

P. W. Mackenzie,

Rotary Blower.

No 12,165.

Patented Jan. 2, 1855.

Fig: 2.

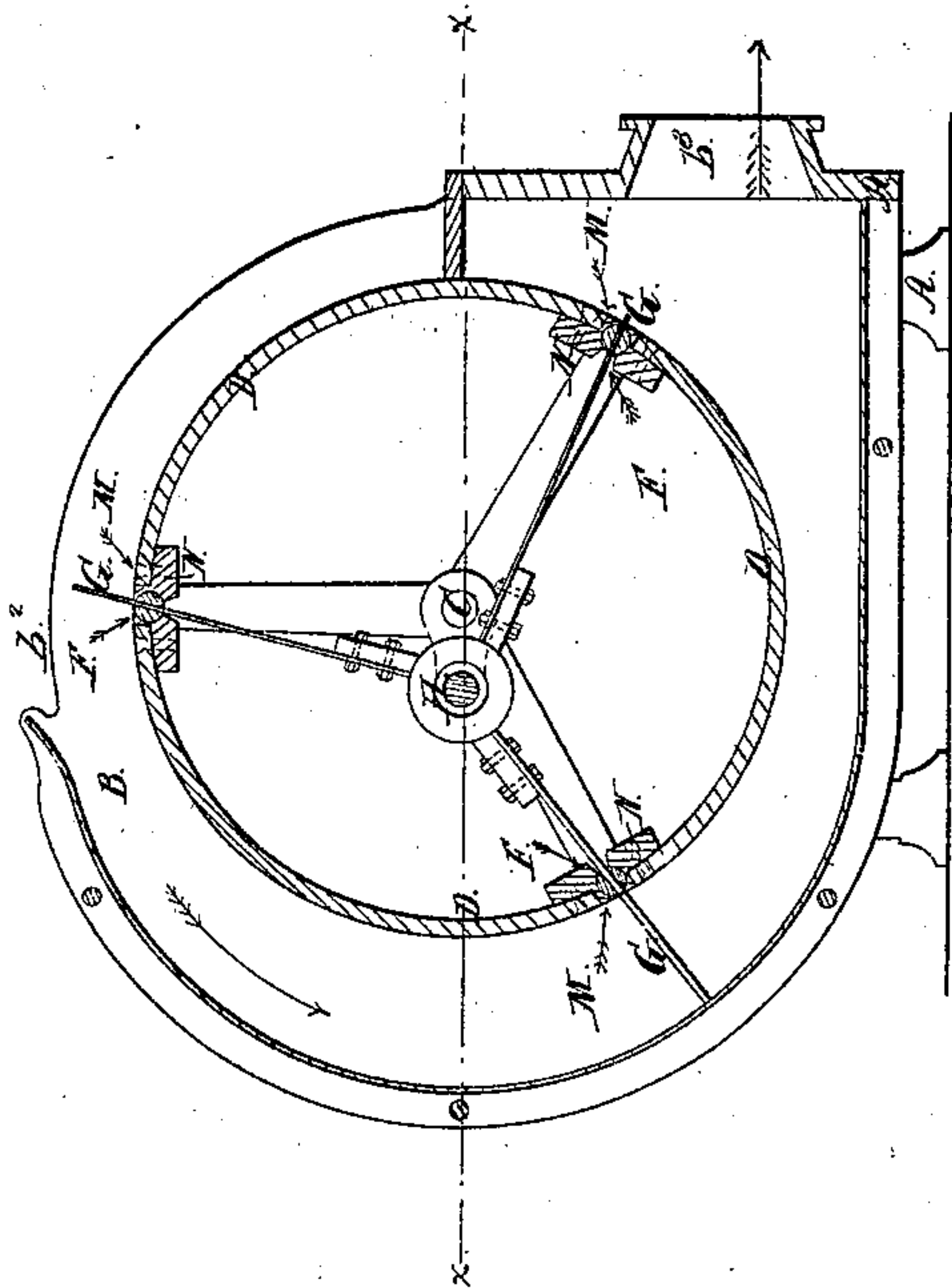


Fig: 4.

