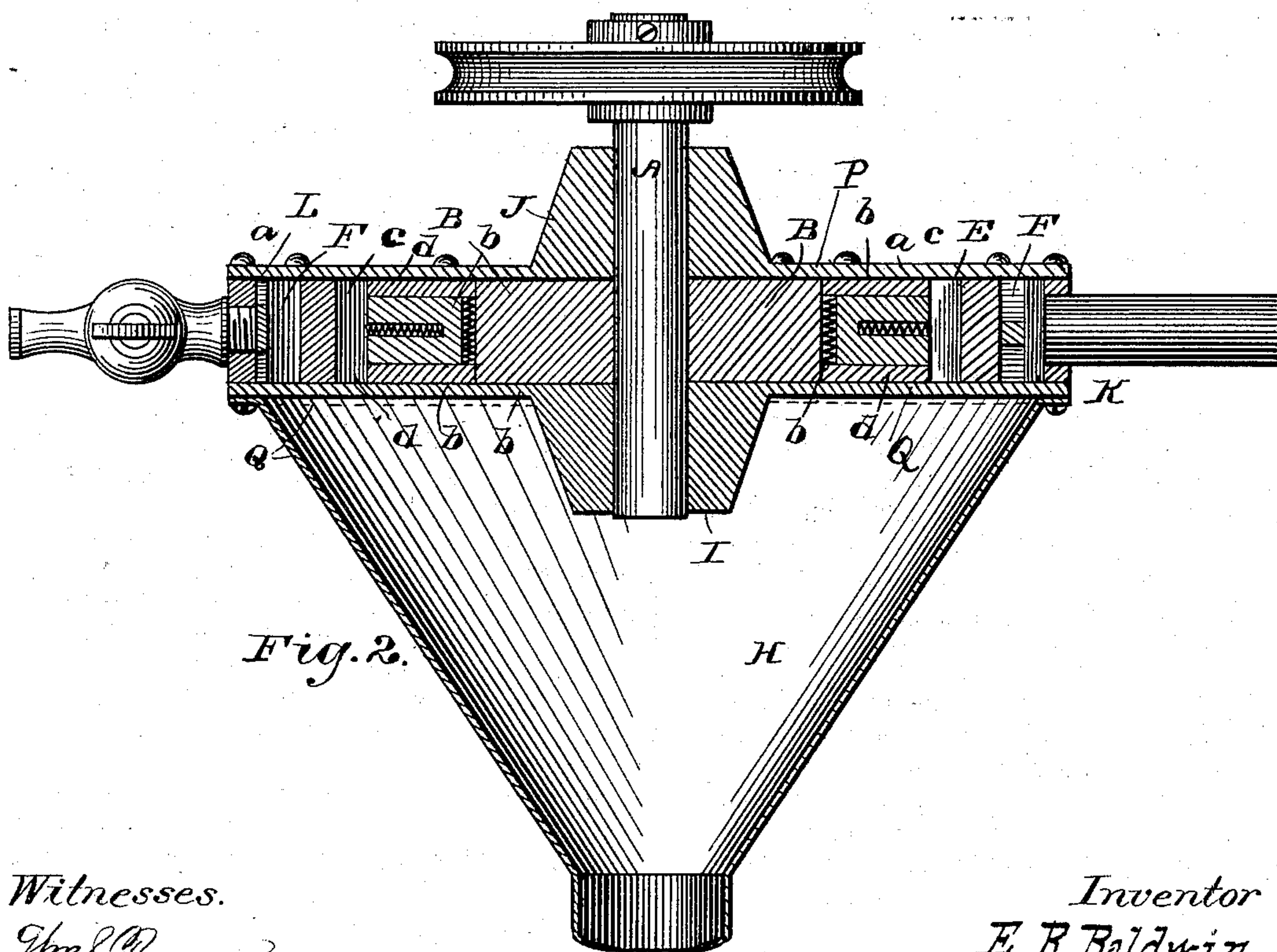
