J. W. WILBRAHAM.

BLOWING-MACHINE.

No. 190,943. Patented May 15, 1877.

Fig. 1.

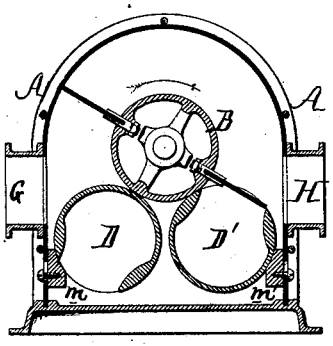


Fig. 2

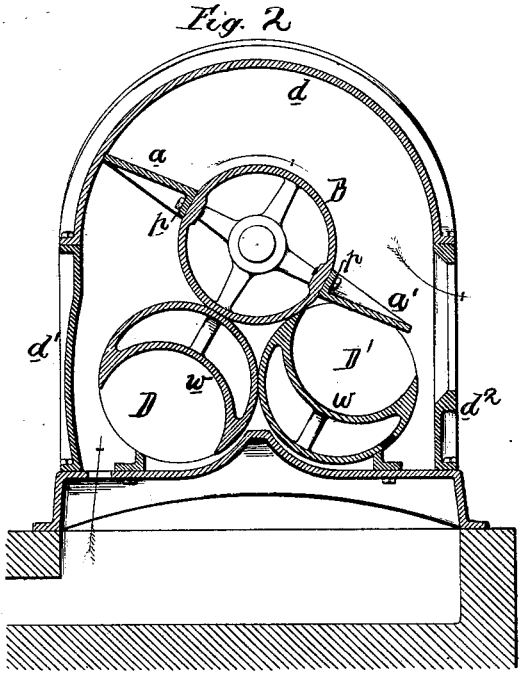


Fig. 3

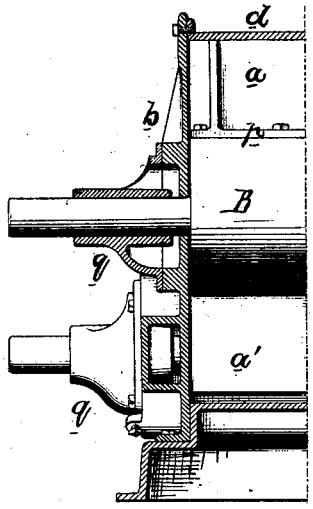
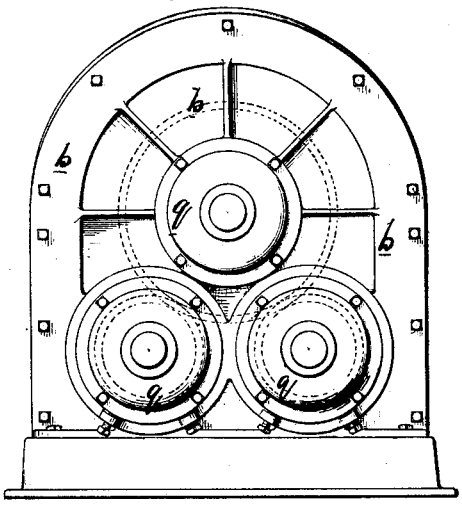


Fig. 4



Witnesses

J. L. Skidmore

Henry Howson Jr.

Inventor

John W. Wilbraham

by his Attorneys

Howson and Son

UNITED STATES PATENT OFFICE.

JOHN W. WILBRAHAM, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO HIMSELF, THOMAS WILBRAHAM, AND JAMES WILBRAHAM, OF SAME PLACE.

IMPROVEMENT IN BLOWING-MACHINES.

Specification forming part of Letters Patent No. **190,943**, dated May 15, 1877; application filed September 2, 1876.

To all whom it may concern:

Be it known that I, JOHN W. WILBRAHAM, of Philadelphia, Pennsylvania, have invented certain Improvements in Blowing-Machines, of which the following is a specification:

My invention relates to improvements in that class of blowing-machines in which a cylinder with vanes is combined with a cylinder or cylinders for admitting the vanes and for cutting off the communication between the inlet and outlet of the chest or casing in which the cylinders are caused to revolve; and the object of my invention is to prevent the loss of compressed air.

In order that my improvements may be readily understood, I have shown them in the accompanying drawing as applied to the blower for which Letters Patent No. 145,382 were granted to J. G. Baker, December 2, 1873. It should be understood, however, that my improvements are applicable generally to that class of blowers to which the patent of the said J. G. Baker relates.

Figure 1 of the drawing is a vertical section of the Baker blower; Fig. 2, a vertical section of a blower made according to my improvements; Fig. 3, a longitudinal section of Fig. 2, and Fig. 4 an end view.

In the above-mentioned patented blowing-machine of Baker, as shown in Fig. 1, a continuous supply of compressed air is obtained by combining in a chest, A, a revolving cylinder, B, and its two vanes, *a a'*, with two revolving and slotted cylinders, D D', the cylinder B turning in the direction of the arrow, Fig. 1, at one-half the speed of the cylinders D D', so that air will enter the chest at the inlet G, and will be discharged under a pressure depending upon the speed of the cylinder at the outlet H, the cylinders D and D' serving, in conjunction with blocks *m m'*, to cut off communication between the inlet and outlet.

Each end of the chest consists of a cast-iron head, *b*, one only of which is shown in Fig. 3 of the drawing, and each head is bolted to the base *e* and to the intermediate casing, which consists of the arched top *d* concentric with the cylinder B, and the opposite side pieces d^1 and d^2, which are bolted to the arched piece and to the base, as shown in Fig. 2, both side pieces and arched piece being bolted to the heads *b*.

When access has to be had to the interior of the blower, either or both of the side pieces can be removed without disturbing the arched piece or base, or any of the operating parts of the machine.

Each vane consists of a plate, the ends of which are as near to the heads of the chest as possible without being in absolute contact therewith, and the outer edge of each vane, as the cylinder revolves, moves in close proximity to, but not in absolute contact with, the interior of the arched portion *d* of the casing.

Each vane has a flange, *p*, through which bolts or screws pass into the cylinder.

Instead of making each of the cylinders D D', like those in the said patent of Baker, with a longitudinal slot into which the vanes pass as the machine operates, an arrangement which results in a waste of compressed air, I extend across the interior of each cylinder a segmental web, *w*, which leaves a cavity of a proper form to permit the outer edges of the vanes to freely clear the said web *w*, the latter having the additional advantage of strengthening the cylinder.

Each of the rollers B D D' has at each end a journal, *q*, and at one end of the machine the journals are geared together by cog-wheels (indicated by dotted lines in Fig. 4) of such relative diameter that the cylinders D and D' revolve at twice the speed of the cylinder B.

It should be understood that I do not desire to claim, broadly, the segmental web extending across the cylinder, for such webs have been heretofore used in rotary pumps. A particular feature in the Baker patent, however, is the extension of the vanes to or beyond the centers of the cylinders D D' as the machine operates. In my improvements the

webs of the cylinders are made to accord with this specific feature.

I claim as my invention—

The cylinder B and its vanes, combined, as described, with segmental webs *w w* on the cylinders D D′, so that the said webs will permit the vanes to extend to or beyond the centers of the cylinders, as set forth.

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

JOHN. W. WILBRAHAM.

Witnesses:

HENRY HOWSON, Jr.,

HUBERT HOWSON.