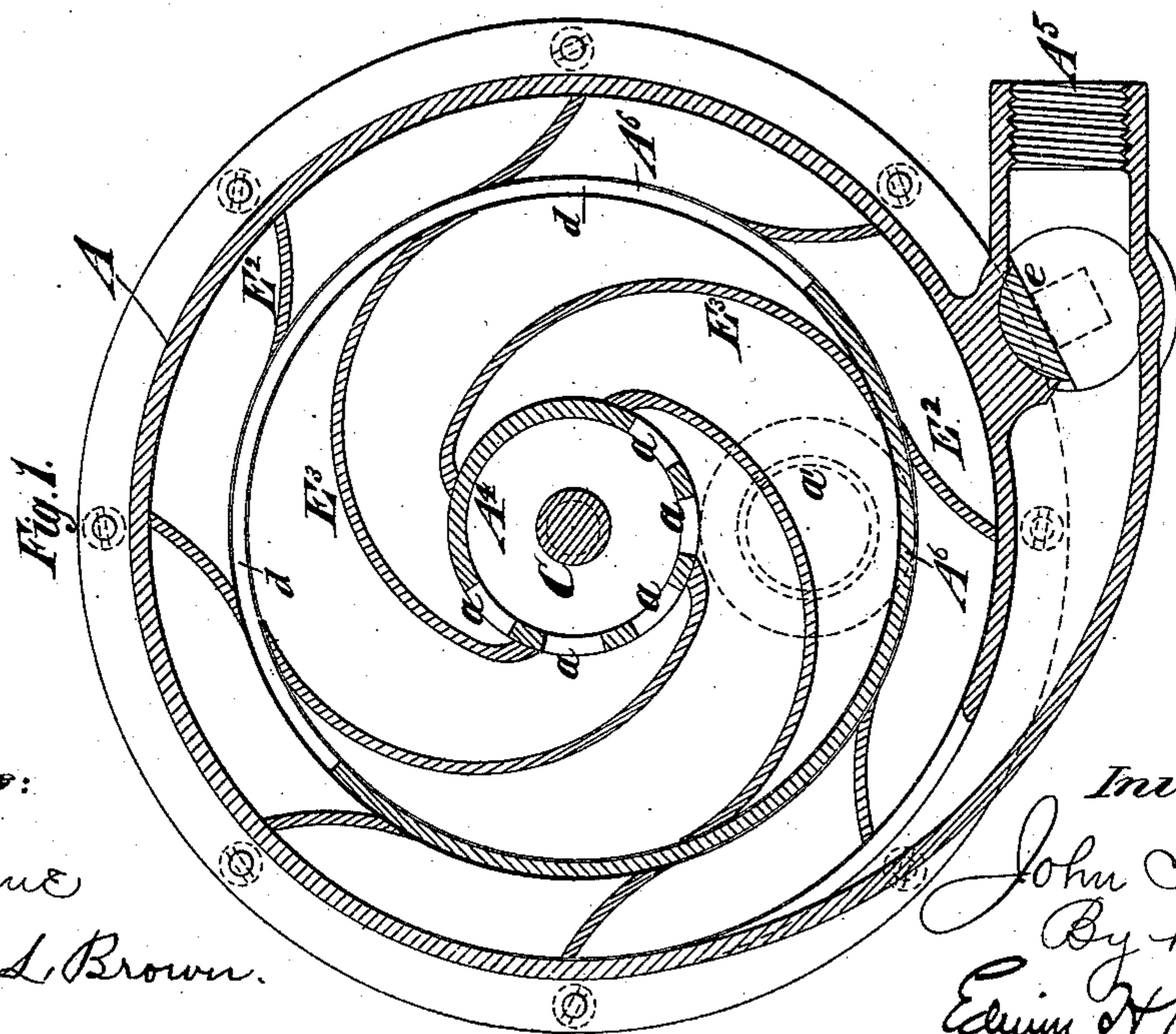
