(No Model.)

M. C. HUYETT.

FAN BLOWER.

No. 303,375. Patented Aug. 12, 1884.

Fig. 1

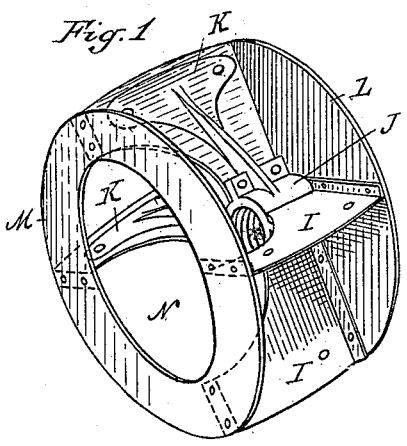


Fig. 2

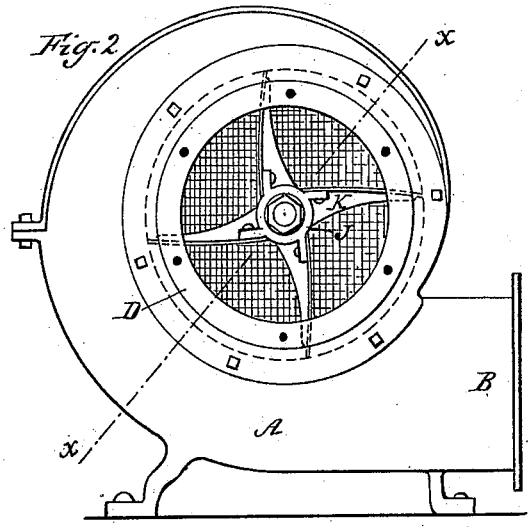
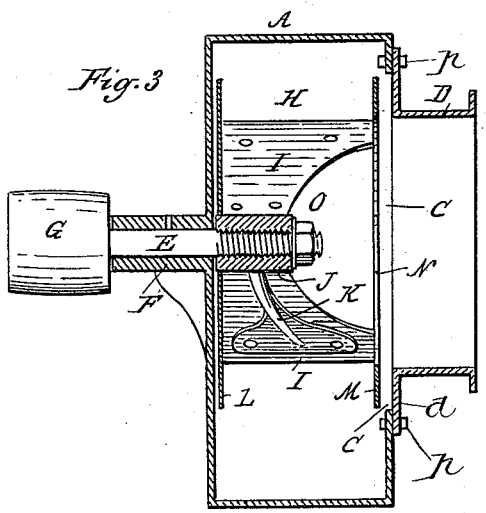


Fig. 3



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UNITED STATES PATENT OFFICE.

MILES C. HUYETT, OF DETROIT, MICHIGAN.

FAN-BLOWER.

SPECIFICATION forming part of Letters Patent No. 303,375, dated August 12, 1884.

Application filed February 23, 1884. (No model.)

To all whom it may concern:

Be it known that I, MILES C. HUYETT, of Detroit, in the county of Wayne and State of Michigan, have invented a new and useful Improvement in Fan-Blowers, of which the following is a specification.

Figure 1 is a perspective of the fan-wheel. Fig. 2 is a vertical section through the fan and case, and Fig. 3 is a section on the line *x x*, Fig. 2.

My invention consists in an improved construction of a fan-blower, hereinafter fully pointed out.

A represents a fan-case, B representing the discharge or outlet. The fan-wheel which revolves in this case is constructed as follows:

L represents a metal disk having an opening through its center just large enough to admit the hub of the wheel, as shown in the drawings, or the shaft E, which carries the wheel, and M represents a metal ring of the same diameter as disk L, having therein an opening, N, the full size of the suction or inlet opening.

J represents the hub of the spider, usually made of cast-iron, having the arms K strengthened by suitable ribs.

I represents the blades or buckets of the wheel, usually made of galvanized iron, and long enough to reach from the hub J to the periphery of disk L and ring M, and riveted to the arms K of the spider, and to disk L and ring M, the edges of the blades being turned to form flanges for that purpose, as shown in Fig. 1. It will be noticed that hub J of the spider is set close to disk L, and only extends about half-way to the plane of ring M, that blades I are cut on an easy curve from the inner edge of ring M to the outer end of hub J, and that the arms K of the spider are curved toward ring M. The object of this mode of construction is to make as large an inlet as possible, and to avoid having the blades close to the inlet-openings, to admit of easy and unobstructed access of shavings and sticks to the fan-wheel, and prevent sticks from catching in and breaking the blades.

E represents the shaft which carries the fan-wheel, and the hub J may be fastened to this shaft by a nut, O; but I prefer to cut a female screw-thread on the inside of hub J, a male thread on the end of shaft E, and screw hub J on the shaft, as shown in the drawings, cutting the thread so that as the shaft turns it will constantly tend to screw into the hub until stopped by a shoulder or collar placed on the shaft.

F represents a bearing for shaft E, either made on the side of the fan-case, or placed close thereto, and G represents a pulley by which shaft E may be driven. By this construction I bring the hub of the fan-wheel much nearer the shaft-bearings than can be done when the hub J lies midway between the sides of the fan-wheel, am enabled to dispense with one of the bearings usually used, and avoid the tendency of the wheel to draw away the lubricant used on such bearing, which is a constant source of difficulty in fan-wheels hung with two bearings.

C represents an opening made through the suction side of fan-case *a*, a little larger in diameter than the fan-wheel.

D represents a short piece of suction-pipe, having thereon a flange, *d*, which is bolted to the fan-case by bolts P. This construction permits the removal of the fan-wheel at any time by simply taking out bolts P, removing pipe D, and disconnecting hub J from shaft E, when the fan-wheel may be taken out of the case through opening C.

I am aware that a fan-wheel has heretofore been composed of fan-blades secured to a rear rotating disk, the outer edges of such blades being cut away opposite the ingress-opening of the fan-casing. Such, therefore, I do not broadly claim.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a fan-wheel, the combination of a solid disk having an opening in the center thereof to receive the shaft, a ring, a spider having a central hub placed close to said solid disk and extending only partially across the width of the wheel, and also having extending arms, and blades secured to and between said solid disk and ring, and also secured to said spider, and cut away from the outer end of the hub of said spider to the inner edge of said ring, substantially as shown and described.

2. A fan-wheel composed of blades secured between a solid disk and a ring, in which said blades are cut away for a portion of their width opposite the opening in said ring, substantially as shown and described.

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Witnesses:

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