

No. 750,914.

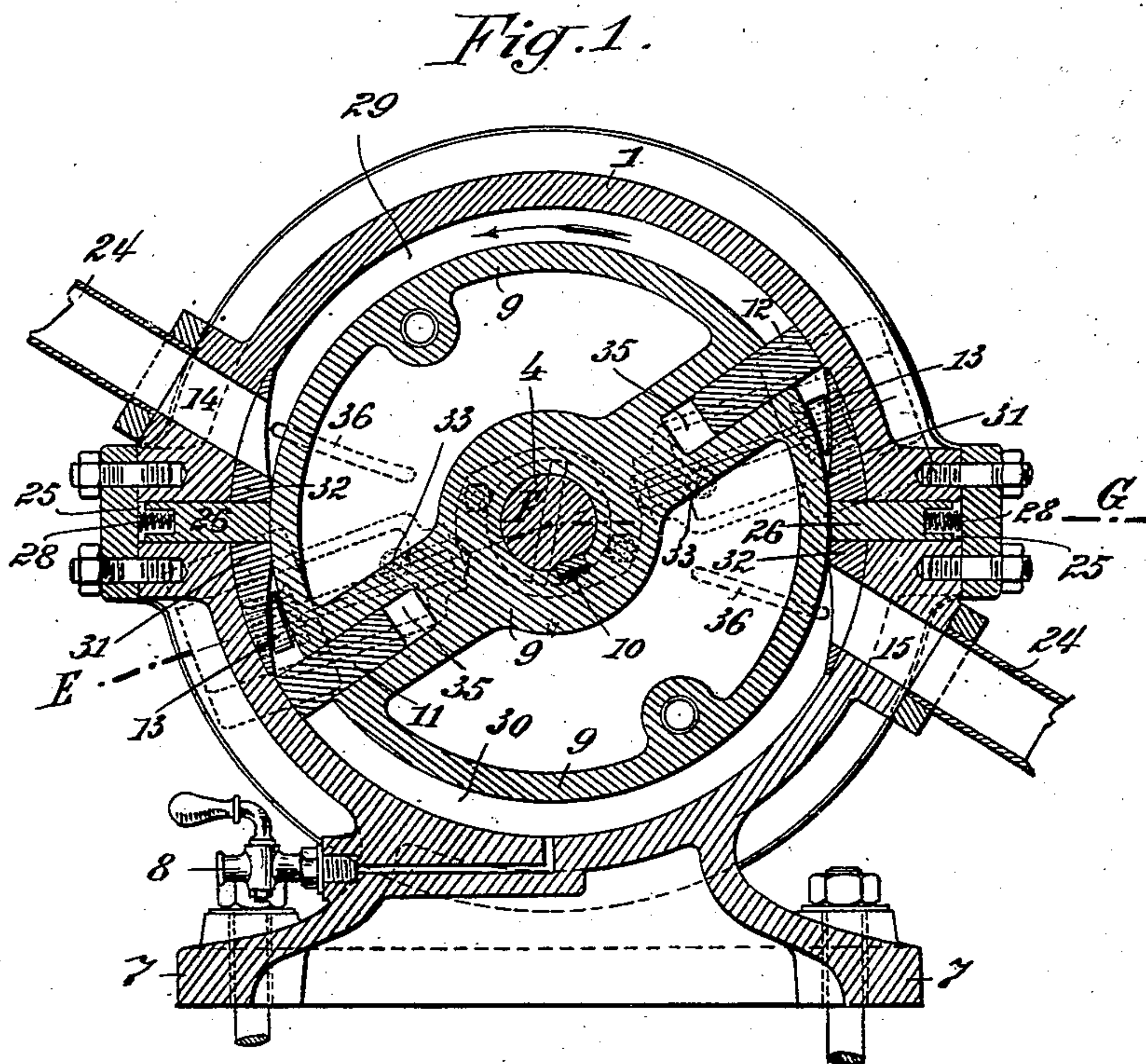
PATENTED FEB. 2, 1904.

H. VAN BERESTEYN.
ROTARY MOTOR.

APPLICATION FILED APR. 6, 1903.

NO MODEL.

