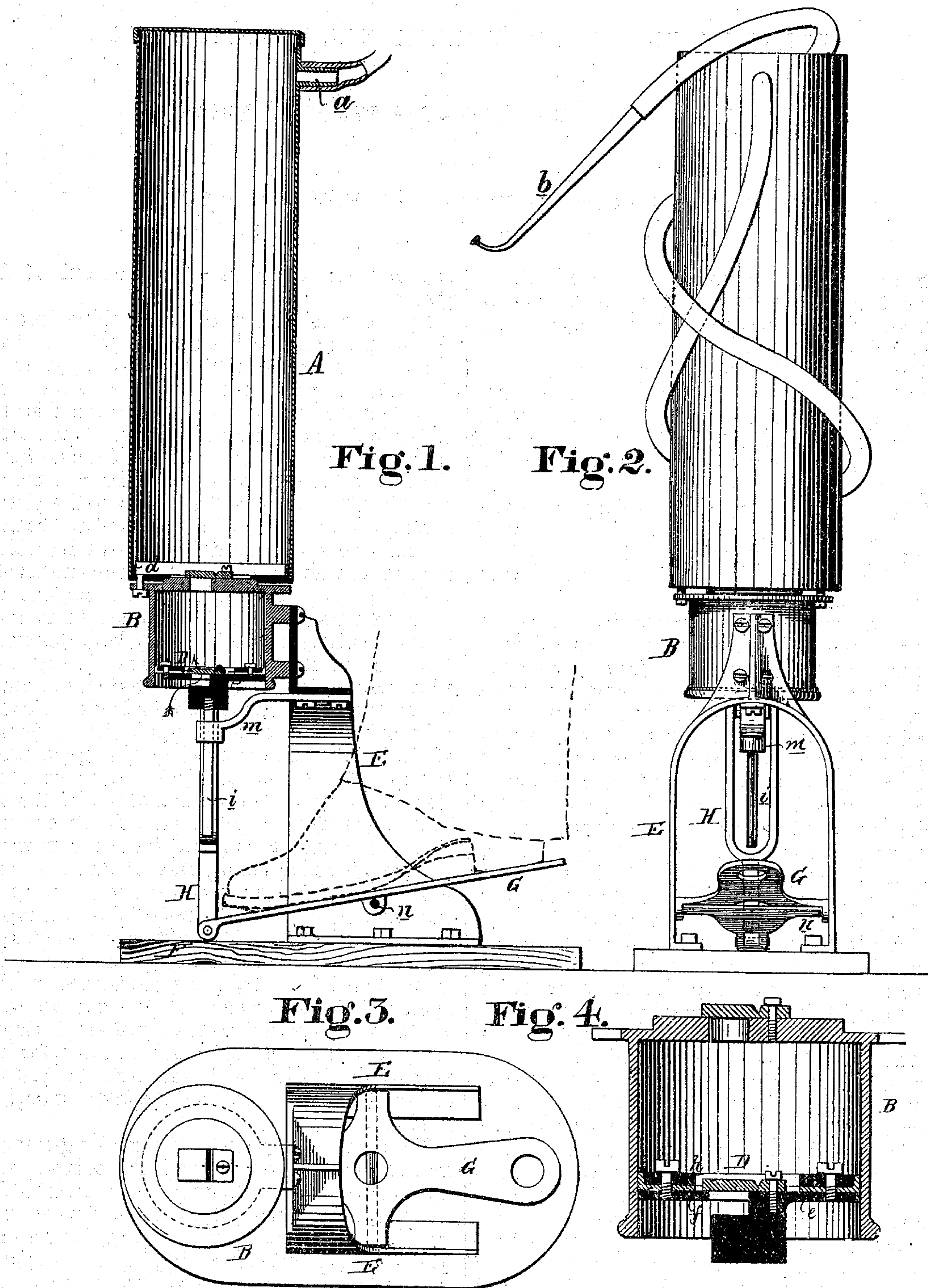


W. S. BURGESS.
Blowing-Pipe Mechanism.

No. 128,587.

Patented July 2, 1872.



WITNESSES { *Wm. A. Steel*
Harry Smith

Warren. S. Burgess
by his Atty
Horace A. Brown

UNITED STATES PATENT OFFICE.

