E. MARSLAND.

LIQUID METER.

No. 186,014. Patented Jan. 9, 1877.

Fig. 3

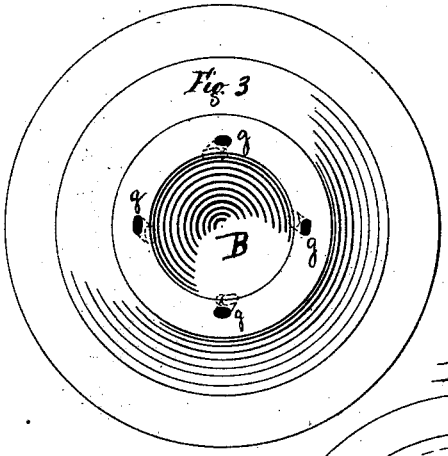


Fig. 4

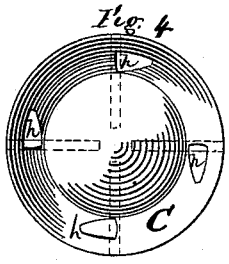


Fig. 2

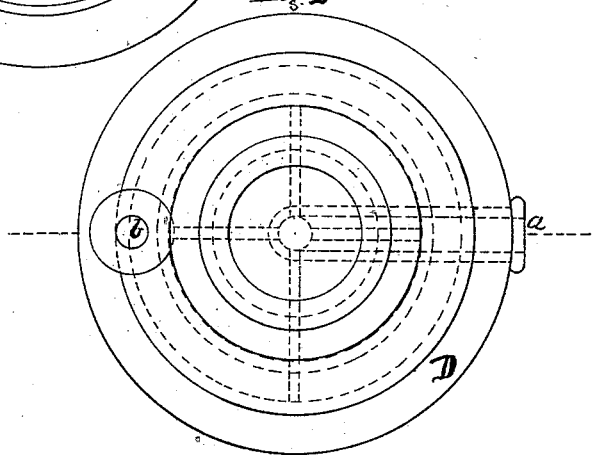
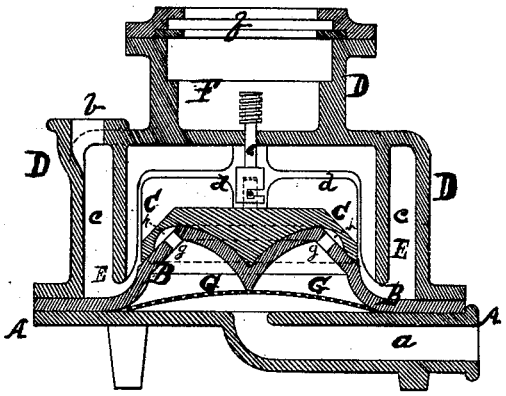


Fig. 1



WITNESSES:

Chas. Isham

J. Homer Riddick

INVENTOR.

Edward Marsland

by Cochrane & Macomber

his Attorneys.

UNITED STATES PATENT OFFICE.

EDWARD MARSLAND, OF SING SING, NEW YORK.

IMPROVEMENT IN LIQUID-METERS.

Specification forming part of Letters Patent No. **186,014**, dated January 9, 1877; application filed March 31, 1876.

To all whom it may concern:

Be it known that I, EDWARD MARSLAND, a resident of the village of Sing Sing, in the county of Westchester and State of New York, have invented certain Improvements in Liquid-Meters, of which the following is a specification:

These improvements relate to the class of liquid-meters described and shown in Letters Patent of the United States granted to me on the 21st day of May, 1872.

The accompanying drawing, making a part of this specification, is a correct representation of my improved meter and its several parts, in which drawing—

Figure 1 is a cross-section of the entire meter. Fig. 2 is an exterior top view. Fig. 3 is a top view of the seat of the floating disk or wheel C, and Fig. 4 is a view of the under side of this floating disk C.

The principal objects of my invention are to confine and control the water or liquid within the chamber containing the revolving disk, and conduct it therefrom in such a manner as to secure an even flow and equalized pressure upon all portions of the floating disk, and preventing any cross-current setting toward the outlet-pipe from tipping or disarranging the floating disk, and also to simplify and cheapen the construction of the meter.

I will now proceed to describe the manner in which I construct my meter in order to accomplish these objects, making reference to the drawing annexed hereto.

The principal parts of the meter are cast, and consist of the three pieces A, B, and D. The base A is formed or provided with an inlet, *a*. The middle piece B is connected at its margin to the outer casing, and also separates the upper and lower compartments, and forms the seat for the revolving wheel or floating disk C, and the upper covering or top D also forms a part of the casing, and has a compartment for holding the registering apparatus cast upon it, and an outlet, *b*. This cap or covering D has also formed on its under side or inner face an annular flange or rim, E, projecting downward, so as to envelop the revolving disk C, and at the same time will form an annular space or chamber, *c*, outside of its circumference, running entirely around the meter, from which chamber the water passes to the outlet *b*.

The floating disk C may be provided with wings *d*, and is connected to the rod *e*, which communicates its revolutions to the registering apparatus contained in the compartment F, over which there is a glass covering, *f*.

G is a wire screen, stretched across the inlet-pipe, so as to keep out any foreign substances, and is slightly bowed or concaved, so as to afford as great an area as possible.

The water or liquid is conducted into the meter through the pipe *a*, and, passing through the holes *g g*, which holes or outlets are inclined, will strike the buckets or indentations *h h*, formed on the under surface of the disk, and cause it to revolve. The water, after its force is spent on the revolving disk, will then pass down under the rim E into the annular chamber *c*, equally at all parts of the circumference of the disk and seat, and is conducted from the chamber *c* through the outlet-pipe *b*, while the water above the disk and within the circumference of the annular rim E will not be subject to any current that may set toward the outlet-pipe, and the disk C will not be tilted or affected by such current.

It will also be observed that by casting the middle piece B in such a shape as to present a seat for the disk C, and so that it may be readily secured to the base-plate A and the top D, I am enabled to construct my meter of fewer pieces, which reduces the cost, and at the same time greatly simplifies the construction.

I claim—

1. In a liquid-meter, the revolving disk C, in combination with a rim, E, surrounding and enveloping it, substantially as and for the purpose shown and described.

2. In a liquid-meter, the combination of the three parts, A, B, and D, cast or formed substantially as and for the purpose shown and described.

3. A liquid-meter having a middle piece, B, cast or formed in the manner shown, so as to form the seat for the floating disk C, substantially as shown and described.

4. A liquid-meter having an annular chamber, *c*, in which the liquid is collected before passing to the outlet-pipe *b*, substantially as shown and described.

EDWARD MARSLAND.

Witnesses:

GEO. W. LASAK,

A. BELL MALCOMSON, Jr.