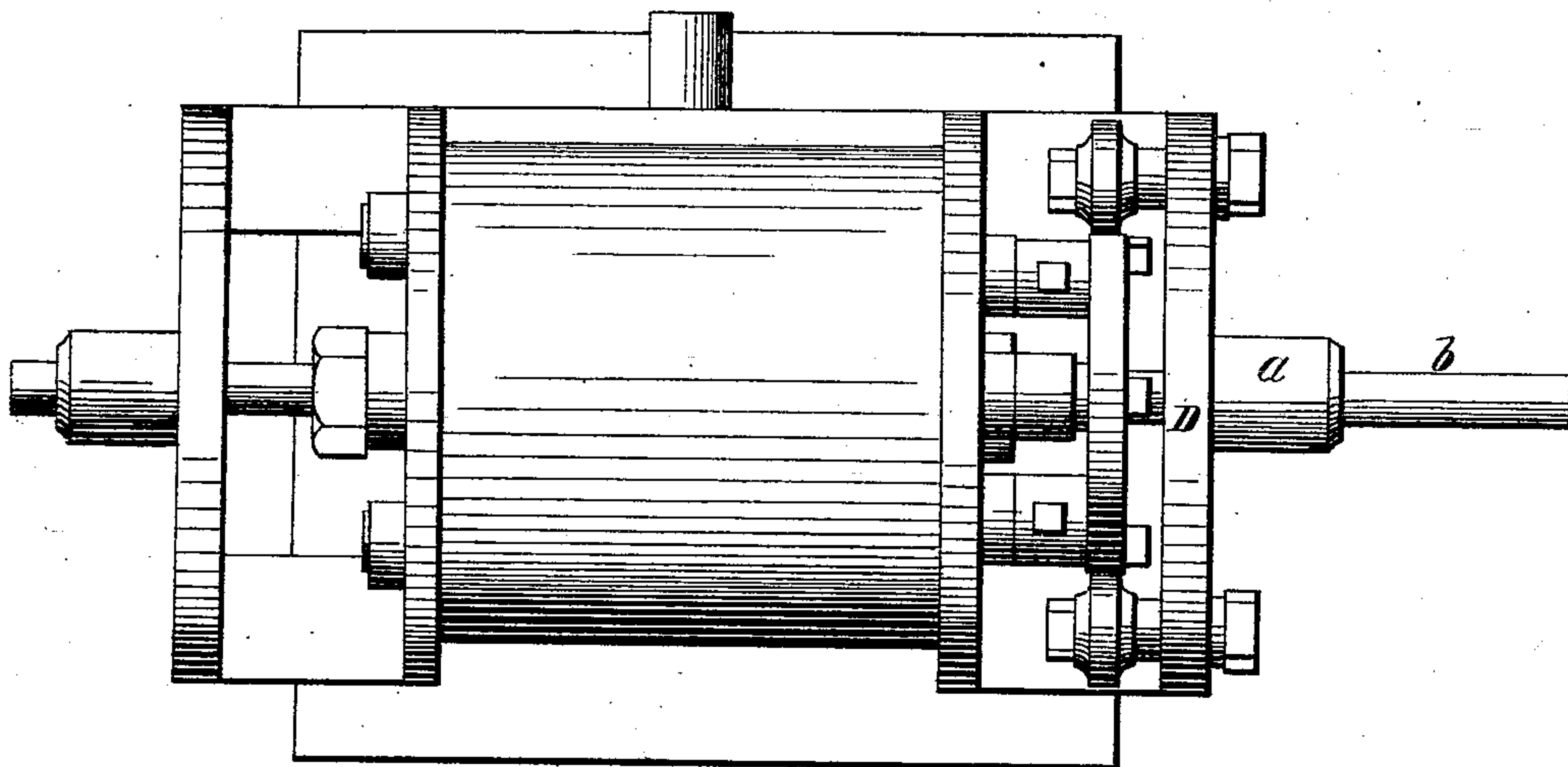


T. L. VARNIS.  
Rotary Pressure-Blower.

