

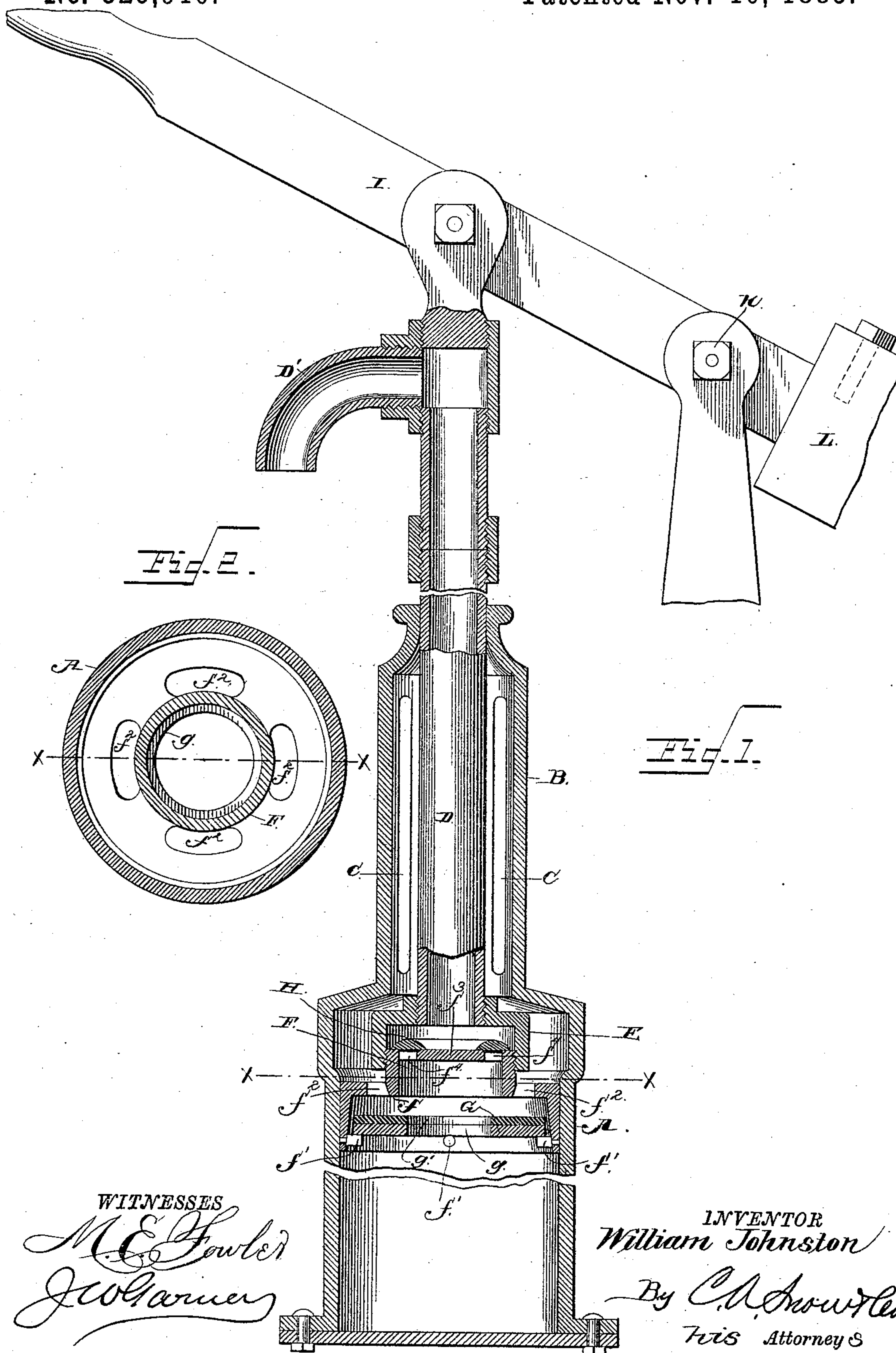
(No Model.)

