

L. D. WHEELER.
FAN BLOWER.

No. 108,949.

Patented Nov. 1, 1870.

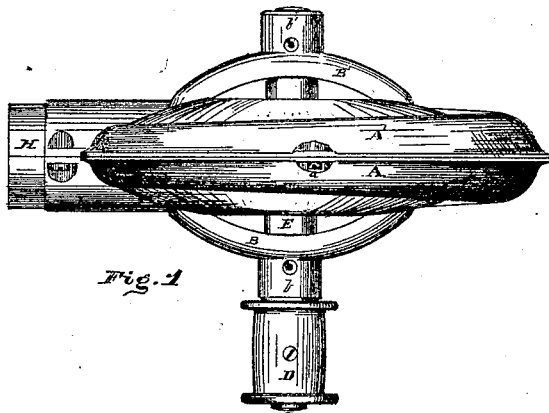


Fig. 1

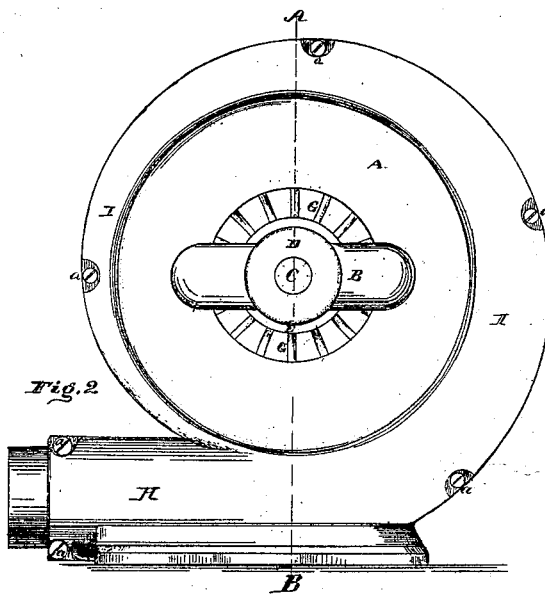


Fig. 2

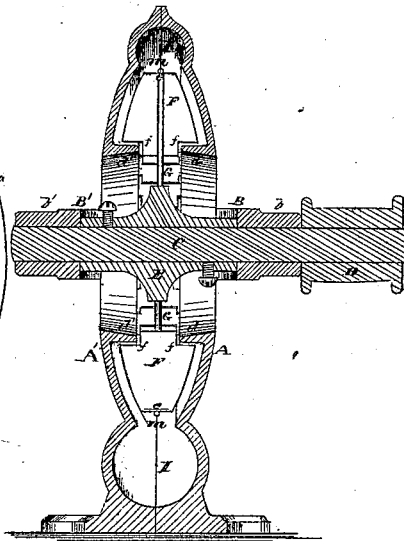


Fig. 4

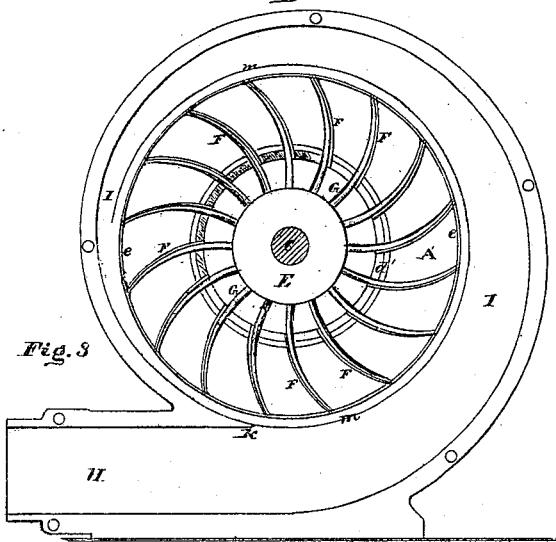


Fig. 3

Witnesses

Wm. H. Dodge
Geo. H. Miller

Inventor

Lorenzo D. Wheeler

United States Patent Office.

