A. P. BARNES & O. SCHMITT.

MOTOR.

APPLICATION FILED MAY 27, 1908.

925,860.

Patented June 22, 1909.

3 SHEETS—SHEET 1.

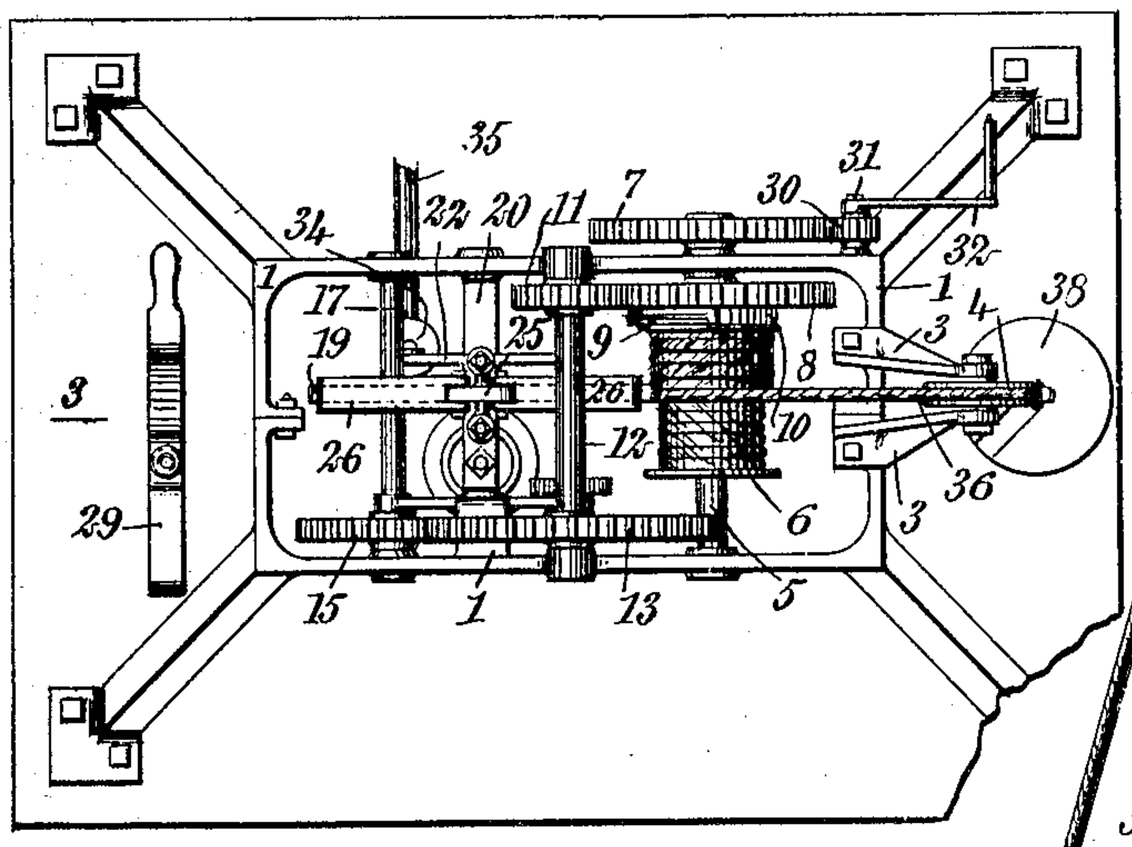
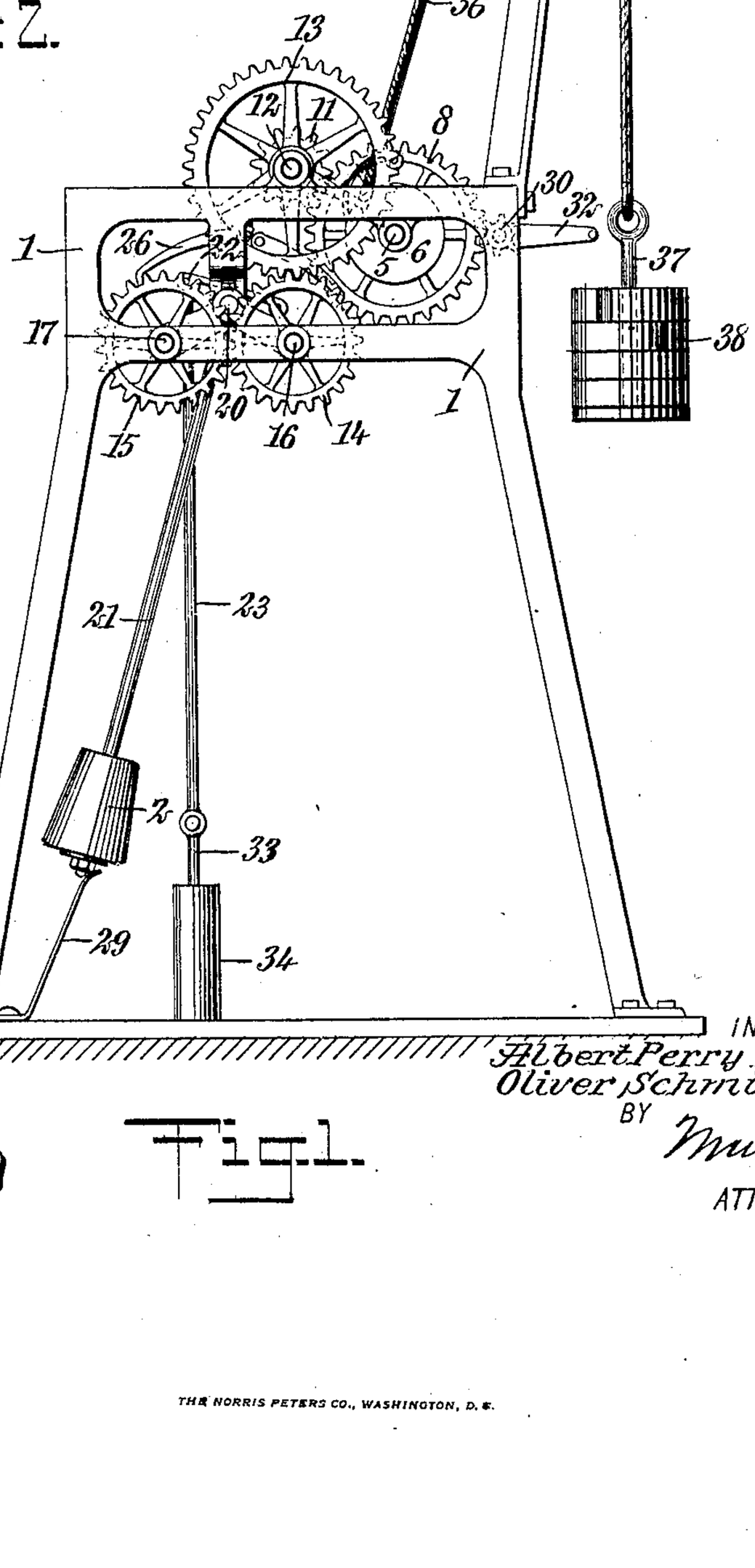