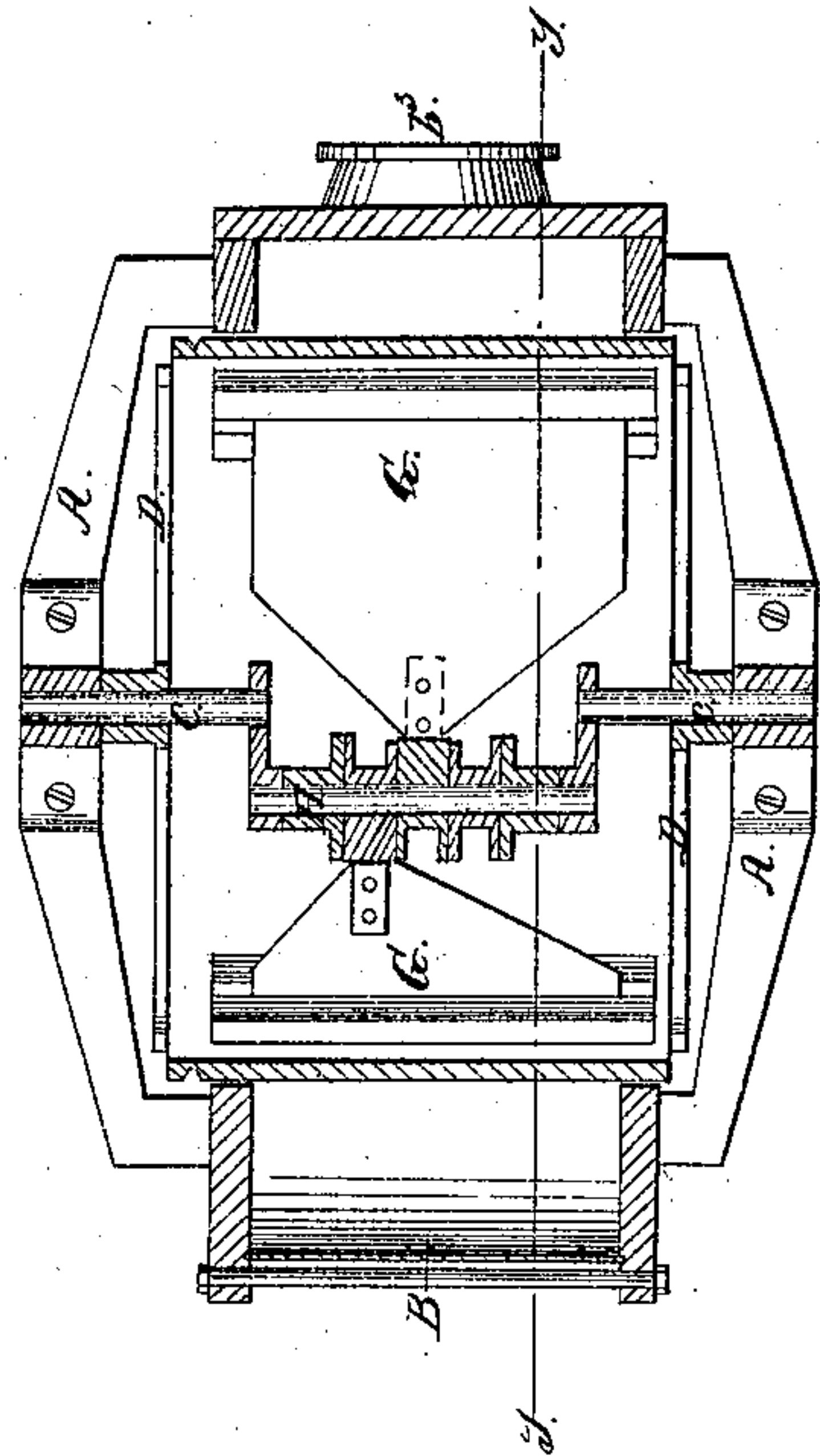


Fig: 1.

