

(No Model.)

M. E. MOORE.

PUMP.

No. 279,581.

Patented June 19, 1883.

Fig. 1.

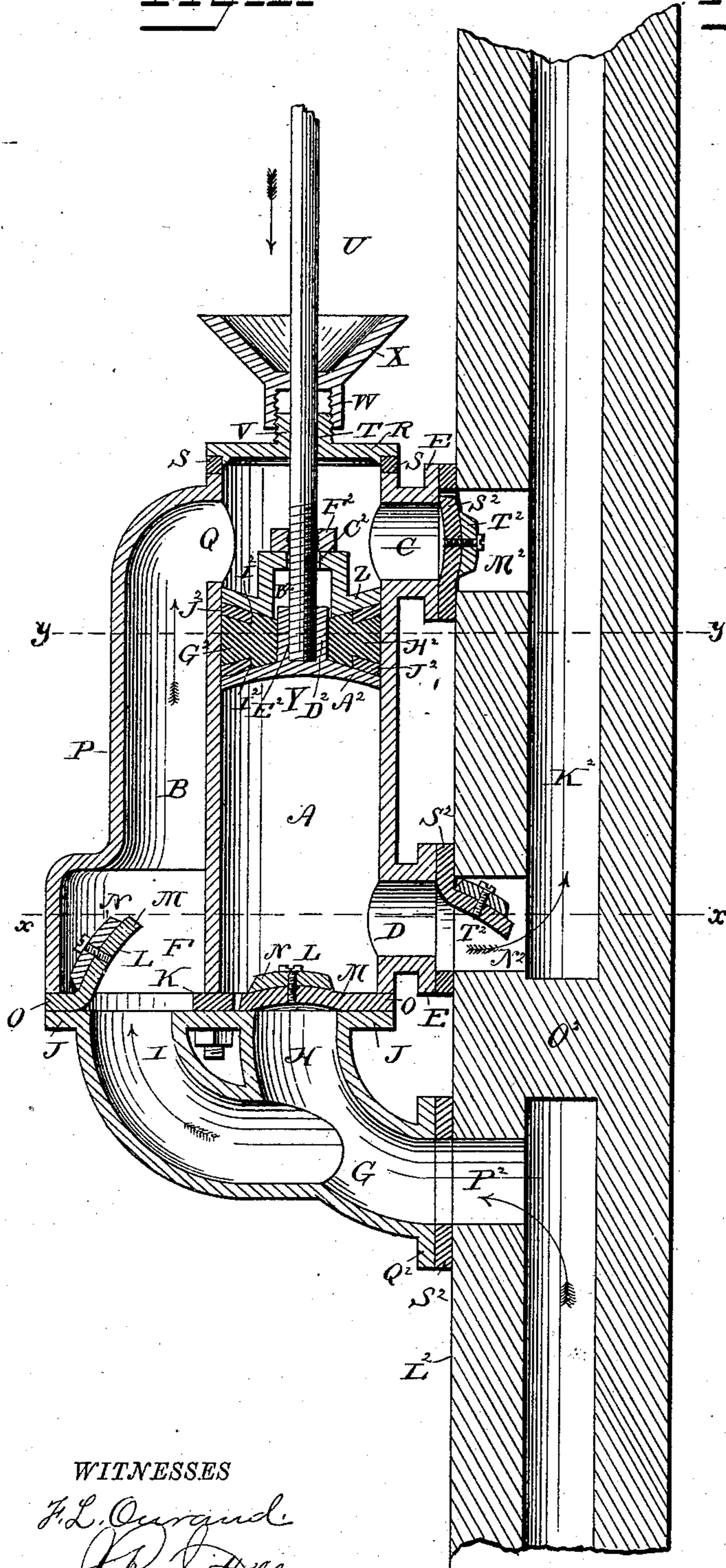


Fig. 2.