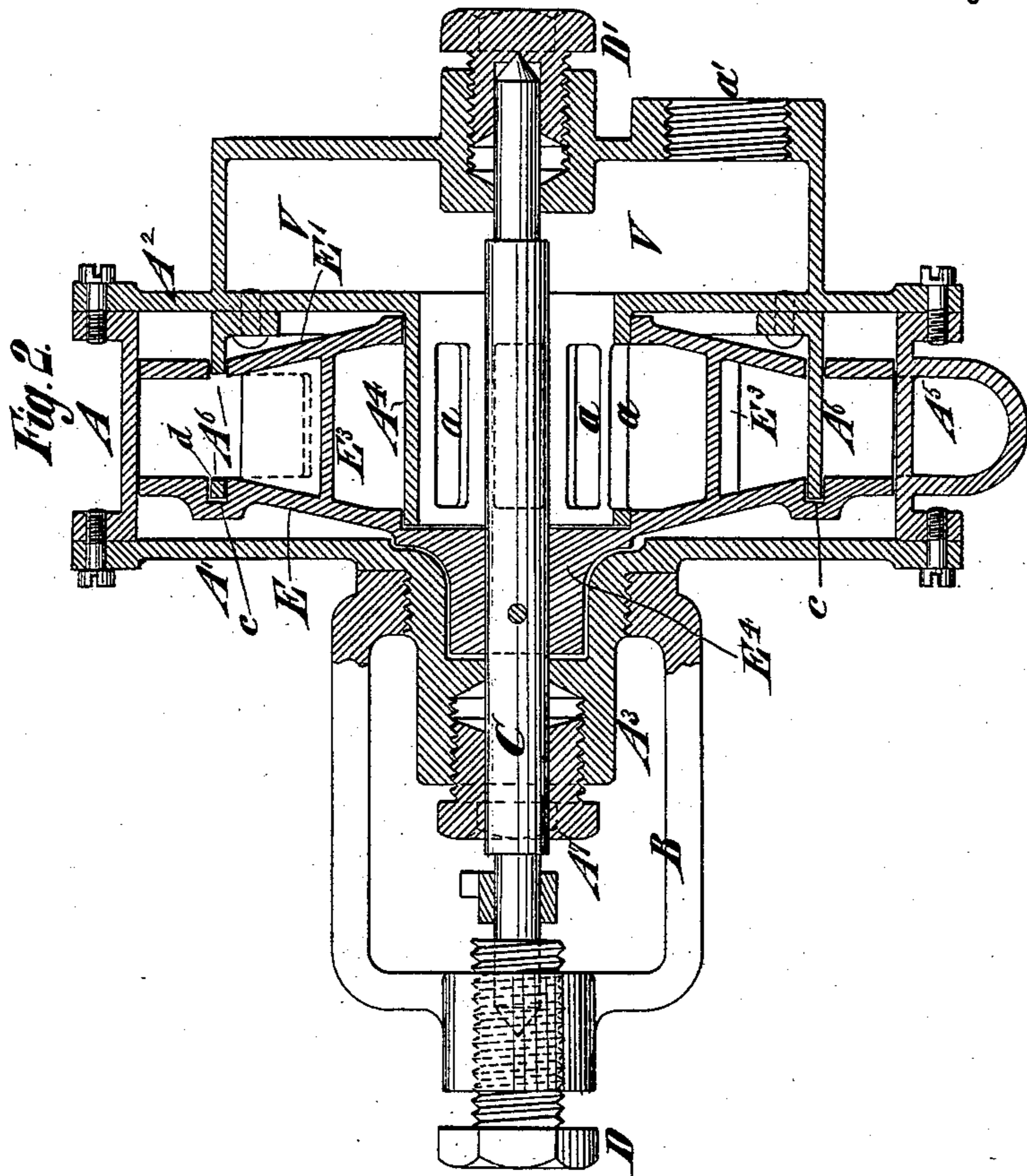