4 SHEETS—SHEET 1.



Witnesses:

L. Goldman

O. Carlberg

Inventor:

Hugo van Beresteyn
per J. Singer
Attorney

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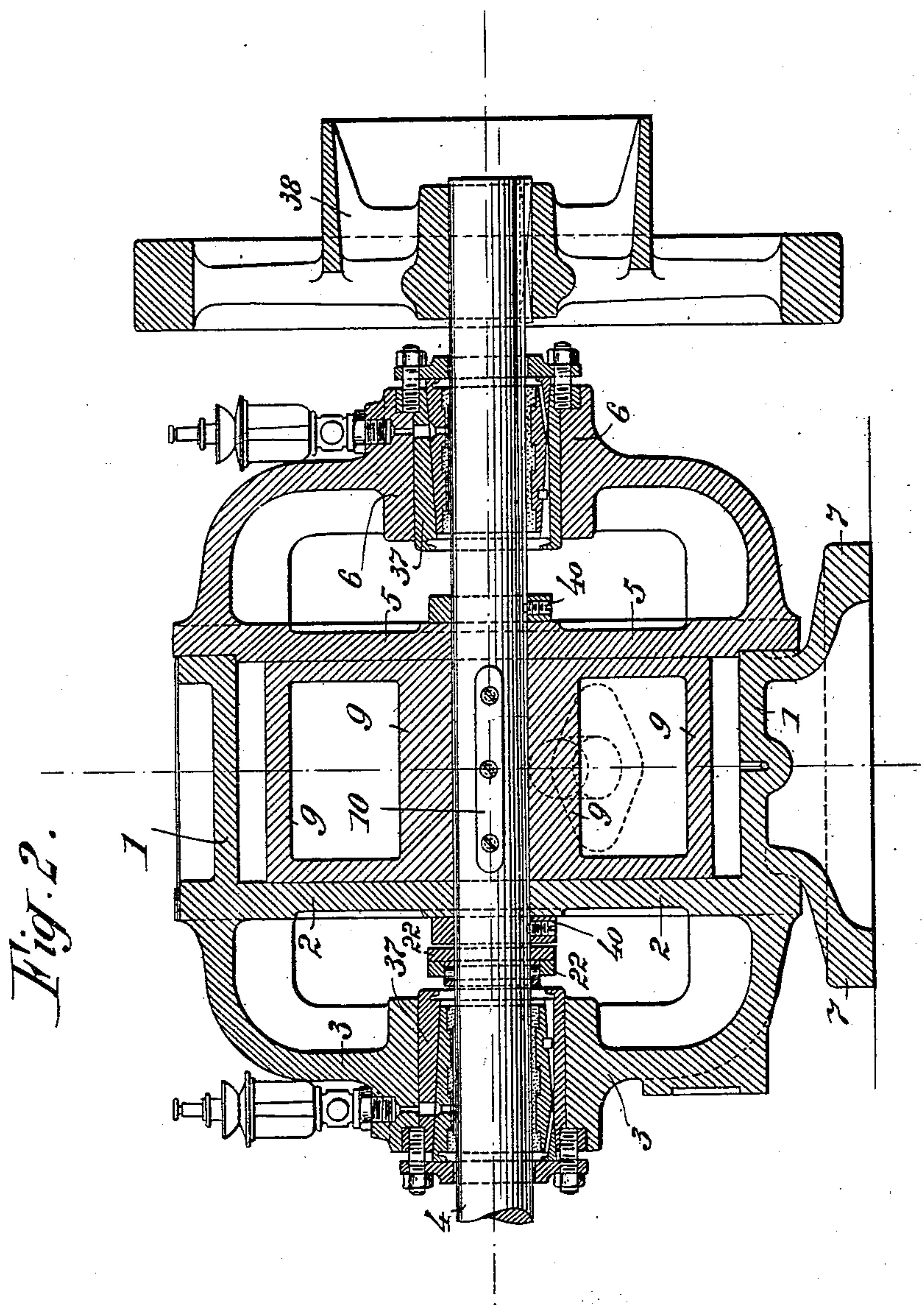
