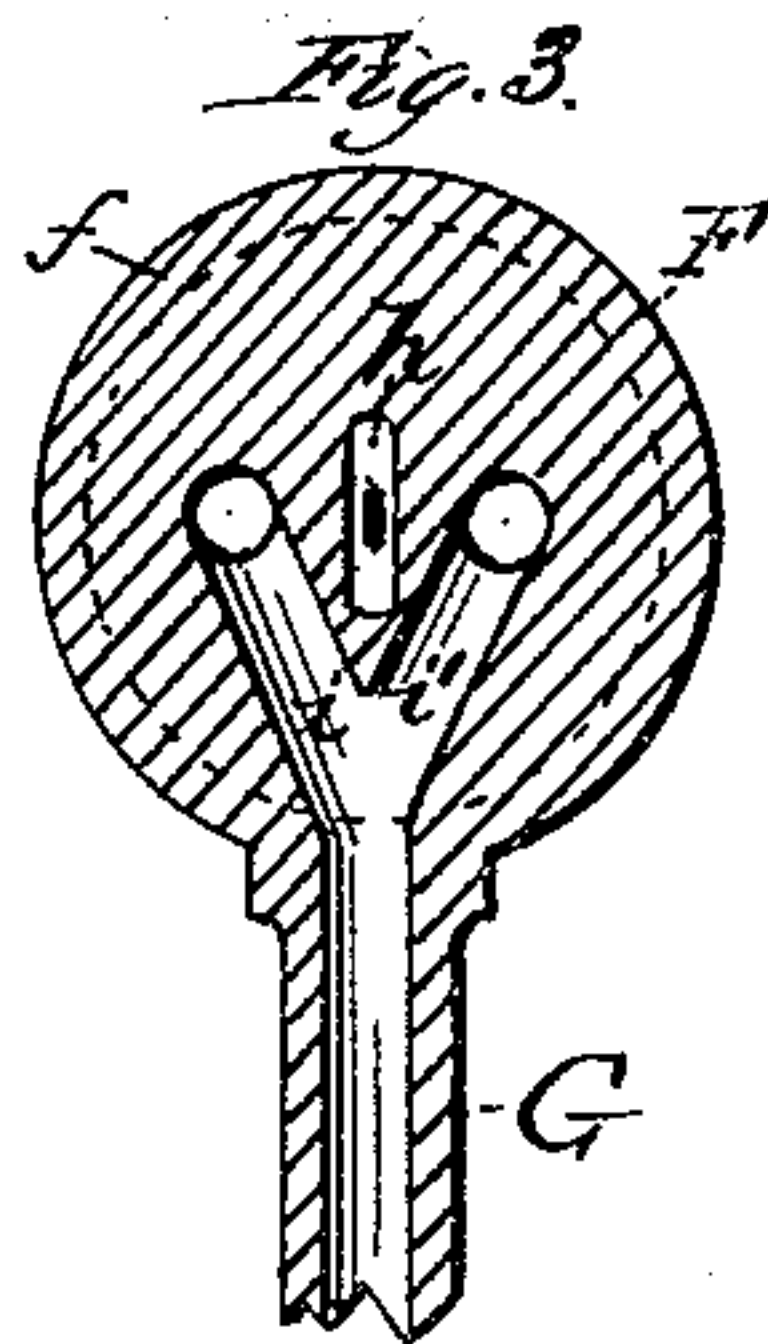
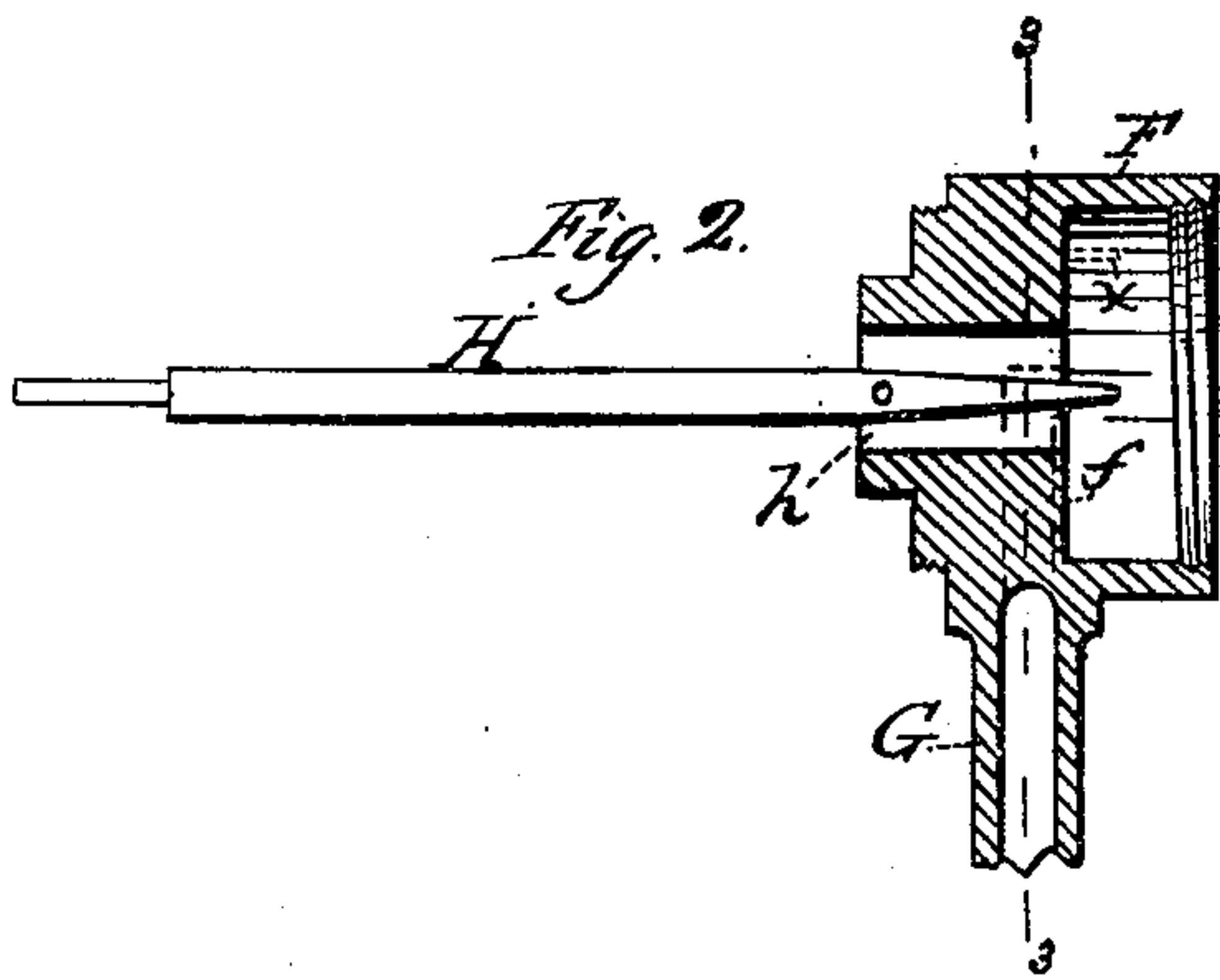
