

T. T. PROSSER.
Fan-Blowers.

No. 145,753.

Patented Dec. 23, 1873.

Fig 1.

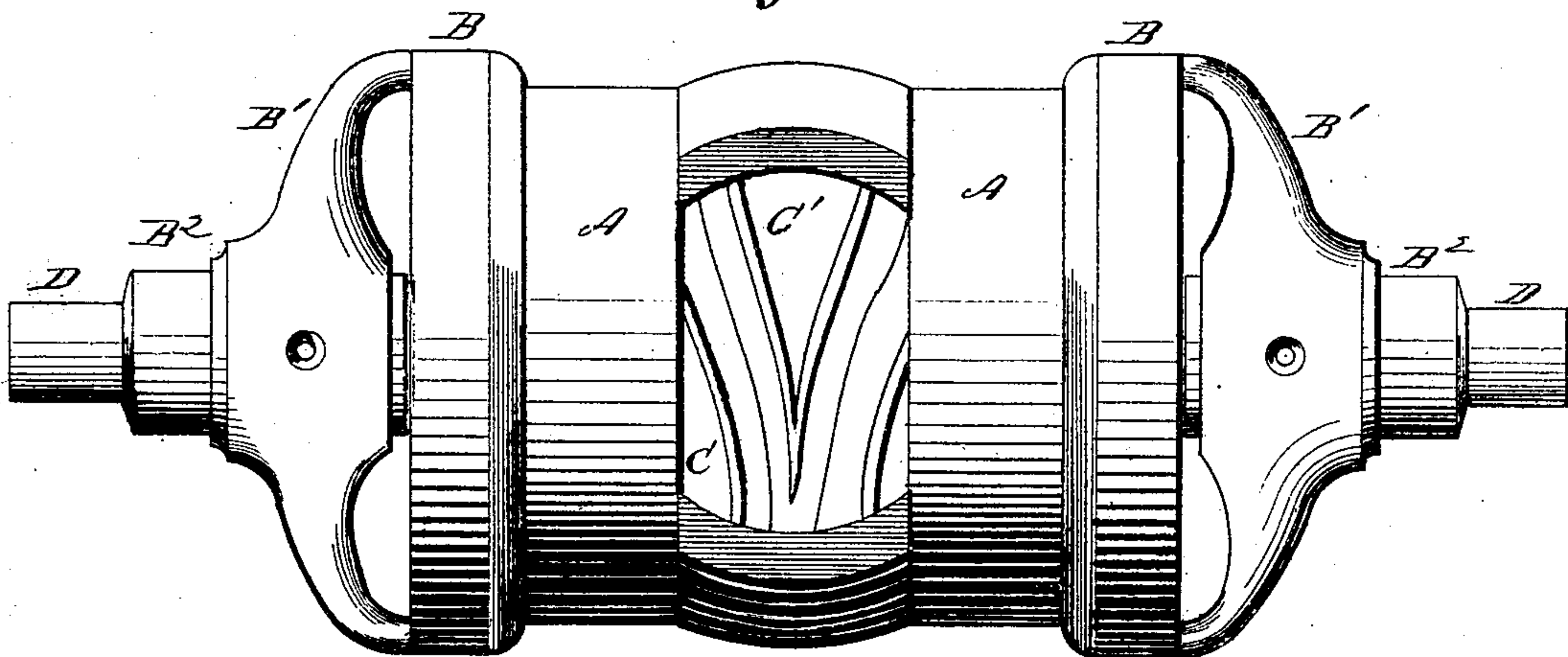
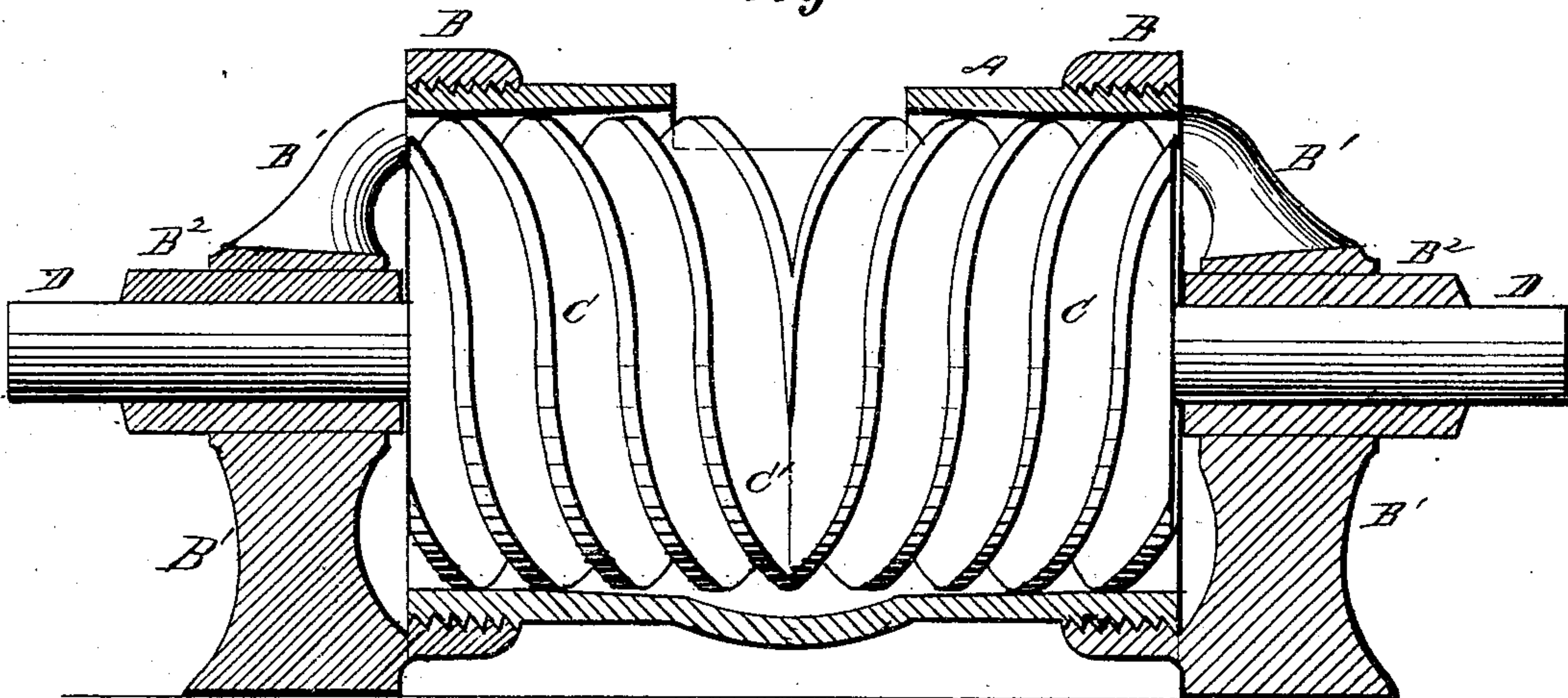


