

(No Model.)

A. A. WALKER & T. J. BACKUS.

WATER MOTOR.

No. 272,105.

Patented Feb. 13, 1883.

Fig. 1

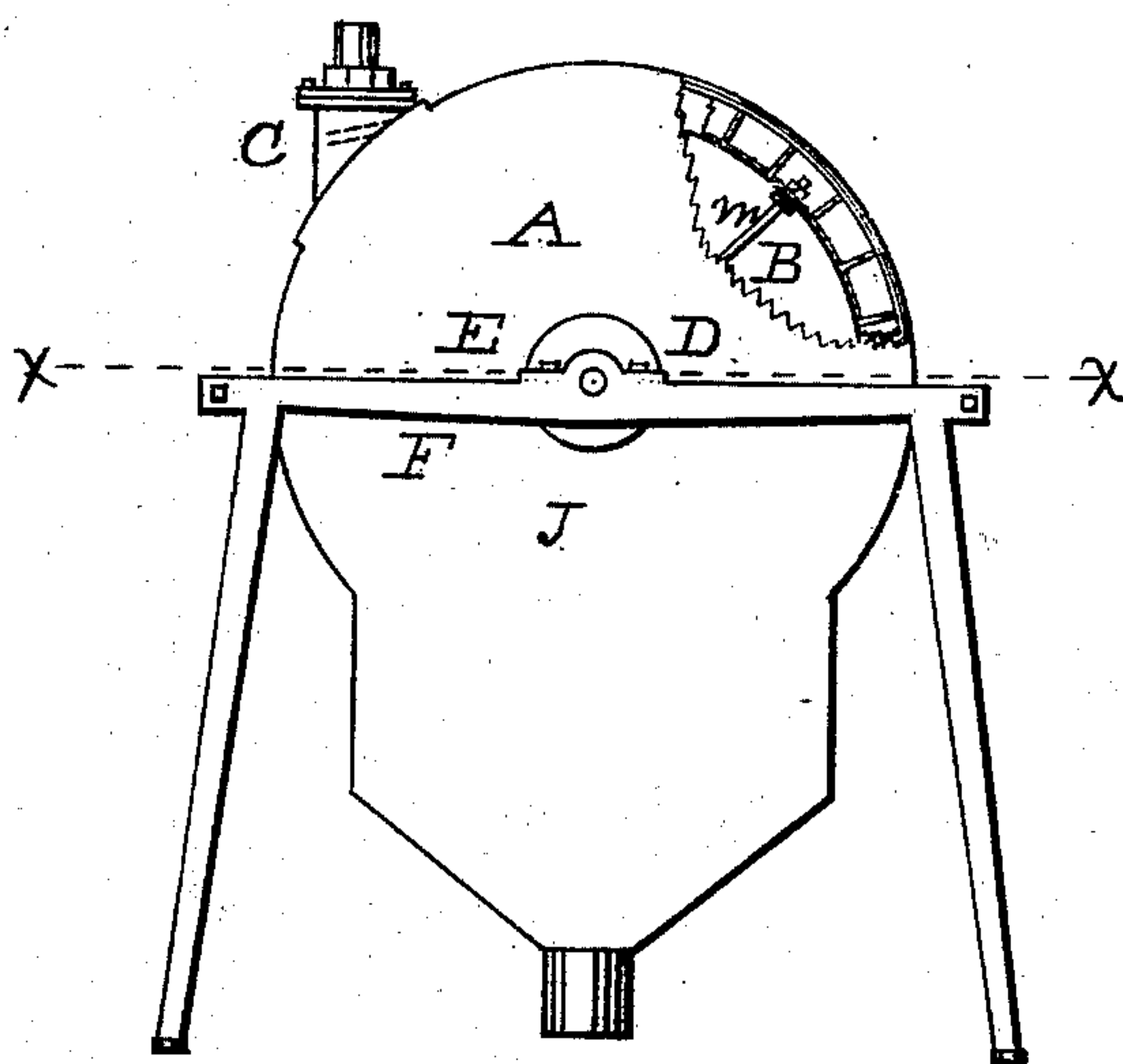


Fig. 2

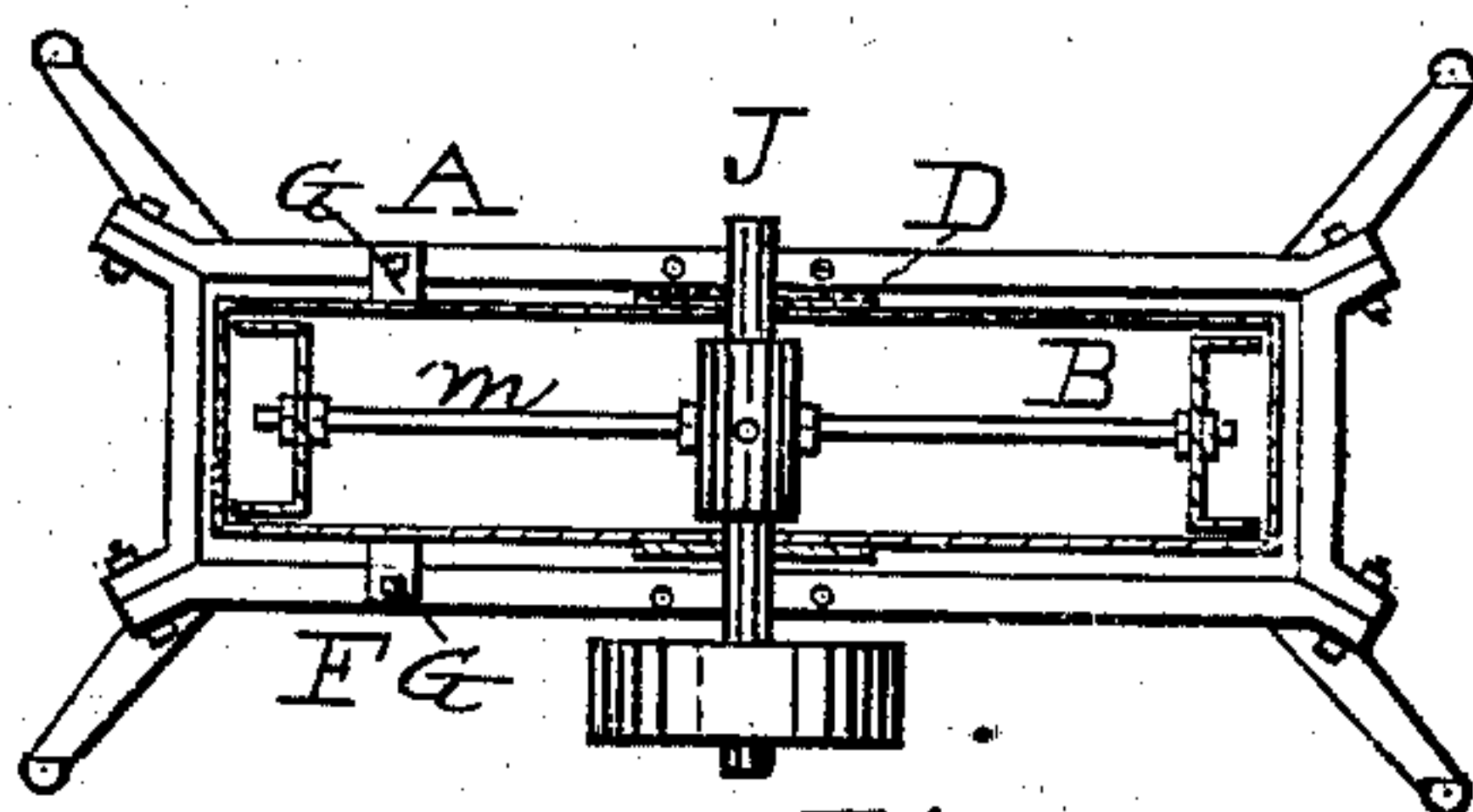
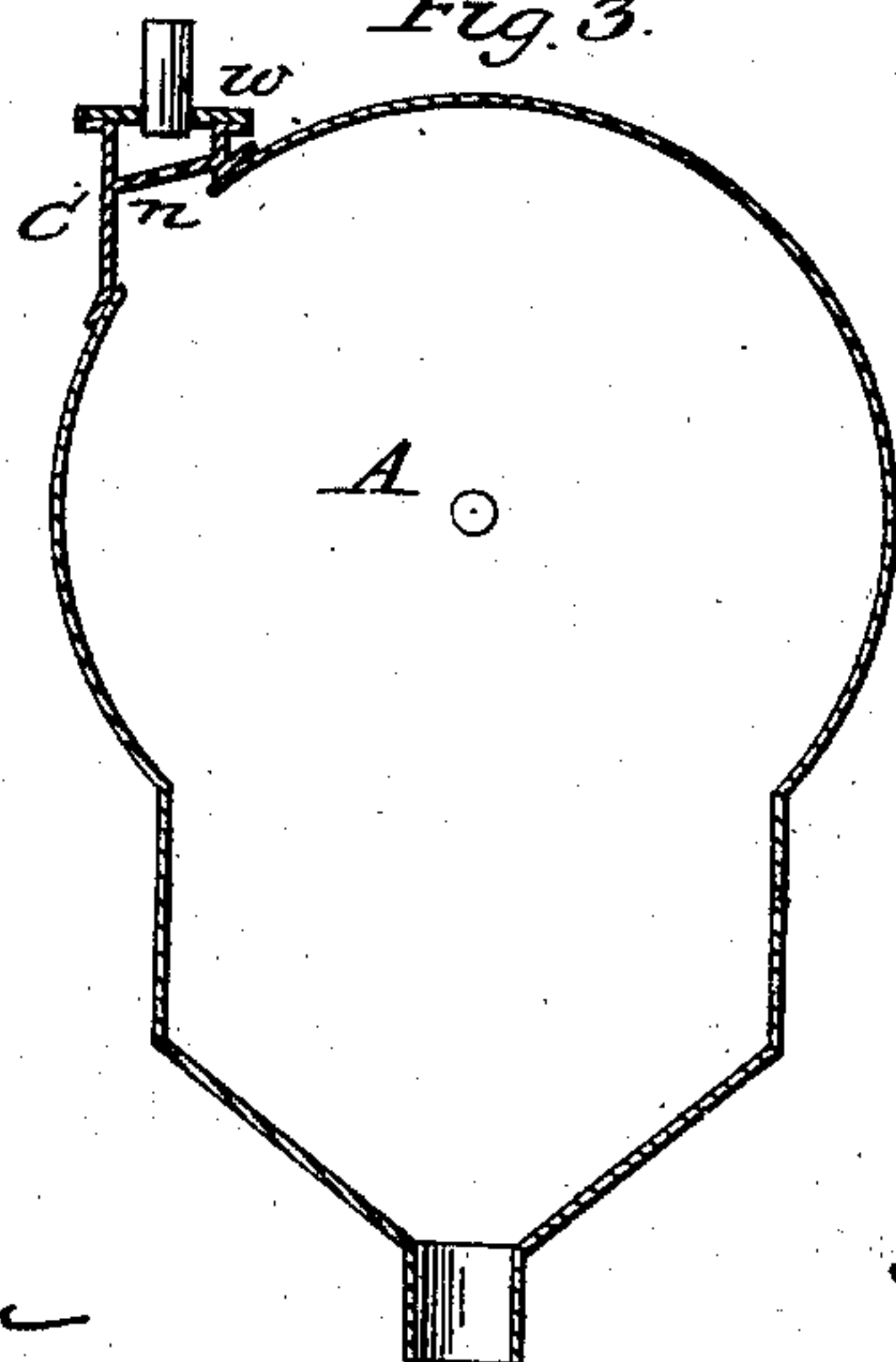


