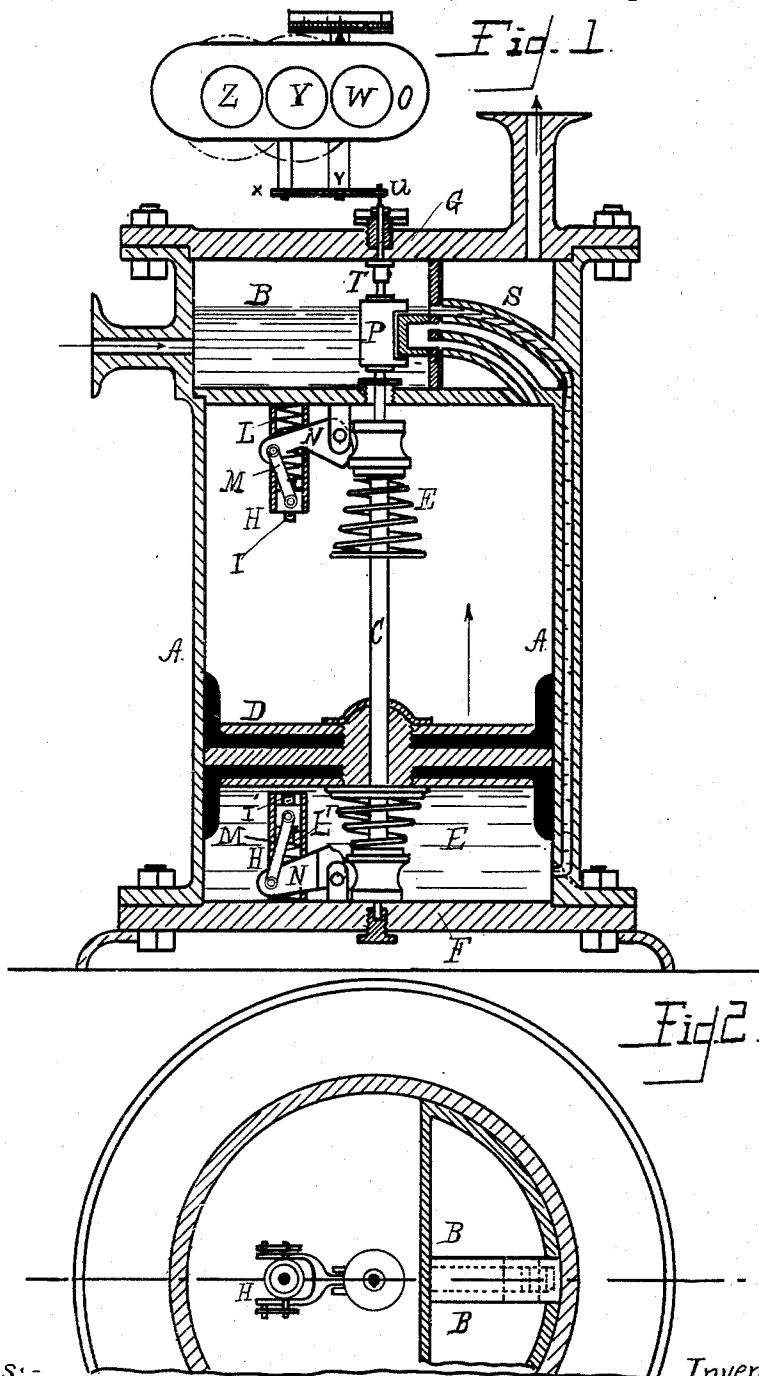


(No Model.)

T. BLEIN & E. BERAUD.
PISTON METER.

No. 483,278.

Patented Sept. 27, 1892.



Witnesses:-

C. S. Champion

E. L. Richards.

Inventors:-

Tony Blein
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UNITED STATES PATENT OFFICE.

TONY BLEIN AND EDOUARD BERAUD, OF LYONS, FRANCE.

PISTON METER.

SPECIFICATION forming part of Letters Patent No. 483,278, dated September 27, 1892.

Application filed October 13, 1890. Serial No. 367,911. (No model.) Patented in France March 27, 1890, No. 204,644.

