

Oct. 5, 1948.

P. ANDERSON

2,450,708

CENTRIFUGAL FAN

Filed Dec. 23, 1946

2 Sheets-Sheet 1

FIG. 1.

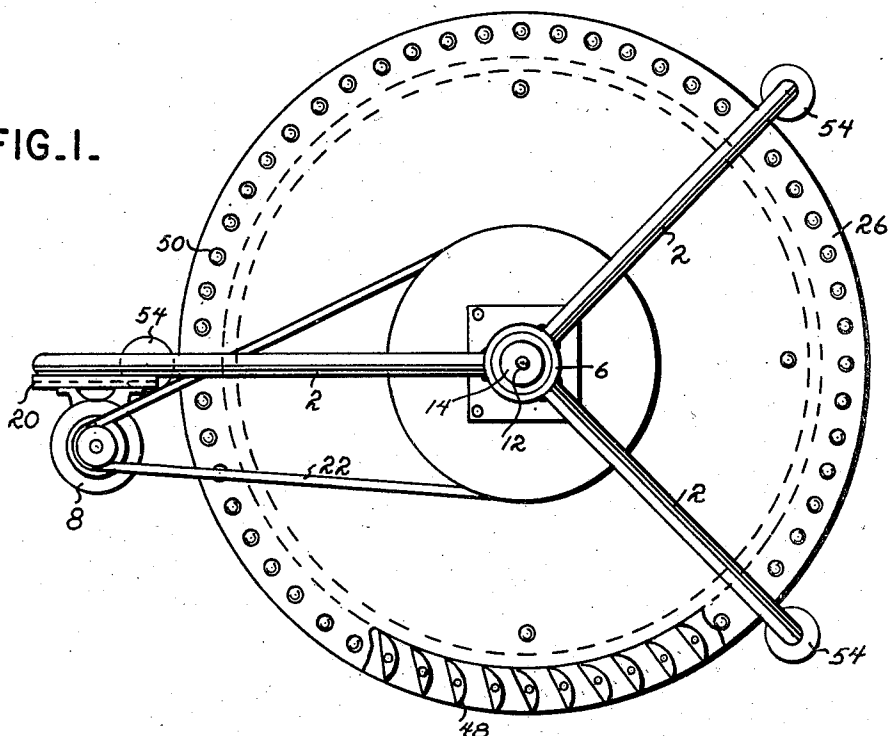
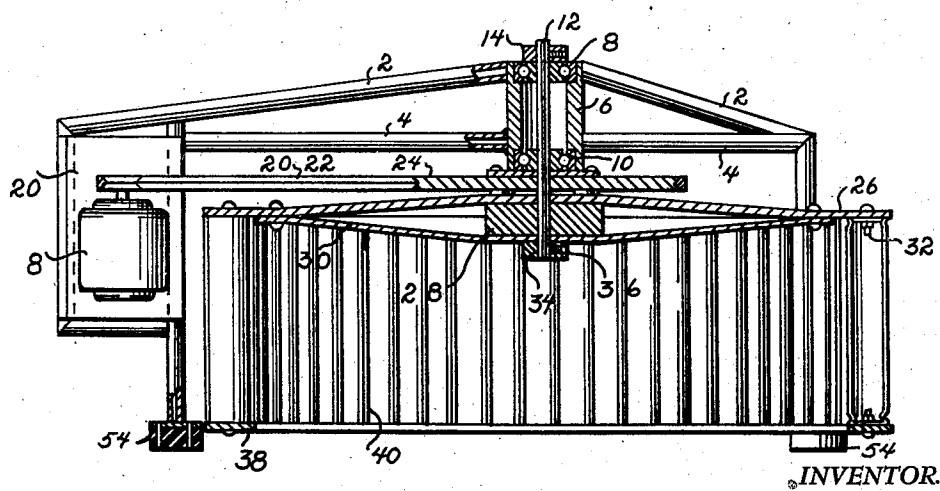


FIG. 2.



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FIG. 3.