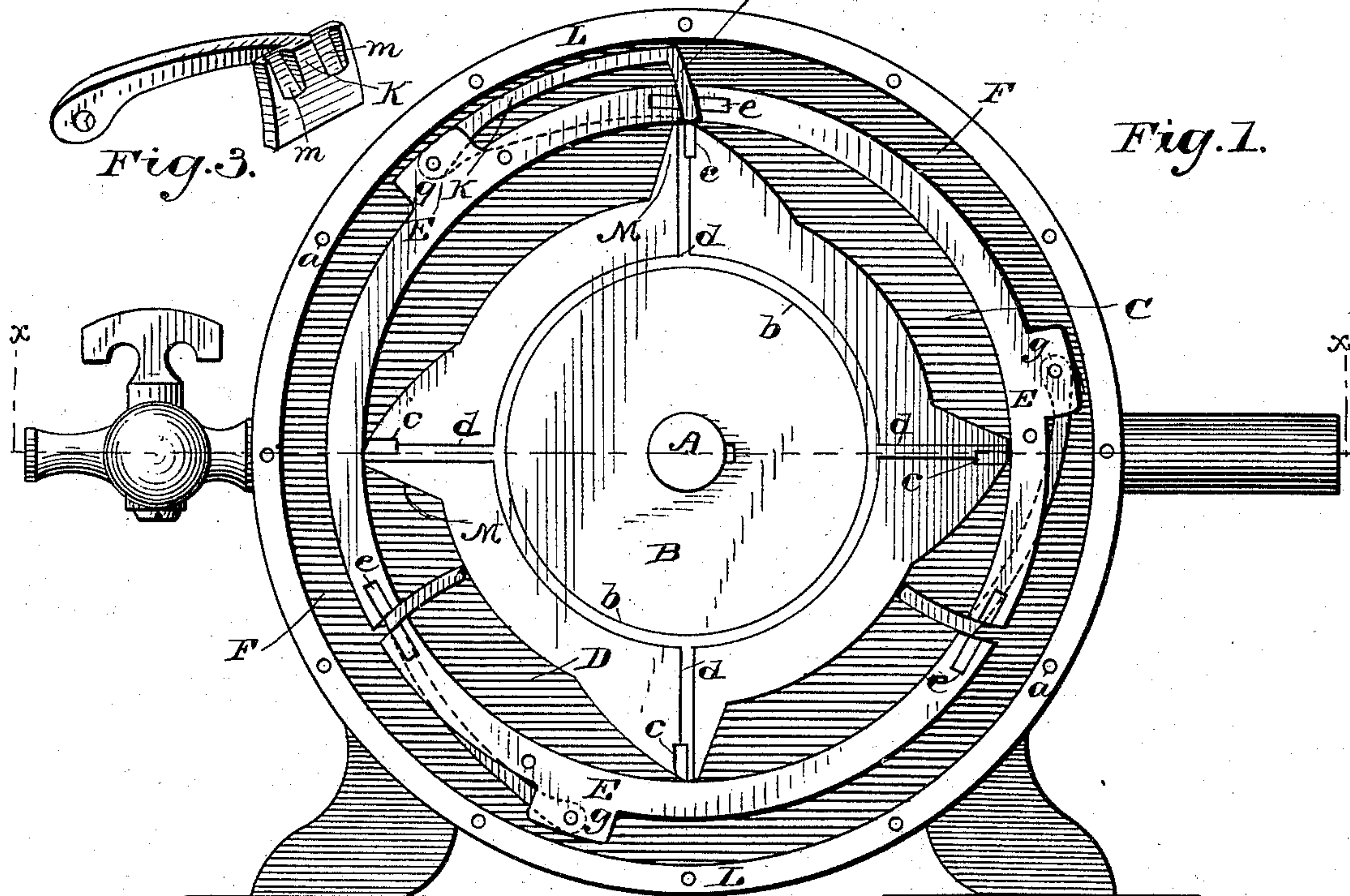