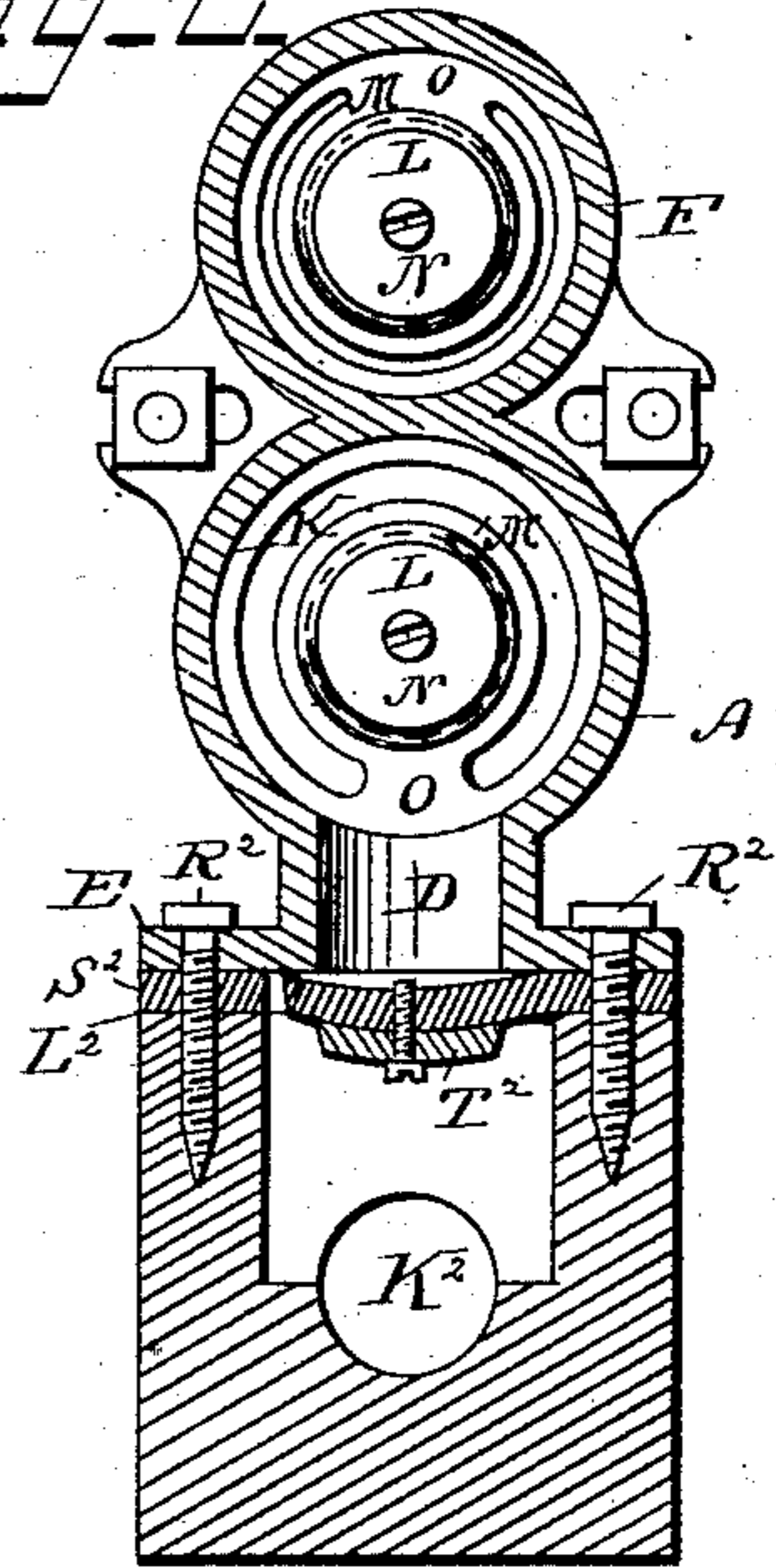
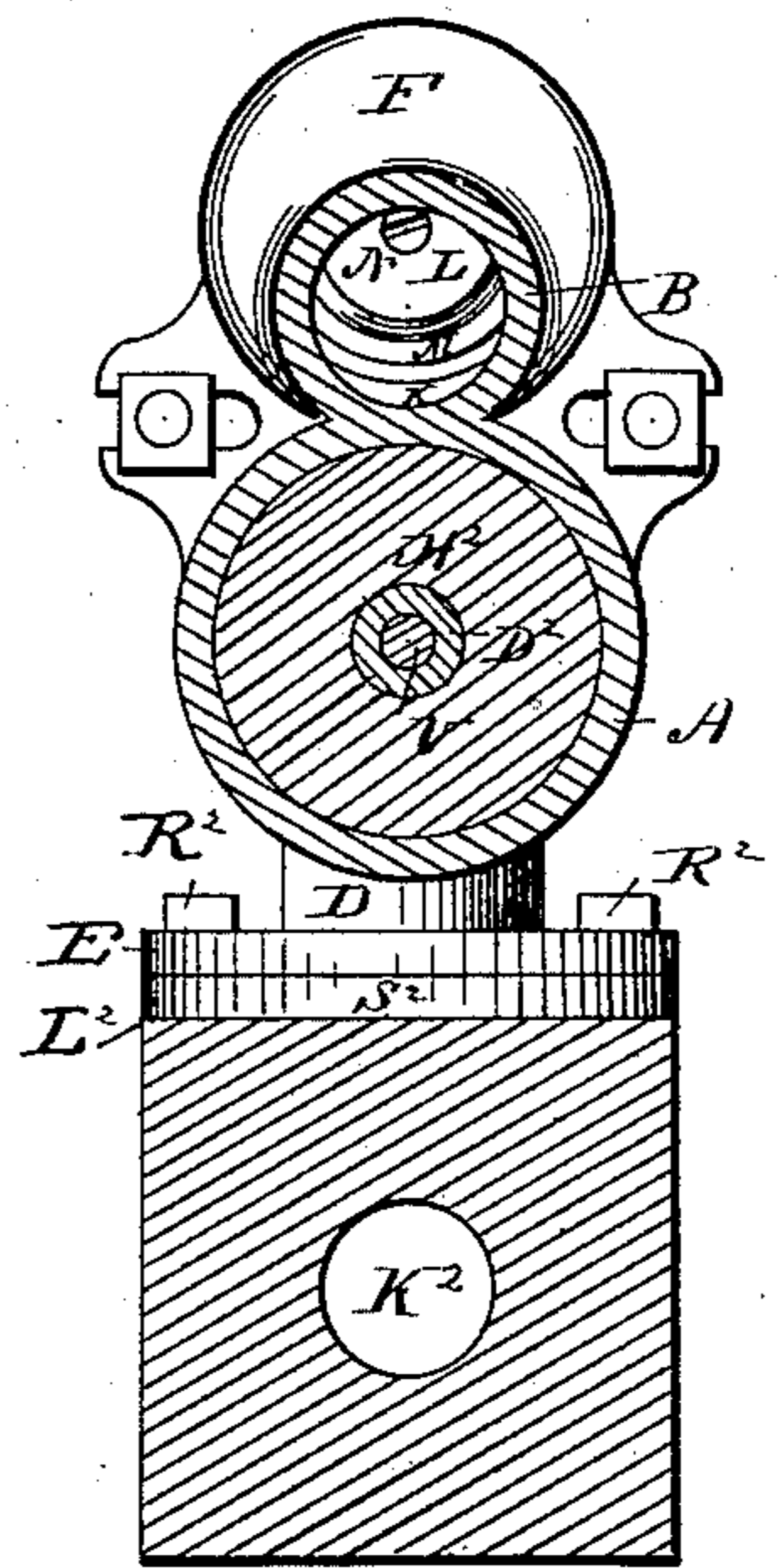


