(No Model.)

G. E. SPRINKLE.

DOUBLE ACTING FORCE PUMP.

No. 317,422. Patented May 5, 1885.

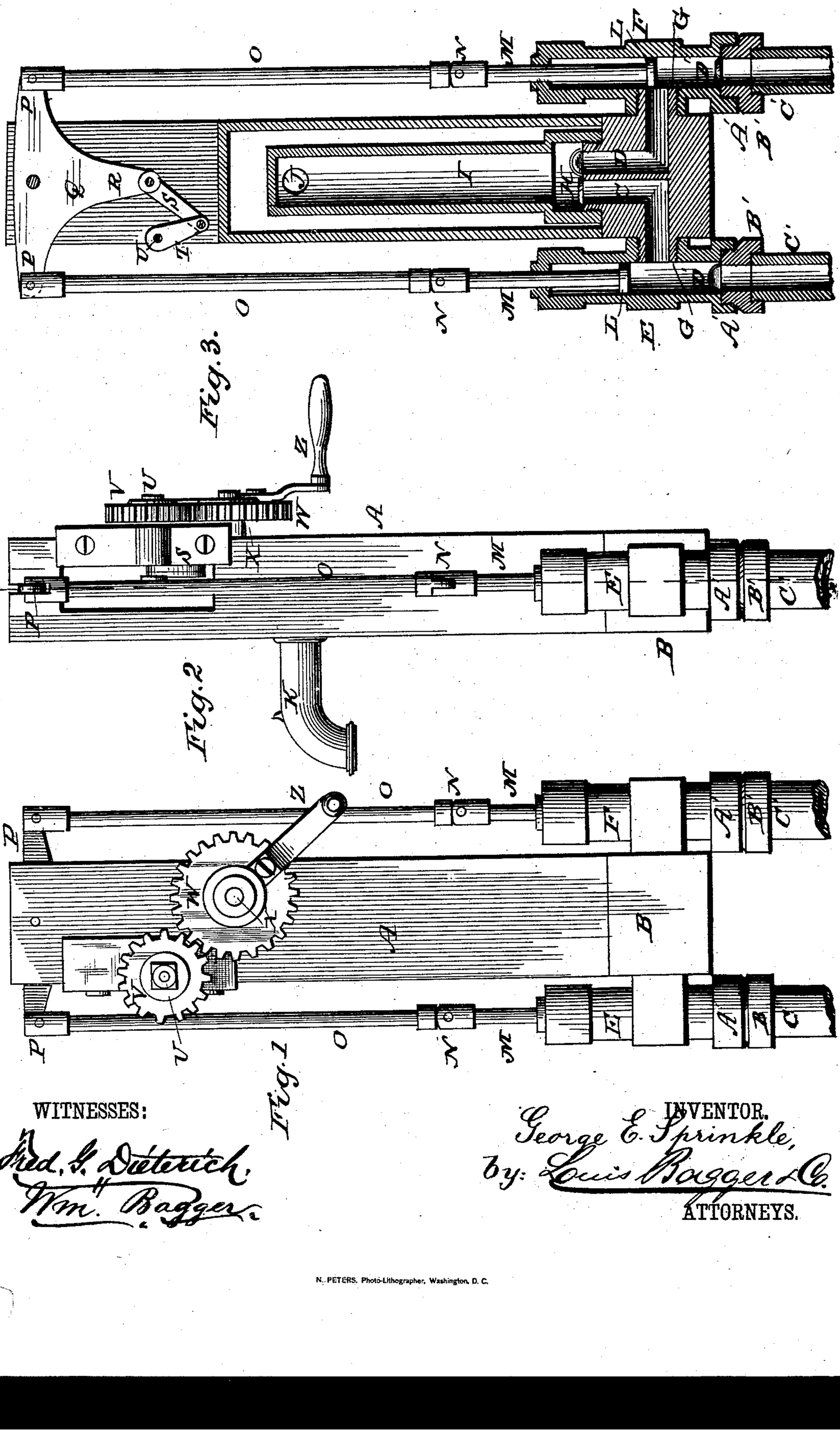

Fig. 3.

Fig. 2.

Fig. 1.

WITNESSES:

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UNITED STATES PATENT OFFICE.

