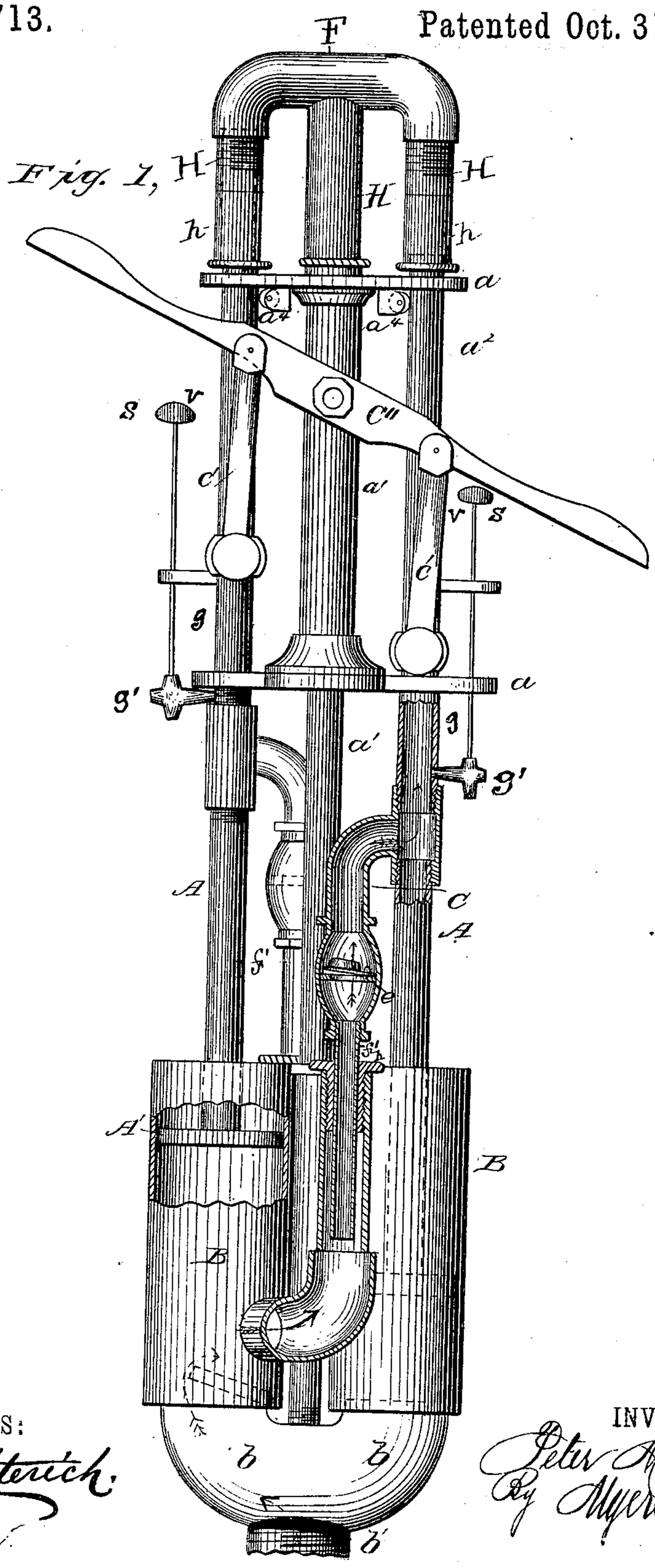
(No Model.)

2 Sheets—Sheet 1.

P. MOUGEY.

FORCE PUMP.

No. 266,713. Patented Oct. 31, 1882.



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ATTORNEYS.

(No Model.) 2 Sheets—Sheet 2.

P. MOUGEY.

FORCE PUMP.

No. 266,713. Patented Oct. 31, 1882.