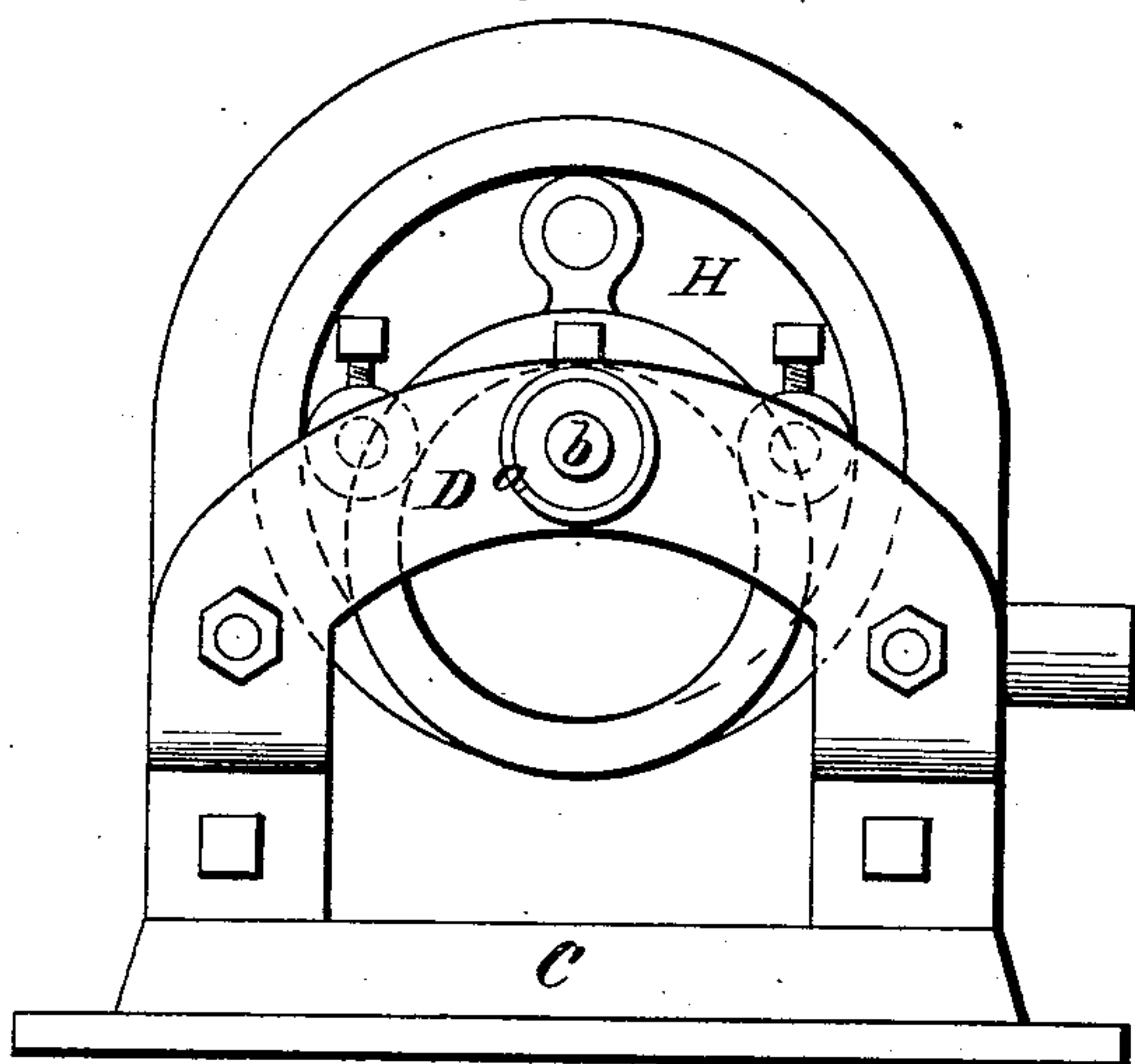
No. 164,346.

Patented June 8, 1875.

