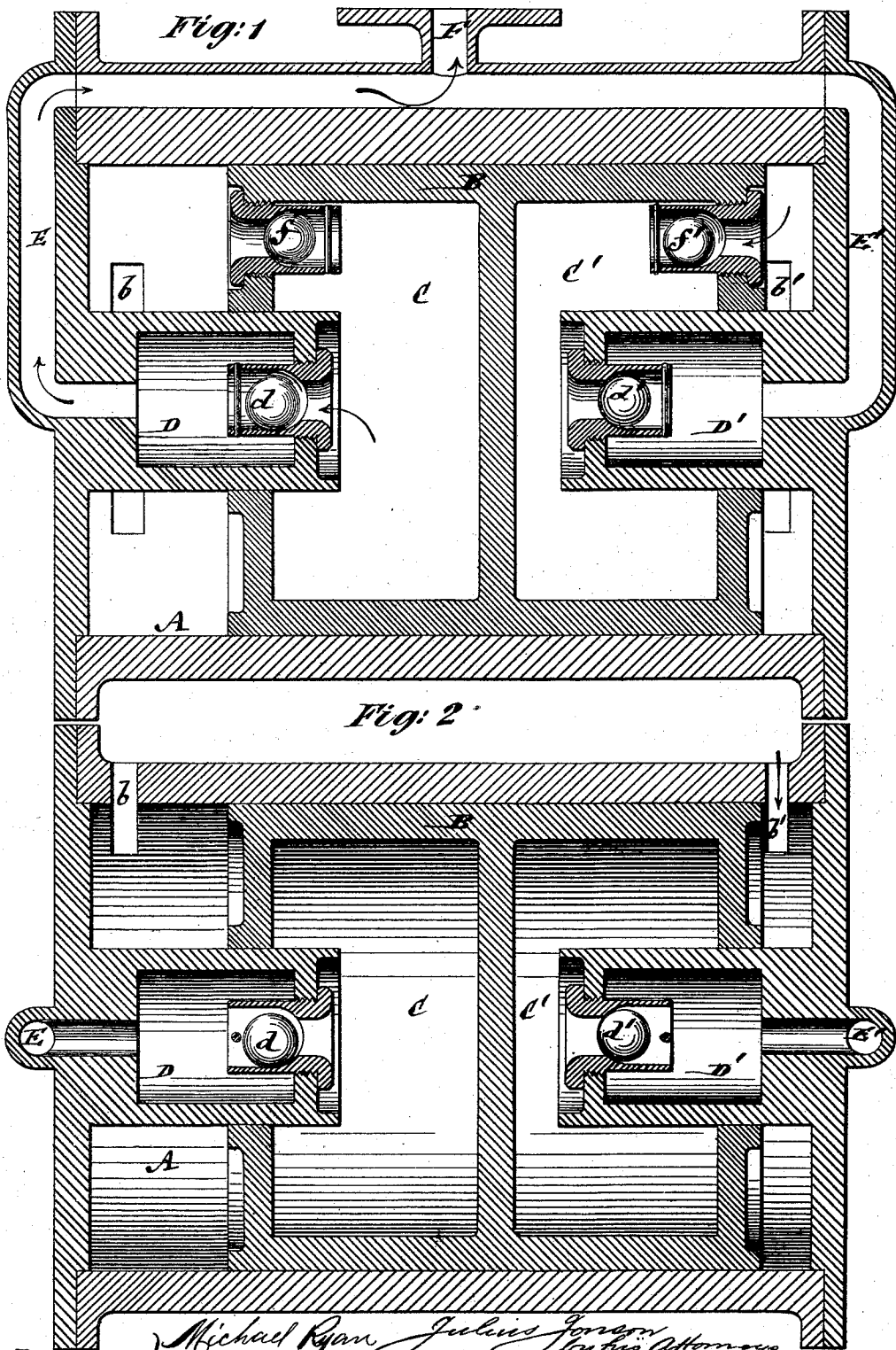


**J. JONSON.**  
**Hydraulic Pressure-Pumps.**

No. 156,025.

Patented Oct. 20, 1874.



