

JOSEPH W. CREMIN.

Improvement in Meters.

No. 122,231.

Fig. 1

Patented Dec. 26, 1871.

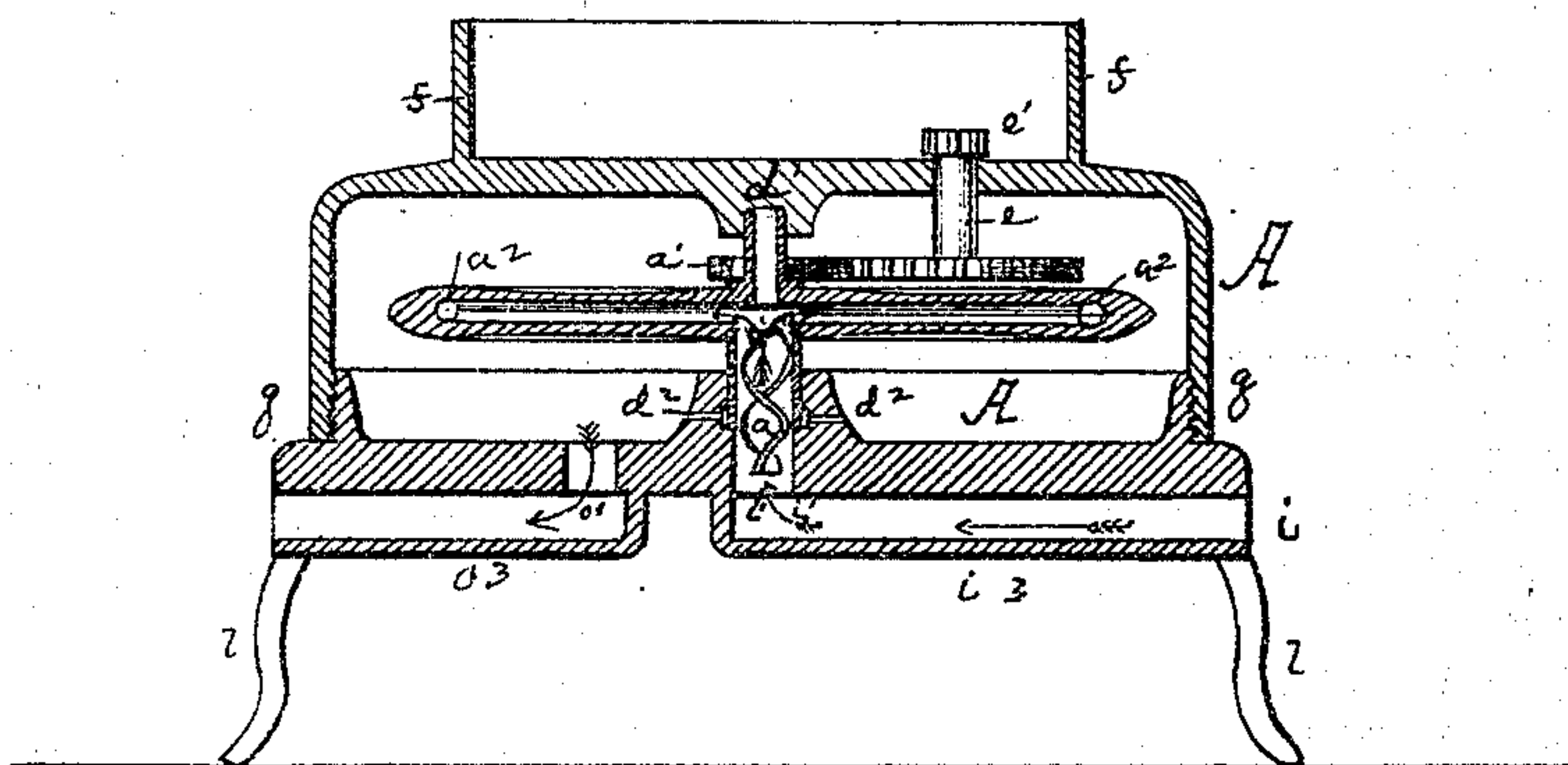