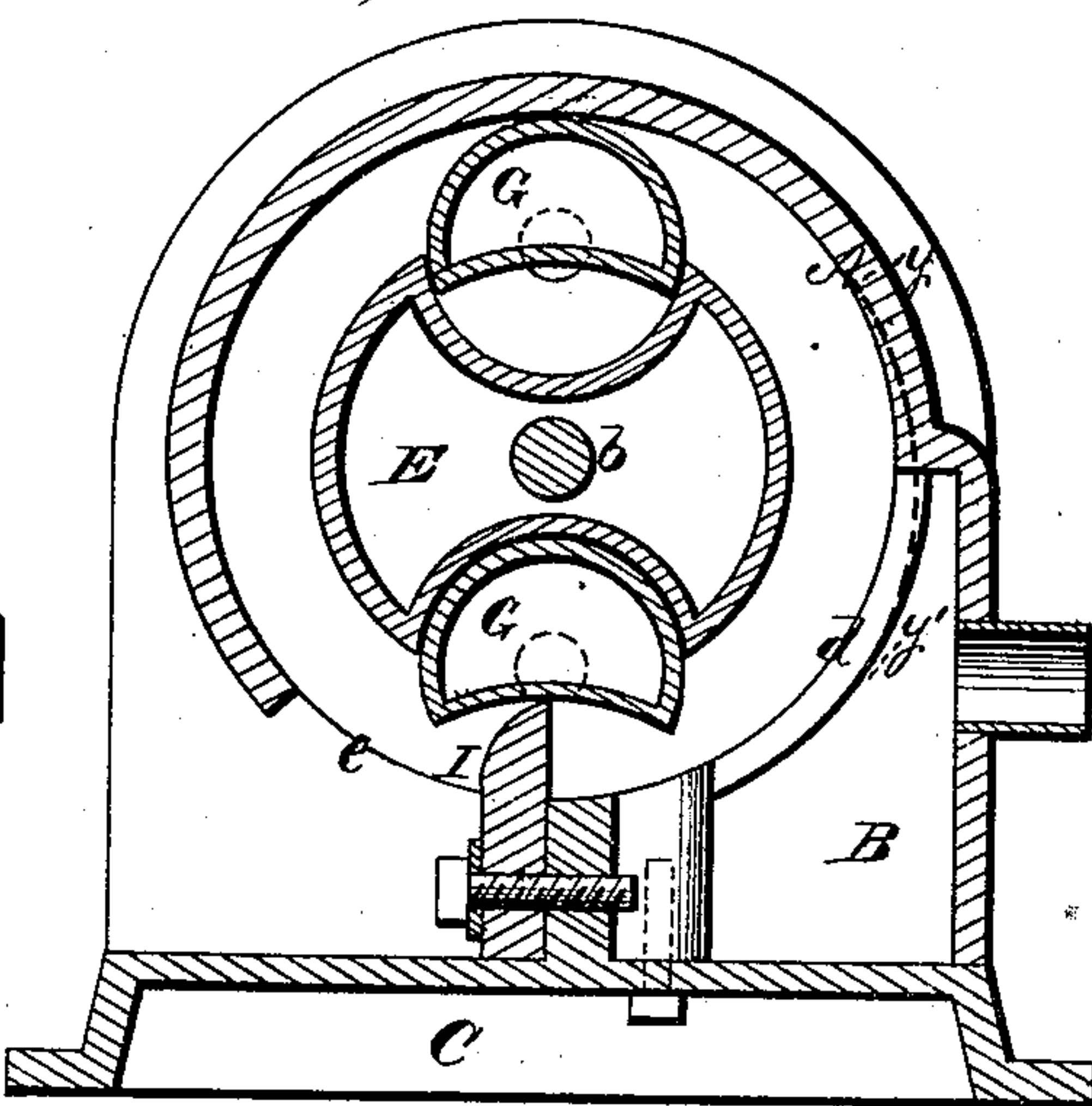
*Fig 1*



*Fig 2*



*Fig 3*



WITNESSES  
*Frank L. Ourand.*  
*Wm A Skinkle* *Rij*

INVENTOR  
*Tobias L Varnis*  
*Alexander Mason*  
Attorney

# UNITED STATES PATENT OFFICE.

TOBIAS L. VARNs, OF KOKOMO, INDIANA.