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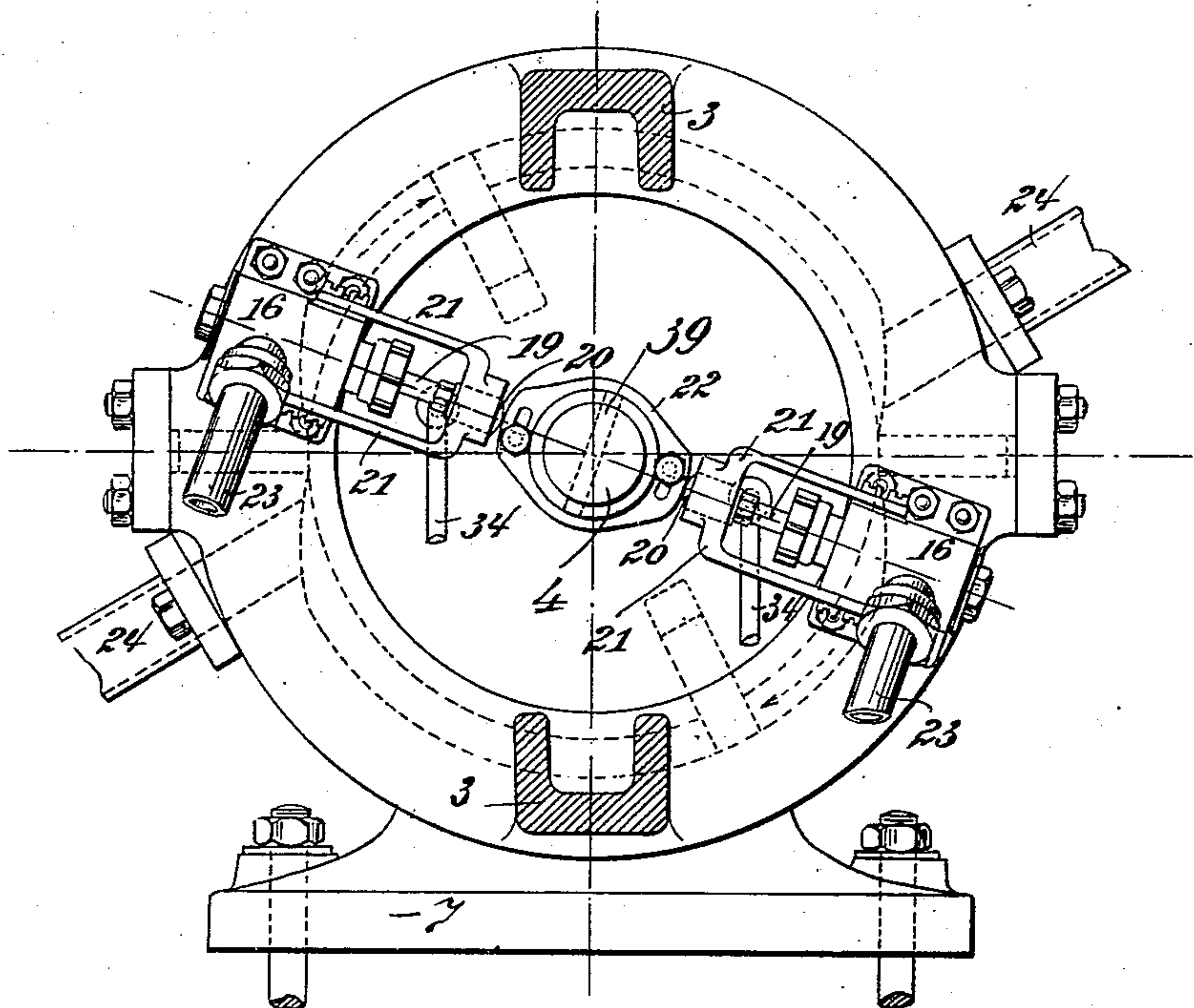
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4 SHEETS—SHEET 3.

