

H. J. KING.
Rotary Water-Meter.

No. 213,665.

Patented Mar. 25, 1879.

Fig. 1.

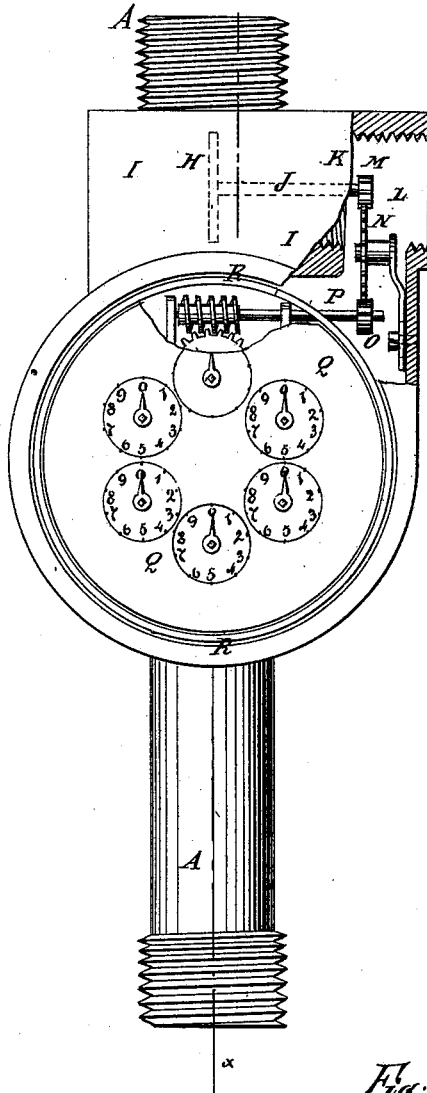


Fig. 2.

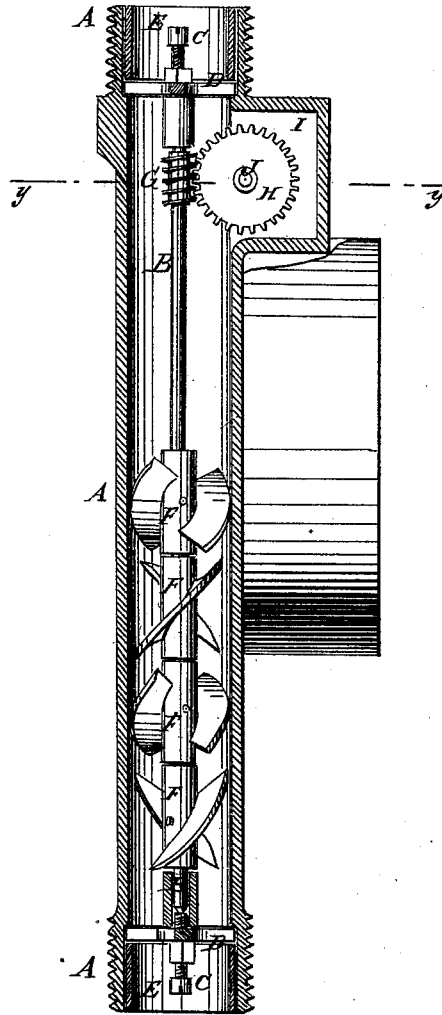
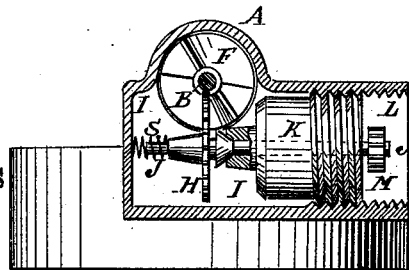


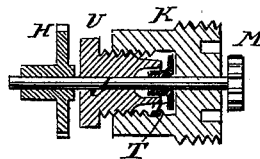
Fig. 3.



WITNESSES

Chas. M. A.
C. Deagwick

Fig. 4.



INVENTOR:

H. J. King
BY *Mum & Co*

ATTORNEYS.

UNITED STATES PATENT OFFICE.

HENRY J. KING, OF MIDDLETOWN, NEW YORK.

IMPROVEMENT IN ROTARY WATER-METERS.

Specification forming part of Letters Patent No. **213,665**, dated March 25, 1879; application filed August 26, 1878.