Fig. 3.



WITNESSES

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PUMP.

SPECIFICATION forming part of Letters Patent No. 279,581, dated June 19, 1883.

Application filed January 31, 1883. (No model.)

To all whom it may concern:

Be it known that I, MYRON E. MOORE, a citizen of the United States, residing at Woodford's, in the county of Cumberland and State of Maine, have invented a new and useful Improvement in Pumps, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to double-acting combined lift and force pumps; and it consists in certain improvements in the construction of the same, the object of which is to construct a simple and inexpensive pump of great capacity, as will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, Figure 1 is a vertical sectional view of my improved pump. Fig. 2 is a horizontal sectional view on the line $x x$ in Fig. 1, and Fig. 3 is a horizontal sectional view on the line $y y$ in Fig. 1.

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

A in the drawings designates the cylinder of my improved pump, and B is a channel or water-passage formed vertically by the side of the said cylinder. The cylinder A is provided at its upper and lower ends with laterally-projecting collars C and D, having annular flanges E. The lower end of the channel or passage B is enlarged, so as to form a valve-chamber, F.

G is a curved pipe, the upper end of which is bifurcated, so as to form two mouths or passages, H and I, surrounded by an annular flange, J, upon which the lower end of cylinder A and channel B rests, packing K being interposed in order to make a tight joint. The casting comprising the cylinder A and channel B is connected with the flange J by means of bolts, or in any suitable manner, thus securing the parts together. The cylinder A, it will be seen, registers with the passage H, and the channel B with the passage I.