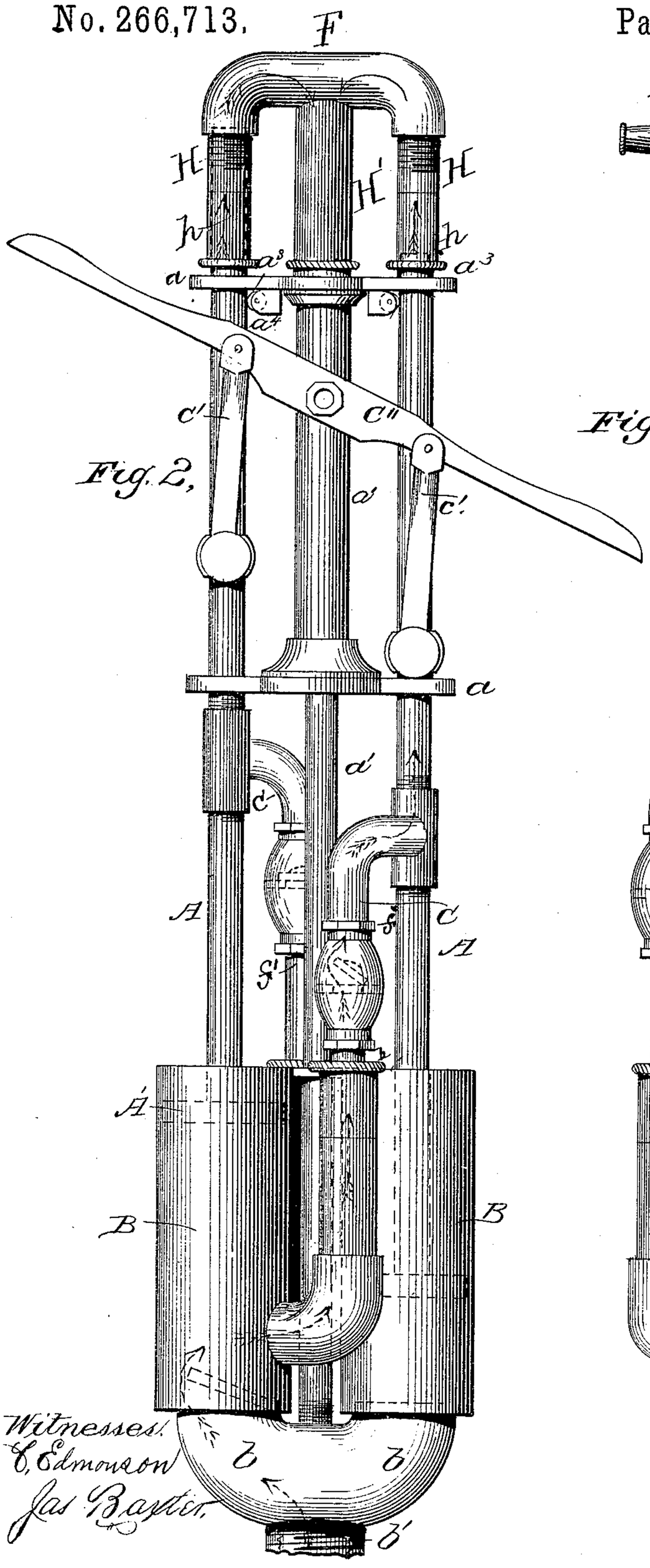

Fig. 2.

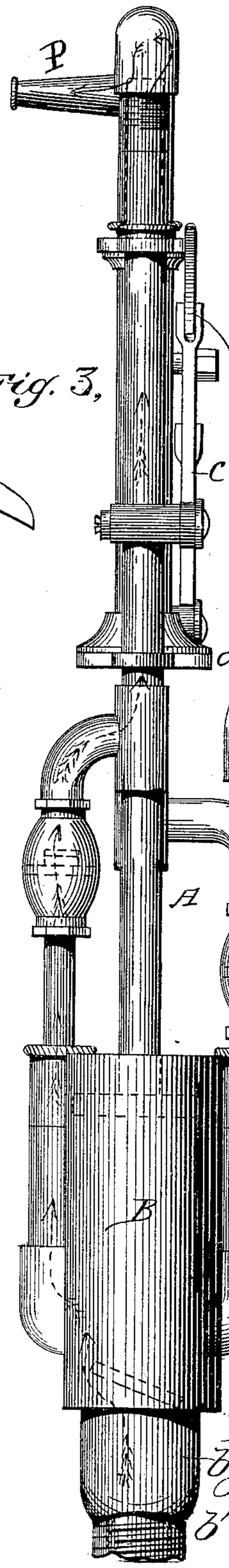

Fig. 3.

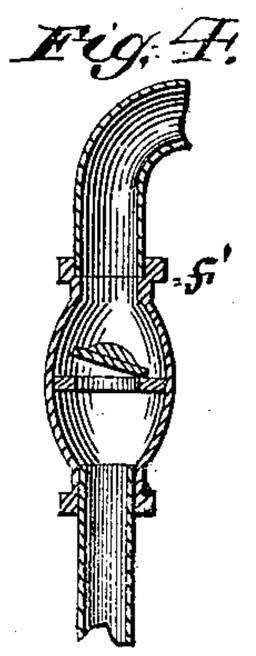

Fig. 4.

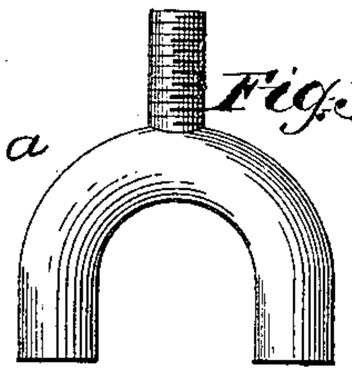

Fig. 5.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

PETER MOUGEY, OF AMWELL, OHIO.

FORCE-PUMP.

SPECIFICATION forming part of Letters Patent No. 266,713, dated October 31, 1882.

Application filed February 18, 1882. (No model.)

