(No Model.) 2 Sheets—Sheet 1.

J. K. VAN PELT.

FORCE PUMP.

No. 529,432. Patented Nov. 20, 1894.

Fig. 1.

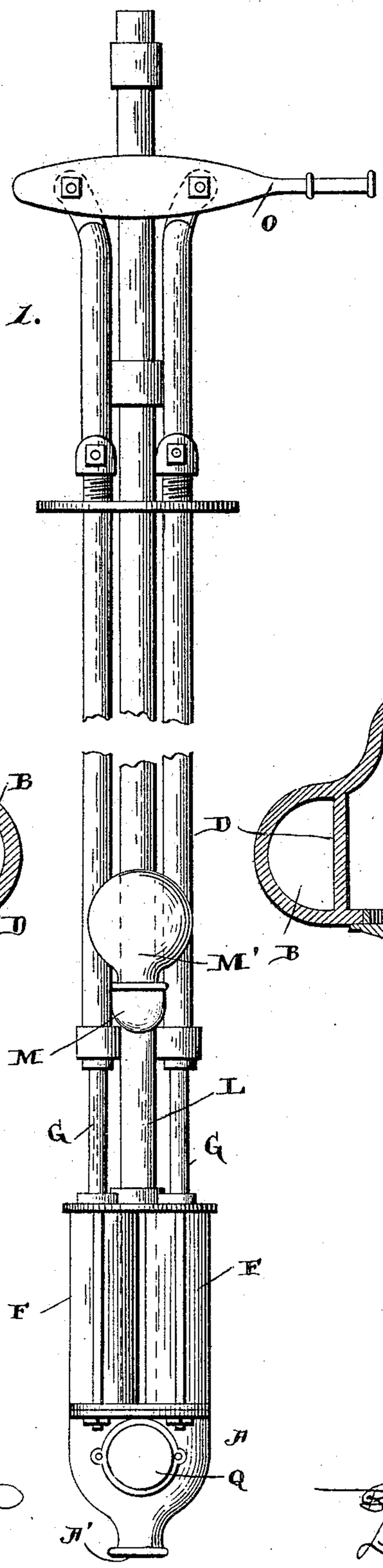


Fig. 3.

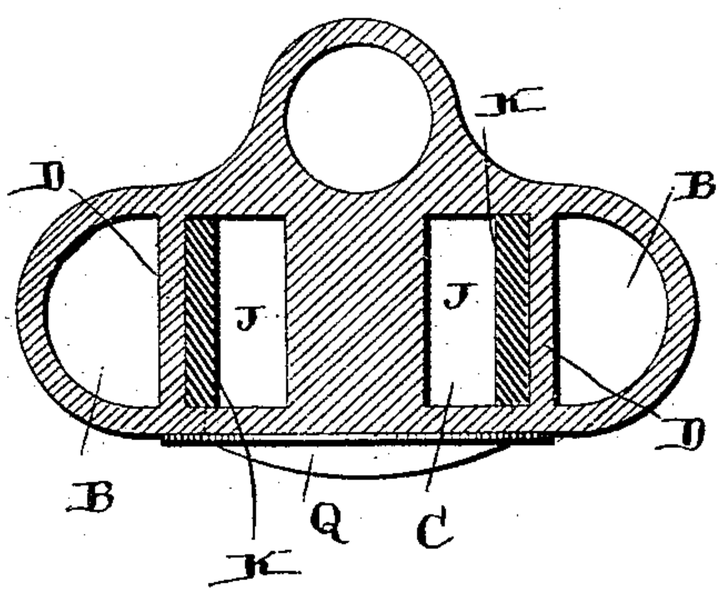
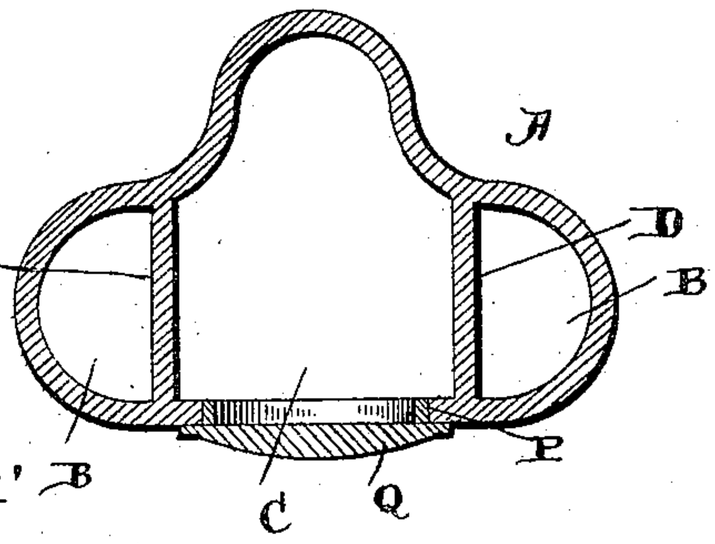