W. JOHNSTON.

PUMP.

No. 329,910.

Patented Nov. 10, 1885.



WITNESSES

M. E. Fowler
J. W. Garner

INVENTOR

William Johnston

By C. A. Snowden
His Attorney

UNITED STATES PATENT OFFICE.

WILLIAM JOHNSTON, OF ESSEX, IOWA.

PUMP.

SPECIFICATION forming part of Letters Patent No. 329,910, dated November 10, 1885.

Application filed September 8, 1885. Serial No. 176,507. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM JOHNSTON, a citizen of the United States, residing at Essex, in the county of Page and State of Iowa, have invented a new and useful Improvement in Pumps, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to an improvement in pumps; and it consists in the peculiar construction and combination of devices that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the drawings, Figure 1 is a vertical sectional view of a pump embodying my invention. Fig. 2 is a transverse sectional view of the same, taken on the line xx of Fig. 1.

A represents the pump-cylinder, which is designed to be supported upon any suitable bearing below the level of the water, or anchored in the bottom of a well. This cylinder is closed at its ends, and is provided at its upper end with a vertical extension, B, of reduced diameter, and which is provided with elongated vertical slots C, to permit ingress of the water to the cylinder.

D represents a tube, which is open at its lower end, and provided at its upper end with a discharge-spout, D'. To the lower end of the tube is screwed a cap, E, to the lower end of which is coupled the reduced upper side of a hollow open piston, F, that works vertically in the cylinder when the tube D is vertically reciprocated. The lower portion of the piston forms a cage for a valve, G, which is a circular metallic disk having a circular central opening, g , and a leather or other suitable packing, g' , on its upper side. This valve plays vertically in the lower portion of the piston, its motion being limited by the shoulder f and the pins or studs f' . In the horizontal shouldered portion of the piston are ports f^2 , communicating with the cylinder. The reduced upper portion of the piston is closed at its upper side, as at f^3 , and has ports f^4 , that communicate with the lower end of the tube D. A valve, H, similar to the valve G, is placed on the upper side of the piston and works vertically in the cap E, which forms a cage for said valve. The upper end of the tube is connected to a handle,

I, which latter is fulcrumed, as at K, and has a weight, L, on its short end sufficiently heavy to counterbalance the piston, tube, and column of water in the latter.

The operation of my invention is as follows: The piston is at its initial position at the upper end of the cylinder, as shown in solid lines in Fig. 1, with the ports f^2 open and the ports f^4 closed. Water is admitted through the slots C and ports f^2 into the cylinder, so that the latter is constantly filled. When the piston is moved downward, by depressing the outer end of the handle-lever the valve G rises and closes the ports f^2 , and a portion of the water in the cylinder passes through the opening in said valve and through the ports f^4 , raising the valve H and passing through said valve into the tube D, as indicated in dotted lines in Fig. 1. On the upstroke of the piston the cylinder is again filled, to be again forced into the tube D and discharged through the spout on the ensuing downstroke.

The weight on the lever raises the piston, and in working the pump the only exertion necessary is to depress the outer end of the lever, thus rendering the operation of the pump extremely easy.

Having thus described my invention, I claim—

The combination of the cylinder having the reduced extension B at its upper end, and inlet-openings C in said extension, the hollow tube D, the cap E, secured to the lower end of said tube, the hollow open piston F, having the reduced upper end coupled to the cap E, the ports f^2 , communicating with the cylinder, and the ports f^4 , communicating with the lower end of the tube, the valve G in the lower part of the piston, having the central opening, g , and adapted to rise when the piston is lowered and close the ports f^2 , and the valve H in the cap E, adapted to rise when the piston is lowered and open the ports f^4 , substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

WILLIAM JOHNSTON.

Witnesses:

G. B. JENNINGS,
J. A. OSTERHOLM.