

(No Model.)

H. G. MORRIS.
FAN.

No. 541,000.

Patented June 11, 1895.

FIG. 1.

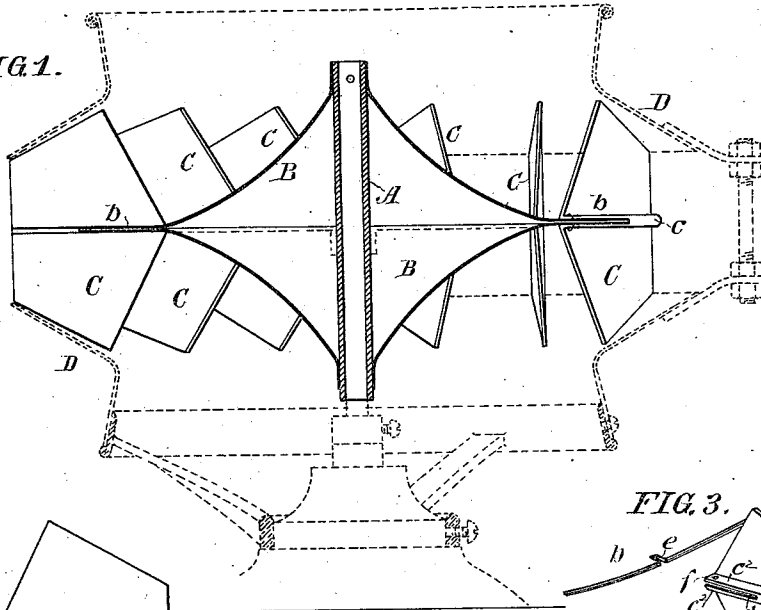


FIG. 6.

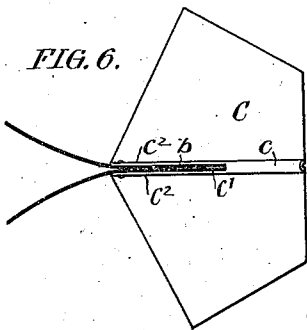


FIG. 5.

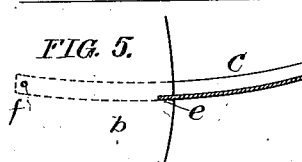


FIG. 3.

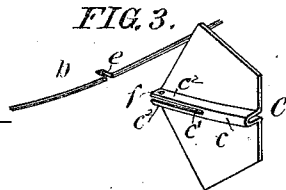


FIG. 4.

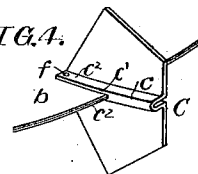
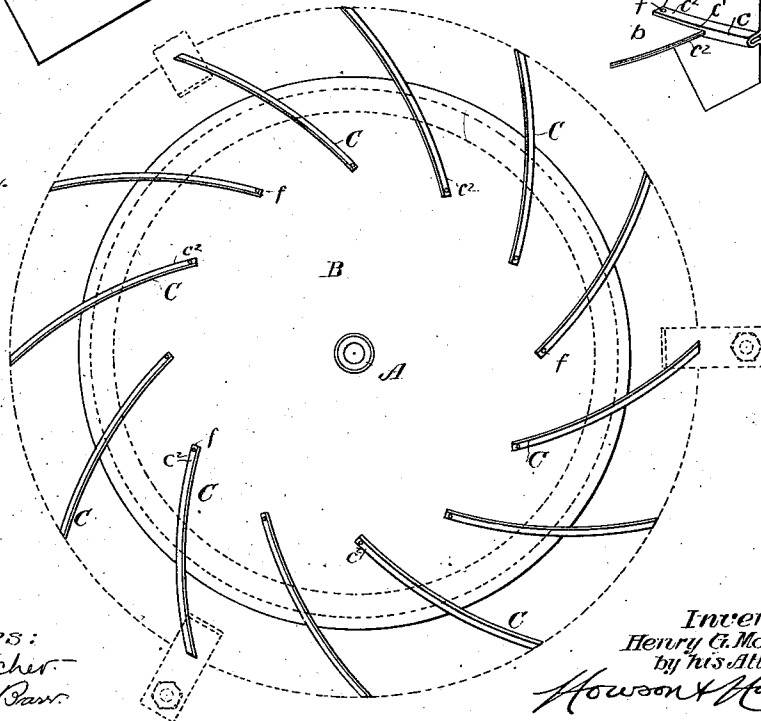


