(No Model.)

J. M. BLACKMAN.

BLOWING APPARATUS.

No. 305,885. Patented Sept. 30, 1884.

Fig. 1.

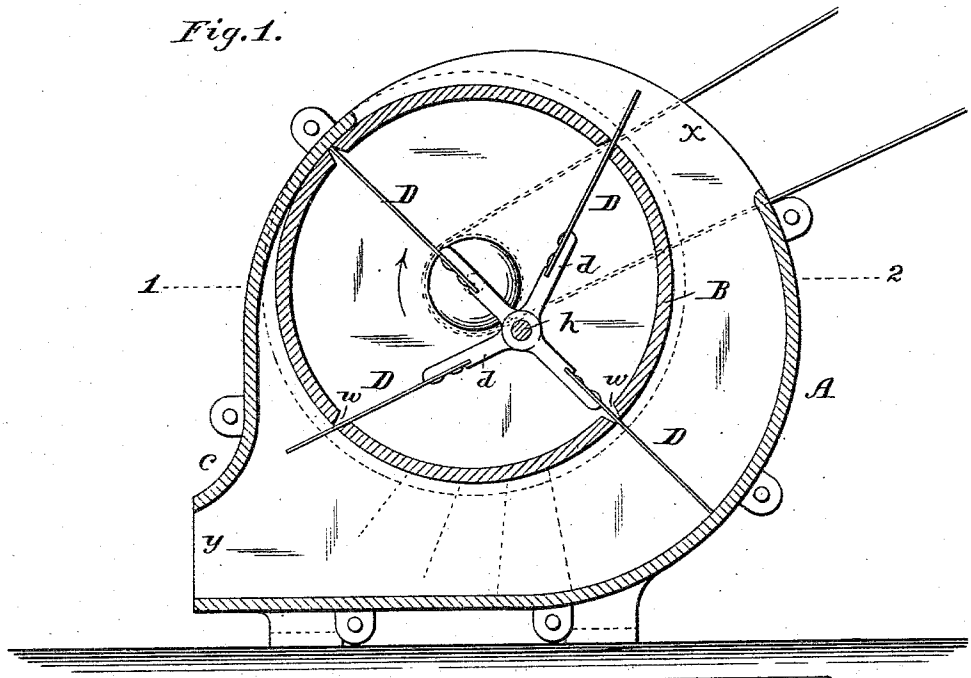


Fig. 2.

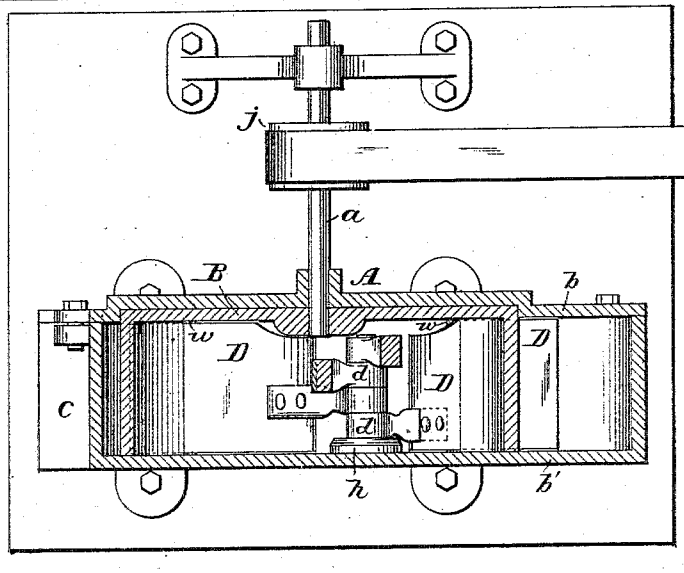
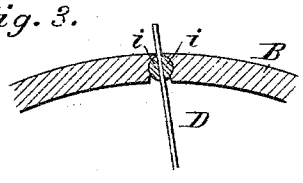


Fig. 3.



Attest:
Court. A. Cooper.
Josephine Campbell.

Jas. M. Blackman
Inventor:
By Foster & Freeman
Attys.

N. PETERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

JAMES M. BLACKMAN, OF CHICAGO, ILLINOIS, ASSIGNOR OF THREE-FOURTHS TO LUCIUS G. FISHER, JR., ALBERT G. SPALDING, AND CHANCEY KEEP, OF SAME PLACE.

BLOWING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 305,885, dated September 30, 1884.

Application filed July 21, 1883. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. BLACKMAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Blowing Apparatus, of which the following is a specification.

My invention relates to that class of blowing apparatus in which a series of blades are rotated within a casing, taking in the air at the edge at one side and expelling it tangentially at another point from the edge; and my invention consists in certain details of construction, hereinafter fully set forth, whereby the apparatus is simplified and increased in efficiency and the cost of construction and operation reduced.

In the drawings, Figure 1 is a vertical section of my improved blowing apparatus; Fig. 2, a horizontal section on the line 1 2, Fig. 1; Fig. 3, a section showing a modification.

The apparatus consists, essentially, of a casing, A, an interior cylinder, B, shaft *a*, and series of blades, D. The case A is nearly cylindrical in form, with two vertical flat sides, *b b'*, with an inlet-opening, *x*, formed by cutting away a part of the edge, and an outlet-opening, *y*, within a neck, *c*, extending tangentially from the casing. Each blade D, there being four in the present instance, is secured to one of four arms, *d*, hung to turn loosely upon a stationary shaft, *h*, at the center of the casing A, and each blade extends through a transverse slot, *w*, in the periphery of the hollow cylinder B, which is secured to the end of the shaft *a*, which turns in suitable bearings, and is provided with a driving-pulley, *j*. The slots *w* are at equal distances apart, and the edges thereof are beveled, as shown, so as to permit the blades to assume different angles. The shaft *a* is eccentric to the shaft *h*, so that the periphery of the cylinder B will be nearly in contact with the edge of the shell A at one point adjacent to a line drawn radially through the axis of the two shafts, so that a blade, D, coinciding with such line upon one side of the shaft *h* will be wholly inclosed within the cylinder B, while the opposite blade will be almost wholly projected beyond the opposite edge of the cylinder, completely closing the opening between the two cylinders or shells. Motion is imparted to the shaft *a* in the direction of its arrow, and the air passes freely into the opening *x*, and is carried by the blades D as they are gradually projected beyond the cylinder B between the two shells, and is thrown radially through the opening *y*, each blade being gradually withdrawn into the cylinder B as it leaves the said outer opening.

It will be seen that the requisite movement of the blades is secured with the aid of but a few devices of a most simple character, cheaply made and connected, and operated by a comparatively small amount of power and with but little friction.

The inner cylinder, instead of having slots with beveled edges, may have edges recessed to receive semi-cylindrical sections *i i*, between which the blades pass, as shown in Fig. 3.

I am aware that blowing-machines have been made with casings, slotted drums bearing on eccentric shafts, and blades extending radially from the shaft through the slots of the drums, and I do not claim these features; but

I claim—

The combination, in a blowing-machine, of an outer casing or shell having inlet and outlet openings, a shaft arranged eccentrically to the casing and carrying an inner hollow cylinder having slotted edges, a central stationary shaft attached to one wall of the casing and supporting a series of loosely mounted arms carrying blades.

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

JAMES M. BLACKMAN.

Witnesses:
LUCIUS G. FISHER, Jr.,
HENRY S. OSBORNE.