L L are valves, consisting of flexible strips M, of leather, rubber, or other suitable material, upon which disks N, of metal or other rigid material, are secured. The valves L L are arranged over the mouths or passages H and I, so as to open into the cylinder A and chamber F at the lower end of the channel B,

respectively. The valves are secured in position by the ends O of the flexible strips M being clamped between the flange J at the upper end of the pipe G and the lower end of the casting P, which comprises the cylinder A and channel B. By this construction the valves are held securely and in such a manner as to operate freely, and they are readily accessible for repairs. The upper end of the channel B is connected with the cylinder A by an opening, Q, above which the cover or top plate, R, is secured, packing S being interposed in order to make a tight joint. The cover R has an opening, T, for the piston-rod U, which said opening is surrounded by a threaded collar, V, to receive the packing-box W, the upper end or edge of which is provided with a flaring flange, X, forming an oil-cup.

The lower end of the piston-rod is screw-threaded to receive the piston or plunger Y, the construction and arrangement of which is as follows: Z and A² are two disks or plates, the inner adjoining faces of which may be convex, as shown. The lower convex side of the upper disk, Z, has a central recess, B², and a perforation, C², large enough to admit of its being slid upon the threaded portion of the piston-rod. The lower disk, A², has on its upper convex side a lug, D², partly accommodated in the recess B², and provided with a screw-threaded recess, E², to receive the lower end of the piston-rod. A nut, F², is adjusted upon the piston-rod above the upper disk, Z. Between the two disks Z and A² packing G² is interposed. By tightening the nut F² the packing may be tightened to any desired extent. The packing G² is composed of a disk, H², of india-rubber, having annular shoulders I² on its upper and under sides, upon which rings J², of leather, are placed. It will be seen that, when the rubber is compressed so as to force it outwardly against the walls of the cylinder, it carries with it the leather rings J², which are thus made to pack the piston as tightly as may be desired.

K² is the water-pipe, which may be constructed of planking or in any suitable manner, with a flat side, L², which is provided with two openings, M² N², arranged above a

horizontal partition, O^2 , and an additional opening, P^2 , arranged below the latter. The lower end of the curved pipe G has a flange, Q^2 , which is in the same plane as the flanges E of the collars C and D of the cylinder A . The latter and the pipe G are secured or connected to the water-pipe K^2 by means of screws or bolts R^2 passing through the flanges E and Q^2 of the collars C and pipe G , which register, respectively, with the openings M^2 , N^2 , and P^2 of the water-pipe. Between the flanges E and the pipe K^2 are clamped the flexible strips S^2 of valves T^2 , constructed exactly like the valves L , hereinbefore described, and arranged to open into the water-pipe K^2 . Suitable mechanism of any kind is to be provided for operating the piston or plunger.

The operation of my invention will be readily understood from the foregoing description, taken in connection with the drawings hereto annexed. On the downstroke of the piston the water passes through the opening I of pipe G into the channel B , and through the opening Q into the upper end of the cylinder. At the same time water is discharged from the lower end of the latter through the pipe or collar D . On the upstroke of the piston water enters through the pipe H , and is discharged through the pipe or collar C at the upper end of the cylinder.

I claim as my invention and desire to secure by Letters Patent of the United States—

1. The combination of the cylinder A , having flanged collars C and D , the pipe G , having flange Q^2 in the same plane as the flanges E of the collars C and D , the flat-sided water-pipe K^2 , having openings registering with the collars C and D and pipe G , and valves the flexible hinge-strips of which are clamped between the flanges E and the flat side of pipe K^2 , as set forth.

2. In a pump-piston, the combination, with two disks or clamping-plates, of an intermediate packing-disk of rubber having annular shoulders on its upper and lower sides, in which packing-rings of leather are seated, and mechanism for forcing the clamping-plates together so as to compress the packing, as set forth.

3. The combination of the piston-rod, threaded at its lower end, the disk Z , having recess B^2 and perforation C^2 , the disk A^2 , having lug D^2 , provided with screw-threaded recess E^2 , the packing H^2 and J^2 , and the clamping-nut F^2 , all arranged and operating substantially as set forth.

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

MYRON E. MOORE.

Witnesses:

WM. BAGGER,
J. R. LITTELL.