Fig. 2

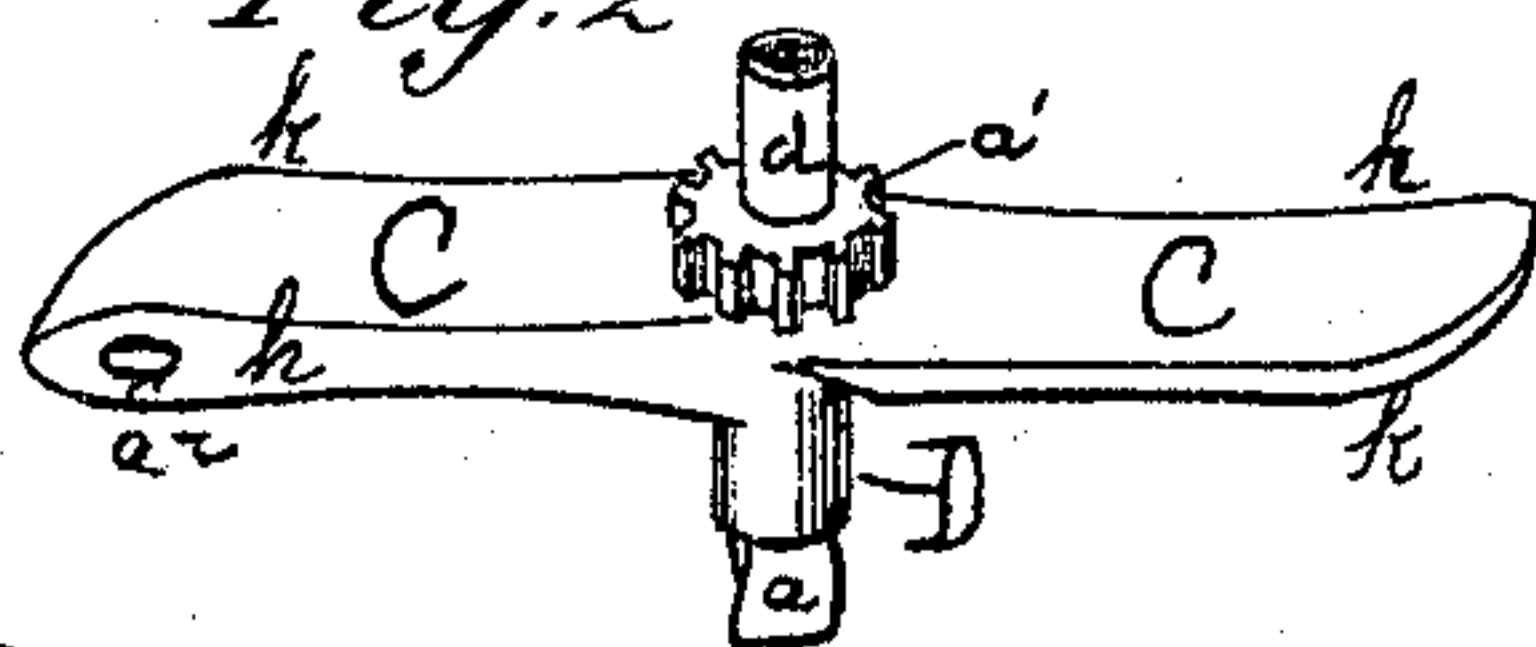


Fig. 3