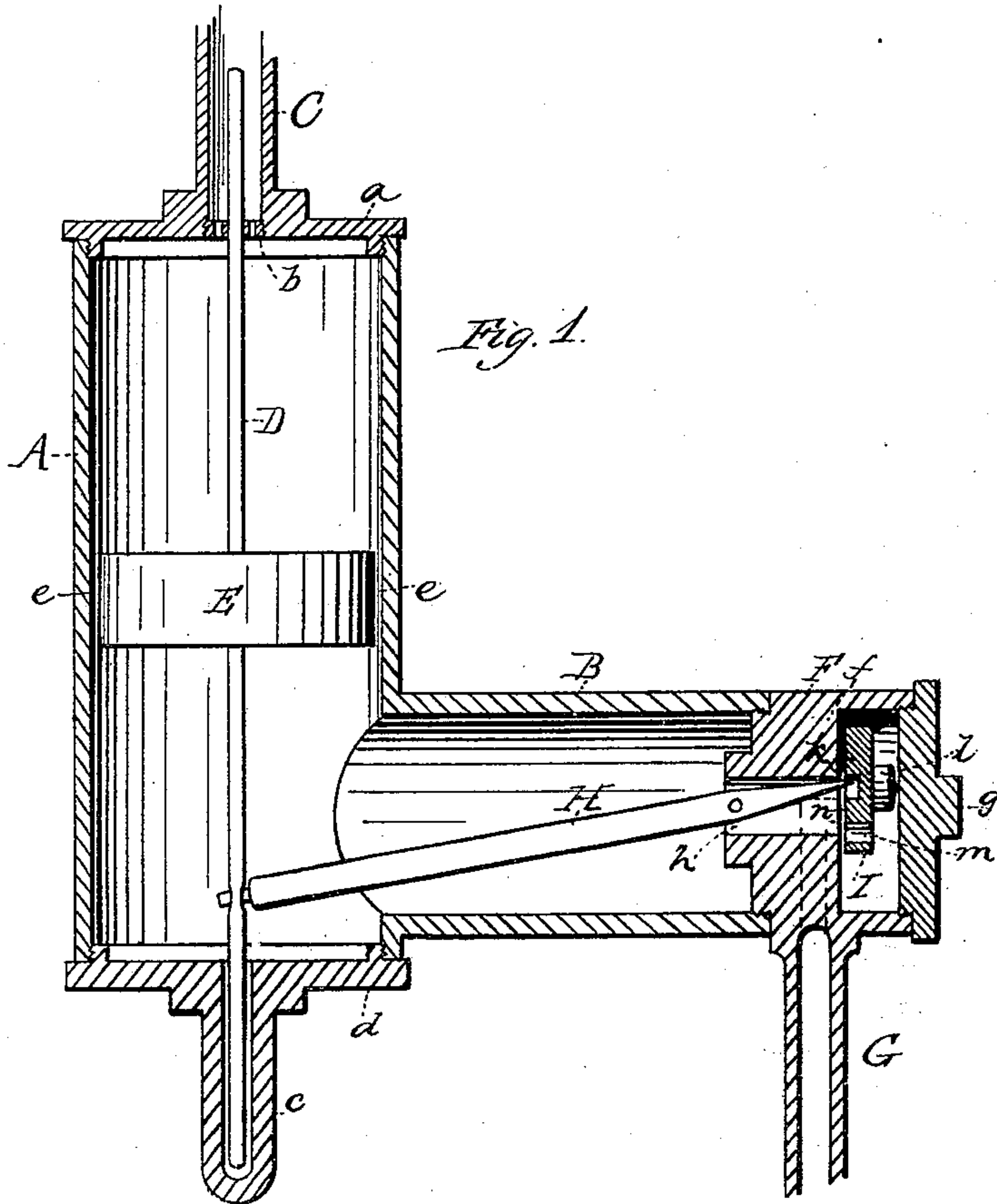


