

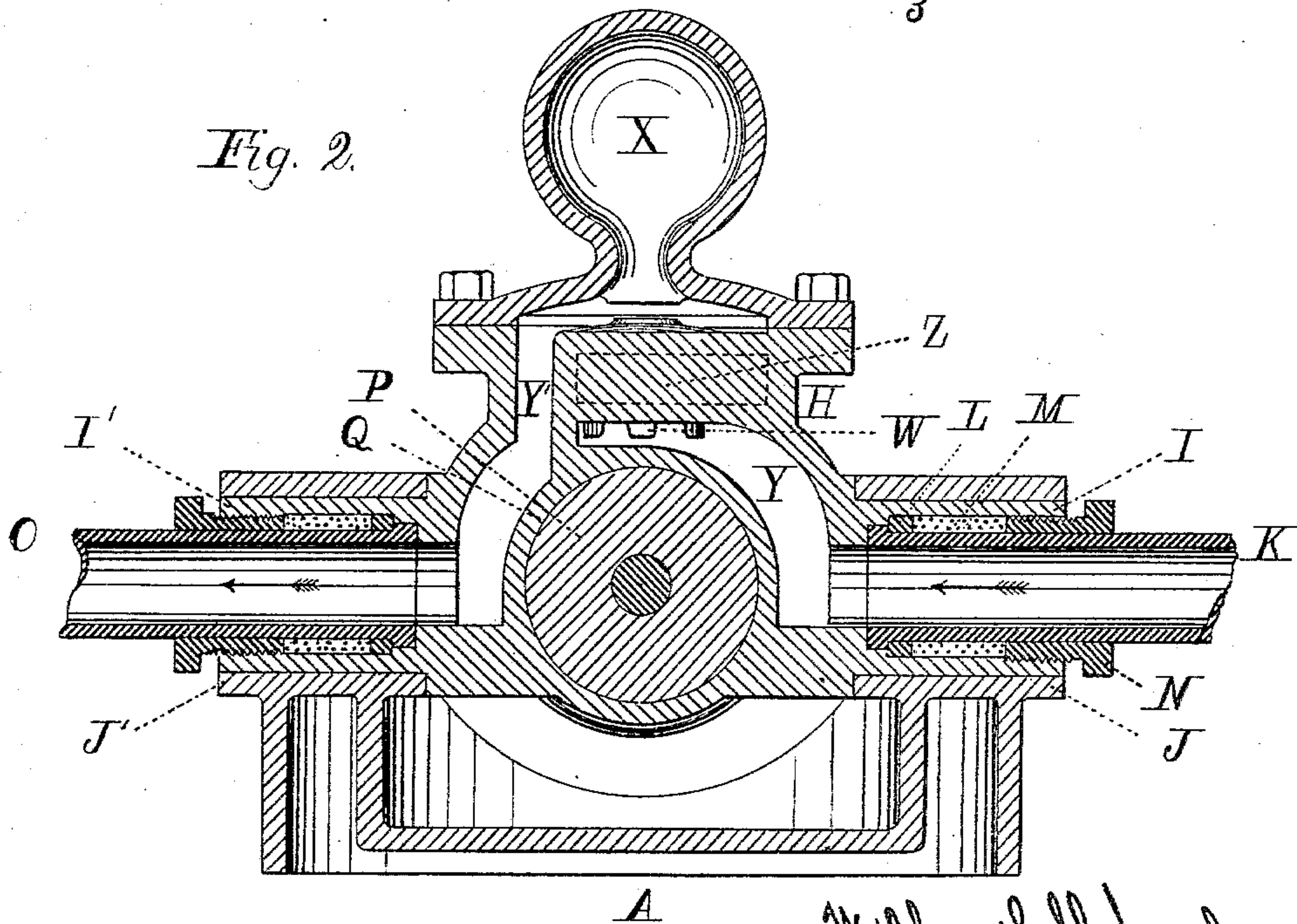