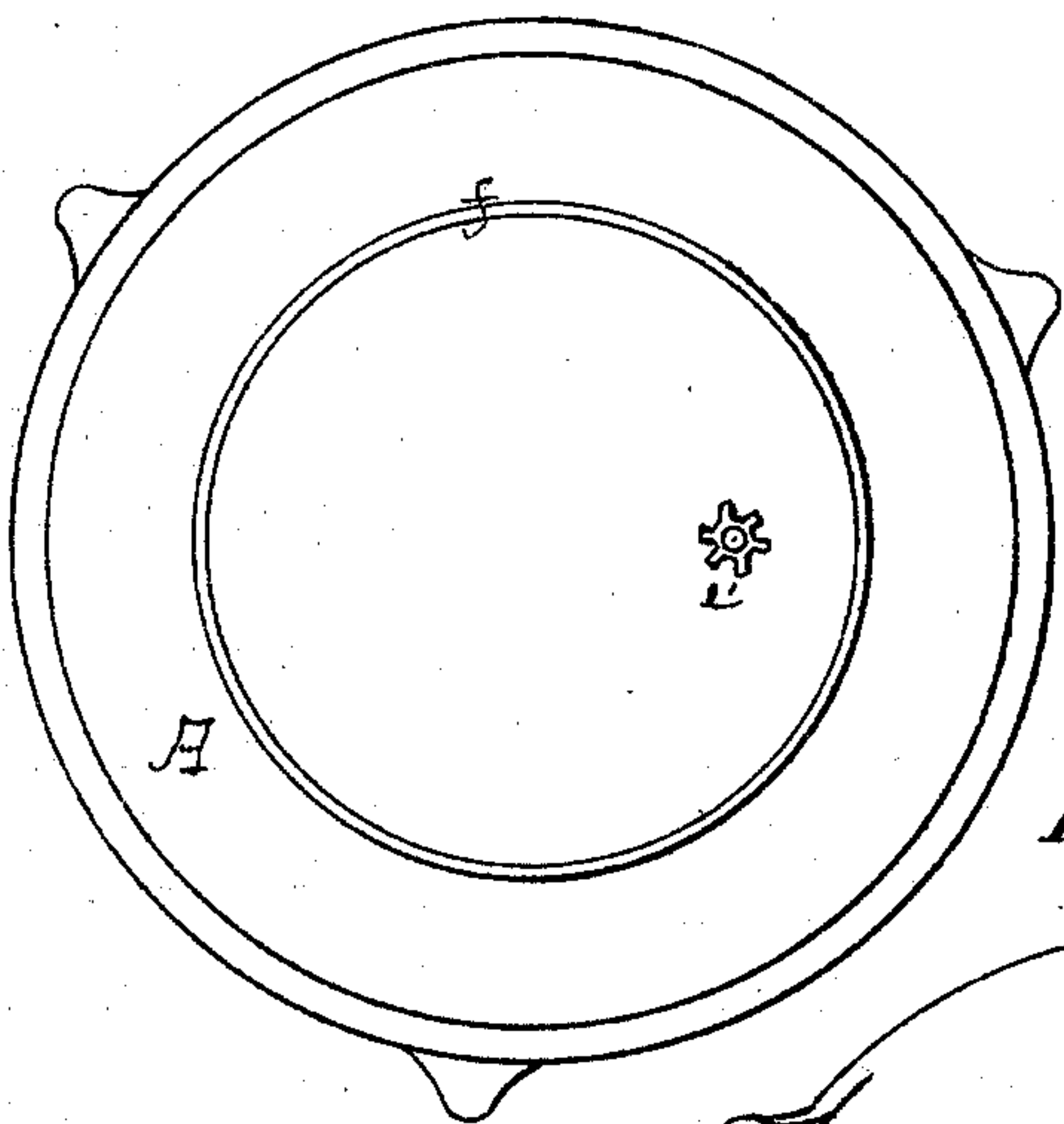


Fig. 4

