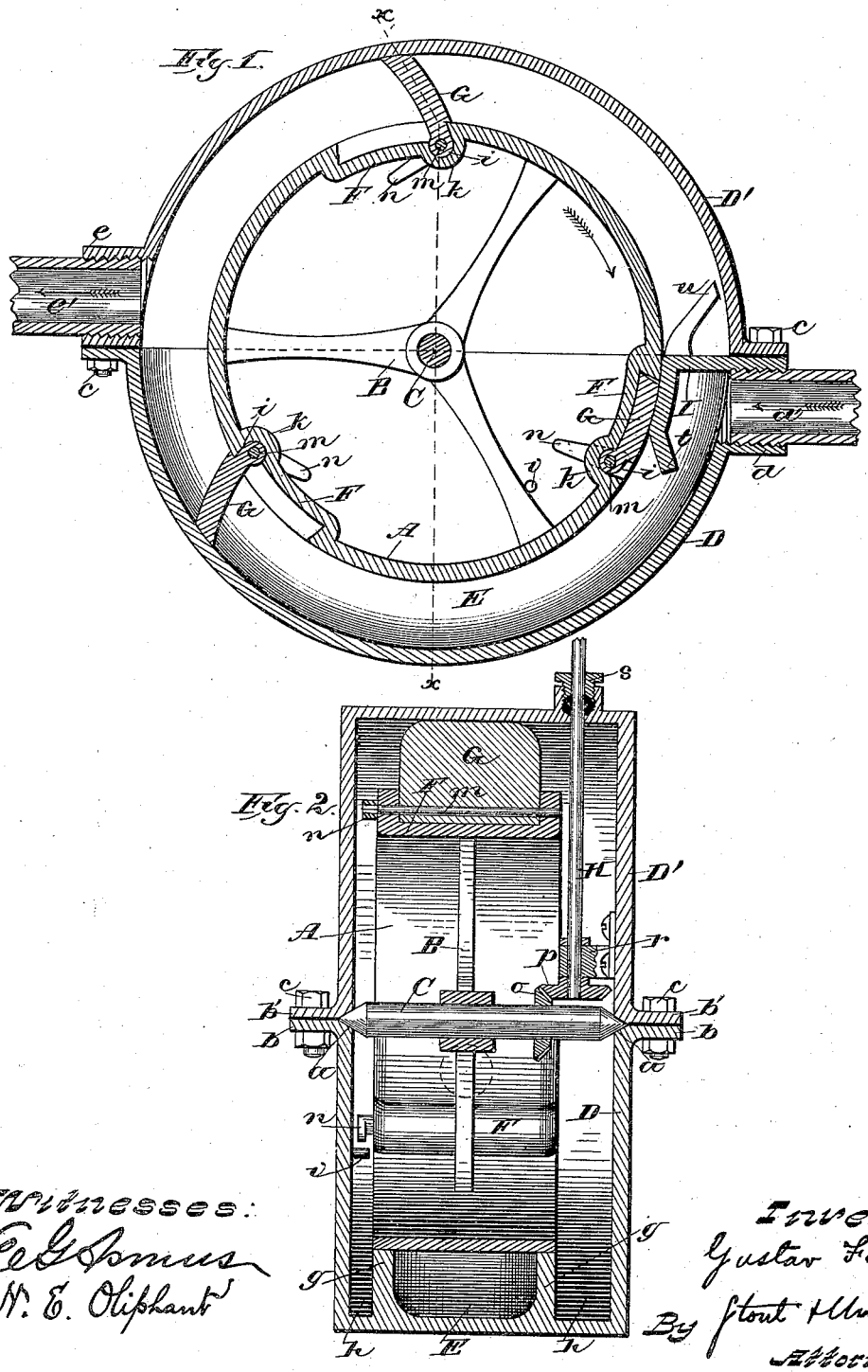
(No Model.)

G. FAJEN.

ROTARY WATER METER.

No. 343,804. Patented June 15, 1886.



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UNITED STATES PATENT OFFICE.

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ROTARY WATER-METER.

SPECIFICATION forming part of Letters Patent No. 343,804, dated June 15, 1886.

Application filed October 21, 1885. Serial No. 180,793. (No model.)

To all whom it may concern:

Be it known that I, GUSTAV FAJEN, of Milwaukee, in the county of Milwaukee, and in the State of Wisconsin, have invented certain new and useful Improvements in Fluid-Meters; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to fluid-meters; and it consists in certain peculiarities of construction, as will be hereinafter described.

In the drawings, Figure 1 represents a vertical longitudinal section of my invention; and Fig. 2, a vertical transverse section on line *x x*, Fig. 1.

A is a drum, open at its ends and formed with an interior skeleton frame, B, having central trunnions or shaft, C, operatively journaled in suitable bearings, *a*, centrally located at the point of juncture of the two sections D D′, forming the outer casing of my meter. These two casing-sections are provided with outwardly-extended flanges *b b′*, which come in opposing contact and are perforated at suitable intervals to receive bolts *c*, by which said sections are held in their united position, the joint thus formed being made tight by suitable packing interposed between the opposing flanges. One end of the lower casing-section, D, at its highest point, is provided with an inlet, *d*, adapted to receive a service-pipe, *d′*, and the section D′, on the end opposite the inlet *d*, is provided at its lowest point with an outlet, *e*, designed to receive an exhaust-pipe, *e′*. The section D is provided with a channel, E, the walls *g* of which form a seat for the drum A, and this channel being of less width than the interior of the section the outer sides of its walls and the inner sides of said section form gutters *h*, to receive sand or other deposits from the fluid.

