

No. 859,763.

PATENTED JULY 9, 1907.

T. W. GREEN.
ROTARY BLOWER.
APPLICATION FILED FEB. 13, 1907.

2 SHEETS—SHEET 1.

Fig. 1.

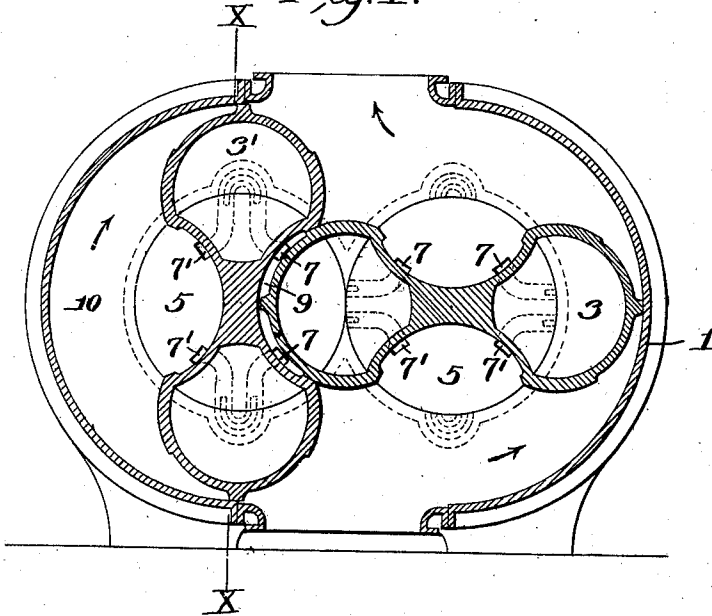
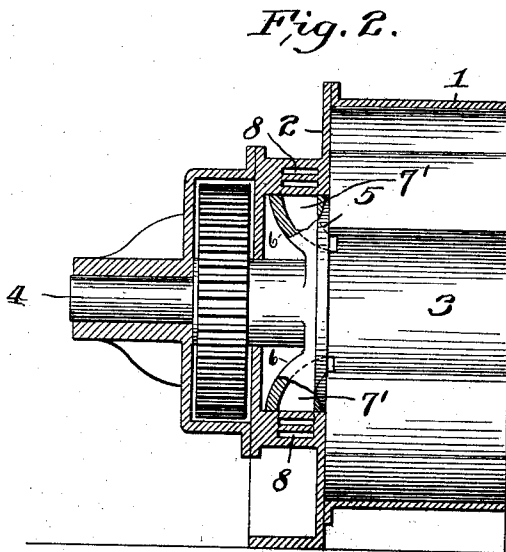


Fig. 2.



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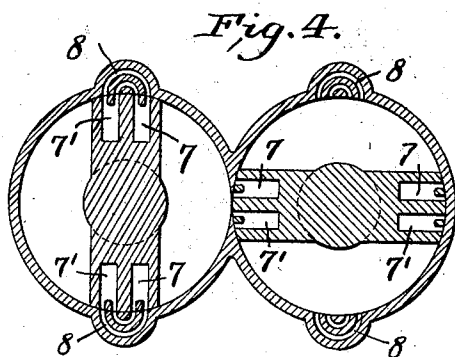
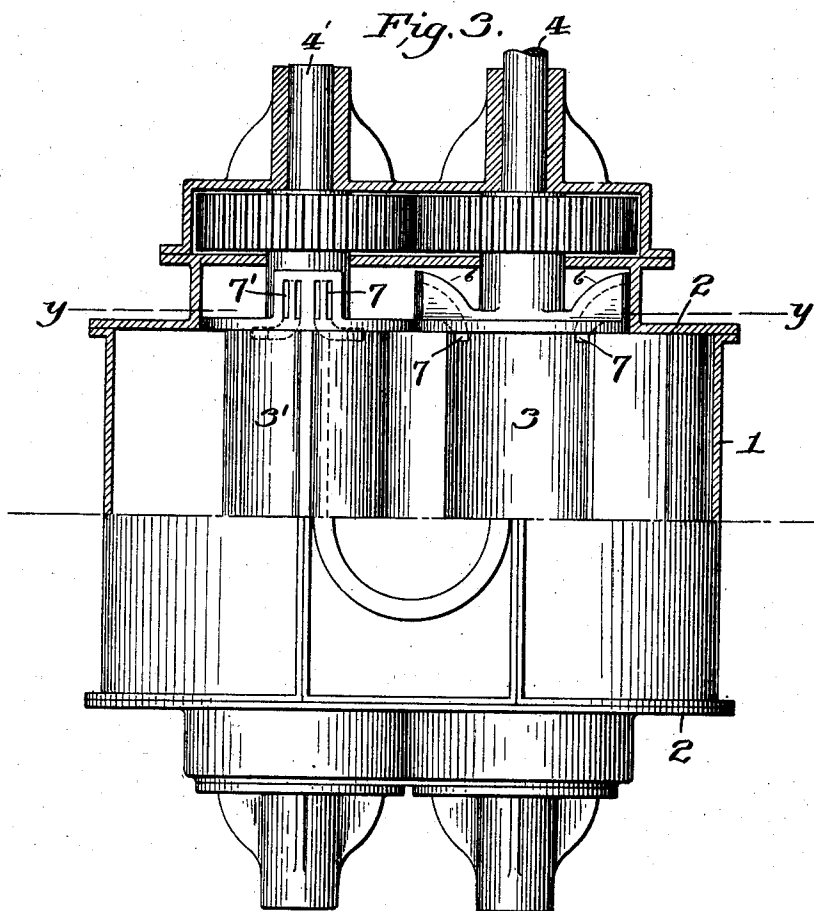
ATTORNEY.

