(No Model.) 2 Sheets—Sheet 1.

E. NEFF.

PUMP.

No. 304,275. Patented Aug. 26, 1884.

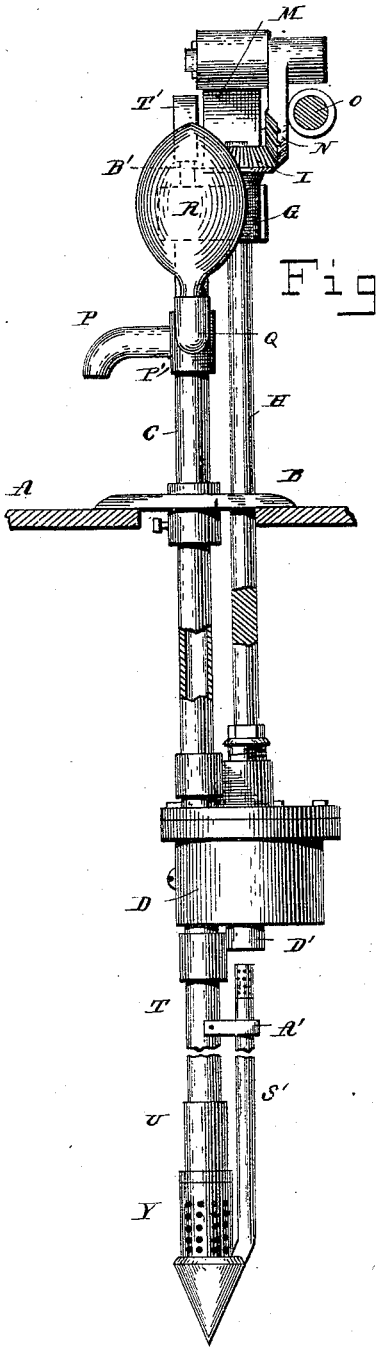

Fig. 1.

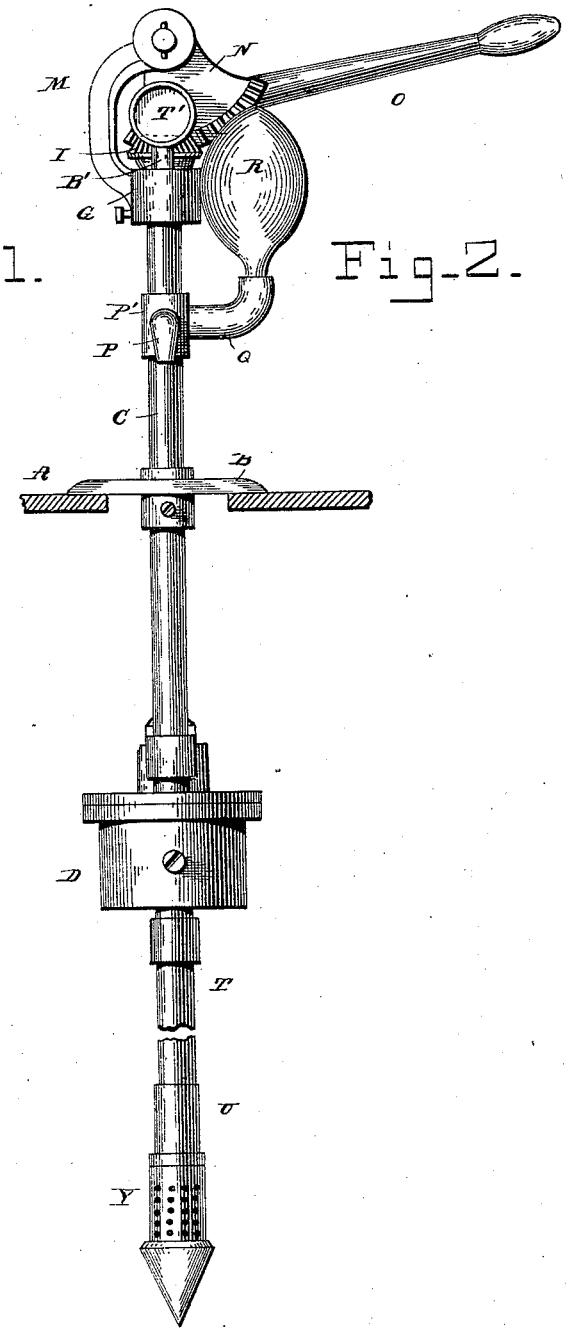

Fig. 2.