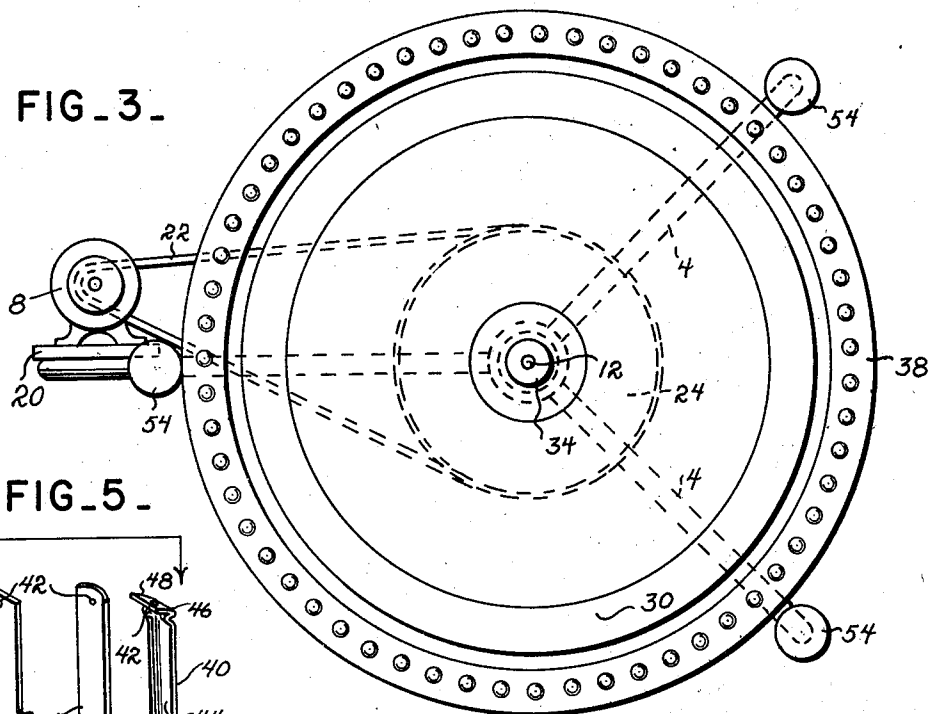


FIG. 5.

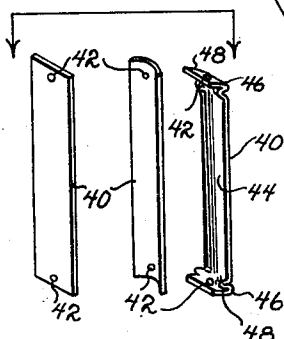
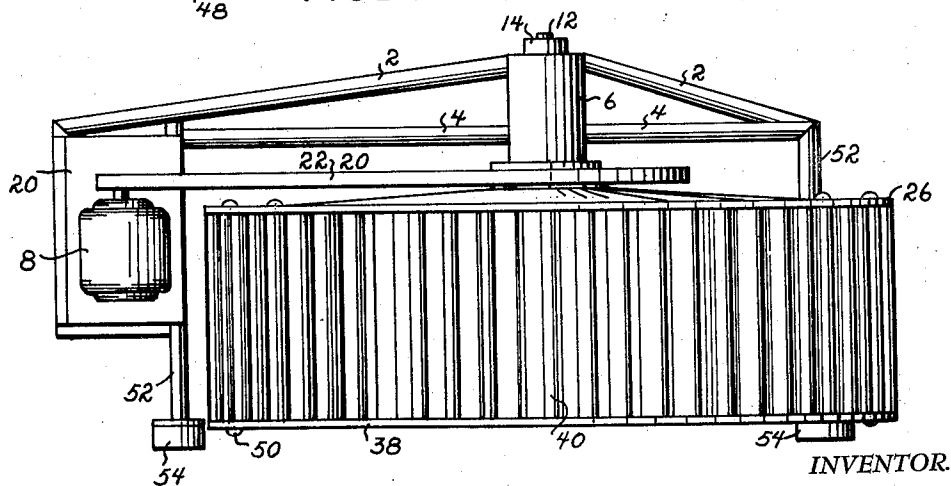


FIG. 4.



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UNITED STATES PATENT OFFICE

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CENTRIFUGAL FAN

Paul Anderson, San Antonio, Tex.

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2 Claims. (Cl. 230-117)

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My present invention relates to an improved centrifugal fan of the type especially designed for use in exhausting air from the upper floor of a building into and through an attic. The fan of my invention is normally placed over an opening in the ceiling of the upper floor such as a stairway or trap door, and the fan will draw the air to be exhausted up into the fan from which it will be discharged by centrifugal action.