Fig. 2.



WITNESSES

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Fig. 1.

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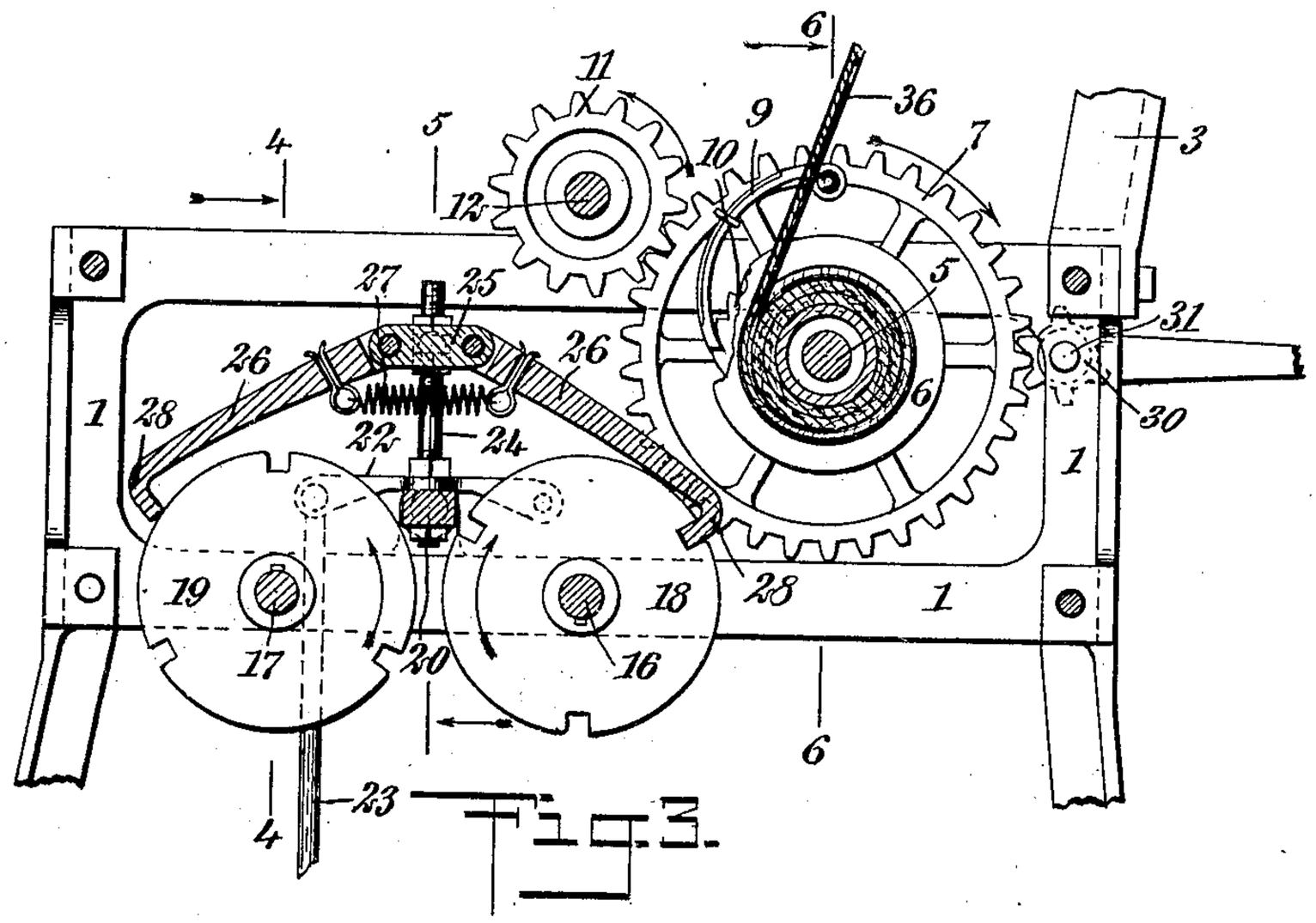

