Feb. 22, 1938. A. L. BAKER 2,108,841

FAN

Filed Oct. 30, 1936

Fig. 1

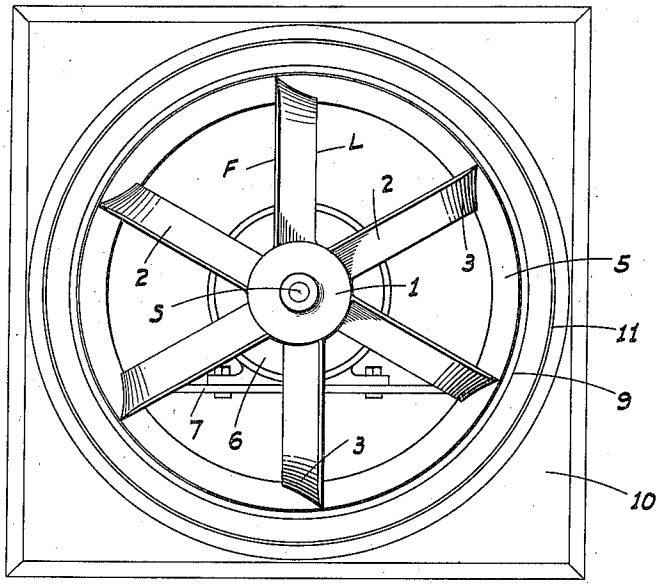
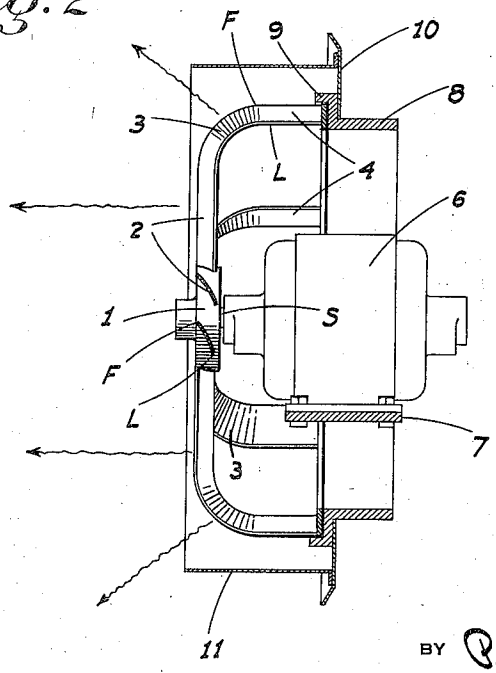


Fig. 2



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1 Claim. (Cl. 230—254)

This invention relates generally to electric fans and in particular relates to an improved form and arrangement of the fan blades.

The principal object of my invention is to provide a fan whose blades are so designed that the fan, when driven by a motor of predetermined power, will move a greater volume of air and at higher static pressure than a fan of the same diameter but of the customary type.

An additional object of my invention is to provide a fan which, when employed as a non-oscillating fan, will create an air stream of substantially the same scope as an oscillating fan of conventional type.

A further object of the invention is to produce a simple and inexpensive device and yet one which will be exceedingly effective for the purpose for which it is designed.

These objects I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claim.

In the drawing similar characters of reference indicate corresponding parts in the several views:

Figure 1 is a front elevation of my improved fan as mounted for use.

Figure 2 is a vertical sectional elevation of the fan.

Referring now more particularly to the characters of reference on the drawing, my improved fan comprises a hub 1 having fan blades of constant pitch throughout their extent as shown, extending therefrom in circumferentially spaced relation. The initial or inner portion 2 of each blade projects substantially radially from the hub and at right angles to the axis thereof.

The blades, some distance from the hub, are bent rearwardly on an easy curve as at 3, said curve being of such extent that the outer portion 4 of each blade is disposed substantially parallel to the axis of the hub. Although in the present embodiment of the invention the blade portions 4 are preferably disposed substantially parallel to the axis of the hub, or at 90° to the blade portion 2, in practice this angle may be varied as operating conditions may require. It is also to be understood that different numbers of blades, other than six, may be used.

Each of the blades of the fan are of the same width throughout, with straight edges; the outer surface of each blade being concave. The leading edge L of each blade is disposed rearwardly of the following edge F, as is usual in fan blade construction, in order to provide the necessary "bite". Also, the leading edges of said bent-back portions 4 are parallel to the axis of the fan, as shown. The outer ends of the fan blades are secured to a connecting ring 5 which maintains the blades in rigid relationship.

In the present instance, the fan is mounted as follows:

The hub 1 is secured to shaft S of a motor 6 which is supported on a cross plate 7 within a cylindrical housing 8, the shaft S of the motor extending axially of the housing. The housing 8 is formed with a projecting flange 9 which concentrically surrounds ring 5. A rectangular supporting plate 10 is secured to housing 8 and a cylindrical hood 11 projects from the plate 10 in surrounding relation to the fan.

In use, the fan assembly is mounted so that the hood projects through a wall opening in the usual manner. Due to its unique fan blade construction, the fan has a much greater capacity than an ordinary fan of the same diameter. Not only is the volume increased but the static pressure of the air stream is materially greater than with a fan of ordinary construction.

A further advantage of my fan resides in the fact that the air stream from the fan is not only directed straight ahead of the fan but is also directed outwardly in a widening circle, as shown by the arrows in Fig. 2. The fan thus not only produces the effect accomplished by an oscillating fan, but gives an even greater distribution of the air.

From the foregoing description it will be readily seen that I have produced such a device as substantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claim.

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

A fan assembly comprising a hub, blades mounted on and initially radiating from the hub and formed with outer portions extending rearwardly relative to the flow of air past the fan, a ring concentric with the hub connecting the rear ends of said outer portions, a stationary band forming an air intake passage projecting rearwardly from the ring concentric therewith, the bores of the ring and band being substantially the same, and a flange on said band overhanging the peripheral edge of the ring.

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