

C. W. ISBELL.
Piston-Blowers.

No. 137,553.

Patented April 8, 1873 .

Fig. 2

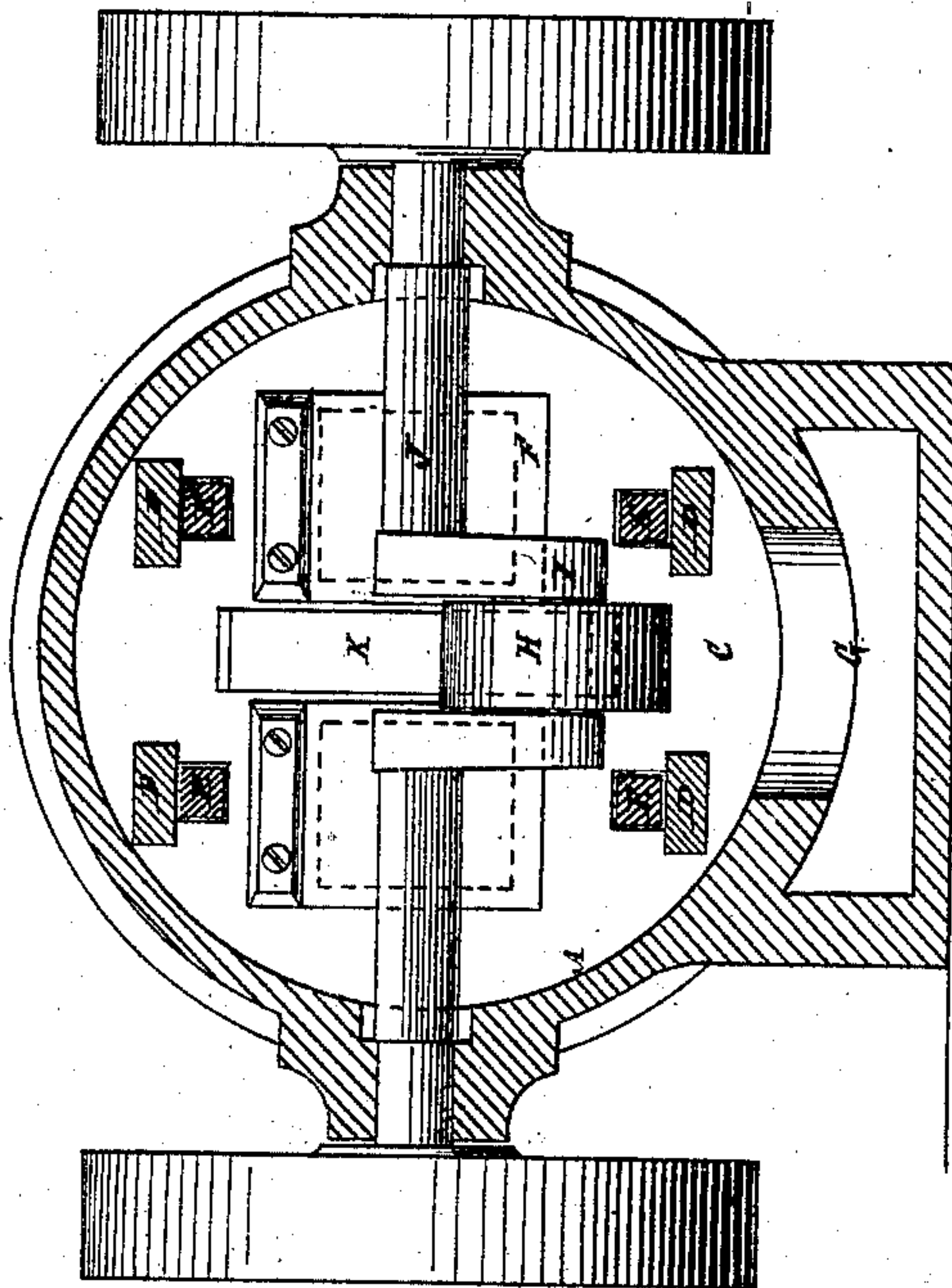
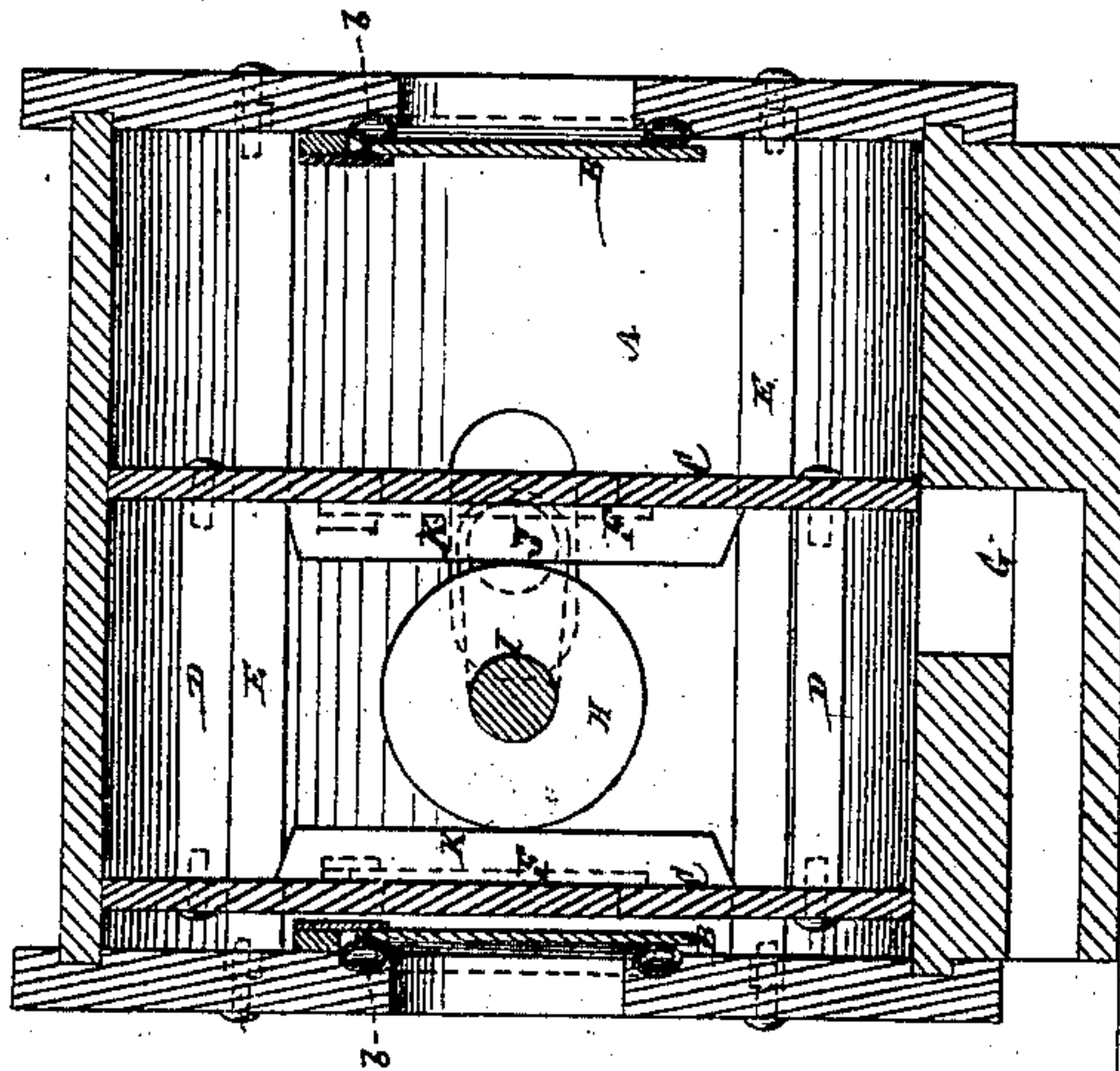


