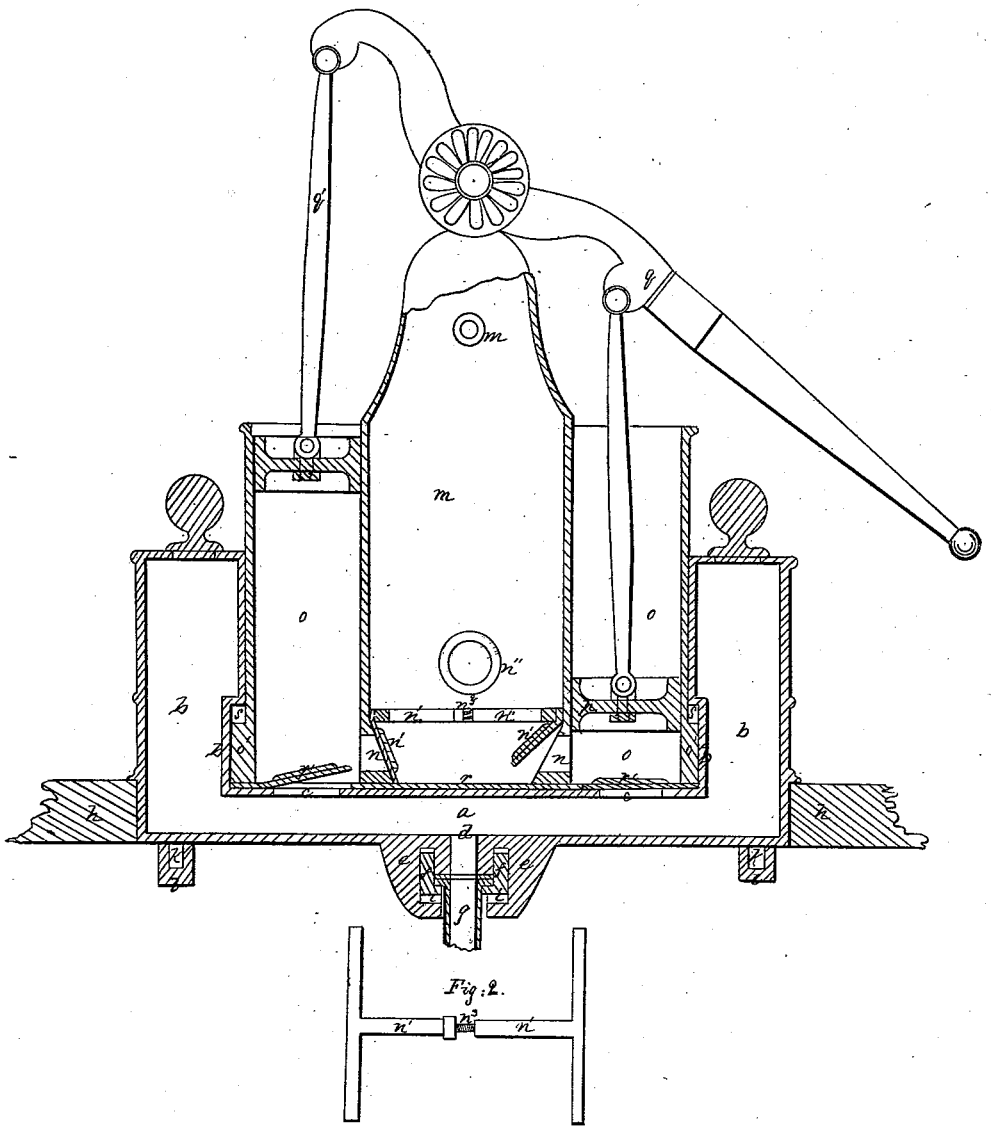
S. C. Higbie,

Double-Acting Pump,

No. 3,010, Patented Mar. 21, 1843



UNITED STATES PATENT OFFICE.

S. C. HIGBIE, OF OPHENHEIM, NEW YORK.

PUMP.

Specification of Letters Patent No. 3,010, dated March 21, 1843.

To all whom it may concern:

Be it known that I, S. C. HIGBIE, of Ophenheim, in the county of Fulton and State of New York, have invented a new and useful Improvement in the Construction of Pumps; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which a vertical section of the pump is shown.

The nature of my invention consists in constructing a double action forcing pump, by casting it in two pieces, with air chambers and all entire; which can be keyed together with two keys, and made perfectly tight.

An oblong box (*a*) is formed, with a vertical cylinder (*b*) at each end. These cylinders are perfectly air tight at top, and open into the box below. Near each of these cylinders there is a hole (*c*) in the top of the box, and at the center there is a similar hole (*d*), through the bottom, around which a flange projects down. On each side of the hole (*d*) is placed a hook (*e*) with the lip projecting inward partly over the flange. Around the flange a ring (*f*) fits, the lower edge of which turns inward. The supply pipe (*g*) is furnished with a flange at its upper end over which the ring (*f*) is put. A ring of leather is put between the top of the supply pipe and the flange, and they are held firmly together, by means of wedges (*i*) driven in between the lower edge of the ring (*f*), and the hooks (*e*). This casting is firmly held to the bottom of the sink, or other convenient plank (*n*), by means of wedges (*k*) driven through staples (*l*) cast on the bottom of the box at each end.

The air cylinders (*b*) has a recess on the inside at (*b'*) for a small space, above which the upper part of the cylinder projects over. The middle compartment (*m*) of the upper casting can be made of any desired form and is the air chamber; it projects up, and forms the fulcrum of the pump handle, to be hereafter described. Near the top of this air chamber, an air cock (*m'*) is situated; and near the bottom the nozzle (*m''*) is inserted. At the bottom of the chamber, the sides project inward, and form a flat valve seat on each side, through which a hole (*n*) is made; this is closed by a valve (*n'*) which is fastened to its place by means of a double T iron, (*n''*) which is an iron running through the center and has a cross piece at each end; this piece is divided at its center (n^2) where there is an extension screw (n^3) to press its two ends apart against the hinge of the valve; a top plan of it is shown at Fig. 2. On each side of the air chamber (*m*), pump cylinders (*o*) are cast, and into which the hole (*n*) opens; in each of the cylinders (*o*) a plunger (*p*) works, which is attached to the pump handle (*q*) by means of the connecting rod (*q'*), which is jointed thereto and also to the plunger. On the outside of the cylinder (*o*) there is a projection (*o'*), that fits into the recess in the side of the cylinder (*b*), the upper part of which cylinder fits against (*o*). Between the top of the box (*a*), and the bottom of the cylinders (*o*), and air chamber (*m*), there is a leather packing (*r*). A valve (*r'*), is cut out of this near each end, at the hole (*c*) in the top of the box, which is directly under the pump cylinder (*o*), and through which the water is drawn, on the rising of the plunger. When the plunger demands, the valve (*r'*) shuts, and valve (*n'*) opens, and admits the water into the air chamber. The chamber (*m*), and cylinders (*o*), are firmly attached to the box, by means of the wedge (*s*), which is driven in between the upper side of the projection (*o'*) and the top of the recess in cylinder (*b*) which secures them together and keeps the packing (*r*) tight.

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

1. The mode herein set forth of constructing the pump in two parts which have but one packing and are keyed together in the manner herein set forth.

2. I also claim the method of holding the valves (*n'*) in place by means of the T iron (*n''*) constructed and arranged as herein fully made known.

S. C. HIGBIE.

Witnesses:
J. J. GREENOUGH,
B. H. MORSELL.