W. Winter,

Fan Blower,

No. 40,974. Patented Dec. 15, 1863.

Fig. 1.

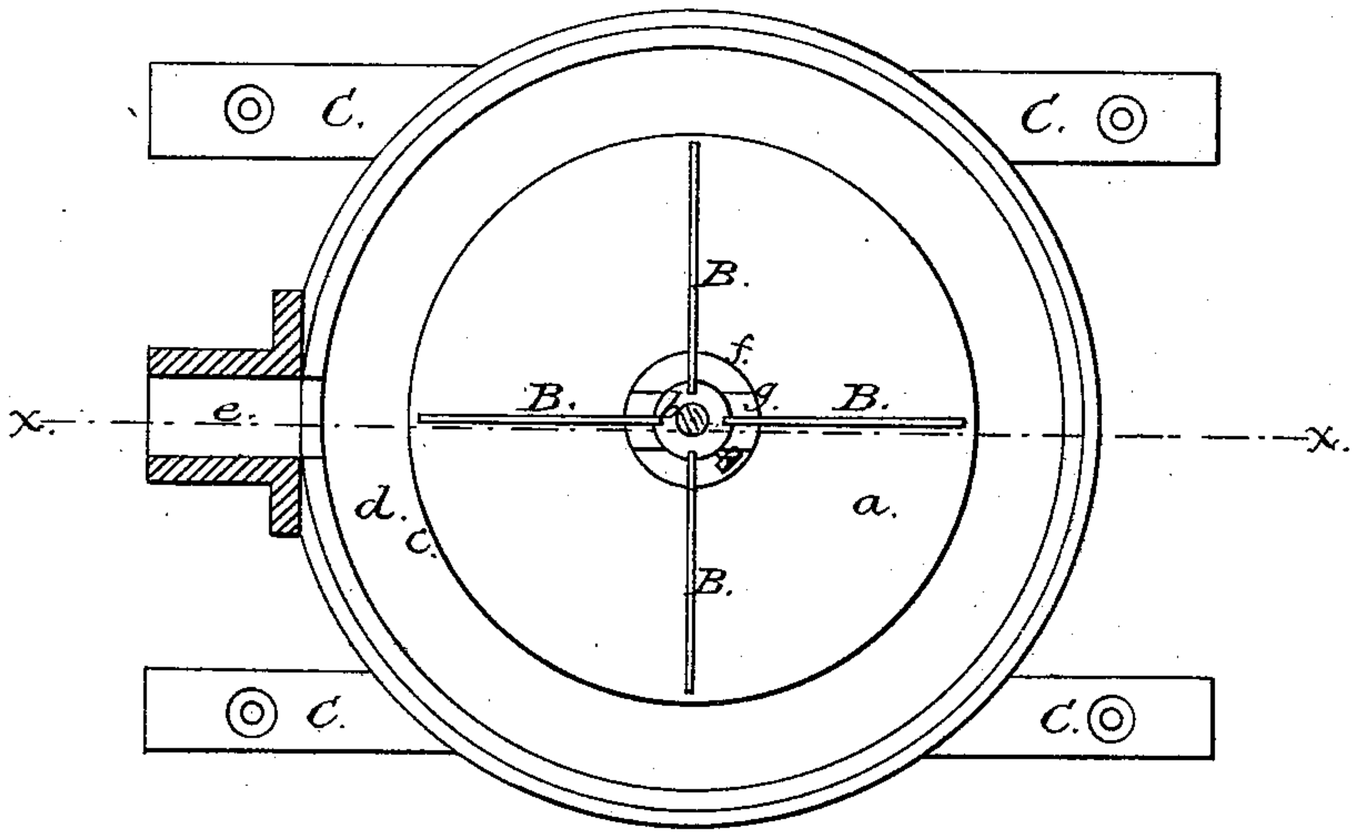
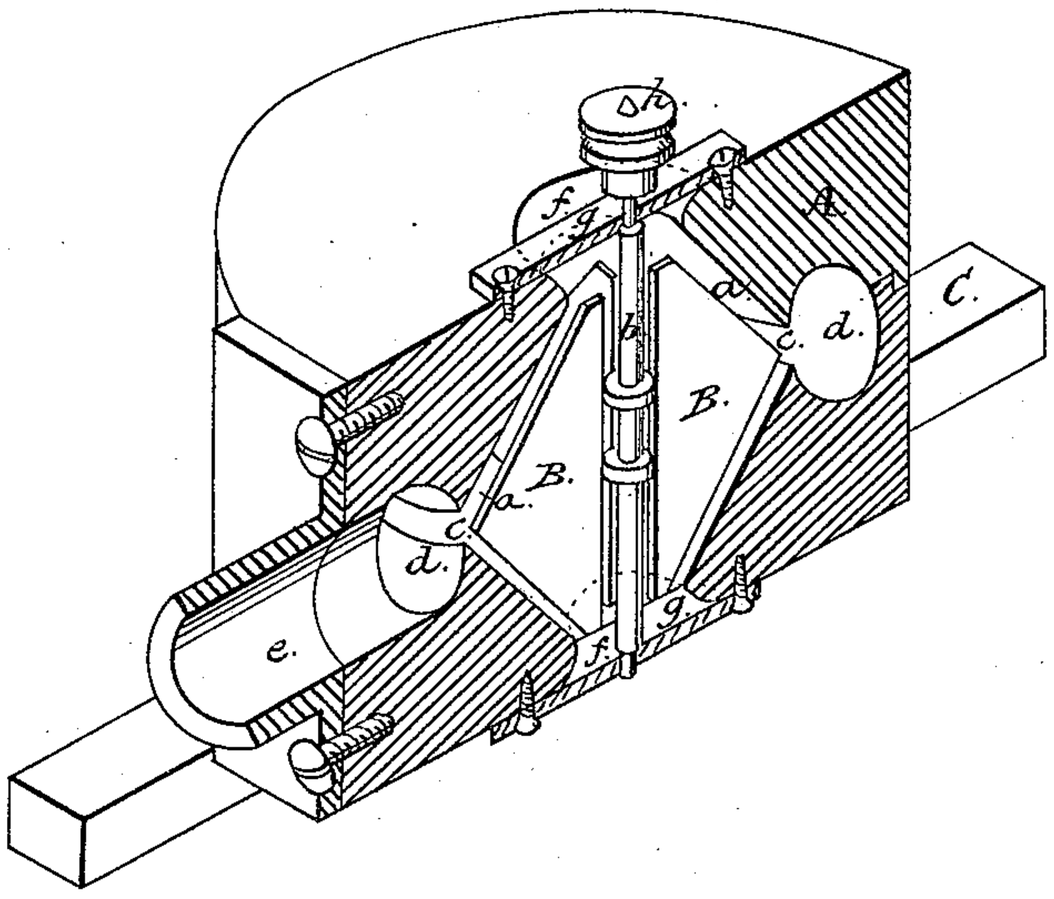