GEORGE E. SPRINKLE, OF SOUTH WHITLEY, INDIANA, ASSIGNOR TO JOHN M. BRIANT AND ELI L. EBERHARD, OF SAME PLACE.

DOUBLE-ACTING FORCE-PUMP.

SPECIFICATION forming part of Letters Patent No. 317,422, dated May 5, 1885.

Application filed June 3, 1884. (No model.)

To all whom it may concern:

Be it known that I, GEORGE E. SPRINKLE, a citizen of the United States, and a resident of South Whitley, in the county of Whitley and State of Indiana, have invented certain new and useful Improvements in Double-Acting Force-Pumps; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a rear elevation of my improved double acting force-pump. Fig. 2 is a side elevation of the same; and Fig. 3 is a vertical sectional view taken on the line *x x* in Fig. 2.

The same letters refers to the same parts in all the figures.

This invention has for its object to provide a double-acting force-pump of improved construction, whereby water may be elevated in a continous stream, so as to make the pump serviceable either for raising water in buildings to the upper stories of the same, or as a pressure-pump which shall be useful for forcing water for the purpose of washing sidewalks, carriages, and the like, and for extinguishing fires.

To this end my invention consists in the improved construction and arrangement of parts, which will be hereinafter described, and pointed out in the claims.

In the drawings, A designates the frame or casing of my improved pump, which is square or rectangular in cross-section, and which is mounted upon a base, B. The latter is constructed with two angular passages, C and D, which are connected, respectively, with the pump-cylinders E and F, the latter being connected to the sides of the base by means of screw-threaded plugs G, extending from the sides of the base and entering screw-threaded openings in the sides of the cylinders. The upper ends of the passages C and D are provided with upwardly-opening valves H, connecting the said cylinders through the passages with an upwardly-extending receiving-chamber, I, which is detachably connected to the base within the casing A. The upper end of the receiving-chamber I is provided with an opening, J, from which a spout, K, extends through the front side of the casing A, and through which the water elevated by my improved pump may be disposed of, as will be presently described.

L L designate the pistons of the pump-cylinders, which are formed upon or attached to the lower ends of the piston-rods M, which are connected by hinged joints N to the operating-rods O, which latter extend in an upward direction and are pivotally connected to the arms P P of a bell-crank lever, Q, the lower arm of which, R, is pivotally connected, through an intermediate rod, S, with a crank, T, secured upon a shaft, U, which is mounted transversely in the frame A, or upon the side of the latter. The crank-shaft U carries at its outer end a pinion, V, meshing with a gear-wheel, W, which is mounted upon a stub axle or shaft, X, and provided with a crank, Z, by means of which the pump may be operated.

The lower ends of the pump-cylinders E and F are provided with screw-threaded sockets A′, in which are fitted the valve-cups B′, having upwardly-opening valves D′, and from which the water-pipes C′ extend downwardly into the well or cistern from which the water is to be raised.

From the foregoing description, taken in connection with the drawings hereto annexed, the operation and advantages of my invention will be readily understood.

To operate the pump, the crank or handle Z may be turned in either direction. Each of the piston-rods on its downstroke will close the valve D′ and force the water contained in the cylinder through the passage C or D, as the case may be, up into the receiving-chamber I, where it is retained by the upwardly-opening valves H. On the upstroke of either piston it will serve to open the valve D′ in the cylinder in which it works, thus raising the water, which by the next downstroke will be forced into the receiving-chamber. It will thus be seen that the two cylinders are operated alternately, thus maintaining a continous and steady flow of water.

To the spout, K, which is connected to the receiving-chamber, as described, a hose may be attached for the purpose of conveying the water to any desired location, the power of

the pump being sufficient to raise the water to a considerable elevation.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

In a double-acting force-pump, the combination of the base having angular passages, an upwardly-extending receiving-chamber, cylinders connected to the lower ends of the said passages, a suitable frame or casing inclosing the receiving-chamber, a bell-crank lever mounted in the upper end of the said frame, and having its upper arms connected by pivoted rods with the stems of the cylinder-pistons, a crank-shaft mounted in the upper end of the casing, and connected by a pivoted rod with the lower arm of the bell-crank lever, and suitable operating mechanism, substantially as set forth.

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

GEORGE E. SPRINKLE.

Witnesses:

ELI L. EBERHARD.

JOHN M. BRIANT.