T. MEIKLE.

VALVES FOR HYDRAULIC ELEVATORS.

No. 186,863. Patented Jan. 30, 1877.

Fig. 1.

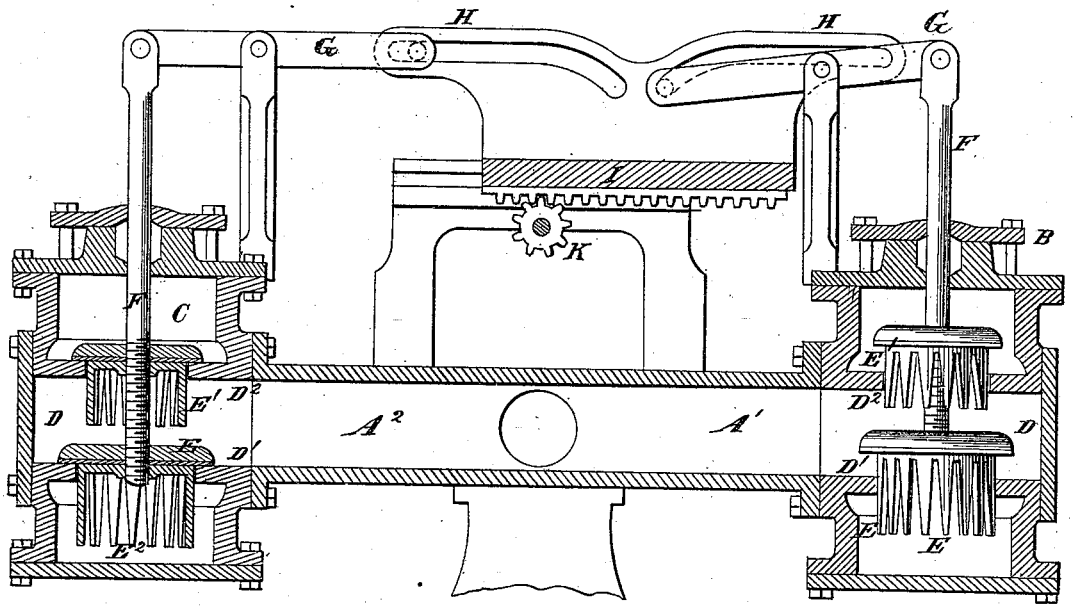


Fig. 2.

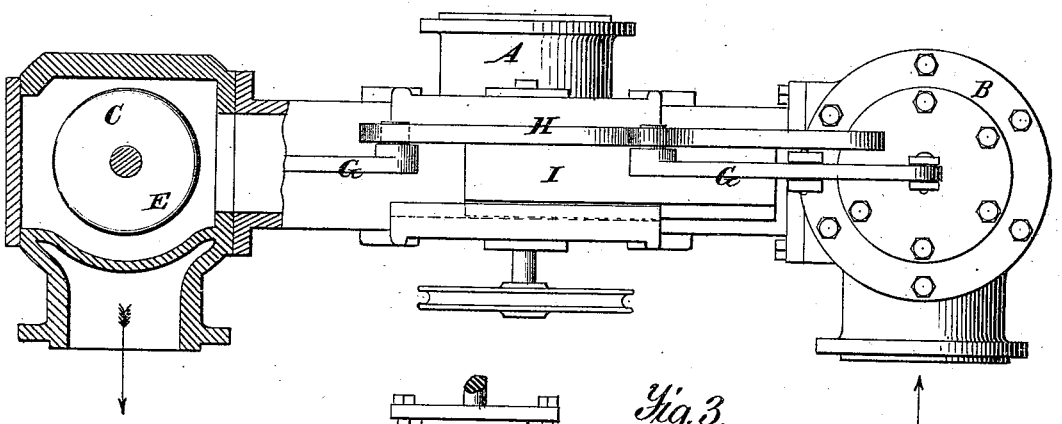
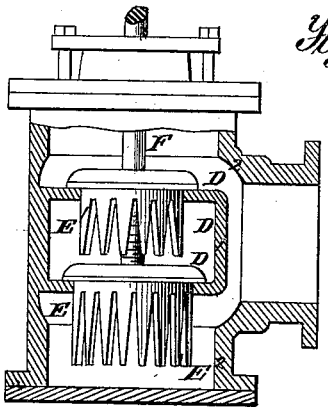


Fig. 3.



Witnesses:
A. Ruppert
Levi Bacon

Thos. Meikle
Inventor.
D. P. Holloway & Co
Attys

UNITED STATES PATENT OFFICE.

THOMAS MEIKLE, OF LOUISVILLE, KENTUCKY.

IMPROVEMENT IN VALVES FOR HYDRAULIC ELEVATORS.

Specification forming part of Letters Patent No. **186,863**, dated January 30, 1877; application filed August 7, 1876.

To all whom it may concern:

Be it known that I, THOMAS MEIKLE, of Louisville, in the county of Jefferson and State of Kentucky, have invented a new and useful Improvement in Valves for Hydraulic Elevators, of which the following is a specification:

This invention relates to a system of balanced and graduated valves for a hydraulic elevator, whereby the valves can be easily and certainly operated and closed without shock to the pipes.

In the annexed drawings, making part of this specification, Figure 1 is a vertical longitudinal section. Fig. 2 is a plan view, partly in section; and Fig. 3 is a transverse section of one of the cylinders.

The same letters are employed in all the figures in the indication of identical parts.

A in the drawing is the pipe communicating with the cylinder, and, through lateral branches A^1 A^2, with the valve-chamber B, regulating the inlet of water, and C, regulating the discharge. In the interior of each is a circular partition, D, forming an intermediate chamber opening into the ducts A^1 A^2, and, through opening controlled by valves E and E^1, communicating, respectively, with the inlet and discharge pipes. The valve-seats D^1 and D^2 are, respectively, in the top and bottom of the partition, and support valves E and E^1, which fit on the seats and carry a tubular series of downwardly-projecting points, E^2, with converging spaces between them, through which the water flows in passing under the valves, so that as the valves descend, instead of cutting off the water suddenly and with a shock, it is gradually diminished as it passes through the converging spaces. The valves are of the same area, and discharge the water equally above and below, so that they are balanced, and they have pressure both up and down, with only preponderance to keep them well seated. They are attached to a stem, F, passing through a stuffing-box, and actuated by levers G, having their fulcrum in the middle, and having a stud-pin on the end entering a curved slot, H, in the T-frame, which moves one way or the other by the rack I and pinion K, the movement being determined by the form of the slot, to give a perfectly easy movement to the valves.

I am aware that valves operating upon the same principle have been employed for faucets and for gas and steam regulators, converging recesses being formed in the periphery of the plug with a view to making a very rapid increase of issue as the valve is opened more and more. It is obvious, however, that such valves are not adapted for the purpose to which mine are applied, where a small valve is designed to issue a considerable amount of water, and in which, therefore, the requisite area of discharge is attainable only by cutting through the valve, so as to form fingers, between which the water will flow freely from the center. It is to valves of this modified construction that my application is limited.

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

In combination with the valves for induction and exit, attached to stems F F, the levers G G and slotted reciprocating arms H, for alternately actuating the valves, substantially as set forth.

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

THOMAS MEIKLE.

Witnesses:

THOS. MALONE,

JAMES TILLEY.