*Witnesses* } *Michael Ryan* *Julius Jonson*  
*Fred. Harnes* *by his Attorneys*  
*Brown & Allen*

# UNITED STATES PATENT OFFICE.

JULIUS JONSON, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF HIS RIGHT TO CORNELIUS H. DELAMATER AND GEORGE H. ROBINSON, OF SAME PLACE.

## IMPROVEMENT IN HYDRAULIC-PRESSURE PUMPS.

Specification forming part of Letters Patent No. **156,025**, dated October 20, 1874; application filed April 6, 1874.

*To all whom it may concern:*

Be it known that I, JULIUS JONSON, of the city, county, and State of New York, have invented an Improved Hydraulic-Pressure Pump, of which the following is a specification:

This invention relates to a pump or apparatus operating by hydraulic pressure—as from a street or other main—for supplying water to buildings or the different stories of buildings, including elevations which are above what the initial pressure of the water in the main would naturally deliver at.

The invention generally consists in an apparatus operated in like manner, and which may, if desired, be a reciprocating-piston water-meter, provided with any suitable valve mechanism for alternating the action of the piston as water is drawn off from or through the meter.

The invention consists in a transversely-divided hollow reciprocating piston for operation, under control of the main valve, within the outer water cylinder or chamber, said piston being provided with inlet-valves to the two end compartments of it, for action in concert with delivery-valves in stationary hollow end plungers fitting within the compartments of the piston, and in communication, by passages, with a general outlet to a higher level, to which the water is forced by the pressure on the piston.

In the accompanying drawing, Figure 1 represents a vertical longitudinal sectional elevation of an apparatus constructed in accordance with my invention, and Fig. 2 a horizontal section of the same.

A is the outer cylinder, corresponding to the ordinary water-measuring chamber or cylinder of a horizontally-reciprocating piston-meter, and in which *b b'* are the end passages for alternately admitting water to and exhausting water from the opposite ends of said chamber, and causing a reciprocating action of the piston within the latter, such action being effected by any suitable valve controlling the ports *b b'*, and operated automatically by the piston as water is drawn off from the

valve or other outer chamber that is provided with a suitable inlet and outlet, the whole so far differing in no essential respect from an ordinary reciprocating piston-meter, and being designed to be placed at a level—as, for instance, in the lower story of a building, where the initial pressure of the water in the main or supply pipe will suffice to actuate the piston of the apparatus.

As, however, it very often happens that it is required to deliver the water at a higher level than the initial pressure in the main or supply pipe would effect—as, for instance, in elevated districts or the higher stories of buildings—I construct the apparatus not only to supply lower levels, as already described, but also higher levels, as above referred to. Thus the piston B is made hollow, and of elongated construction, with a transverse partition in it, dividing the piston into separate end compartments C C', having outer heads, which are fitted to encircle and work, as the piston is reciprocated, in close contact with stationary hollow end plungers D D' of less area than the heads of the pistons. These stationary hollow plungers are fitted with outlet or delivery valves *d d'*, which open and close openings between the inner ends of said plungers and the compartments C C', while the back ends of said plungers are in free communication, by passages E E', with a general outlet, F, to a higher level. Furthermore, the heads of the divided hollow piston B are provided with inlet-valves *f f'*, opening into the compartments C C'.

In the operation of the apparatus, which, in its general principles, is similar to that of a double-acting pump, the water, entering the cylinder A by either of the ports *b b'*, not only serves to propel the piston B to the right or the left, as may be, but also to fill, through the valve *f* or *f'*, the compartment C or C' at the receiving end of the cylinder, and driving out the water previously received within the other of said compartments. In this way the pressure of the water, acting upon the greater area of the piston-heads relatively to the stationary plungers, operates to discharge from the com-

partments C C', alternately, water through either valve *d* or *d'* and passage E E', up to and through the outlet F, to a higher level than the initial pressure of the water in the main or supply pipe would lift it.

I claim—

The combination, with the cylinder A, having end ports *b b'*, of the elongated hollow piston B, divided into opposite end compartments

C C', the inlet-valves *f f'*, the stationary hollow end plungers D D', the delivery-valves *d d'*, and the discharge-passages E E' F, substantially as and for the purposes herein set forth.

JULIUS JONSON.

Witnesses:

M. RYAN,

FRED. HAYNES.