## IMPROVEMENT IN ROTARY PRESSURE-BLOWERS.

Specification forming part of Letters Patent No. 161,346, dated June 8, 1875; application filed May 12, 1875.

*To all whom it may concern:*

Be it known that I, TOBIAS L. VARNs, of Kokomo, in the county of Howard and in the State of Indiana, have invented certain new and useful Improvements in Rotary Pressure-Blowers; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

My invention relates to rotary pressure-blowers, and is intended as an improvement upon the Letters Patent No. 153,202, granted to William Pruett, July 21, 1874.

The nature of my invention consists in the arrangement of the fixed cylinder with the adjustable gate or cut-off at the bottom in a vertical position, bringing the inlet and outlet openings at the bottom, thereby preventing any dirt from getting into the blower and choking the same, and also keeping the wings properly balanced. It also consists in enlarging the outlet side of the cylinder and the outlet-opening, to allow the air to leak back and equalize the pressure within the cylinder, thereby preventing an uneven blast, all as hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a plan view of my rotary pressure-blower. Fig. 2 is an end elevation, and Fig. 3 a transverse vertical section, of the same.

A represents the exterior fixed hollow cylinder, which is cast with the air-box B in one piece, and with suitable flanges at its ends, so as to be attached to a base, C, if desired. At each end of the case thus formed is secured a cross-bar, D, the center portion of which is curved or arched, as shown, and the ends made to run inward and downward, and then bolted to the case. In the centers of the cross-bars D are formed hubs *a a*, in which a central longitudinal shaft, *b*, has its bearings. On this shaft is secured a cylinder, E, which is made hollow and formed with two semicircular cavities for the recep-

tion of the wings G G. These wings are also made hollow, but otherwise constructed and operated in precisely the same manner as described in the former patent above referred to.

The revolving cylinder E is provided with the permanent heads H H, to close the space between its periphery and the bore of the cylinder A, and to one of these heads the mechanism for operating the wings G G is attached.

The air-box B extends, as shown in Fig. 3, from a line drawn vertically through the center of the cylinder to the side, and to the inner wall of the air-box is secured the adjustable gate or cut-off I, which is thus located vertically at the bottom of the cylinder. The wings G G are hung with their concave sides downward, and as they always retain their position they are evenly balanced, and there is no liability, at any point, of their turning, as there is when the cut-off is located horizontally at one side, and the wings are hung correspondingly.

The cylinder A communicates with the air-box B through the enlarged outlet-opening *d*, and on the opposite side of the cut-off I is the inlet *e*, which is thus on the bottom of the cylinder, and prevents dust and dirt getting into the blower and choking the same.

The outlet-opening *d* is enlarged, and that side of the cylinder is bored out or cored out, so as to form one portion of the interior of the cylinder eccentrically, as shown at *y* to *y'* in Fig. 3, in such a manner that when one of the wings G commences to bind on the interior of the stationary cylinder B beyond the inlet-opening *e*, the other wing will reach the bored or cored out part of the stationary cylinder, and allow the compressed air ahead of it to leak back and equalize the pressure, at the same time preventing the puffing so common in rotary blowers, thereby causing a steady and even blast.

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

1. In a rotary blower, having an interior revolving cylinder, E, with two wings, G G, operating therein at opposite sides, the gate



or cut-off I, arranged in a vertical position at the bottom of the stationary case or cylinder, in combination with the wings G G, hung with their concave sides downward, substantially as and for the purposes herein set forth.

2. In a rotary blower, having a revolving cylinder and rotating wings operating within an interior cylinder, the stationary cylinder A, made eccentric on its interior from  $y$  to  $y'$ ,

substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 11th day of May, 1875.

T. L. VARNES.

Witnesses:

H. A. HALL,  
WM. A. SKINKLE.