(No Model.)

F. DE P. I. y FARGAS, P. G. y CORBERA & J. B. y VECIANA
WATER PRESSURE REGULATOR.

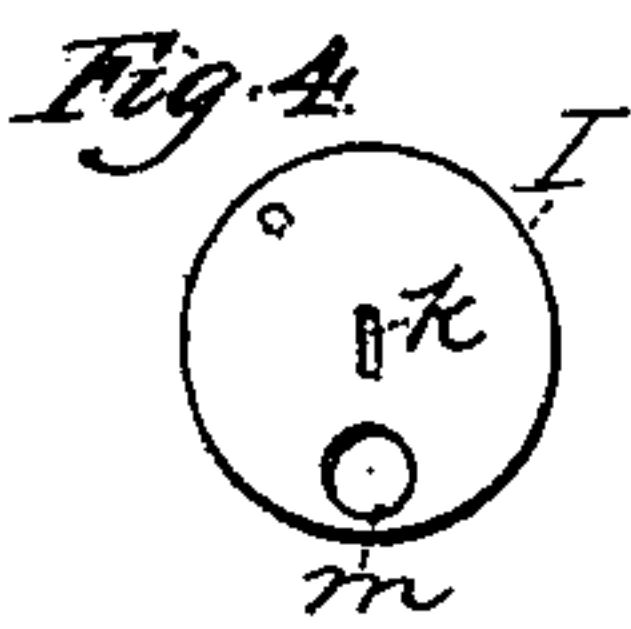
No. 245,288.

Patented Aug. 9, 1881.



Witnesses:

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J. W. Hasehagen.



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Attys.

UNITED STATES PATENT OFFICE.

FRANCISCO DE PAULA ISAURA Y FARGAS, PEDRO GARCIA Y CORBERA, AND
JOSÉ BARRUFET Y VECIANA, OF BARCELONA, CATALONIA, SPAIN.

WATER-PRESSURE REGULATOR.

SPECIFICATION forming part of Letters Patent No. 245,288, dated August 9, 1881.

Application filed April 5, 1881. (No model.) Patented in England November 4, 1880, in Belgium November 30, 1880, in France January 3, 1881, and in Spain January 5, 1881.

To all whom it may concern:

Be it known that we, FRANCISCO DE PAULA ISAURA Y FARGAS, PEDRO GARCIA Y CORBERA, and JOSÉ BARRUFET Y VECIANA, subjects of the King of Spain, residing at Barcelona, in the province of Catalonia and Kingdom of Spain, have invented a new and useful Improvement in Water-Pressure Regulators, of which the following is a specification.

10 The object we have in view is to produce a device for regulating the pressure of water in the water-pipes of a house, and maintaining a constant and even pressure at the faucets, which device will be highly sensitive in its ac-
15 tion, and will be simple and durable in construction.