(No Model.)

E. R. BALDWIN.
ROTARY MOTOR.

No. 330,194.

Patented Nov. 10, 1885.



Witnesses.

Wm. J. Panner.

H. W. Elmore

Inventor

E. R. Baldwin.

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UNITED STATES PATENT OFFICE.

EBEN R. BALDWIN, OF CORTLAND, NEW YORK.

ROTARY MOTOR.

SPECIFICATION forming part of Letters Patent No. 330,194, dated November 10, 1885.

Application filed May 9, 1885. Serial No. 164,916. (No model.)

To all whom it may concern:

Be it known that I, EBEN R. BALDWIN, a citizen of the United States, residing at Cortland, in the county of Cortland and State of New York, have invented certain new and useful Improvements in Rotary Motors, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to certain new and useful improvements, whereby a balanced or continuous and even pressure is maintained throughout the machine, friction of the working parts lessened, the expansive force of the motive power utilized, and the general construction so simplified and compactly chosen as to decrease the cost of building, economize space and belting, and obviate the necessity of frequent repairs.

I attain these ends by means of the mechanism illustrated in the accompanying drawings, wherein—

Figure 1 is an end elevation of the motor, the proximal head of the case being removed. Fig. 2 is a horizontal section of the motor on the line *x x*, Fig. 1. Fig. 3 is a perspective view of the cut-off gate.

Similar letters of reference refer to similar parts throughout the several views.

The motor-case consists of a cylindrical body, L, to which are affixed by screws *a*, or otherwise, the heads P Q, consisting of circular plates having central bosses forming bearings for the shaft A. Within the case is located concentrically therewith the smaller cylinder E, secured to the heads P Q, and leaving between it and cylinder L an annular space, F, for the motive power, which is admitted thereto through the entrance-port G. The cylinder E is divided into a number of equal parts—say three—each provided with lugs *g*, to which are pivoted the arms of the cut-off gates or valves K. These cut-offs are of the form represented in Fig. 3, having depressions *m* on each side of the central line, said depressions serving to admit the motive fluid between the sections and within the cylinder E when the cut-off is forced inward, as hereinafter set forth. To the shaft A is keyed the cylindrical piece B, provided with a number of eccentric lugs, M, equally spaced, and exceeding in number the gates or cut-offs of the motor. Packing-rings *b* of metal fit into annular re-

cesses made in opposite sides of B, and are pressed against the heads P Q by means of springs *d*. This construction permits an expansion of the metallic parts without increasing the friction, and obviates the necessity of separate packing for the shaft. Beveled plates *c*, let into the pieces M, and resting against the springs *f*, act in like manner with respect to the inner surface of the cylinder E, and spring-seated plates *e* with respect to the smooth surfaces of the gates *k*, when the latter are forced outwardly. The head Q is provided with three outlet-ports, D, located just in rear of the cut-off gates, and opening from the inner space, C, into an exhaust-chamber formed by the case H.

The parts being constructed as described, the mode of operation is as follows: The motive power, which may be steam, compressed air, water, and the like, enters into the space F, forcing the cut-off gates inward through the spaces between the sections of the cylinder E. Supposing the cylinder B, and its projections to be in the position shown in Fig. 1, the lower gates will enter the space sufficiently far to admit the motive power thereto, while the upper gate is prevented from entering it by reason of a projection, M. The admission of the motive power causes the cylinder-shaft to revolve from left to right. Referring to the lower left-hand gate, the motive fluid will exert a direct pressure upon the projection in front of it until the succeeding projection raises the gate sufficiently far to close the openings *m*, whereupon the supply is temporarily cut off, and expansion takes place for a short space within the particular motor-compartment. At the end of the brief period of expansion the motive fluid escapes through the upper outlet-port, D, into the case H, and is conveyed away in the usual manner. A similar operation takes place successively in each of the compartments by means of the remaining gates and outlet ports, as will be readily understood, the arrangement being such that at any given time at least three of the compartments are working by direct pressure, and the fourth either by direct pressure or expansion.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A rotary motor consisting of an outer casing having a motive-fluid-entrance port, an inner hollow cylinder provided with equidistant openings, recessed cut-off gates pivoted
5 between the casing and cylinder and entering the openings, and an inner chamber provided with a revolving cylinder having lug projections, and with escape-ports, substantially as described.
- 10 2. A rotary motor having a cut-off gate provided with depressed ports extending part way of its length, and a smooth surface for the remaining portion, substantially as described.
- 15 3. A rotary motor having recessed cut-off gates, as K *m*, in combination with the subdivided cylinder E, and the spring-seated packing plates *e*, arranged and adapted to serve with the rotating cylinder and shell, as set forth.
4. The cylinder B, having eccentric lugs M, 20 with spring-seated plates *e*, combined with the subdivided cylinder E, having spring-seated plates *e*, the gates K, having concaves or recesses *m*, and the exterior shell, as set forth.
5. The combination, with the shell A, having 25 inlet G, cylinders E, subdivided as shown, and having lugs *g* of the pivoted gates K, having recesses *m*, the revolving cylinder B, having eccentric lugs M, of greater number than the gates, and carrying spring-seated plates *e*, and 30 the exhaust provisions D H, all arranged and serving as and for the purposes set forth.

In testimony whereof I affix my signature in presence of two witnesses.

EBEN R. BALDWIN.

Witnesses:

JOHN W. SUGGETT,
FRED. E. KNIGHT.