The fan of my invention is light in weight, strong and durable and being of large size to move a maximum of air includes certain truss arrangements and features as will be hereinafter more fully described.

In the accompanying drawings I have illustrated one complete example of the physical embodiment of my invention according to the best mode I have thus far devised, but it will be understood that various changes and alterations may be made in the exemplified structure within the scope of the appended claims.

In the drawings:

Figure 1 is a top plan view of the fan of my invention.

Figure 2 is a vertical sectional view.

Figure 3 is a bottom plan.

Figure 4 is a side elevational view, and

Figure 5 is a combined view showing stages of preparing the fan blades.

Referring now to the drawings I have illustrated the preferred embodiment of my invention as including the radially-disposed upper inclined spider frame arms 2 and the lower horizontally-disposed spider frame arms 4 forming upper and lower supports for the vertically-disposed cylindrical support or housing 6 in which are located ball bearings 8 and 10 for the shaft 12. Collar 14 on the upper end of the shaft is secured by set screw 16.

A motor 18 is mounted on the vertically-disposed bracket 20 on one side of the spider frames and a V-belt 22 drives a horizontally-disposed disk 24 fixed on the shaft 12.

A circular plate 26 is positioned on the shaft for rotation therewith and this disk is upwardly dishd on the spacer disk 28. A lower convex baffle plate 30 under the disk 28 is downwardly dishd, the two plates 26 and 30 lens type baffle, the two plates being secured as by units 32, and the collar 34 retaining the assembly on the shaft and secured by set screw 36.

A lower open center ring 38 is provided to secure the lower ends of the spaced, parallel, vertically-disposed blades 40. These blades are formed of elongated rectangular metal plates

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apertured at 42 and as seen in Figure 5 the plates are bent transversely as at 44 and the ends are then crimped at 46 so that the flanges 48 may be attached to the plate 26 and the ring 38 by bolts or rivets 50.

Vertically-disposed, spaced, parallel legs 52 depending from the upper frame arms 2 have disks and rubber pads 54 to support the fan with a minimum noise transmission above the floor level.

With the assembled fan in position and rotating, the blades will create a suction through the ring 38 and the lens type baffle will aid the movement of air upwardly through the ring and out between the spaced blades. It will be noted that the driving motor is located within the horizontal planes of the fan so that the motor will be cooled by the blast of air exhausted through the blades.

From the above description it will be apparent that I have devised a fan for the purpose described, light in weight and durable and designed to efficiently withdraw and discharge hot air from a dwelling or other building at a minimum cost.

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

1. In a centrifugal fan, a plurality of spaced parallel vertically-disposed legs supported on a horizontal surface, a first plurality of horizontally-disposed radial frame arms secured to the upper ends of said legs, a vertically-disposed cylindrical housing supported by the other ends of said frame arms, a shaft rotatably mounted in said housing, a circular plate positioned below said frame arms and secured to said shaft, a convex baffle plate arranged below said circular plate and secured to the latter, a plurality of spaced parallel vertically-disposed blades each having its upper end secured to said circular plate, a ring spaced below said circular plate and secured to the lower ends of said blades, a horizontally-disposed pulley interposed between said circular plate and said frame arms, a vertically-disposed bracket secured to one of said legs, a drive motor carried by said bracket, and belt means operatively connecting said pulley to said motor.

2. In a centrifugal fan, a plurality of spaced parallel vertically-disposed legs supported on a horizontal surface, a first plurality of horizontally-disposed radial frame arms secured to the upper ends of said legs, a vertically-disposed cylindrical housing supported by the other ends of said frame arms, a shaft rotatably mounted in said housing, a circular plate positioned below said frame arms and secured to said shaft, a convex baffle plate arranged below said circular plate

and secured to the latter, a plurality of spaced parallel vertically-disposed blades each having its upper end secured to said circular plate, a ring spaced below said circular plate and secured to the lower ends of said blades, a horizontally-disposed pulley interposed between said circular plate and said frame arms, a vertically-disposed bracket secured to one of said legs, a drive motor carried by said bracket, belt means operatively connecting said pulley to said motor, and resilient means on the lower end of each of said legs for reducing noise transmission when said fan is being used.

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The following references are of record in the file of this patent:

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