Fig. 3



WITNESSES:

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ALBERT A. WALKER AND THADEUS J. BACKUS, OF DAYTON, OHIO.

WATER-MOTOR.

SPECIFICATION forming part of Letters Patent No. 272,105, dated February 13, 1883.

Application filed July 22, 1882. (No model.)

To all whom it may concern:

Be it known that we, ALBERT A. WALKER and THADEUS J. BACKUS, citizens of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented a new and useful Improvement in Water-Motors, of which the following is a specification.

Our invention relates to improvements in the construction of the inlet-cup of a water-motor, as will be hereinafter fully set forth.

The mechanism of said improvements is illustrated in the accompanying drawings, in which Figure 1 is a side view of the water-motor. Fig. 2 is a horizontal section of the same on the line *x*. Fig. 3 is a vertical longitudinal section of the case.

Similar letters refer to similar parts throughout the several views.

A represents the case, constructed wholly of galvanized iron, with the exceptions of the inlet-cup C and the circular plates D, which embrace the shaft. The inlet-cup is of cast-iron and has a division-plate, N, through which are one or more orifices for the passage of the water to the wheel. The water striking the wheel from above in vertical line remaining in the buckets about one-fourth the circumference of the wheel, the wheel is not unnecessarily weighted by the water, and there is therefore less friction on the shaft. To the top is bolted a plate, *w*, having a suitable device for attaching a flexible hose or iron tubing. The lower part is flanged, and when placed over the opening in the rim of the case the said flange is soldered to the same in close proximity to the wheel. The bottom of the case is greatly expanded to let the water escape freely from the wheel, and an outlet-orifice at the lowest point is provided for the discharge of the water. The case is supported by straps of iron G, connecting the case to the top of the frame. These straps of iron chiefly support the case, and thereby relieve the circular plates from producing much friction on the shaft. The circular plates are nicely fitted to the shaft to prevent the escape of water, and serve to arrest vibration of the sides of the case.

The frame F is of cast-iron, and consists of

four parts—the two side pieces with legs and the end pieces—the same being bolted together. At the center longitudinally is a bearing for the shaft J, which is held by the ordinary journal-cap.

The rim of the wheel B is made of galvanized iron, and consists of two annular rims united to a circular bottom, thus forming a peripheral channel, across which a series of buckets are secured. The rim is connected to the hub by iron rods *m*, which screw into said hub and are tightened by jam-nuts, and pass through an orifice in the bottom of the rim, and are there secured by nuts on both sides. The hub is keyed to the shaft, and by the attachment of a pulley to said shaft the power is transmitted. As the wheel is constructed, the water strikes the buckets and can only escape by passing between the bucket-edge and the case until the open space is reached at the bottom of the case, where the water is freely discharged from the closed buckets.

The motor is used where water is furnished from pipes holding water subjected to pressure, and the wheel is acted upon by the combined percussive and gravitating force of the water. The ingress of the water is above the center and the egress from the wheel commences about an equal distance below, so that the buckets of about one-fourth of the wheel are continuously supplied, either full or partially so, and the uninterrupted jet from the division-plate gives the fullest percussive effect on the wheel.

Having fully described our invention, what we claim, and desire to secure by Letters Patent, is—

The inlet-cup C, with flange of curve corresponding to the case A of plate metal, a cap for pipe-connection, and a division-plate having an orifice to direct the jet slightly inwardly from a vertical line upon the buckets of the wheel, the said parts combined substantially as set forth.

ALBERT A. WALKER.
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Witnesses:

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