Fig. 2.



Witnesses;

Thos. L. Douglas

Geo. W. Reed

Inventor;

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UNITED STATES PATENT OFFICE.

WILLIAM WINTER, OF PLAINFIELD, NEW JERSEY.

IMPROVEMENT IN FAN-BLOWERS.

Specification forming part of Letters Patent No. **40,974**, dated December 15, 1863.

To all whom it may concern:

Be it known that I, WILLIAM WINTER, of Plainfield, in the county of Union and State of New Jersey, have invented a new and Improved Fan-Blower; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 represents a horizontal section of my invention. Fig. 2 is a perspective sectional view of the same.

Similar letters of reference in both views indicate corresponding parts.

The principal object of this invention is to produce a fan-blower which will have the same effect when worked in either direction, in contradistinction to ordinary fan-blowers, which work in scroll shaped cases, and consequently act in a different manner when turned in one than when turned in the opposite direction.

The invention consists in an annular air-chamber surrounding a double conical cavity with central openings and communicating with the same at its apex, in combination with triangular wings working in said double conical cavity, in such a manner that on imparting to the wings a rapid rotary motion the air passing through the central openings into the double conical cavity is forced in the annular air-chamber, whence it is conducted by a suitable tube or tubes to the place or places where the blast is to take effect.

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

A represents a case, made in two parts, of wood or any other suitable material. This case is provided with a double conical cavity, *a*, formed by rotating an imaginary triangle round the central axis, *b*. The apex of the cavity *a* communicates through a circular opening, *c*, with an annular air-chamber, *d*, which surrounds the cavity *a*, and from which one or more pipes, *e*, lead to the place or places where the draft is to take effect. The cavity *a* communicates, by means of central apertures, *f*, with the open atmosphere, and its interior is occupied by four (more or less) triangular wings, B, which fit nicely into said cavity, and which are secured to the axis *b*, as clearly shown in Fig. 2 of the drawings. The axis *b* has its bearings in bars *g*, secured to the heads of the case A, across the central apertures, *f*, or in suitable boxes secured to said bars, and it is furnished with a pulley, *h*, whereby a rotary motion can be imparted to said axis, together with the wings. The case A may be fastened down to beams C, in a position such as shown in the drawings, bringing the axis *b* in a vertical position; or it may be provided with suitable legs and put up so that the axis assumes a horizontal position.

In imparting to the axis *b*, with the wings B, a rapid rotary motion in either direction, the air is drawn in through the central apertures, *f*, and forced into the annular air-chamber *d*, and from that air-chamber it is conducted through the pipe *e* to the fire, furnace, or other place where the blast is to take effect.

It will be easily understood that the direction in which the axis, with the wings, rotates does not alter the effect of the blower; its action depends entirely upon the triangular shape of the wings and upon the annular air-chamber in which the air drawn in through the central apertures is stored, and from which said air is distributed, as above explained.

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

The annular air-chamber *d* and double conical cavity *a*, with central apertures, *f*, in combination with triangular rotary wings B, constructed and operating substantially as and for the purpose shown and described.

WILLIAM WINTER.

Witnesses:

THOS. L. J. DOUGLAS,

GEO. W. REED.