Our invention consists in the peculiar means employed by us to accomplish this purpose, as fully hereinafter explained and pointed out by
20 the claims.

In the accompanying drawings, forming a part hereof, Figure 1 is a vertical section of the regulator; Fig. 2, a detached section of a portion of the valve-case; Fig. 3, a vertical
25 transverse section on the line 3-3 in Fig. 2; and Fig. 4, an elevation of the valve.

Like letters denote corresponding parts in all four figures.

30 The body of the regulator is composed of a vertical cylinder, A, and a horizontal chamber, B, connected with the cylinder A near the lower end thereof. The cylinder A has a screw-head, *a*, at its upper end, from which the pipe C passes to the house-pipes. The head *a* has
35 a guide, *b*, in which works the upper end of the rod D of the piston E, which piston plays vertically in the cylinder A. The lower end of the piston-rod works in a guide, *c*, in the lower head, *d*, of the cylinder A. The piston
40 E is somewhat smaller than the bore of the cylinder, a space, *e*, being left between it and the walls of the cylinder, which space is accurately determined and made just large enough to allow of a certain flow of water into the
45 space above the piston, and from thence to the house-pipes through the pipe C.

To the outer end of the horizontal chamber B is secured, by a screw-joint, the cylindrical valve-case F. The inner vertical wall, *f*, of the

valve-case is made quite thick, while its outer
vertical wall is formed by a screw-cap, *g*. The
wall *f* is provided with a central horizontal
passage, *h*, which connects the interior of the
valve-case with the chamber B.

G is a pipe through which the water is re-
ceived from the main or supply pipe. This
pipe G connects with two diverging passages,
i i', in the inner wall, *f*, of the valve-case.
These passages *i i'* are joined in one, where
they connect with the pipe G on the lower side
of the valve-case; but they diverge vertically
and terminate on opposite sides of the pas-
sage *h*, being connected at those points with
the interior of the valve-case by suitable ports.

H is a lever which is secured by a horizon-
tal pivot in the passage *h*. One arm of this
lever projects through the chamber B, and its
end enters a slot in the piston-rod D, so that
the movement of the piston E will rock the le-
ver on its pivot. The other end of the lever
is tapered, and projects through the passage
h a short distance into the valve-case F. Upon
this end of the lever is hung loosely a valve,
I, the point of the lever entering a slot, *k*, in
the face of the valve. The valve I is prefera-
bly a flat metallic disk, which plays vertically
in the valve-case. It has a stud, *l*, on its back,
which strikes the cap *g*, and prevents the valve
from working off of the point of the lever H.
Centrally below the slot *k* the valve has an
opening, *m*, made through it. The valve is
not intended to be held close against its seat,
but is intended to play free, leaving a space,
n, most of the time between its face and the
wall *f*.

85 In use, the parts being in the position shown in Fig. 1, the water will flow through the pipe G into the passage *i i'*, and from them into the valve-case around the sides of the valve. When the valve-case becomes sufficiently full
90 the water will flow into the passage *h* partly through the opening *m* and partly through the space *n*. The water will fill the chamber B and cylinder A, passing around the piston, and will pass out of the pipe C. When the pressure
95 is increased beyond the desired degree the piston E will be raised and the valve I lowered. This movement lowers the opening *m*

below the passage *h* and out of line therewith, and the water can then only flow to the passage *h* through the space *n*. The supply of water to the chamber B will thus be diminished, but not entirely cut off. When the pressure in the chamber B and cylinder A is again reduced the piston will drop down and the valve will be raised to the position shown in Fig. 1.

10 Instead of having the valve hung entirely at the end of the lever H, it can be loosely pivoted eccentrically on a pin, *x*, (shown in dotted lines in Fig. 2.) When hung in this manner the valve is worked eccentrically by the lever instead of being moved in a direct vertical line.

What we claim as our invention is—

1. In a water-pressure regulator, the combination, with the vertical cylinder, having a piston working therein, around the sides of which the water flows to the exit, of a valve connected with such piston by a pivoted lever and operated by the movement of the piston, substantially as described and shown.

2. In a water-pressure regulator, the combination, with vertical cylinder A and horizontal chamber B, of the piston E, around which the water flows, the piston-rod D, pivoted lever H, and loose valve I, substantially as described and shown. 25

3. In a water-pressure regulator, the combination, with cylinder A, chamber B, piston E, around which the water passes, and rod D, of the valve-case F, pipe G, passages *i*, *i'*, and *h*, the pivoted lever H, and the loose valve I, having opening *m*, substantially as described and shown. 30 35

This specification signed and witnessed this 28th day of February, 1881.

FRANCISCO DE PAULA ISAURA Y FARGAS.
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Witnesses:

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