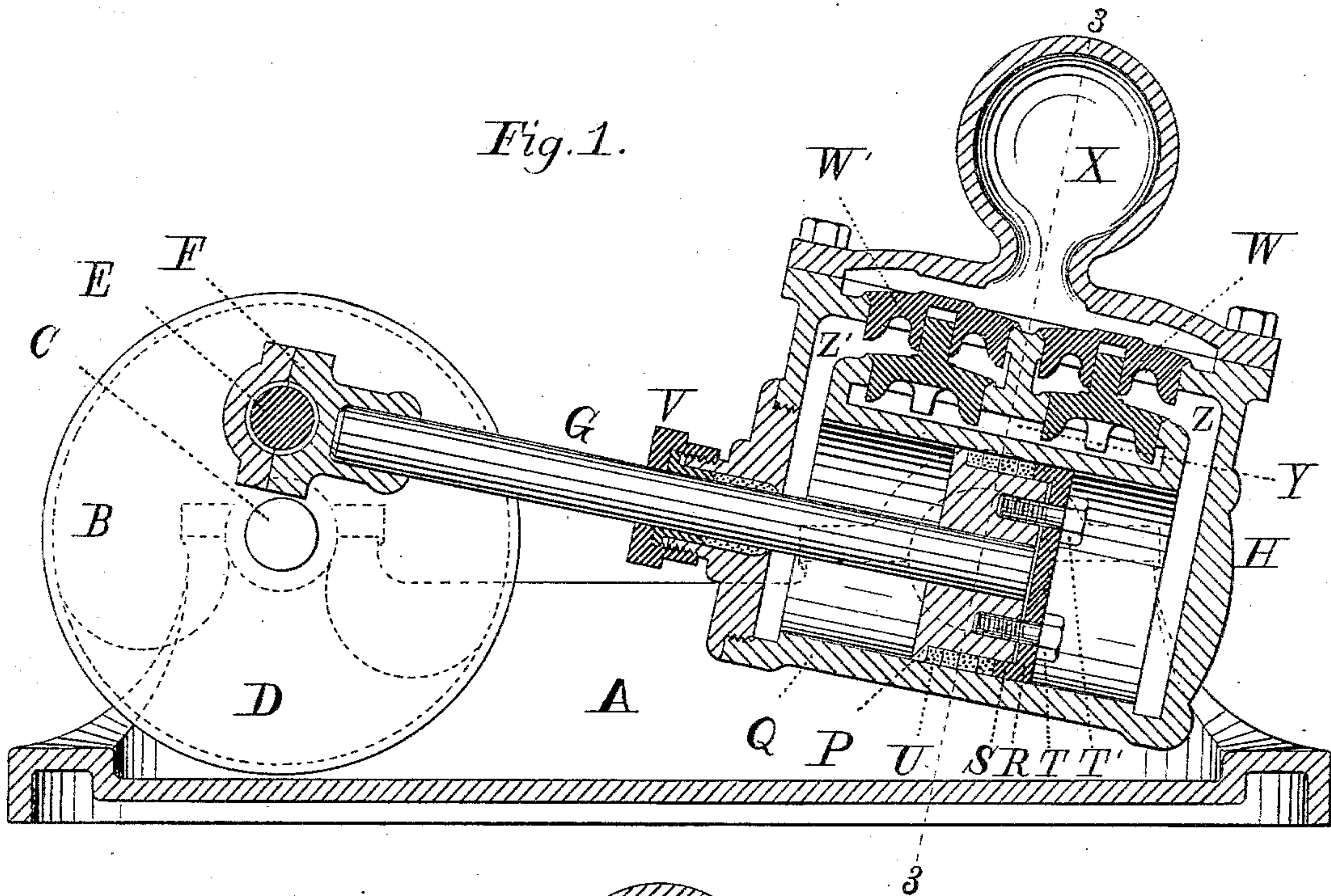
(No Model.)

