

985,674.

3 SHEETS—SHEET 1.



P. HOMISHAK.
MECHANICAL MOTOR.
APPLICATION FILED DEC. 9, 1910.

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Patented Feb. 28, 1911.

3 SHEETS—SHEET 2.

FIG. 2.

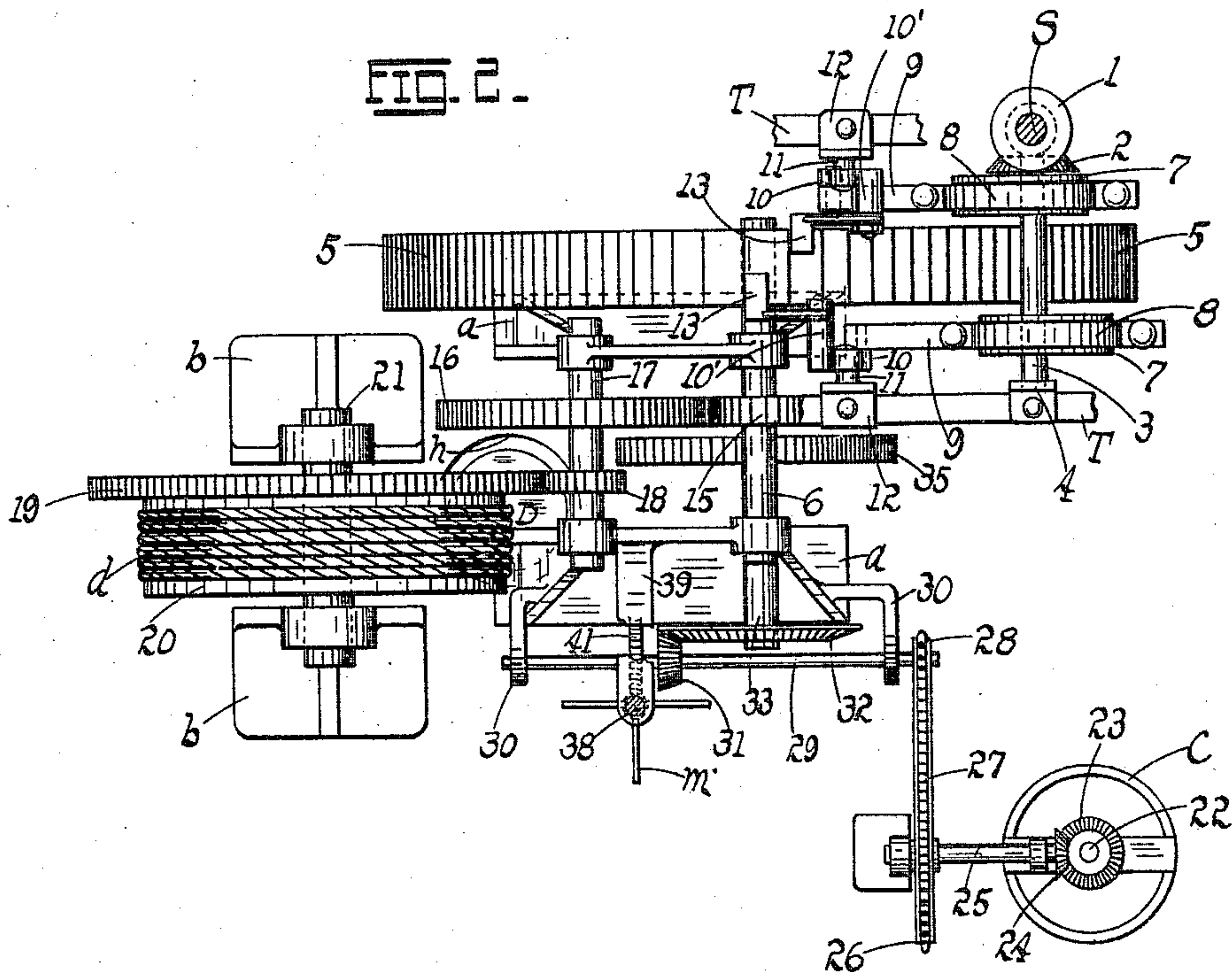
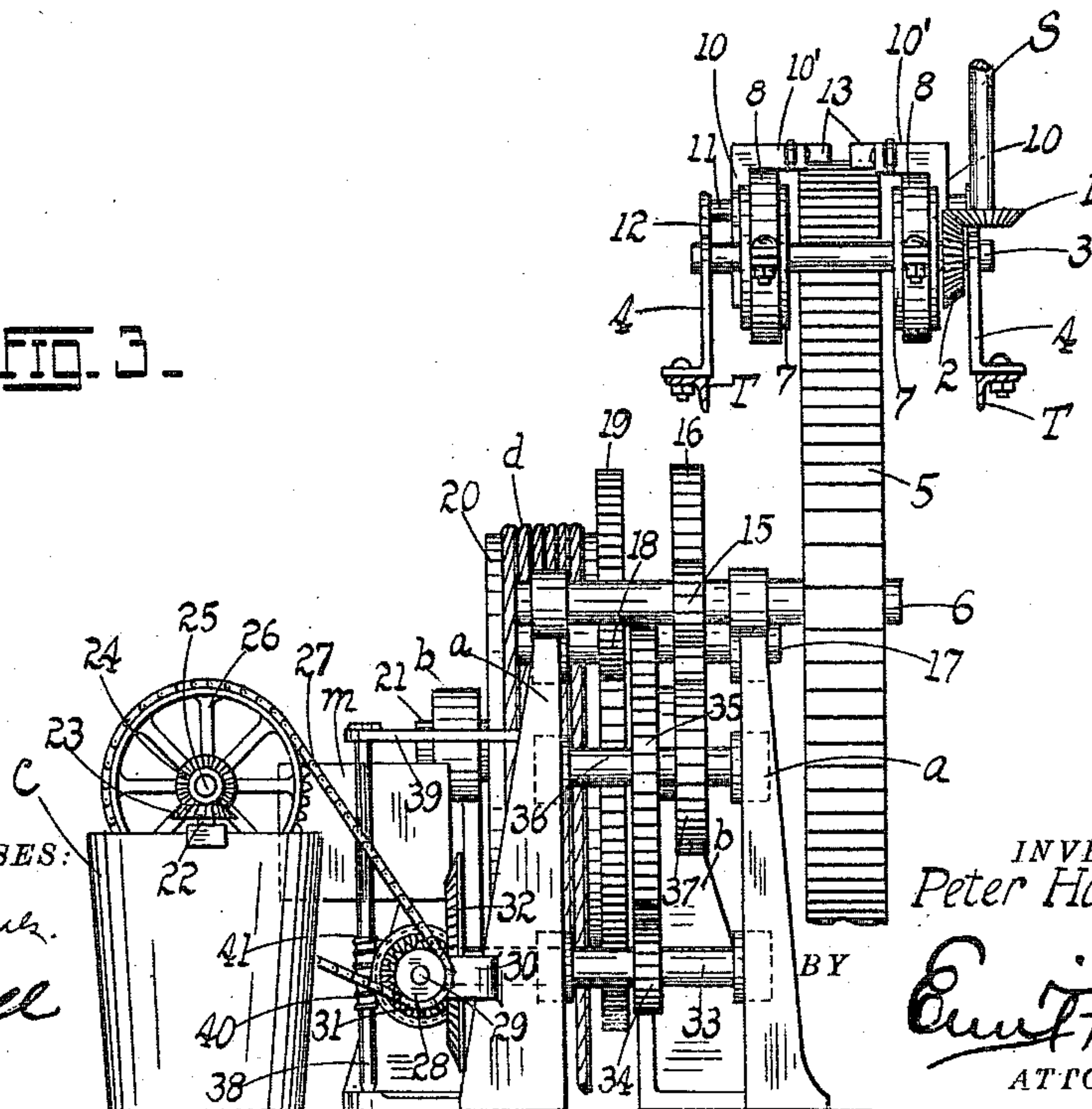