WITNESSES

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Fig. 3.

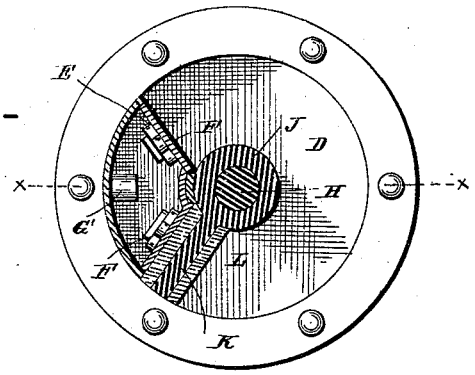


Fig. 5.

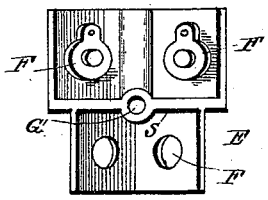


Fig. 4.

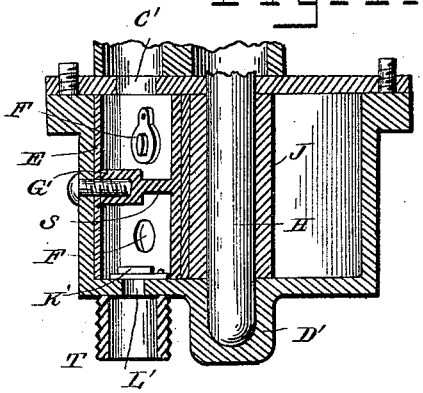
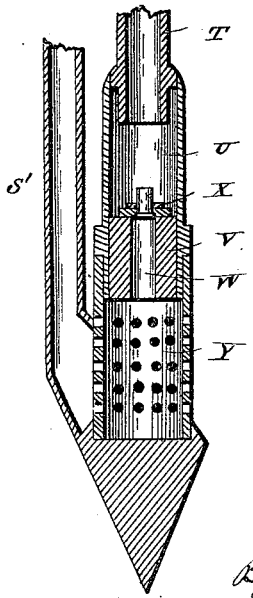


Fig. 6.



WITNESSES

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UNITED STATES PATENT OFFICE.

ELIJAH NEFF, OF ROCHESTER, INDIANA, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF THREE-FOURTHS TO WILLIAM H. GREEN, CHRISTOPHER C. WOLF, AND JOHN B. FULKINSON, ALL OF SAME PLACE.

PUMP.

SPECIFICATION forming part of Letters Patent No. 304,275, dated August 26, 1884.

Application filed January 31, 1884. (No model.)

To all whom it may concern:

Be it known that I, ELIJAH NEFF, a citizen of the United States, residing at Rochester, in the county of Fulton and State of Indiana, have invented certain new and useful Improvements in Pumps, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain improvements in oscillating pumps; and it has for its objects to provide improved means whereby water is elevated from the well and caused to flow in a continuous stream from the spout while the handle is being operated. These objects I attain by the means illustrated in the accompanying drawings, in which—

Figure 1 represents a side elevation of my improved pump; Fig. 2, a front view of the same. Fig. 3 represents a top view of the cylinder, showing the head removed and the piston and segmental bracket in section; Fig. 4, a sectional view through the line *x x* of Fig. 3, with the cover in place; Fig. 5, a front elevation of the valve-bracket; and Fig. 6 represents a vertical sectional view of the lower end of the pump.

In the drawings, the letter A indicates a platform which covers a well, on which rests the circular plate B, having a collar made integral with it and provided with a set-screw for holding the pump at any required height in the well.