(No Model.)

J. A. PEER.
ROTARY METER.

No. 298,230.

Patented May 6, 1884.



Witnesses:

J. H. Kane
Alfred L. Brown.

Inventor:

John A. Peer
By his atty
Edwin H. Brown.

UNITED STATES PATENT OFFICE.

JOHN A. PEER, OF GRASS VALLEY, CALIFORNIA, ASSIGNOR OF ONE-HALF
TO JOHN J. BERGER, OF BROOKLYN, NEW YORK.

ROTARY METER.

SPECIFICATION forming part of Letters Patent No. 298,230, dated May 6, 1884.

Application filed September 1, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. PEER, of Grass Valley, in the county of Nevada and State of California, have invented a certain
5 new and useful Improvement in Meters, also applicable to Motors and Pumps, of which the following is a specification.

The nature of this improvement will be fully described, and then pointed out in the claims.

10 In the accompanying drawings, Figure 1 is a section of an article embodying my improvement, taken transversely to the axis; and Fig. 2 is a section of the same taken parallel with the axis.

15 Similar letters of reference designate corresponding parts in both figures.

A A' A² designate the case of the article, consisting, as here shown, of a cylindrical shell, A, and heads A' A². The shell and
20 heads are shown as having radially-extending flanges secured by screws. Any suitable packings may be employed to preclude leakage between these parts. The head A' is provided with an outwardly-extending cylindrical neck, A³, onto the exterior of which is secured a
25 frame, B, and the head A² is provided with a cylindric shell, A⁴, that extends inwardly into the shell A almost to the head A'. This head A² also is provided with an outwardly-extending air-chamber, V. The shell A⁴ is provided
30 with holes *a* throughout about one-half of its circumference. The air-chamber V is provided with an outlet, *a'*. The lower portion of the shell A is provided with a tangential
35 inlet tube or passage, A⁵, that may be formed therewith, or made separately and screwed thereto, so as to communicate with an opening through the shell. The fluid which is to be passed through the case enters through the
40 inlet-tube A⁵, and escapes from the said case through the holes *a* into the shell A⁴, and thence through the hole *a'* of the air-chamber A⁴. If the fluid is to be saved, the hole *a'* of the air-chamber V may be connected with any
45 suitable conduit or reservoir.

C is a rotary shaft, which, as here shown, is journaled at one end in a hollow screw, D, inserted in the outer end of the frame B, and at the other end in a hollow screw, D', inserted
50 in the outer side of the air-chamber V. The shaft C has affixed to it a wheel, E E' E² E³,

consisting of two heads, E E', and two series of blades or buckets, E² E³. The buckets E² extend at an angle both to the radii and circumference of the heads of the wheel inward
55 a short distance from the circumference of these heads. The buckets E³ extend from a point close to the inner ends of the buckets E² close to the shell A⁴. The buckets E² will preferably be curved, but may be approxi-
60 mately straight from end to end. The buckets E³ are shown as curved eccentrically to the heads of the wheel and to the shells A A⁴. A cylindric shell, A⁶, extends from the head A² between the buckets E² E³, and into a
65 groove, *c*, in the head E of the wheel. It may be made separately from the head A², and secured thereto by screws or otherwise. In the upper portion it is provided with a
70 hole, *d*. The outer ends of the buckets E³ extend close to the shell A⁶. The wheel has a hub, E⁴, that extends into the neck A³ of the head A'. The neck A³ is provided at the
75 outer end with a cap, A⁷, that closes it. It may be advantageously provided with a stuffing-box, through which the shaft C will pass. All the parts described may be made of metal.

Preferably the inlet-tube A⁵ will be provided with a cock, *e*, for regulating the quan-
80 tity of fluid passing through it. Fluid entering the inlet-tube A⁵ passes into the case, and, acting against the buckets E², imparts motion to the wheel. Moving in contact with these
85 buckets, and between the shell A and the shell A⁶, it finally reaches the opening *d* of the shell A⁶. Passing through this opening, it comes in contact with the buckets E³, thereby imparting an additional impetus to the wheel. After
90 acting against the buckets E³, it enters the shell A⁴, and escapes through the same. By passing fluid under pressure thus through the article described, it will be measured, and will render the article useful as a motor. If
95 the wheel be rotated by power applied to its shaft, fluid will be pumped through the article. Obviously the article is therefore a meter, a motor, or a pump, according to the manner in which it is used.

When the apparatus is to be used as a meter, 100 the shaft C may be provided with an index, forming part of a registering apparatus, or

with a bevel-wheel that may engage with another bevel-wheel on the shaft of the index of a registering apparatus. The registering apparatus may be of any well-known character.

5 When the apparatus is to be used as a pump, motion may be imparted to the shaft C by belt or other gearing.

When an index is to be operated, the shaft of the index may extend a considerable distance from the meter—as, for instance, from
10 a cellar to a sidewalk above it.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a meter, motor, or pump, the combination of a case, a wheel adapted to rotate
15 within the same, and having two sets of buckets, a cylindric shell extending between the two sets of buckets of the wheel, and having an opening through which fluid may pass from
20 the outer set of buckets to the inner set of buckets, and an outlet from that portion of the case which is surrounded by the inner set of buckets, substantially as specified.

2. In a meter, motor, or pump, the combination of a case, a wheel adapted to rotate

within the same, and having two sets of buckets, a cylindric shell extending between the two sets of buckets of the wheel, and having an opening through which fluid may pass from the outer set of buckets to the inner set of
30 buckets, and a shell extending into the central part of the case and serving to convey away fluid therefrom, substantially as specified.

3. In a meter, motor, or pump, the combination of a case having a tangential inlet tube
35 or passage communicating with the lower portion, a wheel adapted to rotate within the case, and having two sets of buckets, a cylindric shell extending between the outer set of buckets and the inner set of buckets of the wheel,
40 and having an opening through which fluid may pass from the outer set of buckets to the inner set of buckets, and an outlet from that portion of the case which is surrounded by the inner set of buckets, substantially as
45 specified.

JOHN A. PEER.

Witnesses:

A. S. BROWN,
T. J. KEANE.