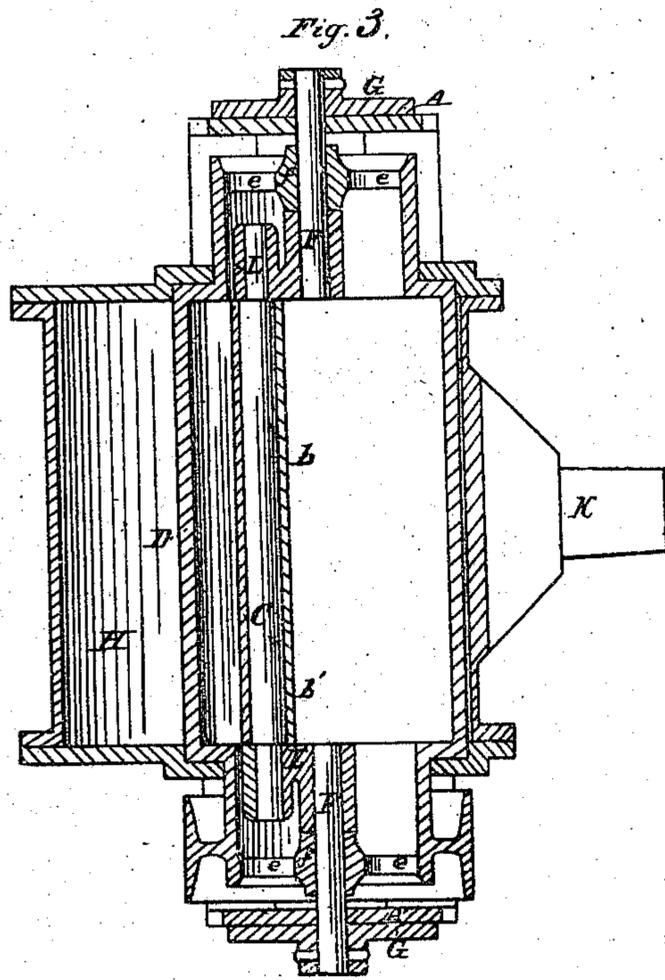
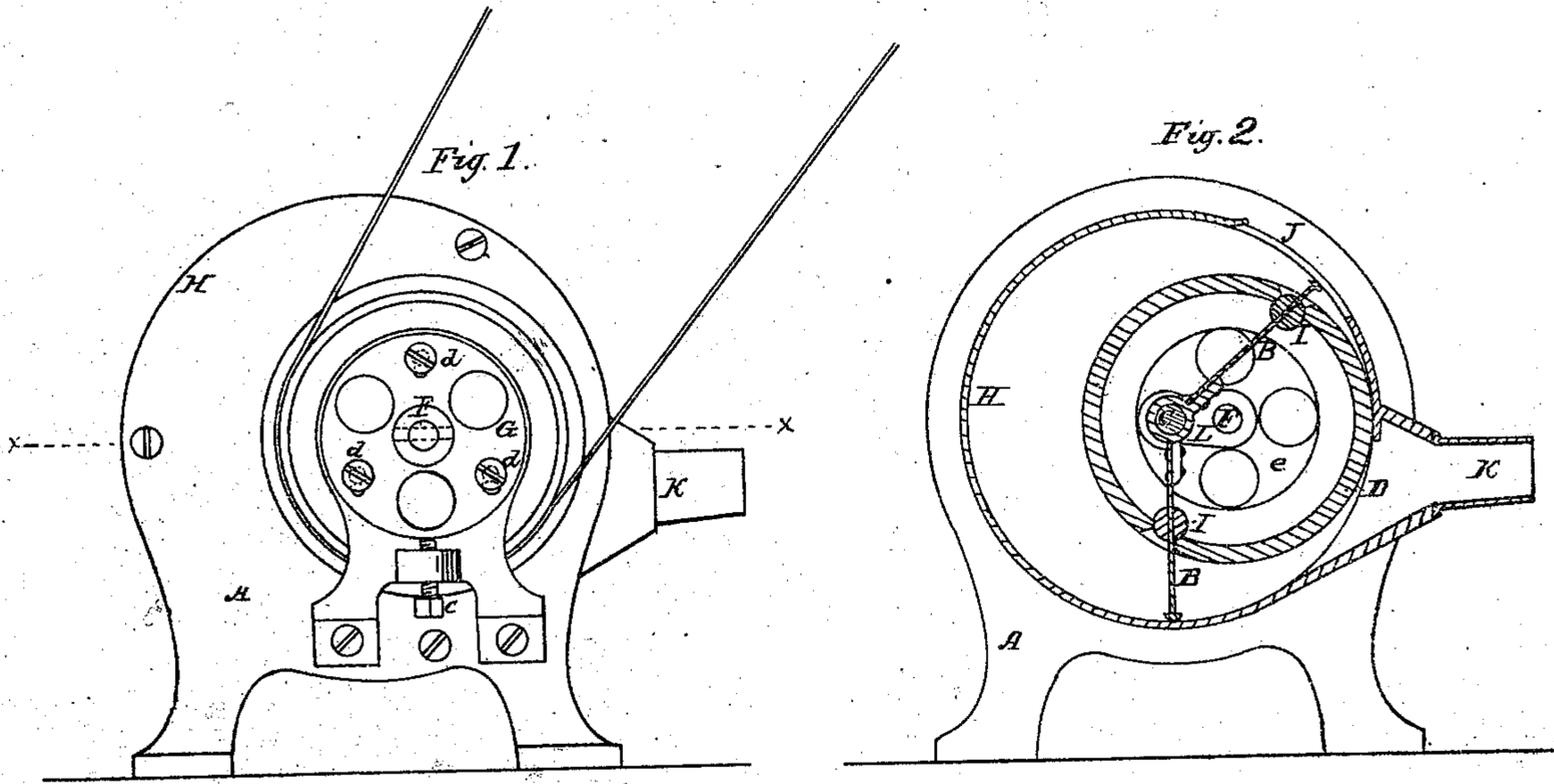


