said hub and constructed of a relatively thin fibrous material, brace means for retaining said blades in a transversely curved position, and means for reducing the vibration of said platform resulting from said motor.

5. The combination of calim 4 wherein said last-mentioned means includes a plurality of legs carried by said platform and suction cups carried by the lower terminals of said legs.

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