

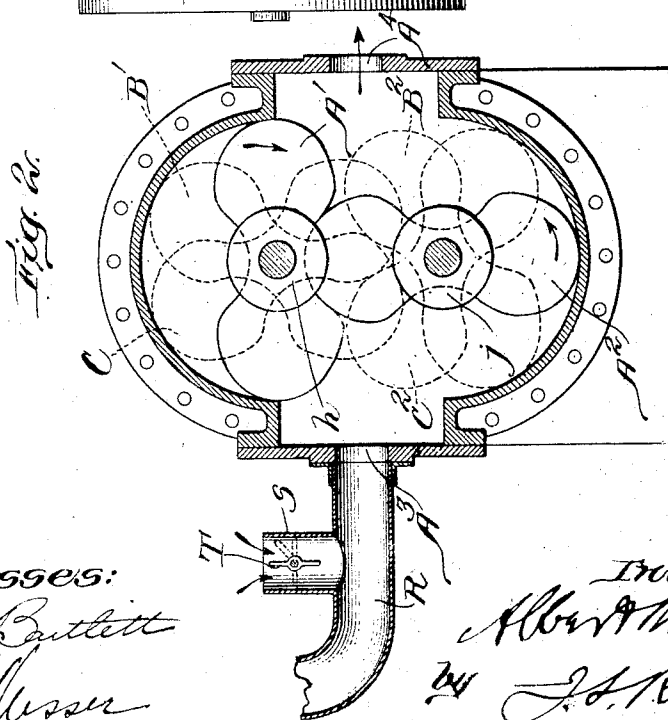
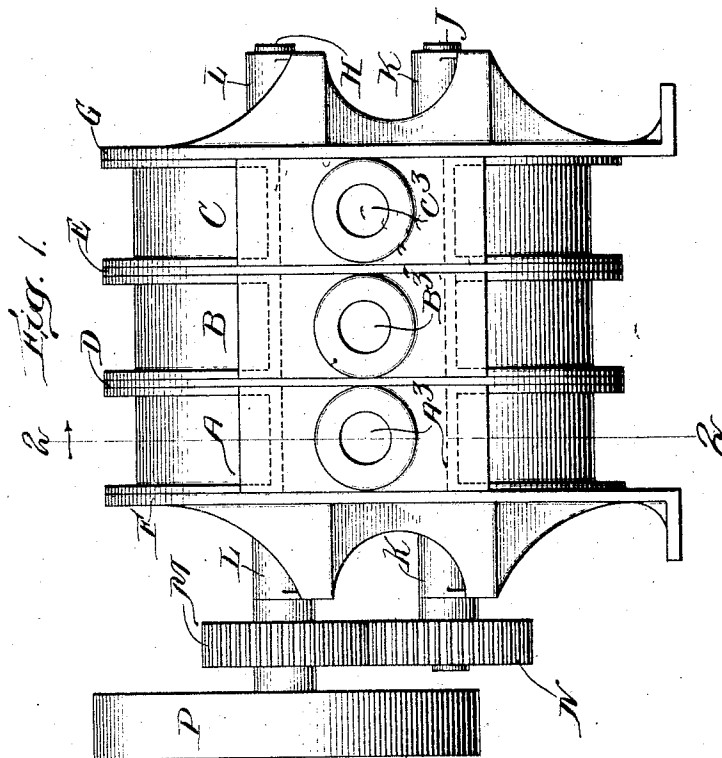
A. W. PEARSALL.
BLOWER OR PUMP.

APPLICATION FILED JAN. 13, 1908.

Patented Aug. 13, 1912.

2 SHEETS—SHEET 1.

1,035,385.



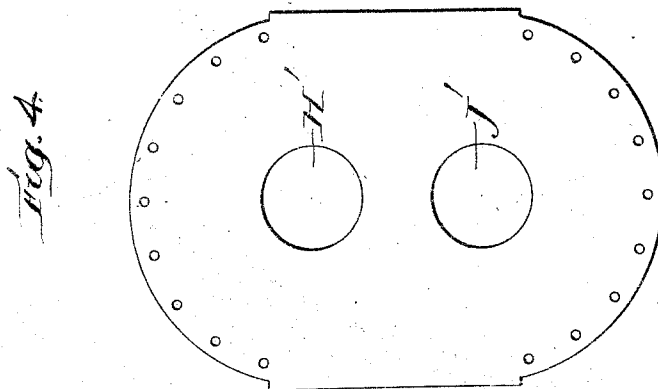
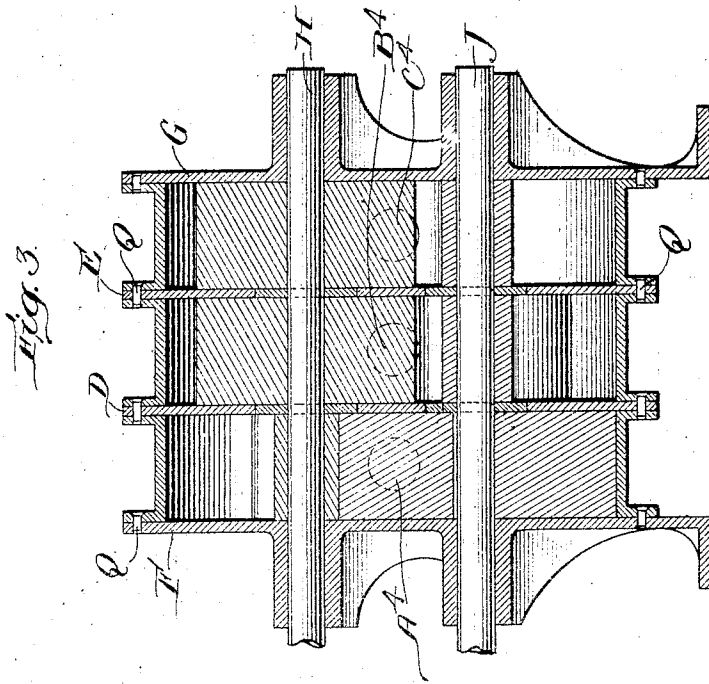
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UNITED STATES PATENT OFFICE.