To all whom it may concern:

Be it known that I, PETER MOUGEY, a citizen of the United States, residing at Amwell, in the county of Wayne and State of Ohio, have invented certain new and useful Improvements in Force-Pumps, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention consists in certain novel combinations of devices in double-cylinder pumps, which will be more fully pointed out in the specification and claims; and to this end it consists in the employment of two cylinders, each having a tubular piston-rod and tubular branch connections between each piston-rod and the opposite cylinder, a curved tubular cap with discharge-nozzle, and mechanism for operating and regulating the stroke of the pistons, and in the curved tubular cap F, cylindrical joints H H, screw-caps *h h*, cylindrical standards H′, and discharge-nozzle P, substantially as hereinafter more fully set forth.

Figure 1 is an elevation of my improved force-pump, with the lower half partly shown in section. Figs. 2 and 3 are side elevations, and Figs. 4 and 5 are detail views of the same.

In carrying out my invention I use, as will be seen by reference to the accompanying drawings, forming part of this application, two cylinders, B B, connected at their base by a curved tube, *b*, having secured to it near the center of the curve a screw-threaded nipple, *b′*, for the purpose of connecting the same with the well-pipe. Cylinders B B are provided with two tubular piston-rods, A A, formed to move vertically at alternate intervals in cross-guides *a a*, rigidly attached to a central standard, *a′*, secured firmly in position at its lower end to a metal plate resting on the top of each cylinder and holding them in place. The pistons are guided in a vertical line by the cylindrical joints H H, screw-caps *h h*, and guides *a a*, while their movements are rendered easy and relieved of friction by their being arranged to move against friction-rollers a^4, hung upon the under side of the upper guide, *a*, so as to bear against the piston-rods. To the lower ends of these piston-rods are affixed the pistons A′, which are fitted water-tight in the two cylinders B. These cylinders are secured one upon each upper end of curved branch pipe *b*, which is provided with threaded connection for attaching the well-tube. The piston-rods are connected by links or rods C′ to the hand-lever C″, which is pivoted at its center to the standard *a′*, near its upper end. The upper ends of the tubular piston-rods open into the screw-caps *h h*. Packing may be provided between the tubular piston-rods and these screw-caps to prevent leakage. The screw-caps *h h* are screwed into the cylindrical joints H H, and the cylindrical joints H H are in like manner inserted in the curved tubular cap or connecting-tube F. This cap or connecting-tube has attached near its center a horizontal discharge-nozzle, P. Hence by the action of the lever C″ operating the hollow pistons the water is forced from the curved tube or cap F out through the nozzle P.

C C are pipes formed each in two sections, one sliding into the other, and so arranged that they connect opposite cylinders and piston rods or tubes together. They are provided with check-valves *e* in their upper portions, as shown in the drawings. These pipes C C are curved at their upper ends and joined to the pistons A, about midway between the top of the cylinders B and the cross-guide *a*. They are likewise joined by a curved connection to the cylinders B, near their base.

The stop-cocks *g′ g′*, which open into the tubular piston-rods, are operated by the rods *s s*. These rods are rigidly secured to the plug in each stop-cock. In operating the plug to open or close the stop-cock, the rods *s s*, by means of the handles V V, attached to their upper ends, are turned to the right or left, as desired, to open or close the stop-cocks. The tubes *f′* are screw-threaded at their upper ends to screw into the check-valve case, that is provided with internally screw-threaded caps *f*, formed on their lower ends to receive the same. By this construction the opposite cylinders and piston-rods are connected together, and can readily be detached when desired.

The operation is as follows: With the downward stroke of one piston a column of water will be forced into the pipe connecting with the other cylinder, past its valve, and into the opposite piston-rod, and be cut off from returning by the check-valve in said connecting-pipe, and thus serve as a weight to aid the other pis-

ton in its downward stroke. With this movement of the latter piston it will be seen that a like column of water will be forced into and be in like manner retained in the pipe leading from its cylinder and in the piston-rod of the opposite cylinder, which will have the effect to aid its piston in its downward stroke.

From the foregoing it will be observed that the action of each piston is reciprocal in aiding the descent or downward stroke of the other, and thereby the pumping operation is rendered easy. The operation is performed by pressing down on one arm of the lever the length of the stroke, then pressing down on the opposite arm of said lever to the same limit, thus alternately operating the pistons.

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

1. In a double-cylinder force-pump, the combination of the tubular piston-rods and their pistons, the cylinders, and the curved pipes having check-valves, and connected to opposite cylinders and piston rods or tubes, as shown and described.

2. In a double-cylinder force-pump, the alternately rising and falling tubular piston-rods, combined with screw-caps and cylindrical joints connected at their upper ends by a curved cap or tube, said tube having a discharge-nozzle attached, substantially as shown and described.

3. In combination, the cylinders B, having sectional pipes *c* and *f'*, screw-caps *f*, and tubular piston-rods A, substantially as shown and described.

4. In a double-cylinder pump provided with hollow piston-rods, the discharge-cocks *g'*, provided with operating-arms *s s*, and adapted to relieve the piston-rods of water, substantially as and in the manner described.

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

PETER MOUGEY.

Witnesses:
GEO. R. HERRICK,
CAROLUS EDMONSON.