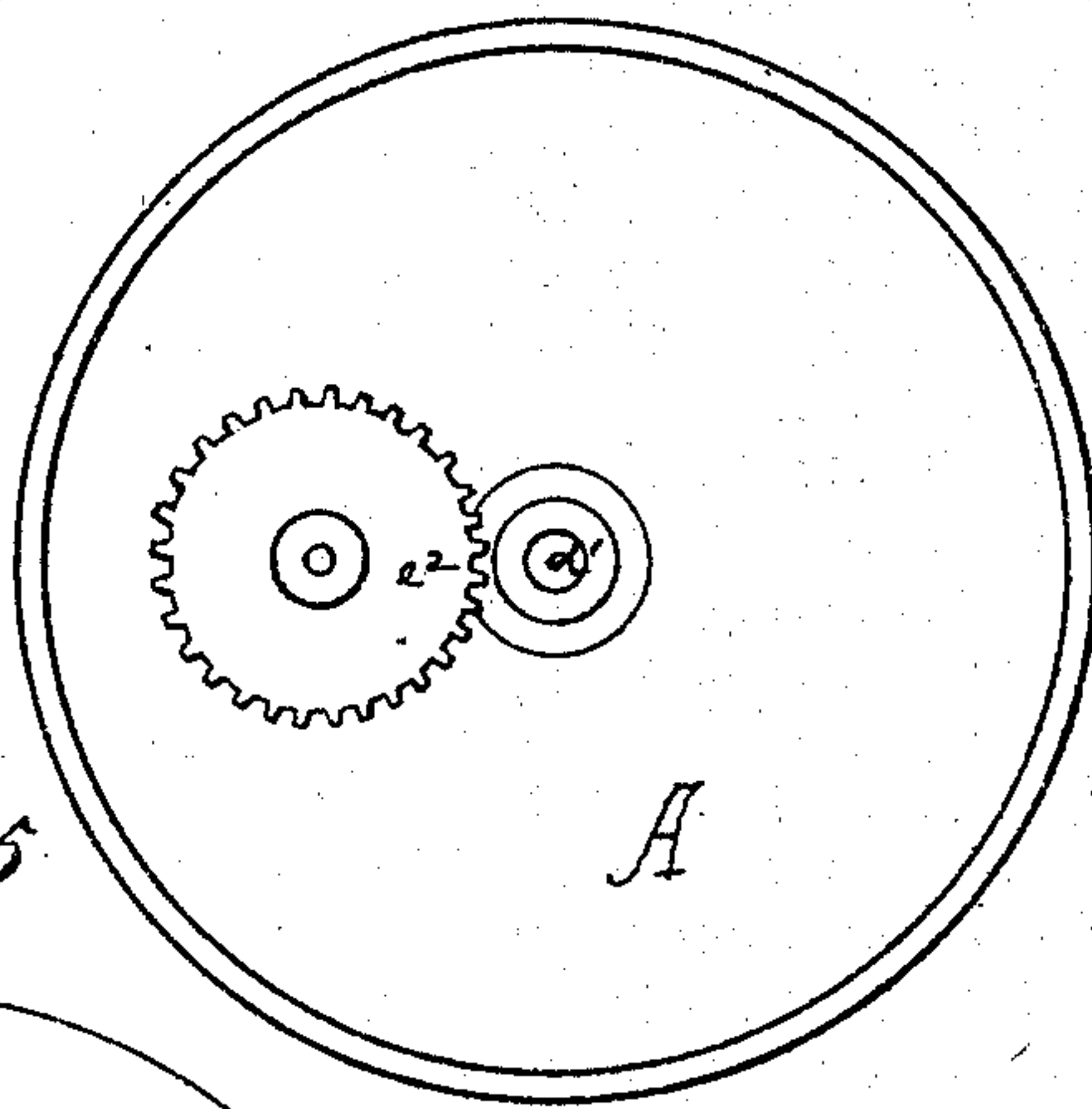
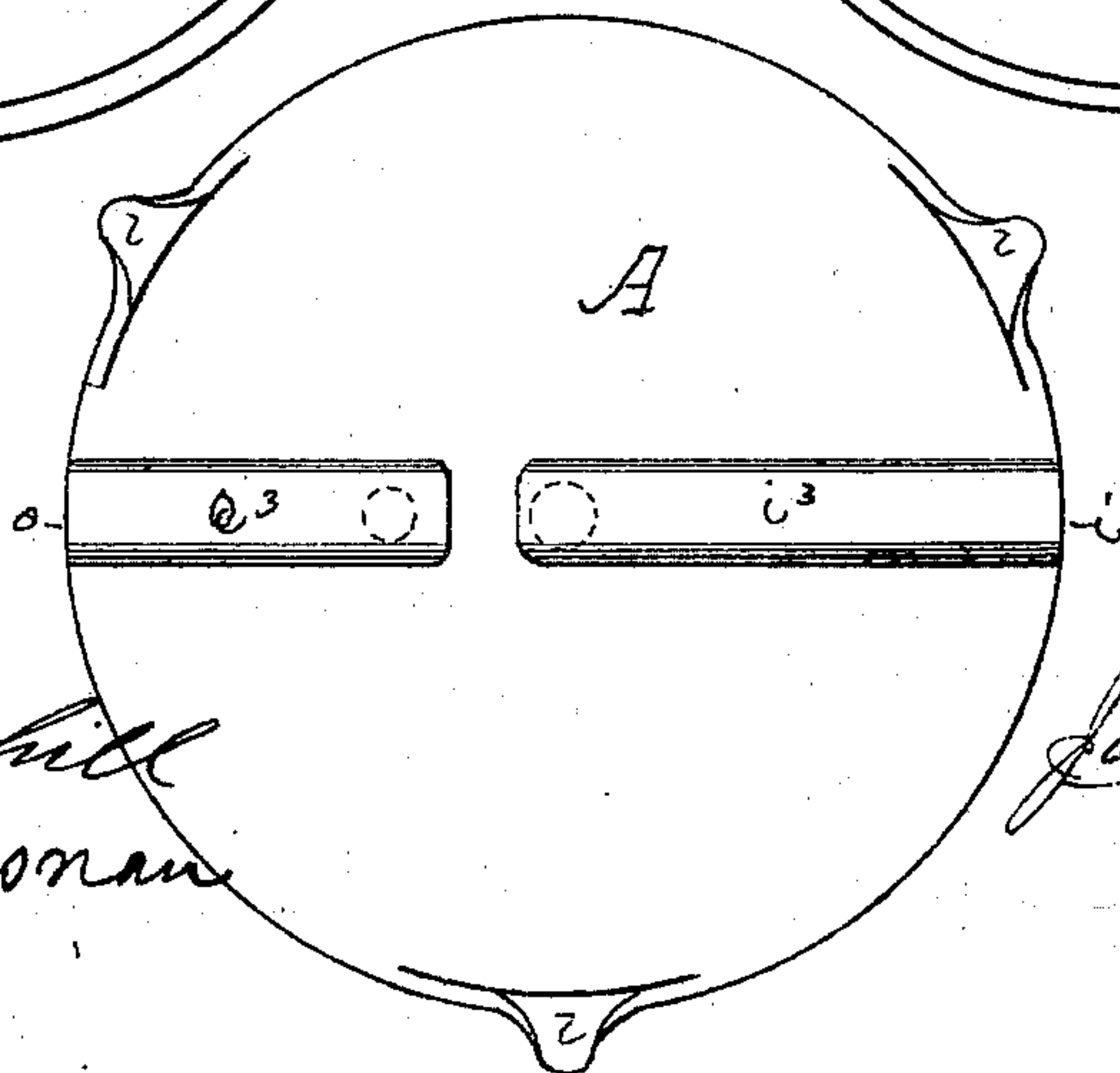