C indicates a pipe passing through the collar above referred to, which passes down and connects to one side of the center of the cylinder-head of the cylinder D, having on its inside a bracket, E, provided with valves F. The upper end of the pipe C has surrounding it and secured to it by a set-screw a collar, G, having a bracket, M, in the upper end of which is journaled the short shaft of the cog-segment N, to which is secured the handle O. This collar has also passing through it a piston-rod, H, to the upper end of which is secured the beveled pinion I, which intermeshes with the cog-segment N. The piston-rod H passes down through the circular plate B and down through the center of the cylinder, and the end of it is seated in a boss, D′, in the bottom of the cylinder. The end of the recess in the interior of the said boss is rounded at its lower extremity to properly receive the rounded or semi-spherical end of the piston-rod, as shown in Fig. 4. Secured to this piston-rod within the cylinder is a collar, J, having a radial arm or wing, K, which is flat and rectangular in form, and has secured on both sides of it a leather packing, all forming a piston (indicated by the letter L) which oscillates in said cylinder.

Between the base-plate B and the operating mechanism on the pipe C, and in front of the same, is situated the spout P, and at the side of said pipe connects the short pipe G, connecting an air-chamber, R, with the pipe C. The spout P and the short pipe or elbow Q are attached to a collar, P′, which surrounds the pipe C, the said pipe being perforated coincidently with the said spout and elbow. The bracket E is segmental in shape, and is provided with walls, to which the valves are hinged, and a partition, S, having a boss, G′, into which fits a screw holding the bracket in position. As will be seen, the partition S divides the bracket into two chambers. The upper chamber has the valves on the inside of the walls and the lower chamber has the valves on the outside, and on the bottom of the cylinder in the lower chamber is a valve, K′, the operation of which will be explained hereinafter. Connecting with the lower chamber is a pipe, T, the lower end of which projects into a short section, U, which is provided with a plug, V, having a passage, W, and valve X, and connected to this section of pipe is a perforated section, Y.

The letter Z indicates an air-pipe connecting with the perforated section Y, which extends up to near the bottom of the cylinder and being perforated at its upper end. A brace, A′, is used to steady the air-pipe above referred to. The head of the cylinder is secured thereto by screw bolts and nuts to furnish easy access to the interior.

B′ indicates a plug inserted into the top of the pipe C, having a fender, T′, secured thereto, to prevent the fingers from being caught in the meshes of the pinion and cog-segment.

The operation of my invention is as follows:

The handle being operated reciprocates the piston-rod and piston, which plays from one radial wall of the segmental bracket to the wall on the other side, and when the piston is being operated it forces the water in front of it through one of the top valves F, into the upper chamber of the bracket, through the opening C′ into the pipe C and out at the spout, the surplus water being forced into the air-chamber R, compressing the air therein, so that when the operation is stopped the air will force the surplus water out at the spout. When the piston commences to reciprocate, the space behind it fills with water, caused by the suction of the piston and the pressure of air through the pipe S′ to enter the perforated section Y, and through the plug V opening the valve X, and up through the pipe T, through the valve K′, into the lower chamber of the bracket, and then into the space behind the piston, ready for the next stroke.

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

1. The combination, with the water-pipe of a pump, and a piston-rod having a pinion secured to its upper end, of a collar supported on the extended end of the water-pipe and forming a bearing for the piston-rod, the cog-segment, to which is secured the pump-handle, and the bracket forming a bearing for the said segment, substantially as and for the purpose set forth.

2. The combination, with the suspended cylinder having a valved inlet entering from below and an outlet coincidently from above, and the piston contained in the said cylinder, of the bracket provided with two compartments, one having inlet-valves and communicating with the outlet-pipe, and the other having orifices and communicating with the valved inlet over which it is placed, substantially as and for the purpose specified.

3. The combination, with the operating mechanism and the pipe C, of the plug B′ and fender T′, as and for the purposes described.

4. The combination, with the pipe T, the perforated section Y, and the air-pipe S′, of the short section U, having a plug, V, and valve X located therein, as and for the purposes herein described.

5. The combination, with the cylinder, of the partitioned segmental bracket, the said partition being provided with an internally-screw-threaded boss for receiving the securing-screw passing through the cylinder-wall, substantially as and for the purpose specified.

6. In combination with the water-pipe, the collar surrounding the same and having projecting from it a spout, and also an elbow supporting and connecting with the said pipe an air-chamber, substantially as and for the purpose specified.

7. In combination with a pump-cylinder, a pipe leading from thence into a well or fluid-receptacle, and provided at its lower end with a valve and a perforated extension, and also an upwardly-extending air-pipe communicating with the said extension.

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

ELIJAH NEFF.

Witnesses:
J. M. ROGERS,
C. C. WOLF.