Fig. 4.



WITNESSES—

Geo. C. Frech.

Roland A. Fitzgerald.

INVENTOR—

J. K. Van Pelt

By Lehmann Patterson & Rockhill

Attys.

(No Model.) 2 Sheets—Sheet 2.

J. K. VAN PELT.

FORCE PUMP.

No. 529,432. Patented Nov. 20, 1894.

Fig. 2.

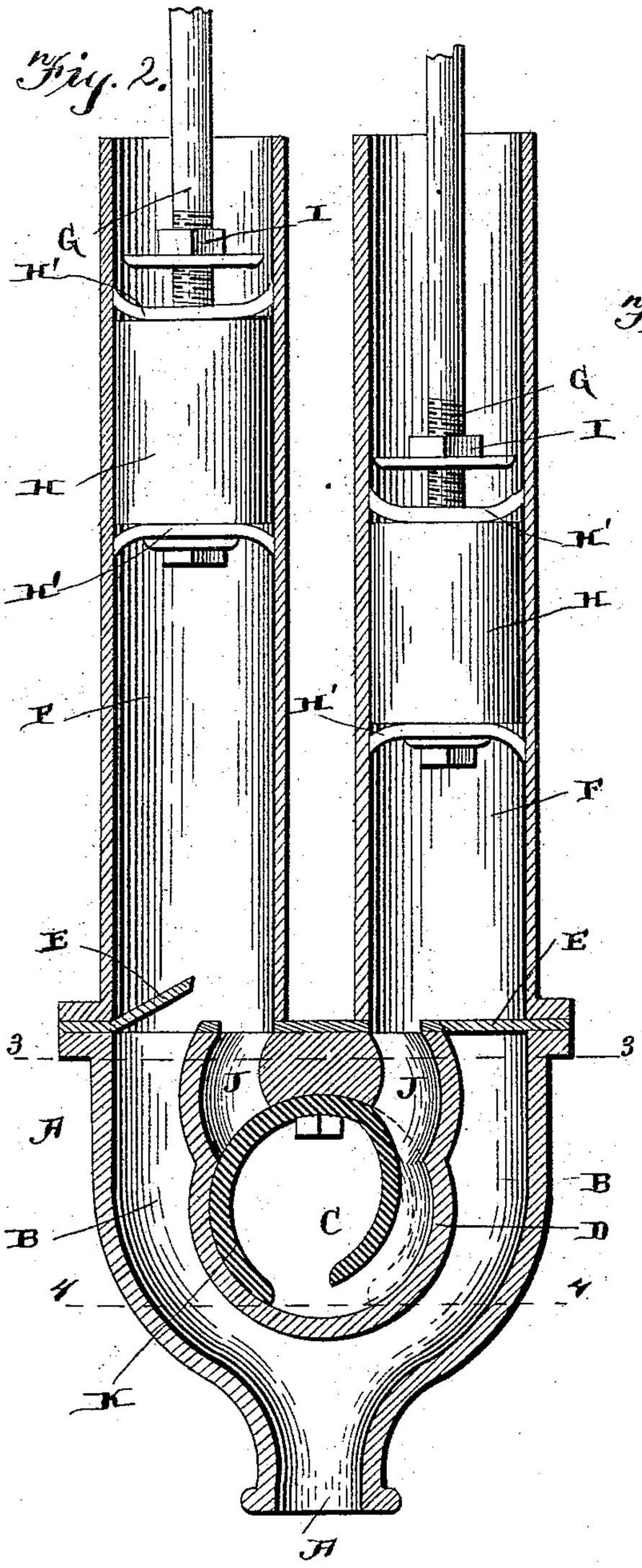
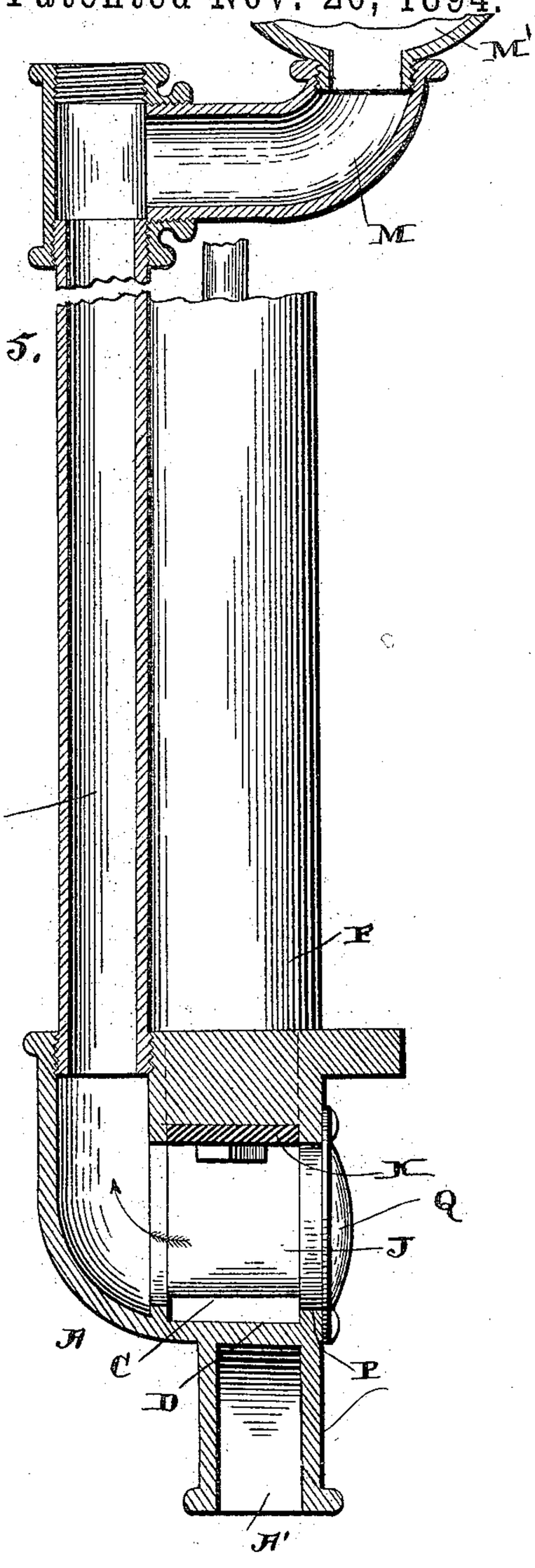


Fig. 5.



WITNESSES.

Geo. E. Fuchs.

Roland A. Fitzgerald.

INVENTOR.

J. K. Van Pelt

By Lehmann Patterson & Nesbit

Attys.

UNITED STATES PATENT OFFICE.

JOHN KING VAN PELT, OF MEMPHIS, TENNESSEE.

FORCE-PUMP.

SPECIFICATION forming part of Letters Patent No. 529,432, dated November 20, 1894.

Application filed May 22, 1893. Serial No. 475,097. (No model.)