Fig. 1



Witnesses:

Frederick Harper
H. C. Simpson

Charles W. Isbell

UNITED STATES PATENT OFFICE.

CHARLES W. ISBELL, OF NEW YORK, N. Y.

IMPROVEMENT IN PISTON-BLOWERS.

Specification forming part of Letters Patent No. **137,553**, dated April 8, 1873; application filed June 20, 1872.

To all whom it may concern:

Be it known that I, CHARLES W. ISBELL, of the city, county, and State of New York, have invented certain Improvements in Piston-Blowers, of which the following is a specification:

This invention consists in a combination, with a blower-cylinder, of two connected pistons arranged to reciprocate therein, and provided with valves opening inward to receive air within or between said pistons from the outside, through valves connected with the opposite ends of the cylinder, and to expel or discharge the air thus received into or through a chamber or passage common to both pistons, whereby great simplicity of parts and efficiency of action are obtained. The invention also consists in a novel combination or arrangement of guides and slides for said connected pistons, whereby the slides also serve as braces to connect the pistons, and the guides as bearing-surfaces throughout the length of the slides, or thereabout, to support the pistons and relieve them, and the cylinder within which they work, of wear and friction.

In the accompanying drawing, which forms a part of this specification, Figure 1 represents a longitudinal section, and Fig. 2 a transverse section, of a piston-blower constructed in accordance with my invention.

Similar letters of reference indicate corresponding parts in both figures of the drawing.

A is the cylinder, provided with inlet-valves B B at or near its ends. C C are the two pistons arranged at a suitable distance apart, and connected by braces D D D D, which also form slides and are arranged to move along or over and upon fixed guides E E E E passing through the pistons and connected with the ends of the cylinder. These guides not only serve to direct the pistons and keep them from turning, but also form bearing-surfaces for the slides D D D D, throughout the length of the latter or thereabout, whereby the pis-

tons are supported and relieved of wear at their peripheries, as also the cylinder of corresponding wear; likewise leakage around the guides and past the pistons is obviated or reduced. The number of these guides and slides may be varied. F F are the valves in the pistons, also opening inward and serving alternately—that is, the valve or valves of each piston alternately—to pass the air received alternately through either valve B B within or between the two pistons, from whence it is discharged into or through a chamber or passage, G, common to both pistons. The connected pistons C C are or may be reciprocated within the cylinder A by means of a roller, H, carried by a crank, I, of a transversely-arranged revolving shaft, J, and operating against the inner faces of the pistons or blocks or surfaces K K thereon. The seats of the valves B B, as also, if desired, the seats of the valves in the pistons, may be formed of India rubber or other flexible tubing *b b*, whereby slamming of the valves is avoided, and a close or tight action insured.

What is here claimed, and desired to be secured by Letters Patent, is—

1. The combination, with the cylinder A and its inlet-valves B B, of the connected pistons C C provided with inlet-valves F F, and the outlet chamber or passage G whereby the connected pistons receive the air in between them from opposite ends of the cylinder and discharge it through an opening common to both pistons, substantially as specified.

2. The combination, with the pistons C C, of the connecting stays and slides D, the guides and bearing-surfaces E, and the cylinder A, essentially as and for the purposes herein set forth.

CHARLES W. ISBELL.

Witnesses:

FRED. HAYNES,
FERD. TUSCH.