Fig. 3.



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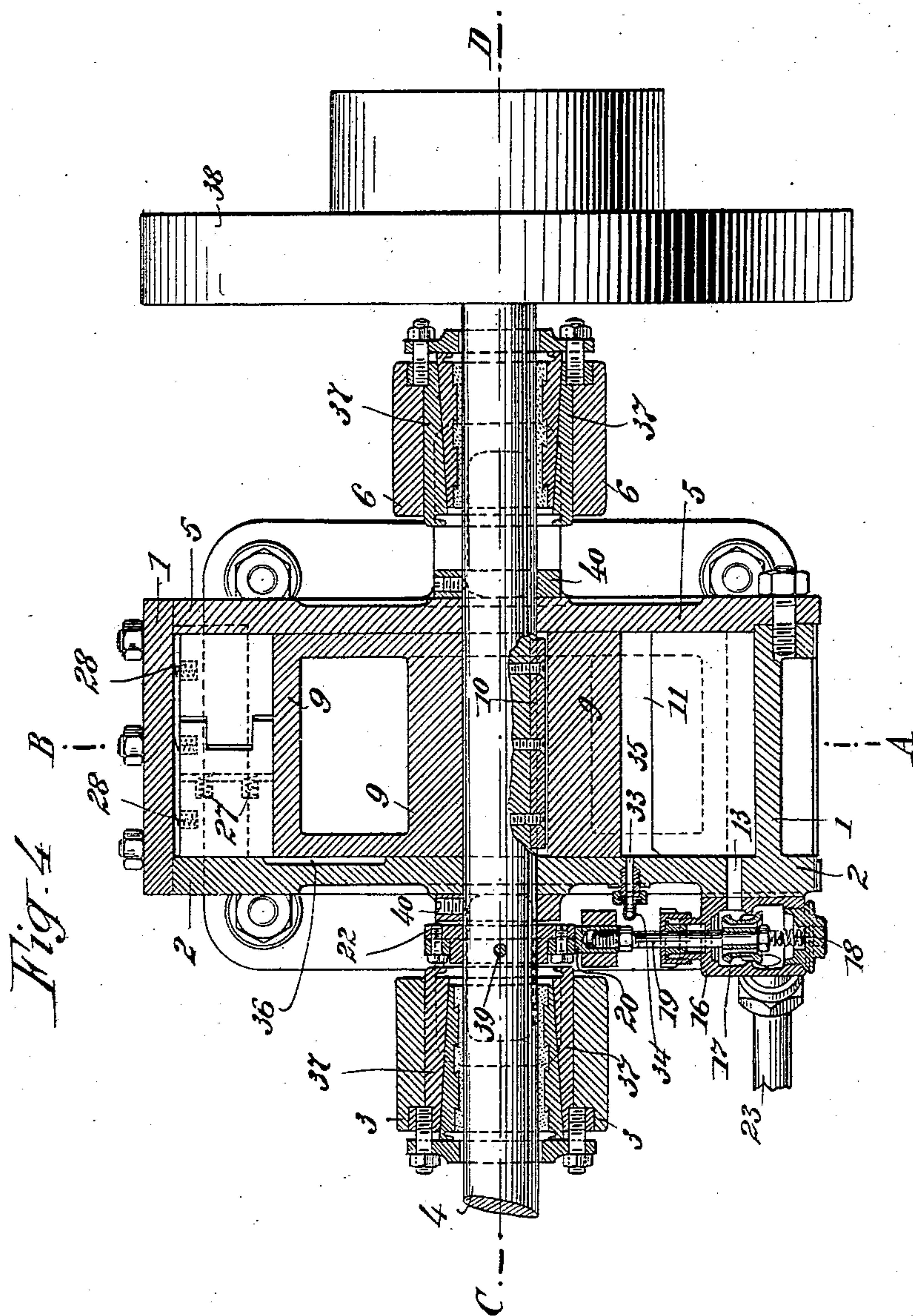
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UNITED STATES PATENT OFFICE.

HUGO VAN BERESTEYN, OF BRUSSELS, BELGIUM.

ROTARY MOTOR.

SPECIFICATION forming part of Letters Patent No. 750,914, dated February 2, 1904.

Application filed April 6, 1903. Serial No. 151,381. (No model.)

To all whom it may concern:

Be it known that I, HUGO VAN BERESTEYN, a subject of the Queen of the Netherlands, and a resident of Brussels, Belgium, have invented
5 a certain new and useful Rotary Motor, of which the following is a specification.

The object of the present invention is a rotary motor with expansion which can be varied by a cam.

10 The accompanying drawings, given by way of example, show a species of this motor.

In the drawings, Figure 1 is a vertical section of the motor on the line B A perpendicular to the shaft. Fig. 2 is a vertical longitudinal section thereof on a plane passing through
15 the said shaft. Fig. 3 is a view, partially in section and partially in side elevation, of the motor, showing the means for controlling the distribution. Fig. 4 is a horizontal section
20 through E F G of Fig. 1.

The motor comprises a cylinder 1, cast integral with its end 2, and a stirrup 3, intended to serve as a support to the main shaft 4. A cover 5, cast integral with a stirrup 6, also
25 serving as a support to the shaft 4, is tightly jointed to the said cylinder by the insertion of oiled-paper joint-rings, by means whereof the wear of the drum may be taken up. This cylinder 1 is integral with a base 7, by means
30 whereof the motor is fixed upon any suitable foundation, and it is provided with a drain-cock 8.

