(No Model.)

W. LAMMERS.

AUTOMATIC WATER MEASURING DEVICE.

No. 385,274. Patented June 26, 1888.

Fig. 1.

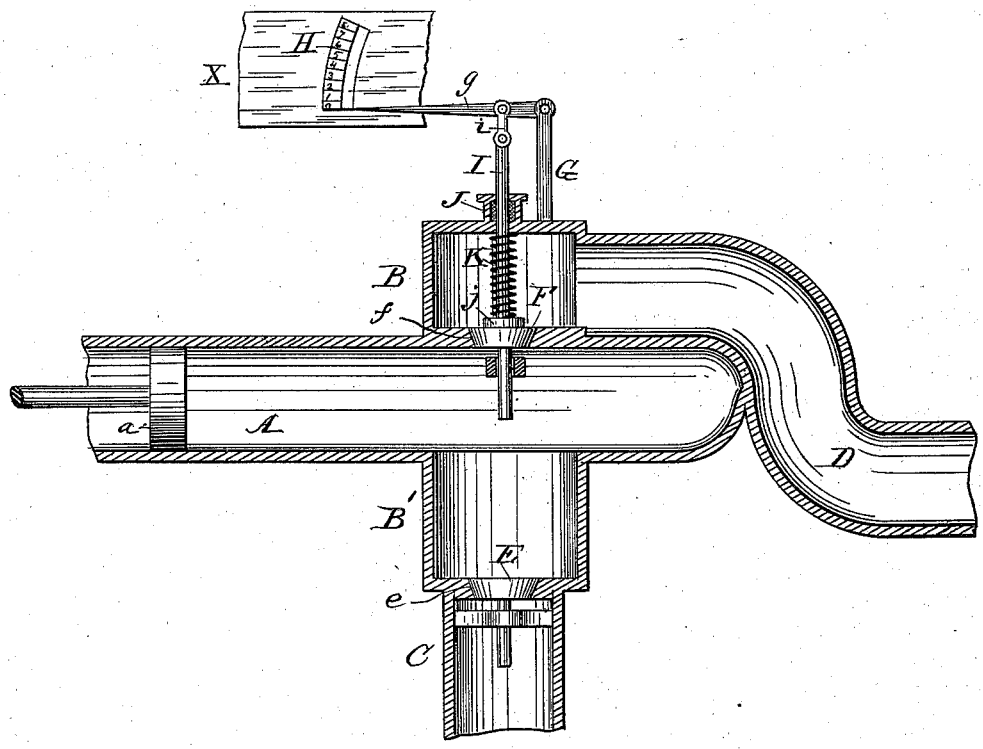
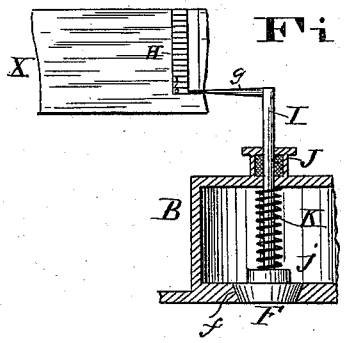


Fig. 2.



WITNESSES.

Grace M. Craig.

B Frigitt.

INVENTOR

Wm. Lammers,

by Audrson & Smith

his ATTORNEYS

UNITED STATES PATENT OFFICE.

WILLIAM LAMMERS, OF STONE CHURCH, ILLINOIS.

AUTOMATIC WATER-MEASURING DEVICE.

SPECIFICATION forming part of Letters Patent No. 385,274, dated June 26, 1888.

Application filed December 20, 1886. Serial No. 222,087. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM LAMMERS, a citizen of the United States, and a resident of Stone Church, in the county of Washington and State of Illinois, have invented certain new and useful Improvements in Automatic Water-Measuring Devices; and I do 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, reference being had to the accompanying drawing, and to letters or figures of reference marked thereon, which form a part of this specification.

The figure in the drawing represents a vertical longitudinal section of the invention.

The invention relates to improvements in devices whereby the amount of water flowing through the pump attached to a steam-engine can at any time be ascertained; and it consists, essentially, in a fixed dial or scale and a pointer therefor operated automatically by mechanism attached to the pump, and the construction and arrangement of which is hereinafter explained, illustrated in the drawing, and pointed out in the claim.

Referring to the accompanying drawing by letter, A designates the pump-cylinder in which the piston *a* reciprocates.

B B′ are the vertical valve-chambers, the former connected below to a pipe, C, leading to the well, and D is the eduction-pipe of the pump-cylinder running from the valve-chamber above said cylinder. The valve-chamber B′ below the cylinder has the part *e* in a transverse partition or diaphragm, as shown, which part is closed by the upwardly-opening valve E, of any suitable construction.

f is a port in a transverse partition or diaphragm between the valve-chamber B and the pump-cylinder, and F is an upwardly-opening valve to close the same, the said valve being similar to the valve E.

G is a standard rising from a proper point of the roof of the valve-chamber B, and *g* is a pointer or index-arm having one end pivoted thereto so as to vibrate vertically, its free end moving over the graduations of the dial or scale H, secured to a suitable part, X, of the frame of the engine, and made on the arc of a circle of which the pivot-point of the index-arm is the center.

i is a short connecting rod or link with its upper end pivoted to the index-arm at a suitable point, and its lower end pivoted to the upper end of a vertical reciprocating rod, I, which passes through a stuffing-box, J, situated centrally on the roof of the valve-chamber B. The said rod has on its lower end a disk, *j*, which is pressed against the upper surface of the valve F by the coiled spring K, surrounding the rod I, between the disk *j* and the inner surface of the roof of the valve-chamber.

It is evident that when no water is flowing through the pump, and the valves are consequently closed, the point of the index-arm will not move from the lowest or naught graduation on the scale, and that the more water that passes through the valve-chambers and the higher the valve F consequently rises the higher will the point of the index-arm rise on the dial with the inward reciprocations of the piston. Thus the engineer can tell at a glance how much water is passing through the pump at each of said reciprocations.

Having described this invention, what I claim, and desire to secure by Letters Patent, is—

In a device to indicate the amount of water passing through a pump, the combination, with the piston and upper and lower valves F, of the standard G, rising from the roof of the chamber of said valve, the index-arm *g*, pivoted to the end of the standard, the scale H, made on the arc of a circle concentric with the pivotal point of the index-arm, the link *i*, pivoted at a suitable point on the index-arm, the rod I, connected by the link with index-arm, and having on its lower end the disk *j*, resting upon but not attached to the valve, and the spring K, surrounding the rod I between the disk *j* and the roof of the valve-chamber, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM LAMMERS.

Witnesses:

AUGUST BRINKMANN,

JOHN BOESCHEN.