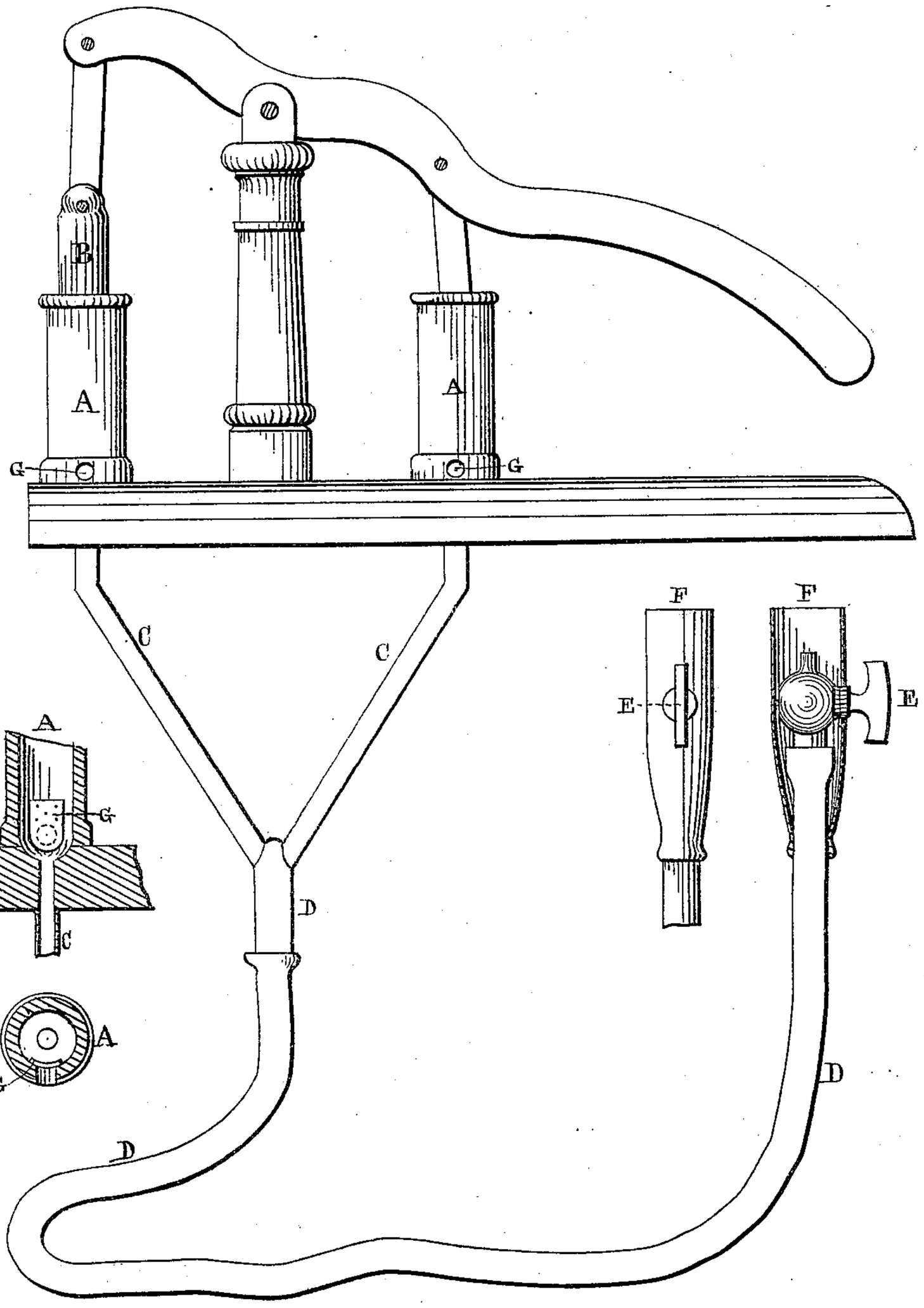
S. L. FLEISHMAN.

Glass-Blowing Machines.

No. 142,845. Patented September 16, 1873.



Witnesses.

G. E. Howe

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UNITED STATES PATENT OFFICE.

SOLOMON L. FLEISHMAN, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN GLASS-BLOWING MACHINES.

Specification forming part of Letters Patent No. **142,845**, dated September 16, 1873; application filed November 5, 1872.

To all whom it may concern:

Be it known that I, SOLOMON L. FLEISHMAN, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Glass-Blowing Machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had by letters to the accompanying drawing, which illustrates my invention.

The object of this invention is the construction of a machine which will supply a steady current of air, of unvarying pressure, to the blow pipe or pipes in the operation of blowing glass in molds, so as to dispense with the services of a human glass-blower in the production of glass articles made in this way. This I accomplish by means of two air-pumps, operating alternately by the same lever, and connected by branch pipes with a common flexible tube. The flexible tube has a hood, by which a tight joint is formed with the blow-pipe. The air-pumps supply a steady continuous stream of air to the blow-pipe.

To enable others skilled in the art to make and use my invention, I will describe its construction and mode of operation.

The air-cylinders A are placed on a suitable table, and are fitted with suitable pistons B and with eduction-openings for the admission of air, such openings being provided with valves, G, opening inward and operating to admit air on the upward stroke of the pistons, and to close the openings on their downward stroke to prevent its escape. Leading downward from the cylinders A to the tube D are two pipes, C C, one from each cylinder, which conduct the air to the tube D. The openings from the cylinders to the pipes C are designed to be fitted with check-valves, as is usual in pumps of this nature, to close such openings on the retraction of the pistons B. The tube D leads to the blow-pipe, and at its outer end is provided with a rubber hood, F, to fit over the mouth of the blow-pipe to prevent the waste of air at that point, and with a cock, E, to regulate the flow of air.

By means of the flexible tube I am enabled to use the blow-pipe in any number of molds, moving it from one to another. This could not be done with a rigid tube.

The pistons B are designed to be worked by a common lever, crank, or wheel. As the pistons operate alternately there is a steady continuous current of air through the common tube D, the force of which is regulated by the speed at which the pump-lever is operated. This cannot be done where there is either a single air-pump or a reservoir of compressed air. In one case the flow is not continuous; in the other the force varies, being much stronger at first and diminishing as the pressure decreases.

By the use of my machine I am able to dispense with the glass-blower and employ less costly labor, as the work of the "blower" and "tender" both can by this means be done by the tender alone, and thereby save the expense of the extra man.

I am aware that double-acting air-pumps have been applied to various uses, and among others, as blacksmith bellows, but as such they are not applicable to this use, especially on account of the difference in the conducting tubes. All such applications I entirely disclaim.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination of the air-pump with the pipes C, the flexible tube D, cock E, and rubber hood F, for supplying a continuous current of air of unvarying pressure to a glass-maker's blow-pipe, substantially as described.

SOLOMON L. FLEISHMAN.

Witnesses:
G. EHIN,
J. BOOS.