Inside the cylinder is fitted upon the shaft 4 a hollow cylinder or drum 9, which can slide
35 along a feather 10, fixed to this shaft, but takes the latter with it in its rotary movement. A certain amount of free space between the drum 9 and the cylinder 1 constitutes the working chamber for the motive fluid, as will
40 be hereinafter set forth. In two slots made diametrically opposite to each other in this cylinder slide two parallelepipedical parts 11 and 12, called "pistons," and upon which the fluid acts. Two openings or admission ports 13
45 are made in the cylinder end 2 opposite to the annular space forming the working and expansion chambers. These ports are situated diametrically opposite in said end. Two exhaust-openings 14 15 for the motive fluid are
50 arranged in the cylindrical wall of the cylinder.

In front of each of the admission-ports 13 is fixed upon the outside of the end 2 a valve-box 16, in which an admission-valve 17 can move and is held in the closed position by a spring 18. This valve is moved by means of a spindle 19
55 and a block 20, sliding in a guide-stirrup 21, fixed to the said valve-box. The two blocks 20 glide continuously on a common and single cam 22, fixed to the shaft 1 by means of a pin 39. It is the form and fixation of this cam which de-
60 termine the admission and expansion, the said cam being made in two parts which can be shifted with regard to each other to change the admission. Feed-ducts 23 lead the motive fluid to said valve-boxes, and exhaust-
65 ducts 24, arranged opposite the exhaust-openings 14 and 15, lead off the expanded fluid.

In a plane passing at equal distances between the axes of the admission and exhaust ports are made in the cylindrical wall of the
70 cylinder and following its generatrices two slots 25 25, in each one whereof can easily move an abutment 26. The latter is formed of two parts engaging easily one in the other and having a tendency to be separated by
75 means of a spring 27, Fig. 4, in such a way that the two parts are constantly pressed against the end 2 and the cover 5 of the outer cylinder and allows the abutment to be compressed by tightening the cover 5 should the
80 piston wear. Besides this, the springs 28 hold the said abutment constantly against the cylindrical surface of the cylinder 9. These two abutments 25 and 26 produce the two expansion chambers 29 and 30, to each one
85 whereof corresponds an admission-port 13 and an exhaust-port 14 or 15. Two segments 31 and 32 are arranged at the side of each abutment. The outer surfaces of the pistons 11 12 slide in their rotary motion over the curvi-
90 lineal planes of these segments to pass over the points upon which the abutments press. In this motion the pistons enter into their respective slots and compress some small springs (not shown on the drawings) which expand
95 when the pistons have passed the aforesaid points, again applying the outer surfaces of these pistons against the inner cylindrical wall of the cylinder 1; but this application is assured, on the one hand, by a jet of steam
100

under pressure coming from a port 33 and a pipe 34 from the steam-inlet, so that at the passage of each piston-slot in front of the corresponding port 33 the steam beneath or
 5 behind the same holds it against the inner wall of the cylinder until it passes in front of an exhaust-port 36, made in the end 2 opposite to the exhaust-opening and communicating with the motor's exhaust-pipe.

10 This motor works in the following manner: The motive fluid being admitted simultaneously by the two ports 13 pushes the pistons in the direction of the arrows, Fig. 1, and according to the position of the cam the expansion takes place in the chambers 29 and 30
 15 until the pistons arrive in front of the exhaust-ports 14, 15, and 36. The drum with its pistons passes, as above described, the dead-point and fresh admission commences for
 20 each piston.

The motor is furnished with lubricating-bearings 37 and a fly-wheel and pulley 38. The bearings are tapered and can be regulated for wear. They allow the drum to be maintained
 25 in the axial line of the cylinder. The arrangement of the drum upon the main shaft allows this drum to be easily taken out in case of repairs or cleaning. Besides this, the main

shaft is held in place by two stop-rings 40, which bear against the end 2 and the cover 5. 30 This is very necessary in order that the cam 22 may remain at the middle of the blocks 20.

The above-described motor can be driven by any motive fluid under pressure. The stirrups are hollow, so as to gather up the oil 35 from the bearings. This prevents the oil being thrown out and keeps the base-plate or foot clean.

Having now fully described my invention, what I claim, and desire to secure by Letters 40 Patent, is—

In a rotary motor, the combination of a cylinder having exhaust-ports therein, of a drum in the cylinder having radially-slidable pistons, and admission-ports in one end of the cyl- 45 inder behind the pistons, and exhaust-grooves in the end of the cylinder, said grooves being opposite to the exhaust-ports and leading from behind the pistons to said ports, substantially as described. 50

In testimony whereof I have hereunto set my hand in presence of two witnesses.

HUGO VAN BERESTEYN.

Witnesses:

GREGORY PHELAN,
 R. WILLIAMS.