Fig 2.



Witnesses

W. Bradford,
A. Ruppert.

T. T. Prosser

Inventor

D. P. Halloway & Co.
Attys.

UNITED STATES PATENT OFFICE.

TREAT T. PROSSER, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN FAN-BLOWERS.

Specification forming part of Letters Patent No. **145,753**, dated December 23, 1873; application filed July 21, 1873.

To all whom it may concern:

Be it known that I, TREAT T. PROSSER, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Fan-Blowers, of which the following is a specification:

Figure 1 is a plan view of my improved blower, showing the cylindrical case with the exhaust-aperture in the top thereof, the end rings with their journal-bearings, and a portion of the revolving spirally-bladed cylinder; and Fig. 2 is a sectional elevation, showing the manner of attaching the end rings to the case, the position of the spirally-bladed cylinder within the case, and the journals in their bearings.

Corresponding letters denote corresponding parts in both of the figures.

This invention relates to that class of machines which are termed "fan-blowers;" and it consists in the novel construction of its parts, and in their combination and arrangement, as will be more fully explained hereinafter.

In constructing blowers of this type, I use a cylindrical case, A, of metal or of wood, of such diameter and length as may be necessary to give the blower the capacity required. The interior surface of this cylindrical case is bored out from its ends inward for a short distance, in order that the cylinder which revolves within it may nearly touch it at these points. From the bored parts it is slightly increased in its interior diameter to near its center, where a considerable enlargement is made, as shown in Fig. 2 of the drawing, the object being to provide a passage for the air after it has reached the center thereof, and allow it to pass to the eduction-aperture. Upon the outer surface of the case, and at each of its ends, screw-threads are formed for the reception of rings, which form supports for the same, its ends being open for the free admission of air, while an opening is formed in its upper surface at its center for the escape of the same, which opening may be covered with a pipe for conducting the air to any desired locality. Rings B B are screwed upon the ends of case A, said rings being provided with arms B¹ B¹, which extend from their outer edges toward their centers and terminate in a hub, B², through which the shaft of the revolv-

ing cylinder passes, said hub being, by preference, provided with a chamber at or near its center for the reception of oil for lubricating the shaft. The outer surfaces of the lower arms are made to form a base for the blower to stand upon, as shown, the spaces between such arms affording room for the passage of air to the case. This method of constructing the case and its rings makes it certain that the apertures in the hubs of the rings will always be in line with each other, as they are bored in the lathe at the same time that the screw-threads upon the interior surfaces of the rings are formed, and as no loose boxes are required there is no possibility of their becoming disarranged or gotten out of line, so as to cause an increase of friction or a disarrangement of the other parts. Within the case A there is placed a revolving cylinder, C, which is provided upon each of its ends with spiral or screw-threaded blades, the outer diameters of which are such as to cause them to fill the bored portions of the case, but allow them to turn freely therein. The outer ends of these blades are placed at points opposite to each other upon the end of the cylinder, and extend therefrom to a point at or near its center, where they meet and are joined to those upon the opposite end, and at their juncture form a chamber or space, C', into which the air is forced from each end of the blower, and from which it is forced by the converging surfaces of said blades. As there are two of these blades or threads upon each end of the cylinder, it follows that there are two separate and distinct air-passages from each end of the cylinder, and two of the central chambers or spaces C', they being upon opposite sides of the cylinder, and so arranged that a portion of one of them is always opposite the eduction-aperture until some portion of the other is brought into the same relative position, which arrangement insures a steady blast of air from the case whenever the cylinder is being rotated. The shaft upon which the cylinder C is mounted is designated by the letter D, it consisting of a round bar of metal fitted within said cylinder and properly fastened thereto, having journals upon or near its outer ends, which are fitted into the apertures in the hubs of the rings B B, and extending far enough beyond,

at one or both of its ends, to allow a pulley to be attached for giving motion thereto, which motion may be derived from any prime mover.

I have contemplated giving the spiral blades or the threads of the screw a gradually-increasing pitch from their outer ends to the points where they meet at the center of the cylinder; but this form of construction will only be found necessary in cases where it becomes desirable to force the air out of the device under a greater pressure than is ordinarily done with fan-blowers, but in cases where such a necessity arises this form of construction will be found to effect the desired result.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A revolving cylinder for fan-blowers, having upon its periphery and at each of its ends spiral blades or screw-threads, which meet and are joined at or near its center, thus forming chambers, into which the oppositely-moving currents of air are forced, and from which it is expelled by the joint action of the two blades or threads, substantially as set forth.

2. The case A of a fan-blower, having open ends for the admission of air, an interior diameter at its ends equal to the diameter of the cylinder, which revolves within it, and an enlargement at its center, for the purpose of forming an air-chamber, substantially as set forth.

3. The end supports, consisting of a ring, B, for the reception of the ends of the cylinder, arms B¹ B¹ B¹, and a hub for the reception of the shaft, one of said arms forming the base upon which the machine rests, substantially as set forth.

4. The combination of the double-bladed cylinder C, the open-ended case A, and the end rings B, substantially as and for the purpose set forth.

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

TREAT T. PROSSER.

Witnesses:

B. EDW. J. EILS,
W. BRADFORD.