

(No Model.)

H. H. PACKER.

FAN BLOWER.

No. 310,219.

Patented Jan. 6, 1885.

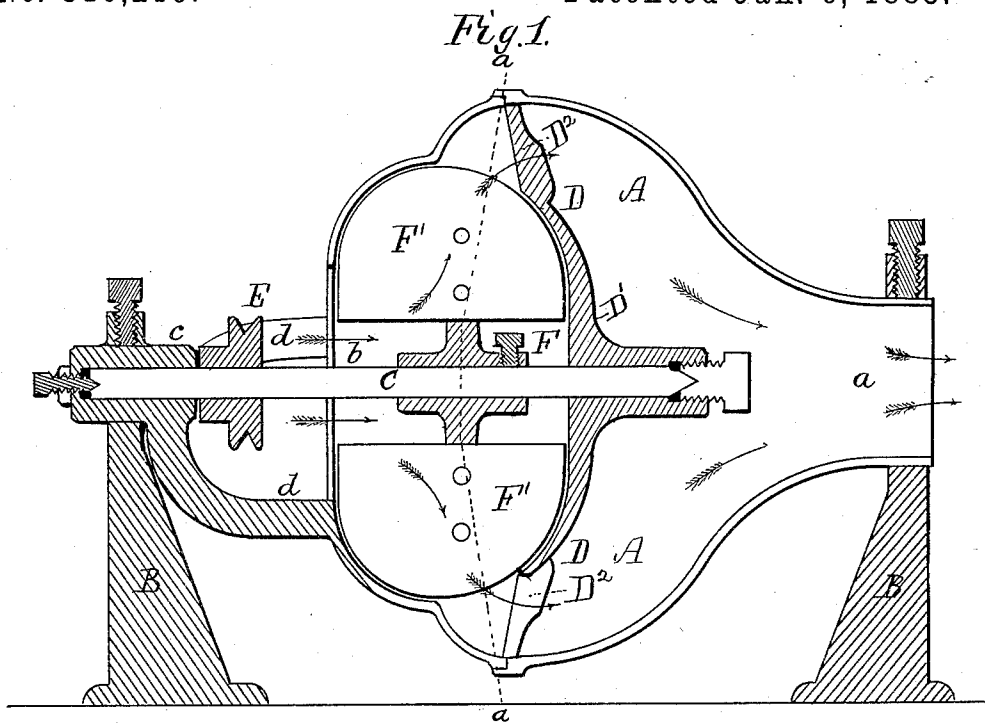
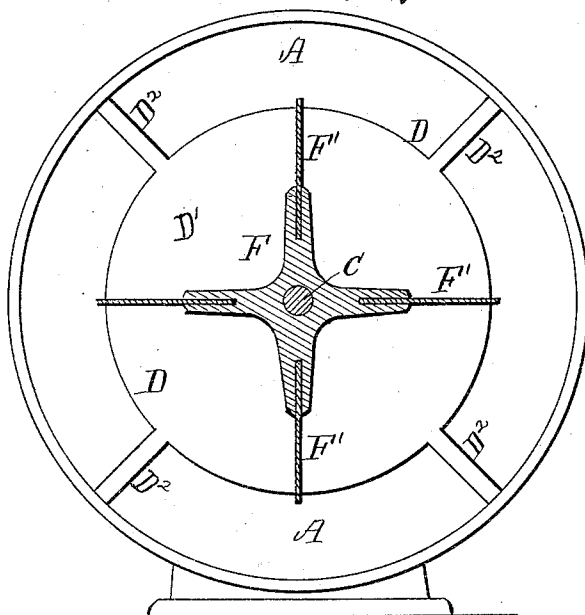


Fig. 2.
Outline view of Fig. 1.



Witnesses.
S. C. Means.
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UNITED STATES PATENT OFFICE.

HENRY HARRISON PACKER, OF BOSTON, MASSACHUSETTS.

FAN-BLOWER.

SPECIFICATION forming part of Letters Patent No. 310,219, dated January 6, 1885.

Application filed September 24, 1883. (No model.)

To all whom it may concern:

Be it known that I, HENRY HARRISON PACKER, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Fan-Blowers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to that class of blowers in which a case open at both ends incloses a rotary fan, which draws air in at one end of said case and discharges it at the other; and said invention consists in the construction and combination of parts hereinafter set forth.

The drawings accompanying this specification represent in Figure 1 a vertical and longitudinal section, and Fig. 2 a cross-section, of a fan-blower containing my invention.

In said drawings, A represents a longitudinal bulb-shaped case or cylinder, supported at each end in upright standards B B in such manner as to be changed in position bodily and axially within such bearings to adapt it to changes in direction of the driving-belt.

C represents a horizontal rotary shaft disposed axially within the case A, one end of such shaft being stepped in a bar or open partition, D, spanning the interior of the case near the outlet end *a* of the latter, while the opposite end of such shaft extends through the inlet-mouth *b* of such case, and is journaled in a hub, *c*, connected with the case A by arms *d d*. The pulley which rotates the shaft C is shown at E as secured to the front end of such shaft and located between the front end, *b*, of the case and the hub *c*, before named.

In setting up this machine the position or direction of the driving-belt is to be ascertained, and the case A then turned bodily in its support to such a position that the arms *d d* offer no obstruction to the belt.

F in the drawings represents a fan composed

of a series of vanes, F' F', secured to and radiating from the shaft C, and located within the body of the case A, these vanes being of such shape as practice may determine best in any given instance. As shown in the drawings, they are simply flat plates of sheet metal secured at their inner edges in a suitable manner to the shaft. The front edges of these vanes rotate in close proximity to the inner wall of the case A in order that no appreciable amount of air may find an outlet from the front end of the case, and in some instances an annular flange may be secured to the interior of the case and surround the front ends of the vanes to prevent such passage of air. The central portion, D', of the partition D is solid and of a diameter equal to or practically equal to a circle described by the outer edges of the vanes in rotation, and the outer part of said deflector consists of arms D², which radiate from said central portion, D'. These arms are attached to the casing A, and the openings between them allow the passage of air from the fan or blower F, which is behind said deflector, as shown. The fan being put in rotation by and with the shaft C, air is drawn into the case A by the centrifugal force of the fan and thrown off from the edges of the vanes to the inner circumference of the case A. If air had free access to both ends of the fan, no circulation through the case A would take place; but the partition D constitutes a deflector to prevent the air, after having been thrown from the vanes, from returning to the center of such case; hence the current of air induced by the rotating fan is compelled to escape by the outlet *a* of the case. This outlet *a* may be smaller than the inlet *b* if it is desired to compress and increase the velocity of the air-current. The deflector or partition D is concave in shape, allowing the fan F to fit and turn partly in the concavity thereof, and thus economizing space. Its arms are attached to the larger of the two parts or sections of case A at or near the joint between such sections. It therefore serves to brace and strengthen the same.

I claim—

The bulb-shaped case A, consisting of two parts overlapping at the joint, and having an

inlet-opening at one end and an outlet-opening at the other, in combination with a concave deflector, D, attached to one of those two parts at the joint thereof and serving to
5 brace the same, and a rotary fan, F, turning in the concavity of said deflector and the proximate part of said case, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY HARRISON PACKER.

Witnesses:

F. CURTIS,

ALBERT T. HAYDEN.