C. W. Isbell.

Rotary Blower.

N^o 75635

Patented Mar. 17, 1868.



Witnesses
J. Moomb
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Inventor
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United States Patent Office.

CHARLES W. ISBELL, OF NEW YORK, N. Y.

Letters Patent No. 75,635, dated March 17, 1868.

IMPROVEMENT IN ROTARY 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, CHARLES W. ISBELL, of the city, county, and State of New York, have invented a certain new and useful Improvement on Blowing-Apparatus, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, forming part of this specification, and in which—

Figure 1 represents an end elevation of a blowing-apparatus constructed according to my improvement.

Figure 2, a vertical transverse section of the same; and

Figure 3, a horizontal section thereof through the line $x x$ in fig. 1.

Like letters indicate corresponding parts throughout the several figures.

This improvement relates to blowing-apparatus of the character described in Letters Patent of the United States (No. 44,809) issued to W. P. Mackensie, of Jersey City, in the county of Hudson, and State of New Jersey, and bearing date the 25th day of October, 1864; and the nature of my invention consists in a novel mode of hanging the shaft, with or around which the vanes work, as an axis and support relatively thereto of the eccentric-drum, that, in being driven, gives to the vanes their respective actions, and whereby friction is reduced, by securing to the drum bearings of a central or small diameter within the circle which encompasses the vane's shaft, and every facility obtained for lubricating from the outside both shafts or bearings.

Referring to the accompanying drawing, A is the frame of the apparatus. B B' are the fans or vanes supported by the axle or shaft C, to which the one of said fans or vanes B may be rigidly attached by a fast sleeve, b , so as to revolve with the said shaft, or so as to give motion thereto, while the other vane, B', works freely thereon by means of a loose sleeve, b' . In case of more than two vanes, also, all excepting the one should turn loosely on the shaft C in order that they may adapt themselves to the continuous change of angle which they assume in their passage through the drum D, as the latter, which serves to drive them, is rotated, say, by a pulley, E, said drum being represented as turning loosely on fixed shafts or gudgeons, F. These shafts F are shown as carried by plates G, one at either end, and made vertically adjustable to meet sagging or wear of the vanes in their cylinder H, by set-screws c , said plates being attachments to the frame A, but adjustable up and down thereon on slackening screw-bolts, d , which hold them to the frame and fit through oblong slots in the plates G. I is what may be termed the cylindrical packing through which the vanes pass in their intersection of the drum. J is the air-inlet or opening to the cylinder, and K the discharge-spout or outlet.

The vane's shaft C turns in and is supported at either end by cranks or projections L, made fast to the inner ends of the shafts or gudgeons F, by which means the shaft C need not pass through the outer ends of the drum, thereby admitting of the latter having arms or perforated end-plates, e , from central bosses, f , which form the drum-bearings on the shafts F. This mode of supporting the drum, as compared with bearings to it outside of the shaft C, materially reduces friction, while every facility is afforded for lubricating both the revolving shaft C and drum-bearings.

In other respects the action of the blower is or may be the same as that described in Letters Patent hereinbefore referred to, and it may be applied to the same or any suitable purposes, the eccentric position of the drum D, relatively to the cylinder H, causing the vanes to gradually project beyond the circumference of the drum, and then to gradually recede, so as to conform accurately to the air-space of the cylinder, and to conduct the whole body of air therein to and discharge it from the spout or outlet of the blower.

It may here be advisable to mention, in conclusion, that this my improvement has no reference to a fixed arrangement of the shaft C, which is so objectionable on account of wear to the boxes of the vanes, and difficulty attending the lubrication of such, while, by allowing the shaft C to rotate, the wear is transferred to the outside bearings of said shaft, and the loose vane or vanes thereon only have a small turning or oscillating movement on the same, incidental to alteration in angle of said vane or vanes.

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

The revolving shaft C, having one of the vanes B rigidly attached and the others loose thereon, and supported in journals in the arms L of the stationary shafts F, in combination with the drum D and cylinder H, all arranged and operating substantially as and for the purposes set forth.

Witnesses:

J. W. COOMBS,
GEO. W. REED.

CHAS. W. ISBELL.