W. L. SHEPARD.

PUMP.

No. 300.400.

Patented June 17, 1884.



Witnesses

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UNITED STATES PATENT OFFICE.

WILBUR L. SHEPARD, OF HARTFORD, CONNECTICUT.

PUMP.

SPECIFICATION forming part of Letters Patent No. 300,400, dated June 17, 1884.

Application filed November 19, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILBUR L. SHEPARD, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented a new and useful Improvement in Pumps, which is illustrated by the accompanying drawings, and of which the following description and claim constitute the specification.

10 This is an oscillating pump.

Figure 1 is a central perpendicular longitudinal section of the apparatus, and Fig. 2 is a cross-section on line 3 3 of Fig. 1.

A is the bed-frame of the pump.

15 B is one of a pair of disks keyed to and revolving with the shaft C, and having the counterpoise D cast on its outer side. The other disk is a counterpart of the disk B, and is keyed to and revolves with a shaft like the shaft C, and has a counterpoise like D cast on its outer side. The inner surfaces of both disks are flat, and the two are connected by the shaft or journal E. On that journal the journal-box F revolves, and to that journal-box the piston-rod G is attached in any customary manner.

25 H is the shell of the pump. It oscillates upon its tubular journals I I', which journals turn within the journal-boxes J J' in the bed-frame A. The inlet-pipe K is fastened within the tubular journal I by means of the ring L, the elastic packing M, and the gland N. The outlet-pipe O is fastened within the tubular journal I' by a corresponding ring, elastic packing, and gland.

35 P is a piston working in the cylinder Q, which cylinder constitutes the lower part of the shell H.

40 R is a circular follower, having the annular flange S, and attached to the piston by one or more bolts, T T', and operating to compress the elastic packing U whenever such bolt or bolts are tightened up.

45 V is a stuffing-box of a construction plainly shown in the drawings, and in which the piston-rod reciprocates.

50 W and W' are double valves, the lower member of each of which has an upwardly-projecting post, which reciprocates in a recess in the upper member, and the upper member of each of which is limited in its upward move-

ment by the shell H, and both members of each of which have continuous flanges fitted to their respective valve-seats, and have downwardly-projecting wings, which guide them in rising and falling.

X is an air-chamber, which forms the upper part of the shell H, the air in which operates to cushion the valves.

Y is a T-shaped water-way in the shell H, 60 the foot of which communicates with the tubular journal I, and the upright part of which bends inwardly around the cylinder Q, and the transept of which is shown in Fig. 1 occupying the space immediately under the valves.

Y' is another T-shaped water-way in the shell H, the foot of which communicates with the tubular journal I', and the upright part of which passes above the valves, and the transept of which is shown in both figures occupying the space immediately above the valves and immediately below the air-chamber.

75 Z and Z' are water-ways in the shell H, respectively connecting the ends of the cylinder with the spaces between the upper and lower members of the valves W and W', respectively.

The mode of operation of this pump is as follows: Rotary motion being imparted to the 80 disk D, the piston will reciprocate in the cylinder, thereby oscillating the shell of the pump. If the first motion of the piston is toward the left, the resulting suction will close the upper member of the valve W, and will 85 open the lower member, and will draw the water through that valve from the water-way Y, the tubular journal I, and the inlet-pipe K, the latter being connected with the water-supply. When the motion of the piston is re- 90 versed, its pressure on the water in the water-way Z will close the lower member of the valve W, and will open its upper member and will force the water through the latter into the water-way Y', and thence through the tubular 95 journal I' into the outlet-pipe O. While that is being done, the piston will also produce suction in the water-way Z', and that suction will close the upper member of the valve W', and will draw water through its lower mem- 100 ber from the water-way Y, the tubular journal I, and the inlet-pipe K. Thus the pump

will continue to operate as long as the water-supply lasts and the motion of the disk continues.

I claim as my invention—

- 5 The combination of the piston P, the cylinder Q, the tubular journals I and I', the water-ways Y and Y', the valves W and W', the water-ways Z and Z', and the air-chamber X, all

constructed and combined substantially as described, and operating together in an oscillating pump, substantially as explained in this specification.

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