FIG. 3.



WITNESSES:
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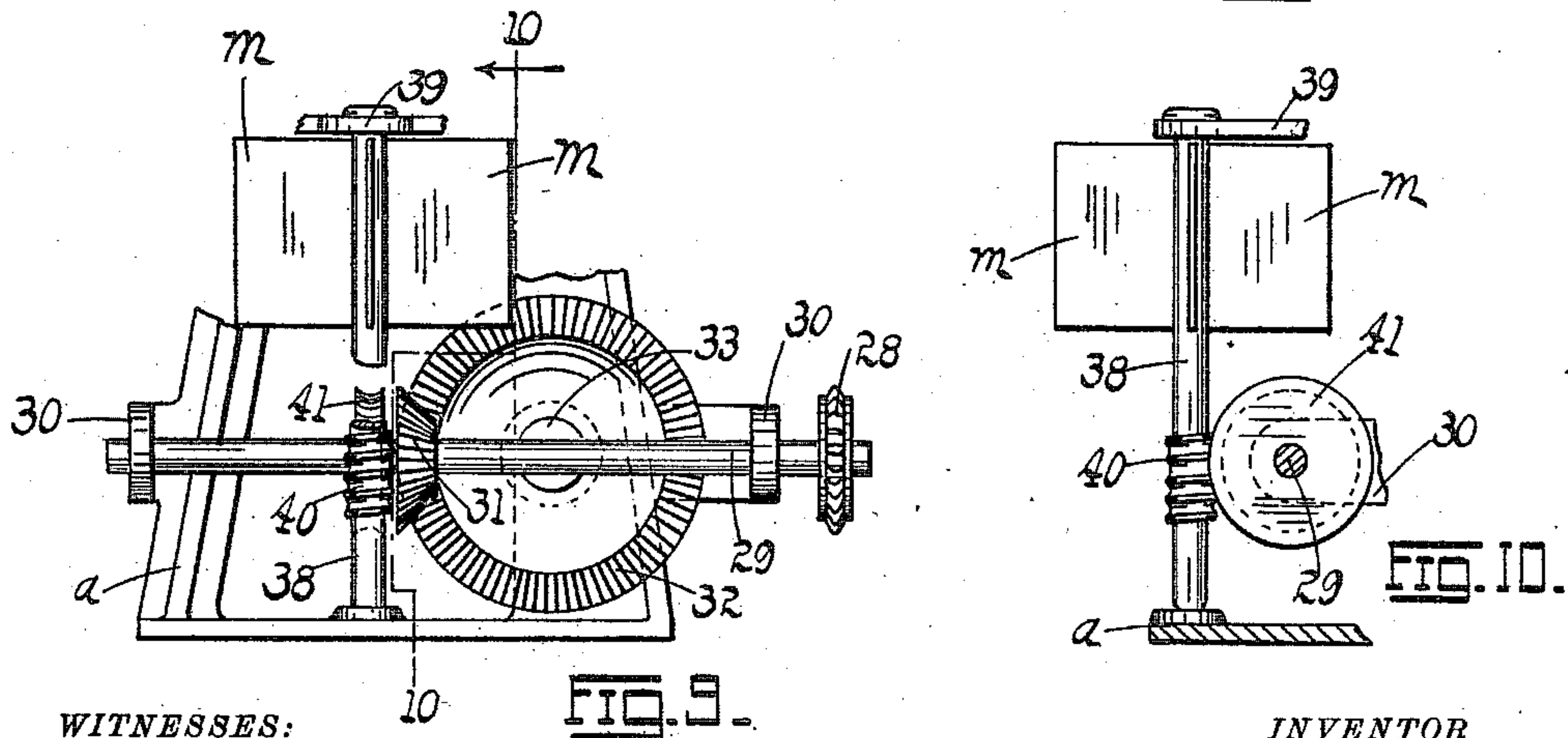