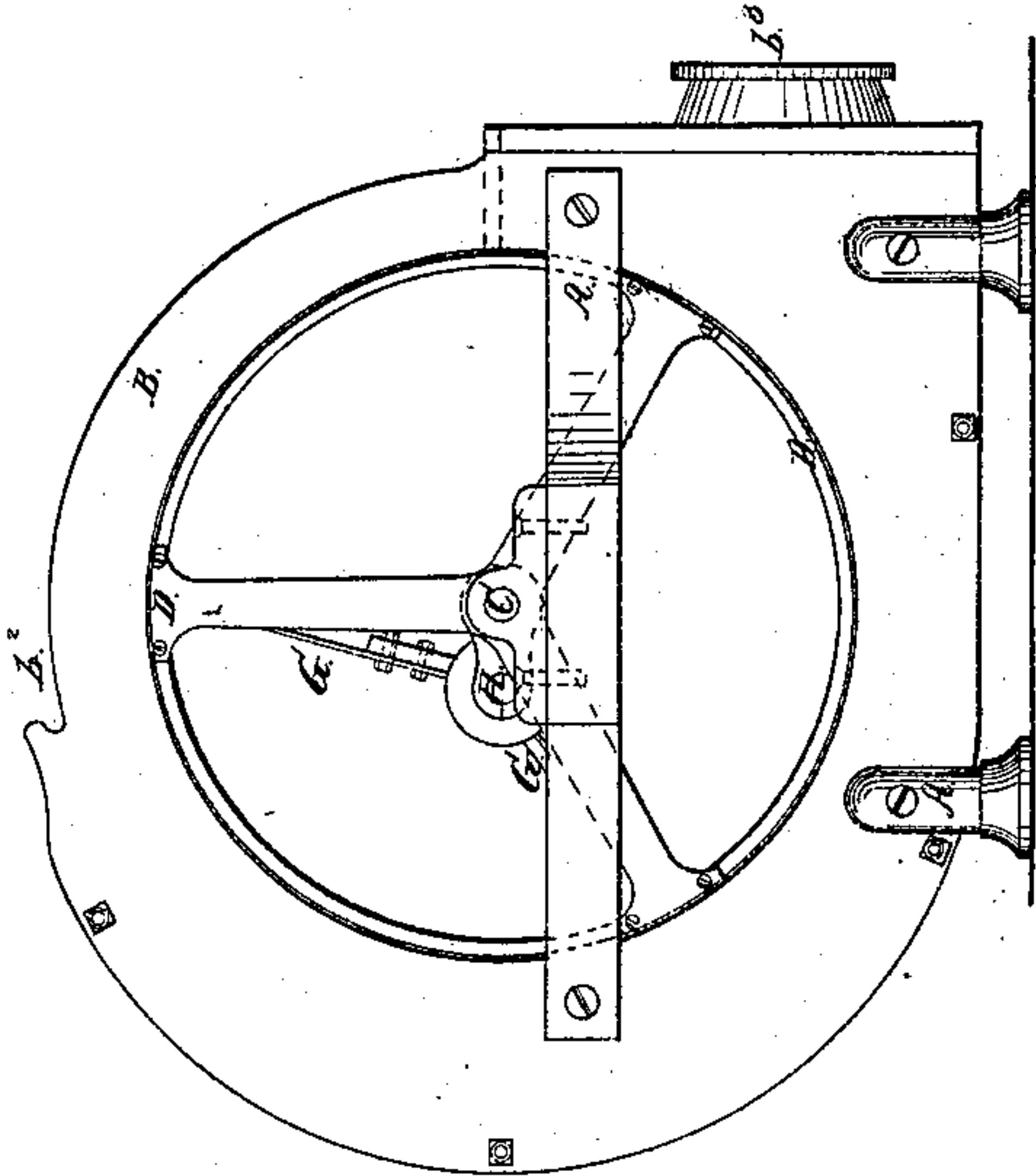