FIG. 2.



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UNITED STATES PATENT OFFICE.

HENRY G. MORRIS, OF PHILADELPHIA, PENNSYLVANIA.

FAN.

SPECIFICATION forming part of Letters Patent No. 541,000, dated June 11, 1895.

Application filed September 22, 1894. Serial No. 523,801. (No model.)

To all whom it may concern:

Be it known that I, HENRY G. MORRIS, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Fans, of which the following is a specification.

My invention relates to improvements in the construction of the driven portion of a fan or blower, and the object of my invention is to make this portion of the fan accurately and economically. This object I attain in the following manner, reference being had to the accompanying drawings, in which—

Figure 1 is a sectional elevation of my improved fan, showing the casing in dotted lines. Fig. 2 is a plan view. Fig. 3 is a perspective view showing one of the blades detached. Fig. 4 is a perspective view showing the blades attached to the body, and Figs. 5 and 6 are views in detail showing the method of attaching the blades to the body.

My improvement is especially applicable to small fans used for cooling and ventilating rooms, but it will be understood that the driven portion of a large fan or blower may be made in accordance with my invention.

A is a hollow shaft or sleeve which is adapted to be secured to the driving shaft in any suitable manner.

B B are two deflecting cones formed of sheet metal, as shown in Fig. 1; each cone being extended to form flanges b. The deflecting cones are secured to the shaft A in any suitable manner.

C are the blades which are shaped in the present instance to fit the casing D, shown by dotted lines in Fig. 1, but it will be understood that they may be shaped differently to fit other casings. Each blade has a struck up rib c at the back, and this rib is partly slotted at c', so that the inner portion of the blade will pass over the flanges b of the cones. The cones are notched at e, so as to receive a portion of the blade, as shown in Figs. 4 and 5.

By slotting the blade, as described, I form two flanges c'', and I perforate these flanges at one end, so that a rivet or screw f, shown in Figs. 4 and 6, can be passed through the

flanges and through the body, thus securing the blade rigidly to the body.

In small fans I have found it only necessary to secure the blades with one rivet, but in larger fans a series of rivets or bolts may be used, if found necessary.

By forming the blades in the manner described, I not only give the blade the required rigidity, but also provide ready means for attaching the blade to the body.

In some instances, where a fan is made having a single inlet opening, one of the disks may be flat, as shown by dotted lines in Fig. 1, and the peculiar form of blade may be used in connection with a single flat disk or plate.

I claim as my invention—

1. The combination in a fan, of the body, blades secured thereto, each blade having a struck up rib, and the rib portion of each blade being partly cut to form flanges by which the blade is secured to the body, substantially as described.

2. The combination of the body having flanges in its periphery, a series of blades partly slotted and having flanges on each side of the slot, each blade being adapted to a notch in the body, and secured thereto at the inner end, substantially as described.

3. The combination of the two flanged cones secured together, with ribbed blades, the rib of each blade being slotted forming flanges, with means for securing the flanged blades to the cones, substantially as described.

4. The combination of the two flanged cones, the hollow shaft by which the cones are secured together, sheet metal blades having struck up ribs, the rib of each blade being slotted forming flanges, and means for securing the blades to the cones, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HENRY G. MORRIS.

Witnesses:

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JOSEPH H. KLEIN.