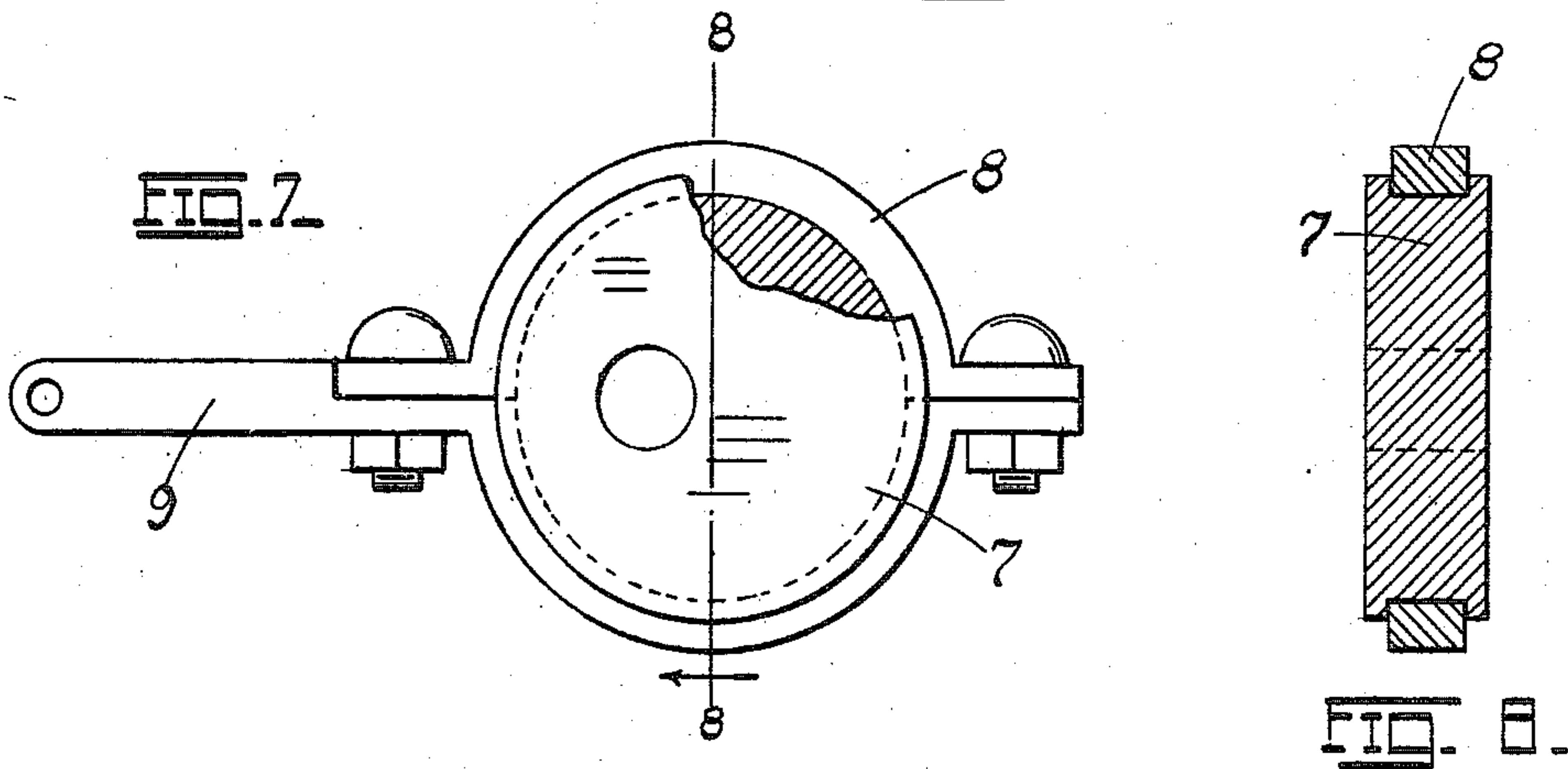
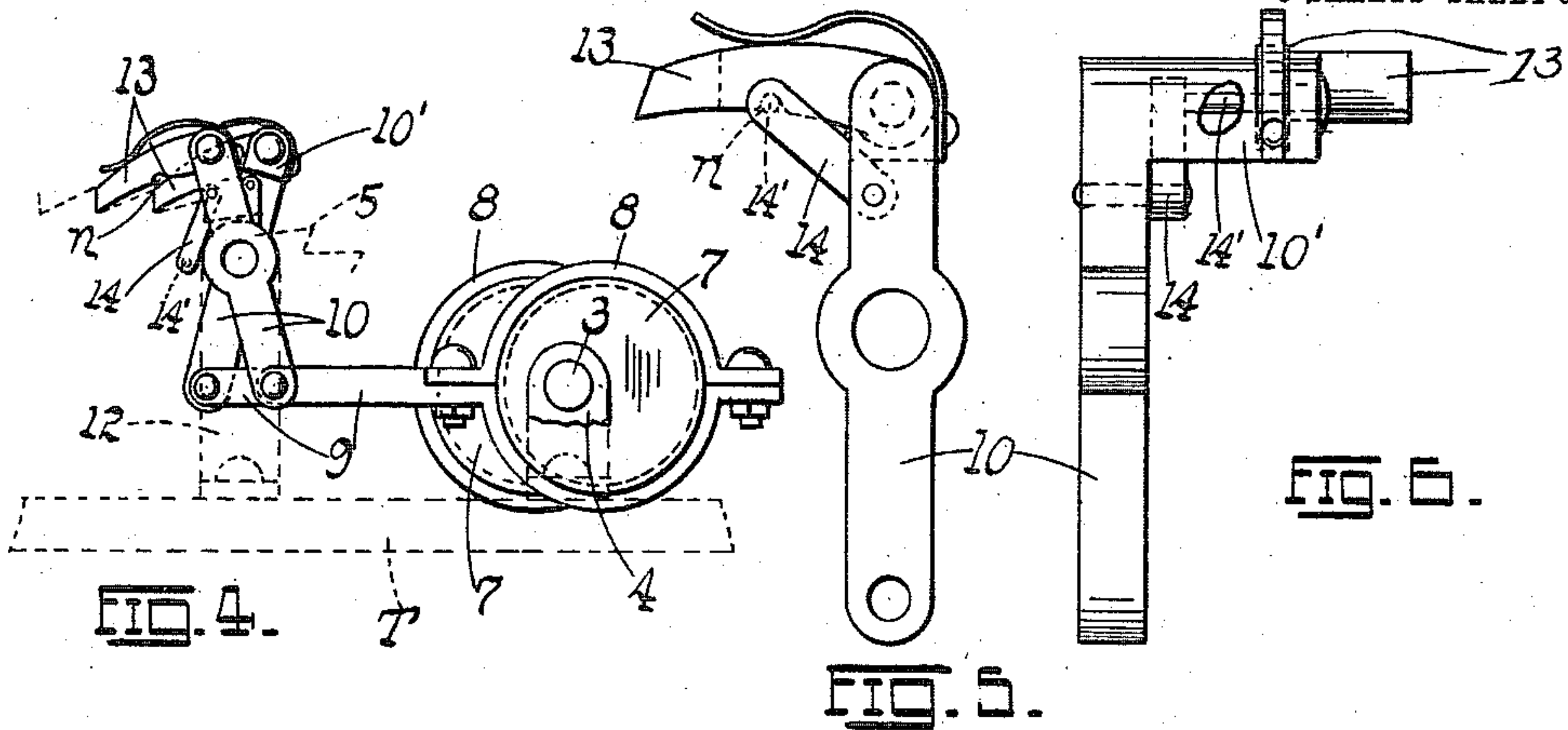
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3 SHEETS—SHEET 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