WARREN S. BURGESS, OF NORRISTOWN, PENNSYLVANIA.

IMPROVEMENT IN BLOWING-PIPE MECHANISMS.

Specification forming part of Letters Patent No. 128,587, dated July 2, 1872.

Specification describing Improved Blow-Pipe Mechanism, invented by WARREN S. BURGESS, of Norristown, Montgomery county, Pennsylvania.

My improved blow-pipe mechanism, which is too fully explained hereafter to need preliminary description, has been designed with the view of making a light, portable, and cheap machine for use by chemists, watch-makers, &c.

Figure 1 is a vertical section of my improved blow-pipe mechanism; Fig. 2, a front view of the same; Fig. 3, a sectional plan on the line 1 2, Fig. 1; and Fig. 4, an enlarged view of part of Fig. 1.

A is a compressed-air reservoir, consisting, in the present instance, of a hollow cylinder of metal having a branch, *a*, for receiving the end of an elastic tube terminating in a metal nozzle, *b*, of a shape which the character of the duty to be performed by the blow-pipe may suggest. The lower end of the air-chamber has an internal flange, *d*, to which is attached the upper end of the cylinder B, the latter being closed at the top, with the exception of a central opening covered by a light clack-valve, of leather or other suitable material, which opens upward. The cylinder B has a piston, D, composed of a metal disk, *e*, to which a leather packing-ring, *f*, is confined by a metal ring, *h*. There is in the disk *e* a hole covered by a clack-valve similar to the valve above, and this hole communicates with the external air through a lateral opening in the hub of the piston's disk, the air passing through the latter and into the cylinder in the direction pointed out by the arrow in Fig. 1 on the descent of the piston. The piston-rod *i* is guided by a bracket, *m*, secured in the frame of the apparatus, to which is also secured the cylinder B, the frame consisting of the arched metal standard E secured to a wooden base, F. Between the opposite sides of the standard, and to a pin, *n*, extending through the same, is hung a treadle, G, the latter being such that the pin is situated midway, or thereabout, between the heel and toe of the operator. The rear end of the treadle is jointed to the lower end of a rod, H, the upper forked

end of which is connected to the hub of the piston.

By the combination of the rocking treadle G with the piston of the air-pump, the desired reciprocating movement may be imparted to the said piston by the rocking of the operator's foot, as with ordinary sewing-machines, instead of by the direct pressure of the foot, as in lathes and in blow-pipe mechanism heretofore constructed, where the desired movement is imparted from the treadle to the piston through the medium of a fly-wheel and crank.

I have found that with the above-described apparatus I am enabled, without continuously operating the pump, to obtain a continuous blast at a pressure of from fifteen to twenty pounds; whereas the ordinary bellows-pump must be operated without interruption as long as a blast is required, and produces a blast which can never exceed a very low pressure.

In ordinary portable pumps the tendency of the operation is to unsettle the apparatus; but it will be seen that, in the present instance, owing to the arrangement of the vibrating treadle above the base, the foot of the operator exerts a constant pressure toward the base, thus imparting greater stability than when the apparatus is not in use. Owing to this arrangement of the treadle, also, a rapid movement may be imparted to the piston, and consequently the cylinder may be of small diameter, and the duty to be performed by the operator's foot correspondingly light, while it will be seen that the necessity of employing a counter-weight, spring, or other device, for imparting motion in one direction to the piston, (as in pumps of the usual construction,) is avoided.

The same combination of the rocking-treadle and piston may be adopted if the compressed-air chamber and air-pump are secured to the under side of a table, to the legs of which the treadle may be hung, the standard E and its base being in this case dispensed with; but in most cases I prefer to construct the apparatus in the manner illustrated in the drawing, the whole mechanism being simple and self-contained, and readily transported from place to place.

I do not claim a vertical pump having a piston-rod extending downward, and working from below; but

I claim as my invention—

A portable blow-pipe mechanism, consisting of the pump B, inflexible reservoir A, and the treadle G, vibrating on a pin, *n*, above the base F, all as described.

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

WARREN S. BURGESS.

Witnesses:

CHAS. SLINGHOFF,

CHAS. HURST.