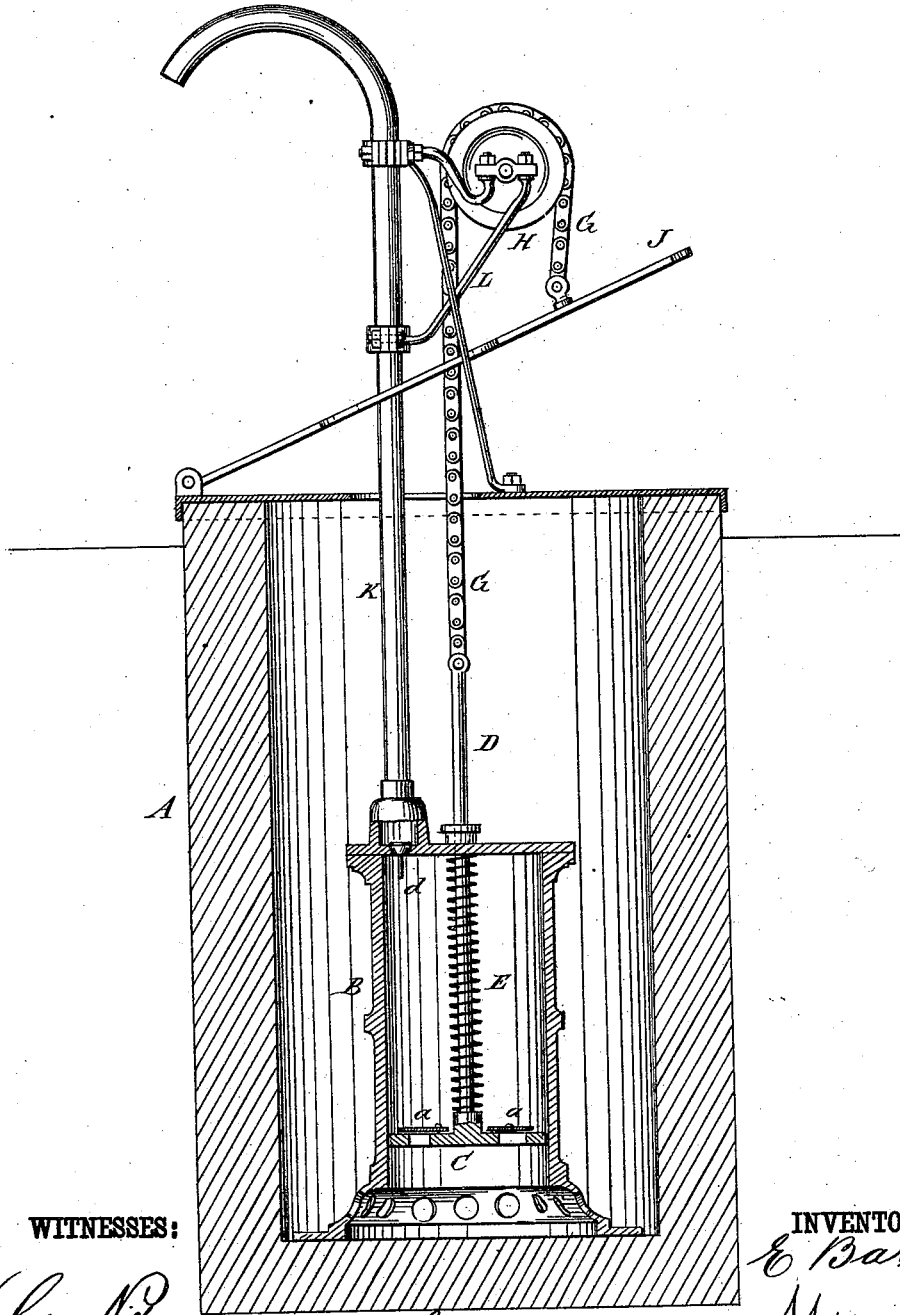


E. BARNES.
LIFT-PUMPS.

No. 195,253.

Patented Sept. 18, 1877.



WITNESSES:

Chas. Nida
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UNITED STATES PATENT OFFICE.

EMORY BARNES, OF MOUNT PLEASANT, MICHIGAN.

IMPROVEMENT IN LIFT-PUMPS.

Specification forming part of Letters Patent No. **195,253**, dated September 18, 1877; application filed August 18, 1877.

To all whom it may concern:

Be it known that I, EMORY BARNES, of Mount Pleasant, in the county of Isabella and State of Michigan, have invented a new and Improved Pump, of which the following is a specification:

This invention has relation to means for raising water; and the nature of my invention consists in combining, with a submerged cylinder, a piston which is depressed by a helical spring and raised by means of a treadle and a chain, which is attached to the piston-rod and passed over a pulley attached to the discharge-pipe, as will be fully explained hereinafter.

In the annexed drawing I have represented my improved pump in section, arranged in a well.

The letter A designates the curbing of a well, at the bottom of which, and submerged in the water, is the pump-cylinder B. This cylinder may be of any suitable length and diameter, and it should be secured down in any suitable manner. The base of the cylinder B is perforated so that water will flow freely into it when a piston, C, is raised. This piston is provided with valves *a a*, which open upward and which allow water to flow when

it is depressed. D designates the piston-rod, which has a helical spring, E, compressed between the piston and head of the cylinder for the purpose of giving the downstrokes to the piston. The upper end of the piston-rod has a chain, G, secured to it, which extends above the top of the well and is passed over a pulley, H, and attached to a treadle, J. By depressing the treadle J the piston D will force water up through the discharge-pipe K. At the foot of this pipe is a check-valve, *d*, which allows piston D to force water up the pipe, but prevents it from returning. The pulley H has its bearing in a journal-box, which is supported by a bracket, L, fixed to the stand-pipe K.

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

In combination with the submerged pump-cylinder having a perforated bottom, and with a piston, C, having valves *a*, the spring E, rod D, chain G, pulley H, and treadle J, arranged substantially as described.

EMORY BARNES.

Witnesses:

GEO. MOSHER,
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