J. F. & W. W. FURNAS.

PUMP.

No. 191,044. Patented May 22, 1877.

Fig. 1.

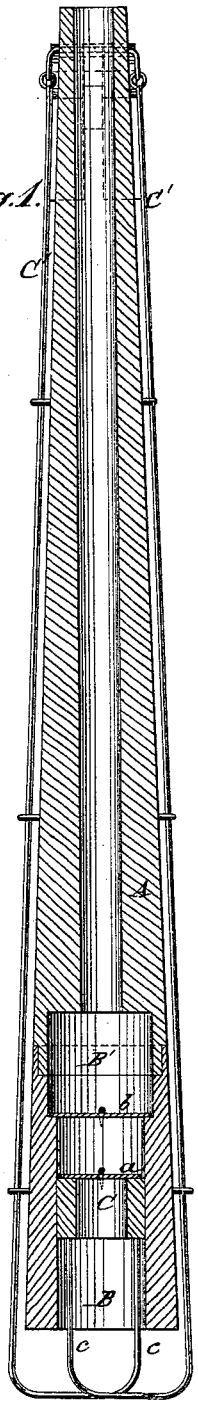


Fig. 2.

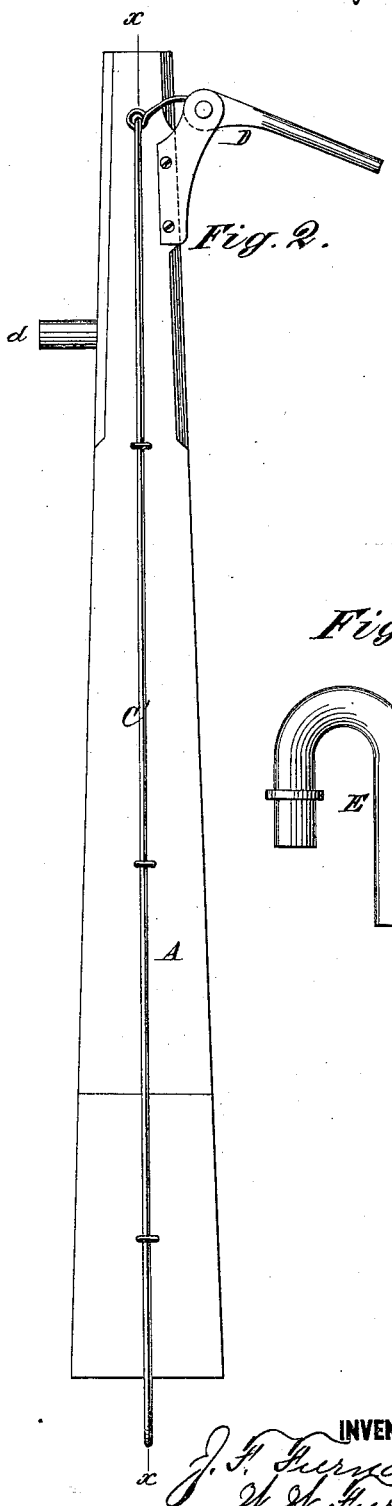
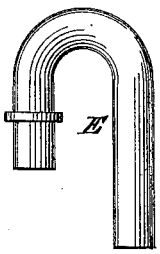


Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JEREMIAH F. FURNAS AND WILLIAM W. FURNAS, OF DYSART, IOWA.

IMPROVEMENT IN PUMPS.

Specification forming part of Letters Patent No. **191,044**, dated May 22, 1877; application filed September 16, 1876.

To all whom it may concern:

Be it known that we, JEREMIAH F. FURNAS and WILLIAM W. FURNAS, of Dysart, county of Tama, and State of Iowa, have invented a new and Improved Pump, of which the following is a specification:

Figure 1 is a longitudinal section of a pump embodying our invention. Fig. 2 is a side elevation. Fig. 3 is a detail view of a crook to be applied to the pump when forcing water.

Similar letters of reference indicate corresponding parts.

The object of our invention is to furnish a pump for elevating water which shall be simple, convenient, and effective.

Referring to the drawing, A is the stock or main portion of the pump, which is bored longitudinally, in the usual way, and is provided at its lower end with a working-barrel, B, which is chambered out at B′; and C is a piston, which consists of an annular block of wood, having the rods *c* projecting downward from it, and connected with a cross-bar attached to the lower ends of the rods C′. These rods run through eyes at the sides of the pump, and are connected at the top with a forked lever, D, which is fulcrumed in the usual way. The piston C is provided with a valve, *a*, consisting of a disk of rubber attached at its center to a rod that is pointed and turned down at a right angle at each end, and driven into the piston. The rubber disk forms a flap-valve on each side of the rod. A valve, *b*, similar to that just described, is placed in the chamber B′, and has its seat on the shoulder formed by chambering the upper end of the working-barrel.

The operation of the pump is obvious. Motion is imparted, by the handle or lever D, to the piston C through the rods C′ and *c*. The valve *a* rises at every downward stroke of the piston, allowing the cylinder B to fill with water. As the piston rises, the valve *a* closes, and the valve *b* opens as the water passes to the upper portion of the pump. When it is desired to use the pump for forcing water, the crook E (shown in Fig. 3) is attached to the top of the pump to receive the hose, and the spout *d* is closed.

The advantages claimed for our invention are, that it may be used either as a force or lifting pump at pleasure. It is made to answer both purposes without stuffing-boxes or complication of parts. The piston and cylinder are submerged, which renders it unnecessary to prime it, and obviates freezing.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

A pumping apparatus consisting of the cylinder A, having barrel B and chamber B′, valved piston, the rods *c*, the outer rod C′, and the lever D, all constructed and arranged as shown and described.

JEREMIAH F. FURNAS.
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