To all whom it may concern:

Be it known that we, TONY BLEIN and EDOUARD BERAUD, of Lyons, France, have invented certain new and useful Improvements in Liquid-Meters, (the same having been patented in France March 27, 1890, No. 204,644;) and we hereby declare the following to be a full, clear, and exact description of the same.

This invention relates to liquid-meters operating with a piston sliding in a cylinder on a movable rod, from which it may be instantly disconnected by means of combined springs and levers and can work with the same regularity under pressure and without loss of the liquid.

Figure 1 is a vertical section; Fig. 2, a horizontal section.

A is a cylinder.

B is a water-box.

C is a movable rod sliding through the piston and working the sliding valve.

E E are springs actuating the rod to give it the movements.

D is the main piston.

F is the bottom of the cylinder.

G is the cover of the cylinder, holding the indicator.

H H are small cylinders bearing the regulating-screw.

I I are the regulating-screws.

L L' are small springs to restore the regulating-screws to their normal positions.

M M are connecting-rods actuating the levers N.

N are levers serving to release the movable rod.

O is a register.

P is a sliding valve.

S is an orifice for the outlet of the water.

T is a cylinder having a stem.

U is a finger working the toothed wheel of the register.

W is the units-dial.

Y is the tens-dial.

Z is the hundreds-dial.

The meter is composed of a cylinder A, in which a piston moves under the pressure of the water, sliding on a movable rod C, which passes through its center. The piston regulates the quantity of water or liquid and the movable rod actuates the sliding valves and

allows the registering, by means of a dial or register, of the quantity of liquid discharged. To obtain an instantaneous movement of the sliding valves, a spring E has been employed, which, pressed by the piston in its course, presses on a lever, effecting the release of the sliding rod. The piston, acting then on the regulating-screw I', moves the lever N, which suddenly escapes and allows the rod C, pressed by spring E, to actuate the sliding valve P, and at the same time the indicator marking the discharge of the liquid.

The working of this apparatus is most simple. The liquid penetrates into the box B, and, passing through the channel left free by the sliding valve, penetrates into the body of the cylinder. By its own weight or under the influence of pressure the liquid acts on the piston and moves it. The piston then forces against spring E, compresses it, and then presses on the regulating-screw, which it forces to descend into the little cylinder H. The lever is then raised and the movable rod falls suddenly to the bottom of the cylinder and moves the sliding valve. The opening which had given passage to the liquid is closed and the other opening allowing the liquid to penetrate into the cylinder at the opposite end is opened. The liquid then moves the piston in the opposite direction, and the same movements of the rod, the springs, and the sliding valve are produced; but in the reverse this produces a perfectly-regular back-and-forth movement and discharges in the two ways the same quantity of liquid.

This apparatus can be given different dimensions and made to discharge different volumes of liquid and always with the same precision.

Having now described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In combination, the casing, the central rod C, arranged to slide in bearings in said casing, the piston D, arranged to slide on the rod, the passages leading to the ends of the cylinder, a valve P, controlling said passages and carried directly on the sliding rod, the springs for placing the said rod under tension, and the means for gripping the said rod, said

means being in the path of the sliding piston to be operated thereby, substantially as described.

2. In combination, the casing, the piston
5 therein, the sliding rod C, passing loosely through the piston, the springs on the rod and directly in the path of the piston to be engaged thereby, and the gripping means also
10 in the path of the piston, said means being arranged to grip the rod and being located entirely within the piston-chamber, together with the springs, substantially as described.

3. In combination, the casing, the valve-chamber, the two passages leading therefrom
15 to the ends of the casing, the piston within

the casing, the sliding rod passing loosely through the piston, the means in the path of the piston to be operated thereby for controlling the action of the rod, and a single valve P, controlling the inlet and outlet of the wa- 20 ter, said valve being carried directly on the sliding rod C, substantially as described.

In witness whereof we have hereunto set our hands in presence of two witnesses.

TONY BLEIN.
EDOUARD BERAUD.

Witnesses:

EDW. B. FAIRFIELD,
BARBARIN, JR.