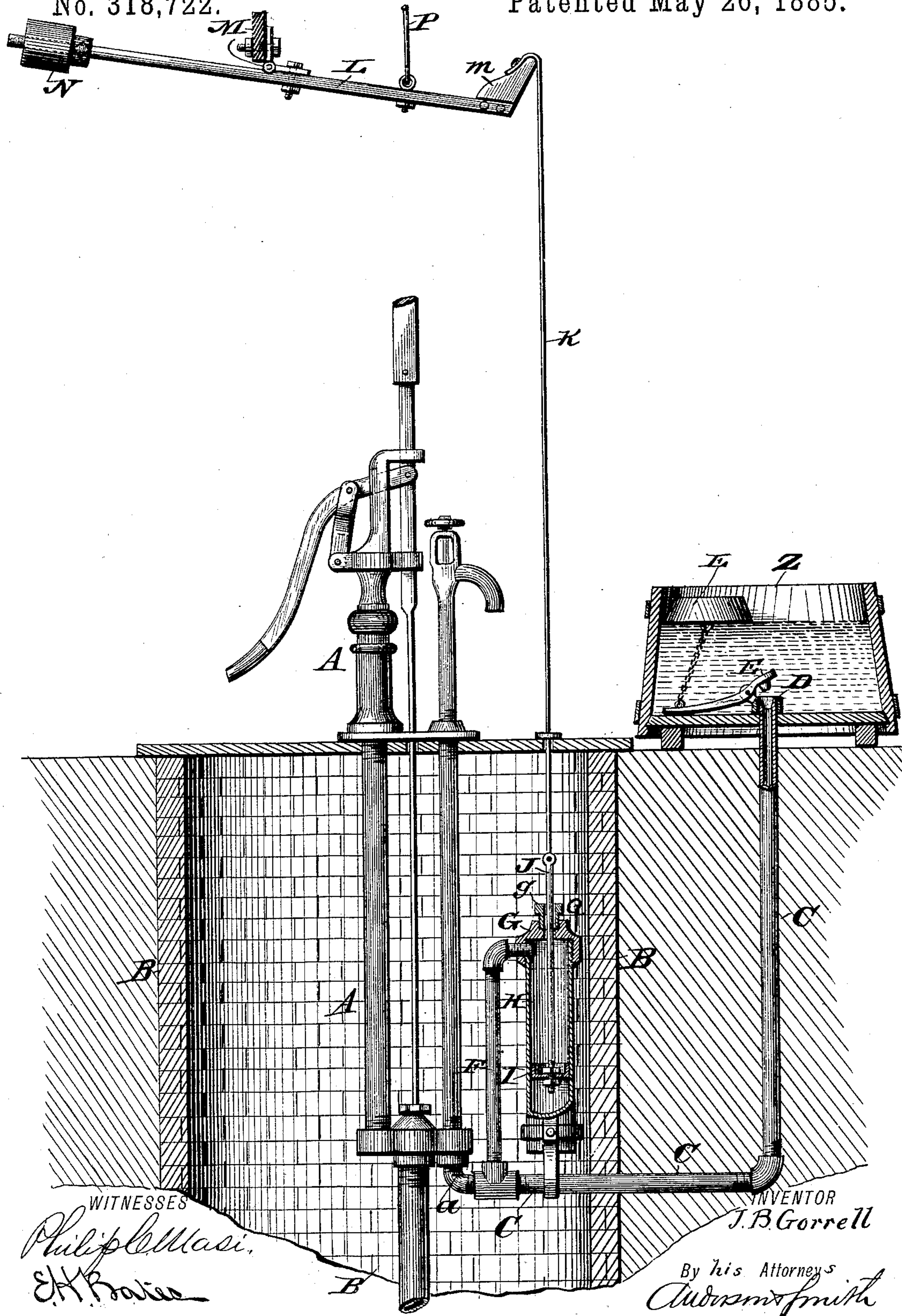


(No Model.)

J. B. GORRELL.
HYDRAULIC REGULATOR.

No. 318,722.

Patented May 26, 1885.



UNITED STATES PATENT OFFICE.

JOHN B. GORRELL, OF LA OTTO, INDIANA, ASSIGNOR OF TWO-THIRDS TO
FRANCIS A. HOGUE AND W. JAMES HOGUE, OF SAME PLACE.

HYDRAULIC REGULATOR.

SPECIFICATION forming part of Letters Patent No. 318,722, dated May 26, 1885.

Application filed November 20, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. GORRELL, a citizen of the United States, residing at La Otto, in the county of Noble and State of Indiana, have invented certain new and useful Improvements in Hydraulic Regulators; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawing, and to letters and figures of reference marked thereon, which form a part of this specification.

The figure of the drawing is a sectional view of a well showing my device attached.

This invention has relation to hydraulic regulators for windmills; and it consists in the construction and novel arrangement of devices, as hereinafter set forth, and pointed out in the appended claim.

In the accompanying drawings, the letter A represents a windmill force-pump, and B the wall of the well.

C indicates the supply-pipe, the end of which is attached to the pump at *a*. Through this supply-pipe the water passes to the outlet D in the tank Z. The end of this supply-pipe is provided with a float-valve, E, which is designed to close the opening when the tank is full of water, and thereby to produce a back-pressure, causing the water to pass into the pipe F and into the cylinder-cap G, where it passes into the cylinder H. In this manner the pressure of the water is brought upon the piston I, causing it to move downward with its stem or rod J, to which the wire *k* is connected.

L is the counterbalance-lever, pivoted at M, and having one of its arms connected to the upper end of the wire *k*.

The lever L is provided with the counterbalance-weight N, and is connected by the operating-wire P to the mechanism for throwing the wind-engine out of gear, which mechanism may be of any ordinary or approved construction. When the piston I is forced down-

ward, the wind-engine is thrown out of gear and held out of gear until the outlet of the discharge-pipe is allowed to open by the falling of the float, caused by the removal of water from the tank. In this operation the water is forced out of the regulating-cylinder by the action of the counterbalancing-lever, and the connection P is slackened, taking the strain off the shifter and allowing the wind-engine to move into gear and proceed with the pumping operation.

The connected end of the counterbalance-lever is turned upward, as shown at *m*, to give the hydraulic pressure more power over it as the piston descends.

In the construction illustrated the regulating-cylinder is provided with a band, to which is connected a stirrup, whereby the cylinder is connected to the supply-pipe.

The cylinder-cap G is provided with a stuffing-box, Q, at its top end, through which the stem or rod J passes. The object is to prevent the escape of water at top of cap G.

I am aware that it is not new in windmill-pumps to provide a tank having a supply-pipe therein operated by a float, and a counterbalance-lever connected with the piston of a cylinder, and therefore do not claim such devices broadly.

Having described this invention, what I claim, and desire to secure by Letters Patent, is—

A hydraulic regulator for windmill-pumps, having a counterbalance-lever formed with an upturned operating-arm and connected to the piston I, the regulating-cylinder H, communicating with the supply-pipe of the pump, and the tank Z, having a float operating the valve of the outlet of the supply-pipe in said tank, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN B. GORRELL.

Witnesses:

LEE HOLBROOK,
JOSEPH H. SIMON.