ALBERT W. PEARSALL, OF LOWELL, MASSACHUSETTS, ASSIGNOR TO LAMSON CONSOLIDATED STORE SERVICE COMPANY, OF NEWARK, NEW JERSEY, A CORPORATION OF NEW JERSEY.

BLOWER OR PUMP.

1,035,385.

Specification of Letters Patent.

Patented Aug. 13, 1912.

Application filed January 13, 1908. Serial No. 419,570.

To all whom it may concern:

Be it known that I, ALBERT W. PEARSALL, of Lowell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Blowers or Pumps, of which the following is a specification.

My invention relates to improvements in blowers or pumps and its object is to provide a type of blower or pump which may be operated at a uniform speed without a uniform load. This is accomplished by dividing the impellers into segments and inclosing each segment in a separate chamber, all of the segments being mounted on a common shaft or shafts, each of said chambers having separate inlets and outlets.

In addition to permitting the blower to run at a uniform speed the volumes of fluid discharged being taken into and expelled from the several chambers are smaller in volume than if the impellers occupied the entire length of the blower cylinder or casing thereby dividing the pulsations and reducing the noise and vibration caused by its operation.

This type of blower permits of economical operation by the use of alternating current electric motors or other sources of power which cannot be varied with a proportional saving in operating expense.

In the accompanying drawings is illustrated a form of construction embodying my invention in which,—

Figure 1 is a front elevation of a cycloidal blower comprised of a number of segments or divisions. Fig. 2 is a vertical sectional view on line 2—2 Fig. 1 looking in the direction indicated by the arrow and shows mechanism for unloading any of the segments or divisions. Fig. 3 is a central longitudinal sectional view of a portion of Fig. 1. Fig. 4 is a detail view of one of the dividing plates.

Like letters of reference refer to like parts throughout the several views.

A, B and C represent three cylinders or divisional casings separated by the dividing plates D and E and secured in position between head plates F and G by suitable bolts Q. The shafts J and H are mounted in bearings K and L respectively in head plates F and G, the shaft H passing through openings H' in dividing plates D and E and the shaft J passing through

openings J' in said plates. The impellers A', B' and C' are mounted on shaft H and suitably secured thereto and are adapted to be rotated in cylinders A, B and C respectively. The impellers A², B² and C² are mounted upon and secured to shaft J and are adapted to cooperate with the impellers A', B' and C' respectively. Circular plates h and j are mounted on shafts H and J respectively and are adapted to fill openings H' and J' in plates D and E and prevent leakage between the cylinders.

M and N represents two gears mounted on shafts H and J respectively and maintain a relative speed of both shafts.

P is a driving pulley secured to one end of shaft H and may be driven by any suitable power.

A³, B³ and C³ are independent inlets for cylinders A, B and C and A⁴, B⁴ and C⁴ are outlets for said cylinders respectively.

R represents a conduit adapted to connect the inlets A³, B³ and C³ independently with any source of resistance or load and S is a branch or air inlet and adapted to be controlled by a butterfly valve T operated by a handle to throw any of the cylinders A, B or C independently into communication with the sources of resistance or unload the same to the atmosphere.

If the blower is operating unloaded and the pistons or impellers rotating in the direction indicated by the arrows, the air is taken in through the inlets A³, B³ and C³ and exhausted through the outlets A⁴, B⁴ or C⁴ respectively, but if any of the valves T are closed the respective cylinder of the blower is thrown into communication with the load.

Having thus described my invention and set forth a construction embodying the same, what I claim as new and desire to secure by Letters Patent of the United States is:—

1. In a blower or pump, a plurality of pressure generators provided with individual air inlets and air outlets, means common to all of said pressure generators for simultaneously driving the same, an exhaust conduit leading from the load and having a separate communication with the air inlet of each pressure generator, and a valve mechanism in each communication between the conduit and the air inlet of a pressure generator operating to open or

close such communication to the external air.

2. In a blower or pump, a plurality of pressure generators provided with individual air inlets and air outlets, means for driving said pressure generators at a uniform rate of speed, an exhaust conduit leading from the load and having a separate communication with the air inlet of each pressure generator, and a valve mechanism in each communication between the

conduit and the air inlet of a pressure generator operating to open or close such communication to the external air.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses, this tenth day of January A. D. 1908.

ALBERT W. PEARSALL.

Witnesses:

L. G. BARTLETT,
A. L. MESSER.