PETER HOMISHAK, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF TO THOMAS JABSCHANKA, OF ST. LOUIS, MISSOURI.

MECHANICAL MOTOR.

985,674.

Specification of Letters Patent.

Patented Feb. 28, 1911.

Application filed December 9, 1910. Serial No. 596,465.

To all whom it may concern:

Be it known that I, PETER HOMISHAK, a subject of the King of Hungary, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in Mechanical Motors, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention has relation to improvements in mechanical motors; and it consists in the novel details of construction more fully set forth in the specification and pointed out in the claims.

In the drawings, Figure 1 is an elevation of a wind-mill and tower therefor, showing the shaft of the wind-mill coupled to my motor; Fig. 2 is a top plan of the motor, the wind-mill being removed; Fig. 3 is an end elevation of the motor; Fig. 4 is a side elevation of the eccentric shaft and pawl-levers actuated thereby; Fig. 5 is a side view of one of the pawl-levers and pawls, detached; Fig. 6 is an edge view of Fig. 5; Fig. 7 is an enlarged face view of the eccentric and strap therefor; Fig. 8 is a section on the line 8—8 of Fig. 7; Fig. 9 is an elevation of the gearing in the region of the fan regulator; and Fig. 10 is a section on the line 10—10 of Fig. 9.

The object of my invention is to construct a motor preferably actuated by a driving weight suspended from a cable wound over a drum, in which the weight shall be initially raised through the medium of some natural power such as the wind, or water power, so that the cost of operation once the motor is installed shall be reduced to a minimum.

In the specific embodiment of my invention as here shown I avail myself of the initial power of a wind-mill to wind up the weight designed to actuate the motor, though a spring could be substituted for the weight as well understood in the art. The motor thus driven may be used for any commercial purpose such as operating a churn, washing machine, mill, and the like, being an admirable adjunct to other forms of machinery used in the field or on the farm, all as will be more fully apparent from a detailed description of the invention, which is as follows:—

Referring to the drawings, T, represents a tower supporting a conventional form of

wind-mill W, the shaft S of the wind-mill extending down centrally of the tower. The basal bevel pinion 1 on the shaft S meshes with a bevel gear wheel 2 carried by a horizontal shaft 3 mounted in brackets 4 on the tower T. The shaft 3 is positioned across the plane of rotation of a large vertically rotating ratchet wheel 5 carried by a shaft 6 which is mounted on top of the standards a, a.

The periphery of the ratchet-wheel 5 is in proximity to the shaft 3, the latter having disposed thereon on either side of the wheel 5, an eccentric 7, the two eccentrics being set one-hundred and eighty degrees apart, so that the maximum eccentricity of one eccentric shall be on one side of the shaft while the maximum eccentricity of the other eccentric shall be on the opposite side. Over each eccentric passes a strap 8, and from each strap extends a rod 9 alongside of the wheel 5. The end of each eccentric rod 9 is pivotally coupled to one arm of a vertically oscillating lever 10 mounted pivotally at substantially its medial portion about a stud 11 projecting from an angle-bracket 12 bolted to the tower T. The opposite or upper arm of each lever has an offset or lateral arm 10' directed toward the wheel 5, each arm 10' having pivoted thereto a spring-controlled pawl 13 engaging the teeth of the ratchet-wheel 5 on opposite sides of the central plane of rotation of said wheel. It will be seen from the connections described, that upon rotation of the shaft S, rotation will be imparted to the eccentric-shaft 3, which in turn will rotate the eccentrics 7, 7, these imparting oscillations to the levers 10, 10, simultaneously in opposite directions, so that as one pawl advances the wheel one tooth, the other pawl is receding to engage the next tooth, the pawl thus alternately imparting periodic advances to the ratchet-wheel 5 in one direction with the rotation of the wind-mill shaft S. To the upper arm of each lever 10 is pivoted a latch 14 the free end of which carries a laterally projecting pin 14' adapted to engage, when the latch is raised, a notch n on the lower edge of the pawl and thereby disengage the pawls from the ratchet wheel. With a disengagement of the pawls, the wheel 5 is free to rotate in the opposite direction, during which time the shaft S is out of commission.

The shaft 6 carries a pinion 15 which

meshes with a gear wheel 16 on a parallel shaft 17 mounted in the standards *a, a*, the shaft 17 carrying a pinion 18 which meshes with a large gear-wheel 19 carried at one end of a drum 20 which is mounted on a shaft 21 between standards *b, b*. Over the drum 20 winds a cable *d* from the outer end of which is suspended a heavy driving weight D which preferably is allowed to descend into a well or hole *h* in the ground to any required depth. It will be seen from the connections described that with the periodic advances or rotations of the wheel 5, the drum 20 will be rotated in proper direction to wind up the cable *d* and hence raise the weight D; and it is further obvious that with a disengagement of the pawls 13, the weight thus raised will now drive the drum 20 and gear wheel 19 in the opposite direction without interfering with the shaft S. The rotation of the drum 20 and gear wheel 19 under the power of the descending weight D is availed of to drive any kind of machinery, such as churns, washing machines, and the like, the wind-mill or natural power being allowed to wind up the drum-cable and raise the weight at such times as the motor is not in use, for example during the night, it being obvious that the winding up process is a slow one. In the illustration is shown a churn C, the dasher shaft 22 of which terminates in a bevel pinion 23 which engages the terminal pinion 24 on a shaft 25 mounted in any suitable manner, the shaft 25 being provided with a sprocket-wheel 26 from which leads a sprocket-chain 27 over a sprocket pinion 28 at the outer end of a shaft 29 mounted in brackets 30, 30, on one of the standards *a*. The shaft 29 has disposed thereon a bevel pinion 31 which meshes with a bevel gear wheel 32 at one end of a bottom shaft 33 mounted in the standards *a, a*, said shaft 33 carrying a pinion 34 which meshes with the gear wheel 35 on the shaft 36 disposed below the shaft 6, the shaft 36 likewise carrying a pinion 37 which is engaged by the gear-wheel 16 on the shaft 17, the latter being driven (as previously stated) by the pinion 15 on the shaft 6. It will be seen therefore that the descending weight D will impart a driving rotation to the drum 20 and its gear wheel 19, the latter by its engagement with the pinion 18 rotating the shaft 17. From this shaft the necessary motion is imparted to the shafts 36 and 33, and hence to the churn shaft 22.

