

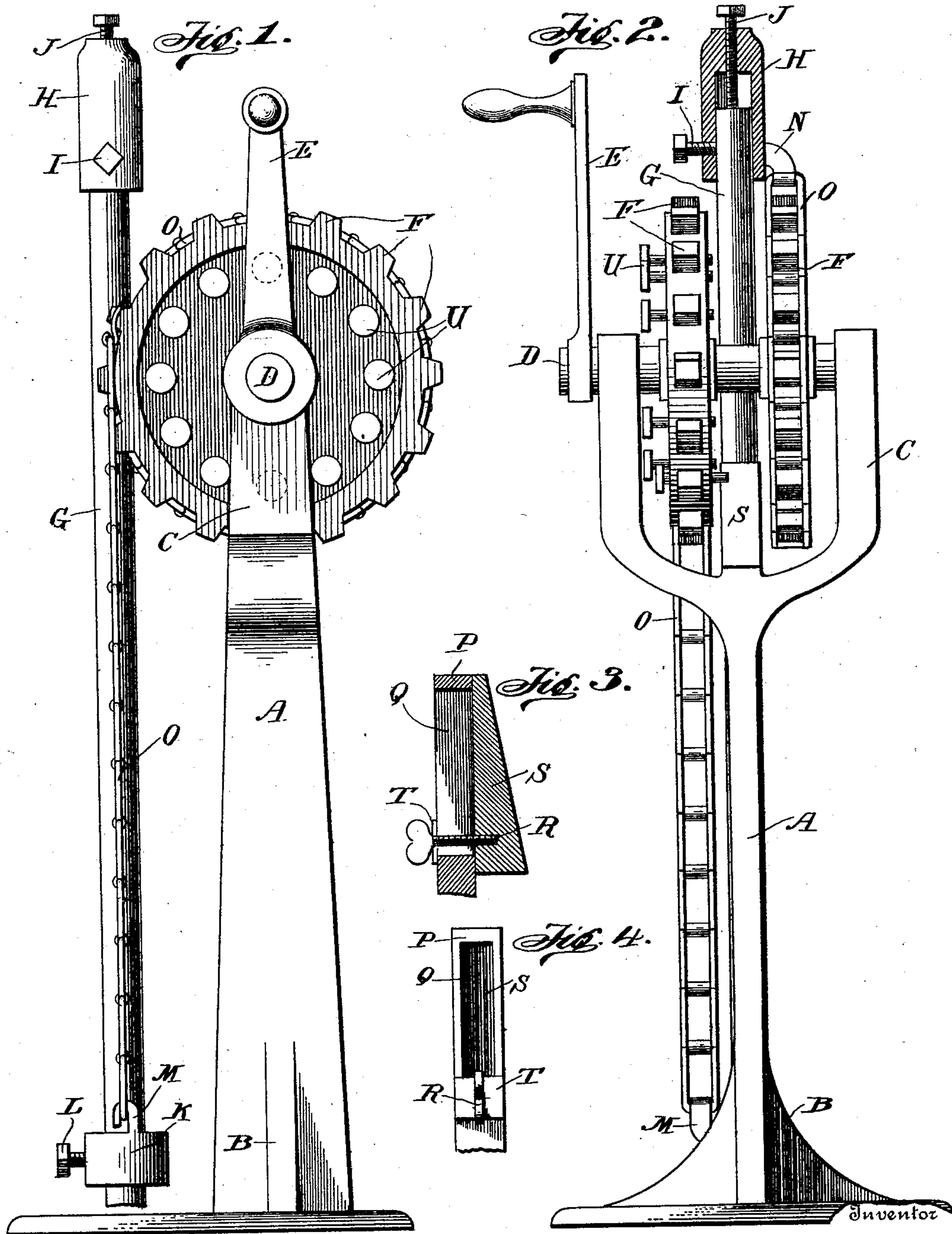
No. 705,351.

Patented July 22, 1902.

W. J. HUGHES.
PUMP.

(Application filed July 13, 1901.)

(No Model.)



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UNITED STATES PATENT OFFICE.

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PUMP.

SPECIFICATION forming part of Letters Patent No. 705,351, dated July 22, 1902.

Application filed July 13, 1901. Serial No. 68,133. (No model.)

To all whom it may concern:

Be it known that I, WILL J. HUGHES, a citizen of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in 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 appertains to make and use the same.

10 This invention relates to improvements in pumps; and the object is to provide a simple and improved operating device for quickly and readily effecting the reciprocation of the piston-rod.

15 A further object is to provide an improved means which may be quickly adjusted to cause the pump to deliver a predetermined quantity of liquid, thus making the same a self-measuring pump.