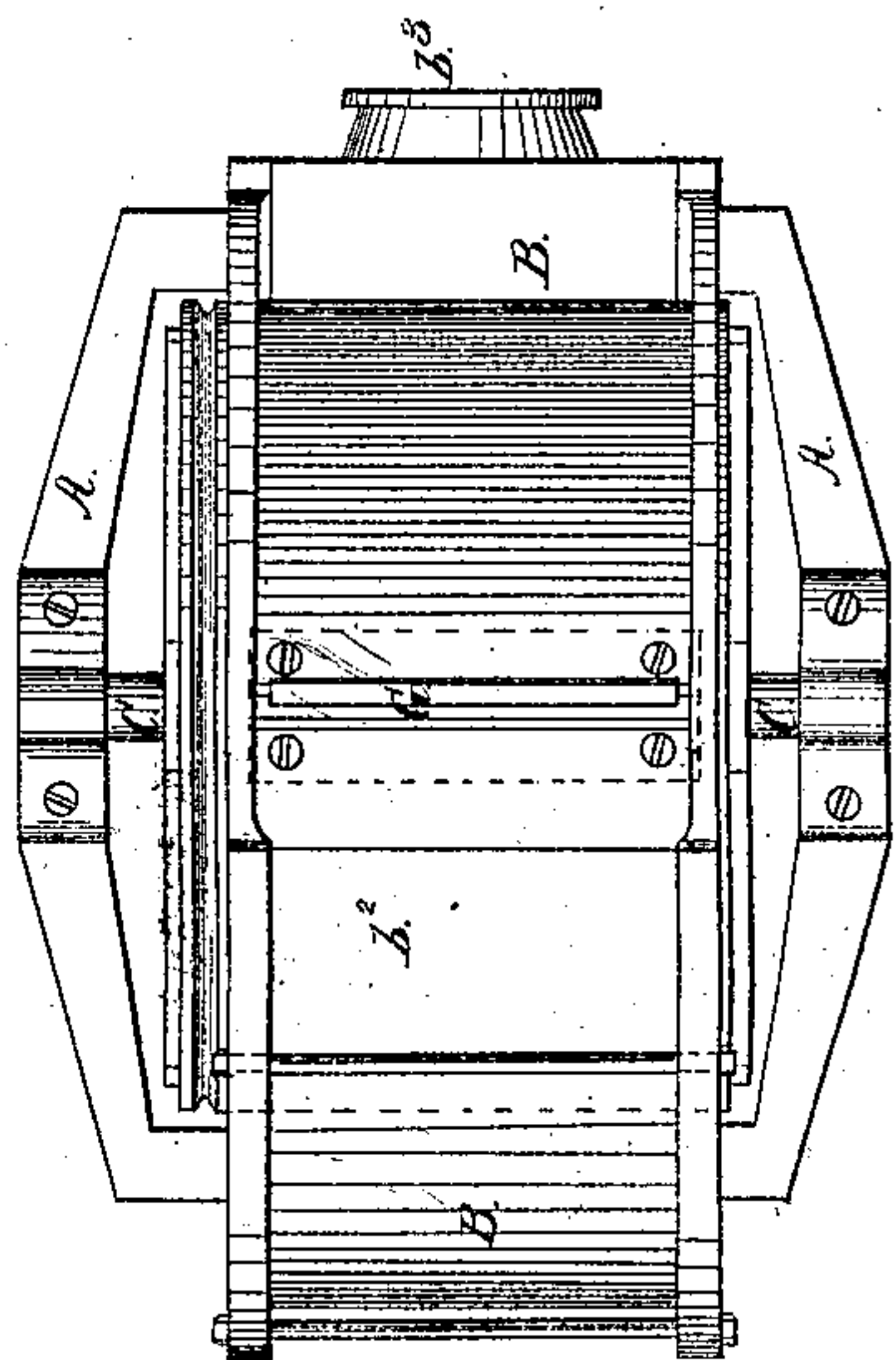