In order to regulate the speed at which the motor is driven under the action of the weight D, I provide a governor or regulator in the form of a series of blades *m* disposed about a vertical shaft 38 mounted between a bracket 39 on the standard *a* and the base of said standard, the said shaft 38 carrying a worm pinion 40 meshing with a worm gear 41 on the shaft 29. By these connections

rotation is imparted to the blades *m*, the resistance of the air offered to the rotating blades checking the speed of the worm-shaft 29 and hence of the power-shaft 22 of the churn, or other machinery.

The operation is as already described, that is to say, the pawls 13 are dropped into engagement with the ratchet wheel 5, during the night or at such times as the wind-mill may wind-up the weight D on the drum 20, and when the power of the weight is to be utilized for driving the motor the pawls are disengaged as described. The motor thus operating under the action of the weight may be utilized for any purpose whatsoever, the churn C being but a single example.

Having described my invention, what I claim is:—

1. In combination with a natural-power-driven shaft, a ratchet-wheel, a pair of reciprocating pawls moving simultaneously in opposite directions actuated from said shaft and imparting periodic advances to the ratchet wheel in one direction, a drum provided with a winding cable, geared to said ratchet wheel and rotated thereby in one direction by the periodic advances of the ratchet wheel, a weight at the outer end of the cable adapted to be raised with the winding of the cable, means for disengaging the pawls from the ratchet wheel and allowing the drum to be rotated in the opposite direction by the weight aforesaid, suitable gearing coupled to said drum, a power shaft leading from said gearing, and means for regulating the speed of the drum and gearing during the driving action of the weight.

2. In combination with a natural power-driven shaft, a pair of eccentrics actuated by said shaft, eccentric straps and rods leading from said eccentrics, levers oscillated simultaneously in opposite directions by said eccentric rods, pawls on said levers, a ratchet wheel impelled by said pawls by successive advances, a drum provided with a winding cable, geared to said ratchet wheel and rotated thereby in one direction with the periodic advances of the ratchet wheel, a weight at the outer end of the cable adapted to be raised with the winding of the cable, means carried by the oscillating levers for disengaging the pawls from the ratchet wheel and allowing the drum to be rotated in the opposite direction by the weight aforesaid, suitable gearing coupled to said drum, a power shaft leading from said gearing, and a series of rotating blades for regulating the speed of the drum and gearing during the driving action of the weight.

3. In combination with a natural power-driven shaft, a counter-shaft actuated thereby, a pair of eccentrics on said counter-shaft set one-hundred and eighty degrees apart, straps and eccentric rods for said eccentrics, a pair of levers having each an arm

coupled to an eccentric rod, a terminal pawl at the end of the opposite arm, a ratchet wheel engaged and periodically advanced by said pawls, the pawls being provided with notches, latches on the levers adapted to engage said notches for releasing the pawls from the teeth of the ratchet wheel, a drum provided with a winding cable geared to the ratchet wheel and rotated by the latter in one direction, a weight at the outer end of the cable adapted to be raised with the winding of the cable, the drum rotating in a reverse direction upon a disengagement of the pawls from the ratchet wheel, a series of blades rotating about a fixed axis geared to the drum for regulating the speed of reverse rotation of the drum, suitable gearing coupled to said drum, and a power shaft leading from said gearing substantially as and for the purpose set forth.

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

PETER HOMISHAK.

Witnesses:

EMIL STAREK,
A. W. POWELL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