To all whom it may concern:

Be it known that I, HENRY JAMES KING, of Middletown, in the county of Orange and State of New York, have invented a new and useful Improvement in Water-Meters, of which the following is a specification:

In the accompanying drawings, Figure 1 is a face view of my improved water-meter, parts being broken away to show the construction. Fig. 2 is a longitudinal section of the same, taken through the line *x x*, Fig. 1. Fig. 3 is a cross-section of the same, taken through the line *y y*, Fig. 2. Fig. 4 is a detail section, showing a modification of construction.

Similar letters of reference indicate corresponding parts.

The object of this invention is to improve the construction of the water-meter for which Letters Patent No. 44,432 were issued to me September 27, 1864, so as to make it more convenient in use and more reliable in operation.

The invention consists in a water-meter in which the spiral screw that operates the register is made in sections, secured adjustably to the shaft placed in the water-pipe; in the chamber to receive the worm-wheel formed upon the pipe that receives the spiral screw, in connection with the chamber that receives the connecting-gearing and the chamber that receives the register; in a water-meter in which the shaft that connects the worm-wheel with the driving mechanism of the register passes water-tight through the plug that closes the chamber in which the said worm-wheel works; in a water-meter in which the hub of the worm-wheel or a collar upon its shaft works in a ground seat in the end of the plug through which the said shaft passes; and in the combination of the packing and the small screw-plug with the large screw-plug and the shaft that connects the worm-wheel with the mechanism that drives the register, as hereinafter fully described.

A represents a short length of water-pipe, within which is placed a shaft, B. The ends of the shaft B revolve upon the points of set-screws C, which pass in through screw-holes in the center of the spiders D.

The spiders D rest against shoulders formed upon the inner surface of the pipe A, and are

kept in place by loose rings E, fitted into the ends of the said pipe A, and which, in turn, are kept in place by the adjacent lengths of pipe.

Upon the shaft B is placed a spiral screw, which is made in sections F, the wings, threads, or flanges of which are made a little shorter than their hubs, so as to leave a passage-way for water between the adjacent ends of the said flanges.

With this construction, the meter is regulated by adjusting the sections F so that the adjacent ends of their flanges may overlap or have a space between them, as may be required.

The sections F are secured to the shaft B by set-screws or other suitable means, so that they may be readily adjusted as desired, and when adjusted may be held securely in place. The meter may also be regulated by cutting off the ends of the flanges of the sections F to enlarge the space between the adjacent ends of the said flanges.

To the shaft B, near one end, is attached, or upon it is formed, an endless screw, G, into the threads of which mesh the teeth of the worm-wheel H. The worm-wheel H extends up into a chamber, I, cast upon the pipe A, and its hub is secured to the short shaft J.

The shaft J passes out through a hole in the plug K, which is screwed into the screw-thread in the mouth of the chamber I. The outer end of the shaft J projects into the chamber L, also cast upon the pipe A, and the opening or mouth of which is directly opposite the mouth of the chamber I, so that the plug K can be readily passed through the chamber L in putting it into and removing it from its place.

To the outer end of the shaft J is attached a small gear-wheel, M, the teeth of which mesh into the teeth of a gear-wheel, N. The gear-wheel N is pivoted to an arm attached to the wall of the chamber L, and its teeth mesh into the teeth of a gear-wheel, O, attached to the shaft P, that drives the wheels of the indicator Q.

The mouth of the chamber L is closed by a screw-plug, and the said chamber L opens into the open chamber R, in which the indicator Q is placed.

The end of the hub of the screw-wheel H, or

a collar formed upon its shaft J, may be made conical or flat, and ground to its seat upon the inner end of the plug K, so that there can be no leakage of water around shaft J.

The hub of the screw-wheel H is held to its seat upon the plug K by the pressure of the water and by a spiral spring, S, placed upon the inner part of the shaft J, and which rests against the wall of the chamber I.

If desired, a screw-hole may be formed in the inner end of the screw-plug K around its bore, to receive a packing, T, and a screw-plug, u, to hold said packing in place while the water presses it closely around the shaft J to prevent any water from passing through.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination of the shaft B, the adjustable spiral-screw sections F, the worm G, the worm-wheel H, the shaft J, the plug K, the spiral spring S, the gear-wheels M N O, and the worm-shaft P with the register Q, substantially as described.

HENRY JAMES KING.

Witnesses:

WM. H. STODDARD,

M. J. DONOVAN.