LORENZO D. WHEELER, OF FITCHBURG, MASSACHUSETTS, ASSIGNOR OF ONE-THIRD HIS RIGHT TO HUBBARD H. BEIGHAM, OF SAME PLACE.

Letters Patent No. 108,949, dated November 1, 1870.

IMPROVEMENT IN FAN-BLOWERS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, LORENZO D. WHEELER, of Fitchburg, in the county of Worcester and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Fan-Blowers; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 represents a plan view of my improved fan-blower;

Figure 2 represents a side view of the same;

Figure 3 represents a side view of the interior, one side of the case being removed; and

Figure 4 represents a central vertical section on line A B, fig. 2.

To enable those skilled in the art to which my invention belongs to make and use the same, I will proceed to describe it more in detail.

The nature of my invention consists—

First, in the combination, with the fans, of a periphery supporting-wire, substantially as hereinafter explained.

Secondly, in an improved fan-blower, the parts of which are constructed and combined together substantially as hereinafter described.

Thirdly, in the combination, with the peculiarly-constructed fans, of inwardly-projecting flanges, substantially as hereinafter described.

The outside case of my improved fan-blower is made in two parts, indicated in the drawing by the letters A A', each of the parts forming one side of the case, and the two sides are secured to each other by means of screws, *a*, which pass through flanges at the edges of the side pieces, as shown in the drawing.

Each of the sides A and A' is formed with an opening in its center, through which the air passes to the interior of the case, and curved arms B B' are formed on the outer side of the case across said openings, to support the bearings *b b'*, in which turns the fan-shaft C, said shaft being arranged through the air-openings in the position shown in the drawing.

The driving-pulley D is arranged upon the end of the shaft C outside of the bearing *b*, and the hub E of the fan-wheel is arranged between the two arms B B', so that its central part will be in line with the center of the space between the two sides of the case A A'.

The fans F are secured to arms G, which radiate from the central part of the hub E, their outer ends being curved backward, as indicated in fig. 3.

The outer ends of the fans are made narrower than

their inner ends, which latter are notched out as shown at *f*, to match the inwardly-projecting flanges *d d'*, which surround the central openings.

The outer ends of the fans are secured to a periphery wire, *e*, which acts as a brace to keep the fans steady, thereby making the fan-wheel very strong.

The central portion of the case is made to conform to the curvature of the sides of the fans, the two sides being drawn toward each other, so that, just beyond the circumference of the fan-wheel, at the point *m*, the internal diameter of the case is about equal to the width of the fans at their outer ends.

Beyond the point *m* the case is rounded outward, to form a spiral air-passage, I, commencing at the front of the case, and gradually increasing in diameter until it merges into the delivery-pipe H, to which the conducting-pipe is to be attached.

The air-passage I is circular in form, and its diameter increases equally in all directions, while the space-way *n*, between the air-passage I and the fan-chamber, is the same width throughout its full circumference.

By reference to the drawing, and from the foregoing description, it will be seen that the construction of my improved fan-blower is such that the size of the air-passage I gradually increases, to accommodate the increasing volume of air, so that an equal current is radiated from the fans throughout the full circumference of the fan-wheel, whereby no loss of power is occasioned by the fans holding the air, nor is there liability of the air being drawn into the fan-chamber from the discharging-tube at their point of junction at K.

And again, the form of the fans is such that the air is rapidly drawn in and passed through the fan-wheel, so that the blast produced by the blower is very strong, while, at the same time, it requires comparatively but little power to drive the fans.

Having described my improved fan-blower,

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

1. The combination of the peculiarly-constructed fans F with the inwardly-projecting flanges *d d'*, substantially as and for the purposes stated.

2. An improved fan-blower, the parts of which are, constructed and combined together, as herein shown and described.

LORENZO D. WHEELER.

Witnesses:

THOS. H. DODGE,
GEO. H. MILLER.