To all whom it may concern:

Be it known that I, JOHN KING VAN PELT, of Memphis, in the county of Shelby and State of Tennessee, have invented certain new and useful Improvements in Force-Pumps; and I do hereby 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in force pumps, and it consists in certain novel features of construction hereinafter referred to and especially pointed out in the claim.

My invention is especially directed toward the provision of a pump of improved construction and possessing superior advantages, it being formed of a minimum number of parts which are assembled in a most compact manner.

Referring to the accompanying drawings: Figure 1, is a side elevation of my improved pump. Fig. 2, is a vertical sectional view of the same. Figs. 3 and 4, are horizontal sectional views on lines 3—3 and 4—4, respectively of Fig. 2. Fig. 5, is a side elevation shown partly in section.

A indicates the main pump chamber having the inlet A′ at its lower end and the inlet water passages B extending upward on opposite sides of a discharge chamber C, the partition D within the chamber A serving to form the said discharge chamber.

Upwardly opening valve E at the upper ends of passages B control the communication between the latter and the pumping cylinders F in which are adapted to move vertically the plungers G. These plungers are preferably formed with a main core H having at its upper and lower ends leather washers H′, which are slightly larger than the space inclosed by the cylinder so that a very tight fit is secured and thus all leakage is prevented. A nut I adjustable vertically upon the plunger rod enables me to spread the upper washer within the cylinder and thus stop the leakage which may have been caused by the wear of the washer.

The pumping cylinders F are bolted or otherwise secured upon the upper end of chamber A and each cylinder besides communicating with one of the passages B also communicates with an inlet passage J leading to the discharge chamber B. Secured to the top wall of this last named chamber are the oppositely extending and depending curved valves K which are preferably formed of leather or some other flexible material which are adapted to press outward against the partition D, which is here shown as curved, so that the valves may rest tightly against it and effectually close the lower end of the passages J.

A discharge pipe L leads upward from chamber C and mounted near its upper end is the fitting M, upon which an air chamber M′ is placed for the purpose of securing a steady flow of the water. The plunger rods extend upward as shown and are secured to opposite sides of the fulcrum point of an operating lever O, so that when one plunger is being raised in its cylinder the other is being lowered.

In operation, an upward movement of a plunger creates a suction which raises valves E and induces a flow of water through the inlet A and passage B into the chamber F. This upward movement serves to close valves J, thus preventing any backward movement of the water contained in the discharge chamber C. A downward movement of this plunger immediately closes the valves E and opens valves J, forcing the water into the discharge chamber and upward through pipes L to the point where it is to be used.

It will be seen that I have so arranged the two cylinders and plungers that while one is drawing water into its cylinder from the source of supply, the other is discharging from its cylinder into the chamber C. Thus a most effectual alternating double action is secured which enables me to maintain a constant flow of water while the pump is in operation.

It is apparent that either plunger and cylinder will operate independently of the other, so that if one is disabled the usefulness of the pump is not totally impaired until such disability is removed. The front of chamber A is provided with an opening P closed by

cover Q, which affords ready access to the interior of the chambers for the purpose of cleaning or repairing the valves.

The valve K as here shown is formed of one piece of material secured at its center to the wall of chamber C, but I do not wish to limit myself to this particular form of valve as it is apparent that two separate and distinct valves may be employed which will be just as effectual. These valves may also be formed of metal rather than of leather or other flexible material if so desired.

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

The herein described pump composed of the main chamber A, having the lower end inlet, and the central transversed discharge chamber extending completely through the upper portion of the main chamber and having the rounded inner surface, the two pump cylinders on the main chamber having valved openings, respectively, into said chamber, the two ducts J, J, from the pump cylinders, respectively, into opposite sides of the upper portion of said discharge chamber, the flap valves formed of a single piece secured between its ends, in said discharge chamber between the ducts J, J, to fit the inner surface of said chamber and control the ducts, and the uptake from one end of said discharge chamber.

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

JOHN KING VAN PELT.

Witnesses:

WM. M. SMITH,

GEORGE OWENS.