20 With the above objects in view the invention consists in the novel features of construction hereinafter fully described, particularly pointed out in the claims, and clearly illustrated in the accompanying drawings, in which—

25 Figure 1 is a side elevation of my invention; Fig. 2, an end elevation, partly in section, of the same; and Figs. 3 and 4 detail views of the adjustable wedge-shaped stop of the measuring mechanism.

30 Referring now more particularly to the accompanying drawings, A designates a standard having a suitable base B, by means of which it is attached to the tank (not shown) and bifurcated at its upper end. Mounted in the bifurcations C is a shaft D, provided at one end with a crank-handle E and having fixed thereon sprockets F, which are spaced and are disposed between said bifurcations C.

35 G designates the piston-rod, which is provided with any ordinary construction of piston (not illustrated) and having at its upper end a cap H, carrying a clamping-screw I and an adjusting-screw J, which latter is threaded through the end wall thereof and bears against the upper end of the piston-rod. Adjustable upon the said piston-rod intermediate of its ends is a collar K, having a securing-screw L. The collar K and cap H are

40 provided with hooks M and N, respectively, to receive the ends of operating-chains O. Said chains O have their opposite ends at-

tached to sprockets F and extend about the latter in reverse direction, so that when the shaft is rotated in one direction one of the chains is wound while the other is unwound, and vice versa when the shaft is rotated in the reverse direction.

Through the medium of the above-described construction the piston-rod may be quickly raised or lowered according to the direction in which the shaft is rotated. Through the medium of the adjustable cap and collar the chains may be adjusted independently of each other to take up any slack therein.

65 Formed integral with the standard A and disposed between the two sprockets is an arm P, having a slot Q formed therein to permit of the vertical movement of a clamping-screw R, which extends therethrough and is threaded into a wedge-shaped block S, said screw passing loosely through a plate or washer T and disposed upon the opposite side of the arm to that upon which the wedge-shaped block is positioned, which plate or washer is greater in size than the width of the slot.

The sprocket-wheel F, which effects the upward-pumping movement of the piston-rod, is provided in its face with a concentric circle of perforations extending entirely through the wheel transversely thereof and receiving headed stop-pins U. Normally these pins are in their outward position, so that during the rotation of the sprocket-wheel their inner ends will not contact with the wedge-shaped stop S. When, however, it is desired to limit the rotation of the wheel, one of the pins is moved inwardly until its inner end projects beyond the inner face of the sprocket a sufficient distance to contact with the wedge. The amount of rotation of the sprocket may be varied as desired by moving any one of the stop-pins inwardly in position to engage with the wedge. Thus the upward movement of the piston-rod may be varied according to the quantity of liquid desired to be withdrawn from the tank, as will be readily understood. By making the wedge-shaped stop adjustable also it may be caused to assume a lower or higher position, so that the stop-pins instead of striking the narrow part of it will strike a portion having a greater thickness, which will have the effect of caus-

ing the piston-rod to pump a less amount of liquid than that absolutely provided for by the location of said stop-pins.

From the above description it will be seen
5 that I have provided a very simple and effective pump-operating device and at the same time provided means whereby the amount of liquid pumped may be varied.

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

1. In a pump, the combination with the piston-rod, of an operating-shaft carrying sprockets, chains attached to said sprockets
15 at one end and adapted to be wound thereon reversely to each other, and adjustable members upon said piston-rod to which the opposite ends of said chains are attached, substantially as described.

20 2. In a pump, the combination with the piston-rod, of an operating-shaft, a cap upon the end of the said rod, an adjusting-screw carried by said cap, a clamping-screw carried thereby, a collar adjustable upon said rod, a
25 clamping-screw carried by said rod, and flexible connections between said collar and cap and the shaft, said connections being adapted to be reversely wound upon said shaft, when the latter is rotated, substantially as
30 described.

3. In a pump, the combination with the piston-rod, of an operating-shaft, an opera-

tive connection between said shaft and said piston, a wedge-shaped stop mounted independently of the shaft and adjustable relatively thereto, and a member carried by the shaft and adapted to contact with said stop to limit the rotation of the shaft, substantially as described. 35

4. In a pump, the combination with the piston-rod, of an operating-shaft, a sprocket-wheel carried thereby, a chain attached to said wheel and to the piston-rod, a stop disposed adjacent to said wheel, and a plurality of independently-adjustable pins carried by
45 the wheel and adapted to be adjusted to contact with the stop and limit the rotation of the shaft, substantially as described.

5. The combination of a forked standard, an operating-shaft journaled in both arms of
50 said fork, fixed sprocket-wheels on said shaft, a piston operated by said sprockets, adjustable pins borne by said sprocket-wheels, and an upright portion of said standard between the arms of said fork with which said pins
55 are adapted to engage, substantially as described.

In testimony whereof I have hereunto set my hand this 9th day of July, 1901.

WILL J. HUGHES.

Witnesses:

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