Fig: 3.



UNITED STATES PATENT OFFICE.

P. W. MACKENZIE, OF JERSEY CITY, NEW JERSEY.

MACHINE FOR BLOWING BLASTS, &c.

Specification forming part of Letters Patent No. 12,165, dated January 2, 1855.

To all whom it may concern:

Be it known that I, PHILLIP W. MACKENZIE, of Jersey City, Hudson county, and State of New Jersey, have invented certain new and useful Improvements in Machines for Blowing Blasts or Currents of Atmospheric Air, and for other Purposes; and I do hereby declare the following to be a full description of the same.

The nature of my invention consists in the use of a drum arranged on a center so that it may be rotated, and having slots or openings through the periphery of the drum for the arms of the blowing apparatus, in combination with the blowing apparatus arranged on an independent axis eccentric to the axis of the drum and inside of it, so that as the drum is revolved by the driving-pulley the arms of the blowing apparatus are projected beyond the surface of the periphery of the drum at one side to fill the case surrounding it and at the front side are drawn within the periphery of the drum to prevent any drawback or back-stroke of the blower upon the discharging blast or current of atmospheric air; also, in the use of the roller packing of the arms or blowers at the point where they pass through the slots in periphery of the drum, in combination with the drum, and a blowing apparatus arranged on a shaft eccentric to the shaft of the drum and internal of it and rotated by the action thereof.

But to describe my invention more particularly I will refer to the accompanying drawings, forming a part of this schedule, the same letters of reference, wherever they occur, referring to like parts.

Figure 1 is a side elevation of the blower-machine. Fig. 2 is a vertical cut section of the blower through the line *y y*, Fig. 4. Fig. 3 is a plan view of the blower-machine. Fig. 4 is a longitudinal cut section of the blower-machine through the line *x x*, Fig. 2.

Letter A is the frame on which the shaft of the drum is arranged.

B is the shell or case of the blower apparatus. This is made of metal or wood. At the top is an open space b^2 for the ingress of the air, and at the lower and front side of it is a discharge-port b^3 for carrying the blast to the furnace. In this shell is arranged on an axis C a drum D, which may be rotated by any suitable pulley on its axis. In the periphery of this drum are cut three longitudinal slots F F F. The object of these slots is to allow the arms G G G of a blower internal of the

drum to pass through them, and as the drum rotates on its center carries with it the arms of the blower, which are secured on an axis H, eccentric to the axis of the drum, and consequently projects them at one side beyond the periphery of it and at the front or opposite side withdraws them within the periphery of it, so as to carry around the back of the blowing apparatus a full blast of air, and allowing it to be discharged at the front side free from any back action.

The mode of securing the blower-arms on the eccentric-axis may be varied in many ways; but as they should (to prevent friction in consequence of wear) be made so as to obviate this defect I have made the hubs to which the arms are secured with broad flanges, so that by means of washers on the eccentric-shaft and outside of the hubs they always can be tightened up, by screw-nuts or otherwise, so as to cause the blower-arms to run freely and with very little friction against the drum or blower case.

Letter M is a cylindrical piece of metal having a slot lengthwise of it (through which the blower-arm passes) and secured in a box N on the inner side of the periphery of the drum. The object of this cylindrical piece of metal (or wood, as the case may require) is to pack the arms, and as they are constantly changing the angle of their bearings on the sides of the slot as the drum rotates the utility and effectual, as well as novel, way of packing the blower-arms will be obvious.

Having now described my invention and its operation, I will proceed to state what I claim and desire to secure by Letters Patent of the United States.

What I claim is—

1. The use of the drum and blower having centers eccentric to each other, the said blower being internal of the drum and propelled by it, substantially in mode of construction and for the purposes hereinbefore set forth.

2. As a part of my invention, the cylindrical adjustable packing for the arms of the blower, in combination with the drum and blower-arms, substantially in mode of construction and operation and for the purposes hereinbefore set forth.

P. W. MACKENZIE.

Witnesses:

CHARLES L. BARRITT,
MILES B. ANDRUS.