Fig. 5



Witnesses.

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# UNITED STATES PATENT OFFICE.

JOSEPH W. CREMIN, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF HIS RIGHT TO GEORGE H. FAIRCHILD, OF JERSEY CITY, NEW JERSEY.

## IMPROVEMENT IN LIQUID-METERS.

Specification forming part of Letters Patent No. 122,231, dated December 26, 1871.

### SPECIFICATION.

Be it known that I, JOSEPH W. CREMIN, of New York, in the county of New York and State of New York, have invented a new and Improved Water-Meter; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 is a vertical sectional view of my improved water-meter. Fig. 2 is a perspective view of the arms and the mechanism immediately connected therewith. Fig. 3 is a top view of the meter. Fig. 4 is an inside view of the upper half of the case, and Fig. 5 is an exterior view of the bottom of the meter.

This invention relates to the application of the device known as Barker's centrifugal mill to a water-meter, the revolving arms being placed within a case and mounted on a hollow shaft extending cross-wise therein, said shaft connecting at one side of the chamber with the supply-pipe and at the other side with the registering clock-work, which is put in motion by the turning of the shaft through the agency of water rushing into the arms and out at the ports in or near the ends of the latter, in the ordinary way of operating the centrifugal mill. This is an improvement upon my patent No. 115,937, dated June 13, 1871, for water-meters; and the invention consists in the improvements hereinafter described and more particularly referred to in the claims.

Referring to the drawing, A is the case, composed of two pieces or sections, which are connected by means of a screw-thread cut on each at *g*, the lower part resting on the legs *l l l*. D is the hollow shaft connecting the hollow arms C C, and having at its upper end a short hollow extension, *d*, which fits loosely into a water-bearing, *d*<sup>1</sup>, formed in the case A for its reception. The shaft D, at its lower end, fits loosely, also, into a water-bearing formed within the lower part of the case, the water entering through the small apertures *d*<sup>2</sup>. The arms C C are made with sharp cutting-edges at *k k*, and with flat vertical sides at *h h*. In the flat sides, and near the outer ends, are ports *a*<sup>2</sup> *a*<sup>2</sup>, through which the water flows that enters the shaft D through the supply-pipe *i*<sup>3</sup>. The ends of the arms are also sharp and rounded, and their cutting-edges enable them to force their way easily through the water in the case A. To the hollow shaft *d* is rigidly connected a pinion, *a*<sup>1</sup>, which meshes with a gear-

wheel, *e*<sup>2</sup>, placed on a vertical shaft, *e*. Upon the upper end of this shaft is a pinion, *e*<sup>1</sup>, to which the clock-registering apparatus is to be attached. The flange *f* surrounds the said apparatus, over which a cover is placed to protect and inclose the clock-work. The supply-pipe *i*<sup>3</sup> is in direct line with the outlet-pipe *o*<sup>3</sup>. *o* is an aperture leading from the inside of the meter to the outlet-pipe. *a* is a screw situated within the shaft D, so constructed as to assist in rotating the arms by the action of the water on it. The water enters from the supply-pipe at *i*, passes up through the hollow shaft D; thence laterally in the arms C C, and through the ports *a*<sup>2</sup> *a*<sup>2</sup>, causing the rotation of the arms and the gearing that connects with the clock-registering apparatus. The hollow shaft *d* is open also at the upper end, so that the pressure of the water may not force the shaft and its arms against the top or side of the meter, and thereby cause considerable friction. Its being open also subserves another purpose, viz., to aid in giving the shaft a water-bearing at that end. The construction of the case A is peculiar, being made so as to inclose in a circular form the water and operating parts in one chamber and the registering apparatus in another, in the most compact manner possible.

My object in constructing this meter has been to produce one that is simple in construction, cheap, durable, safe, (in connection with steam-boilers,) accurate in registering under any pressure, and one that will operate under all circumstances. This I have accomplished and proved by repeated tests, and am now enabled to present to the public one that possesses all these requisites.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. The combination of the hollow arms C C, shaft D, extension *d*, and the screw *a*.

2. The combination of the arm C C, shaft D, extension *d*, screw *a*, pinion *a*<sup>1</sup>, gear-wheel *e*<sup>2</sup>, shaft *e*, pinion *e*<sup>1</sup>, and case A, as and for the purpose set forth.

3. The case A A, constructed internally and externally as described and shown, and in two parts, one having on the exterior the flange *f* and the other the ingress and egress ports.

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Witnesses:

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