The drum A is provided with a series of depressions, F, equidistant apart, each of said depressions being adapted to receive a gate, G, having a perforated and shouldered end, *i*, which rests in a socket, *k*, and is hinge-joined to its respective depression by a rod, *m*, the latter having upon one end a bell-crank, *n*. The hinged gates have their free ends constructed to conform with the contour of the channel E, thereby forming a flush and water-tight joint between these parts when the drum is rotated. As the several gates are opened the shoulders on their ends *i* come against the periphery of the drum, and thereby limit the movement of said gates and retain them in operative position with relation to the channel E. The shaft C is provided with a gear-wheel, *o*, or its mechanical equivalent, designed to engage a corresponding gear-wheel, *p*, or equivalent, on the lower end of a shaft, H, said shaft being adapted to communicate with any suitable registering mechanism, in order that the amount of fluid passed through the meter may be automatically indicated. A bracket, *r*, secured to the interior of the casing-section D′, acts as the lower bearing for the shaft H, which latter also has a bearing in a suitable water-tight connection, *s*, at the top of said section.

At the highest point of the casing-section D, where I locate the inlet *d*, is a cut-off flange, I, having its inner end downwardly extended and preferably terminated in an angular bend, *t*, adapted to project into the channel E, the downwardly-extended portion of the cut-off flange being immediately opposite to said inlet. The cut-off flange I is provided with an upwardly-extended prong or web, *u*, which acts to close the gates G at this point when the drum A is rotated, and projecting from the inner side of the casing-section D is a lug, *v*, designed to operate the bell-cranks *n*, to open said gates after they have passed the point of inlet for the fluid.

In the operation of my invention, the several parts being in the position shown in Fig. 1 and fluid let on through the inlet *d*, said fluid will come against the gate G, having its free end opened into the channel E, and by pressure will cause the drum A to rotate. As this drum is rotated the gate held closed by the cut-off I passes the inlet and is opened into the channel E by its bell-crank *n* coming into contact with the lug *v* on the casing-section D, so that the pressure of the fluid is now exerted on this latter gate to continue the rotation of the drum. As the rotation continues the uppermost gate is carried around, and in case it does not close of its own gravity it comes against the prong or web *u*, projecting upward from the cut-off I, and is by the latter forced down in its respective depression in the drum, so as to pass said cut-off and open into the channel E, to be acted on by the incoming

fluid. The gates being equidistant apart, one of them will be brought and opened into the channel E before another has passed out of the latter, thereby forcing the drum to continue its rotation and prevent the fluid from rising above the inlet prior to exerting its pressure to operate said drum, and thus actuate the indicator mechanism to register the quantity of such fluid passed through said inlet. The drum will continue to rotate until a sufficient amount of fluid has entered to pass the outlet *e* and fill the meter, the weight of this fluid operating to force said drum tightly against its seat formed by the channel-walls *g*, thus preventing any escape into the meter until the outlet has been passed. As the fluid is drawn off from the outlet *e* the above-described operation is automatically continued, and the amount drawn indicated by the registering mechanism designed to be connected with the shaft C of the drum.

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

1. A fluid-meter consisting of a suitable casing having inlet and outlet openings and its lower portion provided with a channel of less width than the interior thereof, in combination with a rotary drum adapted to be supported upon the channel-walls, and provided with hinged gates designed to open into said channel, as set forth.

2. A fluid-meter consisting of a suitable casing having inlet and outlet openings and its lower portion provided with a channel of less width than the interior thereof, and gutters formed by the channel-walls and casing-sides, in combination with a rotary drum adapted to be supported upon the channel-walls, and having hinged gates designed to open into said channel, as set forth.

3. A fluid-meter consisting of two sections suitably joined to form a water-tight casing, the lower section provided with an inlet, inlet cut-off, channel, and gutters, the latter formed by the channel-walls and the inner sides of said section, the upper section provided with an outlet at its end opposite the inlet of the lower section, and a drum journaled in suitable bearings to come in close contact with the walls of said channel, and provided with a series of depressions having hinged gates adapted to automatically open and close, substantially as and for the purpose set forth.

4. A fluid-meter having an inlet and outlet at opposite ends, a channel extending from one to the other, an inlet cut-off having a downwardly-extended flange terminating in an angular bend, and an upwardly-projecting prong or web, a lug upon one of the inner sides of the meter-casing below the inlet, and gutters formed by the channel-walls and interior sides of the casing, an open-ended drum having a skeleton frame and trunnions or shaft journaled in suitable bearings, and a series of depressions, each provided at one end with a socket, a series of gates having perforated and shouldered ends designed to engage the socket ends of the depressions and their free portion shaped to conform with the interior of the channel, suitable rods adapted to unite said gates to their respective depressions in the drum and provided with bell-cranks designed to come in operative contact with the lug on one of the inner sides of the casing, and an indicator-shaft operatively hung in suitable bearings, and provided with gearing adapted to mesh with corresponding gearing on one of the journals of the drum, all constructed and arranged to operate substantially as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

GUSTAV FAJEN.

Witnesses:

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