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WITNESSES:

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UNITED STATES PATENT OFFICE.

THOMAS W. GREEN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO WILBRAHAM-GREEN BLOWER COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

ROTARY BLOWER.

No. 859,763.

Specification of Letters Patent.

Patented July 9, 1907.

Application filed February 13, 1907. Serial No. 357,139.

To all whom it may concern:

Be it known that I, THOMAS W. GREEN, a citizen of the United States, residing in Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Rotary Blowers, of which the following is a specification.

My invention relates to rotary blowers or exhausters and the object of my improvement is to facilitate the passage of the small quantity of compressed air caught between the waist portion of one impeller and the end of the wing of the opposite impeller as described in an application for a patent filed by me on January 23, 1907, Serial No. 353,606. The arrangement of the air ports described in that application is particularly adapted to blowers of large dimensions and when the impellers revolve comparatively slow. The improvement described in the present application is preferably used in smaller blowers in which the impellers revolve at a very high rate of speed.

In the accompanying drawing Figure 1, shows a vertical cross section of a blower constructed with my improvement. Fig. 2, is a vertical sectional view through the case and one impeller as on line X—X of Fig. 1. Fig. 3, is a plan view partly in section. Fig. 4, is an enlarged sectional detail as on line Y—Y of Fig. 3.

Referring to the drawing by numerals, the numeral 1, indicates the outside casing surrounding the impellers. 2, the end casings in which the impeller shafts are supported and journaled.

3, 3', are the two impellers.

4, 4', are the shafts carrying the impellers suitably geared together and connected with a source of power.

5, 5, are circular heads formed on the both ends of each impeller.

6, 6, are two extensions formed on the outside of each of the circular heads. The outer surfaces of these extensions 6, 6, are made to conform to the circumference of the circular heads.

7, 7', are ports formed in the waist portion of each impeller, there are four of these ports in each head and they extend from the inside of the circular heads to the outer surface of the extensions 6, 6.

8, 8, are semi-circular ports formed in the end casings.

There are two pairs or sets of these semi-circular ports in each of the end casings 2, and they are placed opposite to each other in such positions that they will register with the outside of the ports 7, 7', when the impellers are in a position at right angles to each other, twice on each full revolution of said impellers.

The several parts of the blower being constructed as described, when the impellers come to the positions shown in Fig. 1, the compressed air contained in the space marked 9, will pass through the port 7, into and through the semi-circular ports 8, out through port 7', into the space marked 10. The air contained in the space 9, being under pressure and that contained in the space 10, being at atmospheric pressure only, when the ports 7 and 8 register the air will quickly pass there-through and mingle with the air in space 10 about to be discharged.

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

1. In a rotary blower, the combination with one end of the casing having therein an open ended channel, of a rotary impeller having a circular head provided with channels that extend from the waist portion of said impeller to the circumference of said circular head and adapted to register at regular intervals, during the rotation of said impeller, with the channel in the end of the casing, whereby communication is established between the opposite sides of the waist portion of said impeller.

2. In a rotary blower, the combination with one end of the casing having therein two oppositely disposed open ended channels, of a pair of rotary co-acting impellers each provided with a circular head and channels in said heads extending from both sides of the waist portions of the impellers to the circumference of said heads and adapted to register at regular intervals during the rotation of said impellers with the open ends of the oppositely disposed channels in the end of said casing, whereby the air entrapped in the waist portion of one impeller by the wing of the co-acting impeller will flow to the opposite side of the waist portion of said impeller.

3. In a rotary blower, the combination with the two ends of the casing, each of said ends having therein two sets of oppositely disposed open ended channels, of a pair of rotary co-acting impellers, the ends of each impeller being provided with circular heads, each of said heads having therein two sets of oppositely disposed channels that extend from the waist portions of each impeller to the circumference of said circular heads and adapted to register at regular intervals, during the rotation of said impellers, with the open ends of the channels in the ends of said casing, whereby air entrapped in the waist portion of one impeller by a wing of the co-acting impeller will flow through the channels in said circular heads and casing ends to the opposite side of the waist portion of said impeller.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS W. GREEN.

Witnesses:

SADIE I. HARPER,

THOS. D. MOWLDS.