FIG. 3.

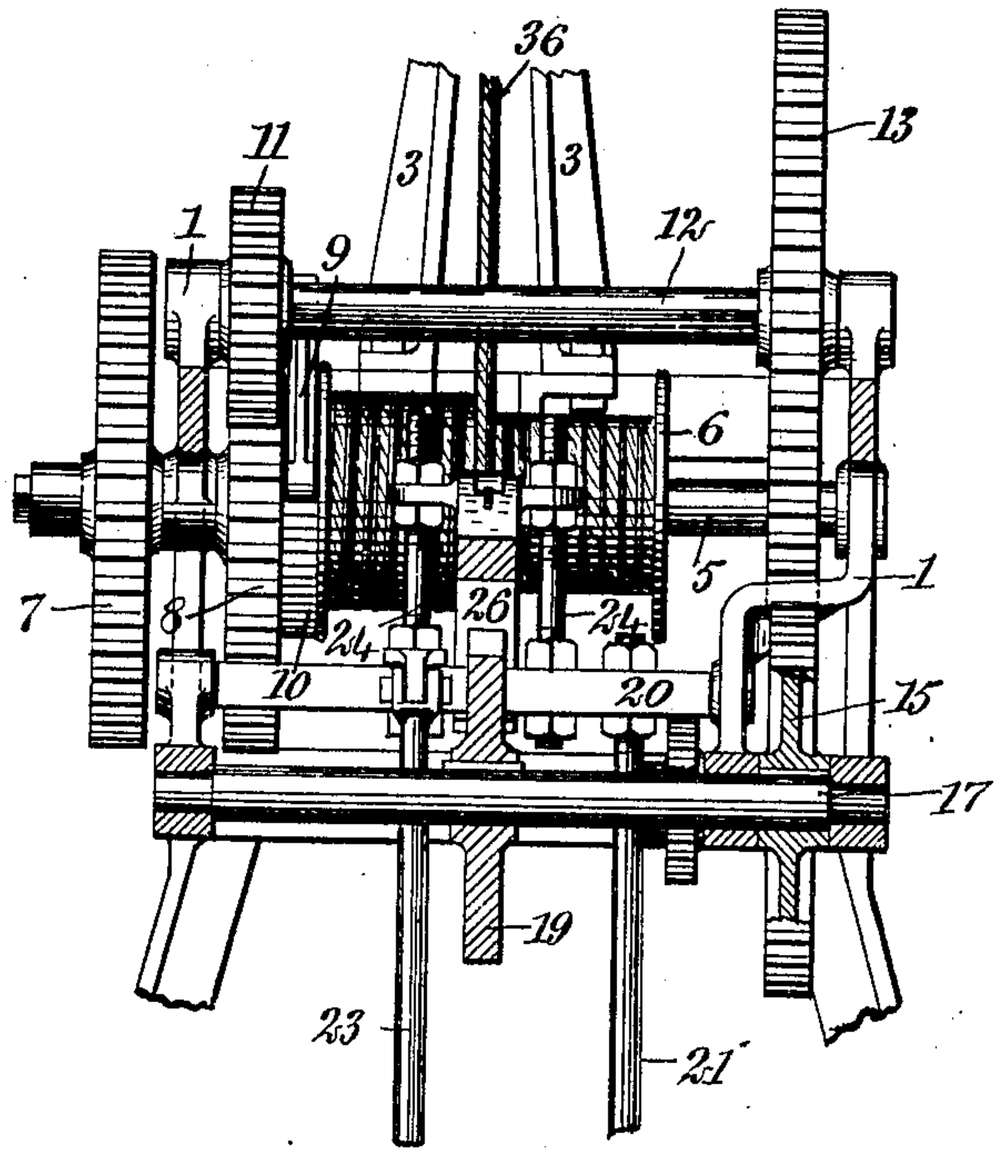

FIG. 4.

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3 SHEETS—SHEET 3.

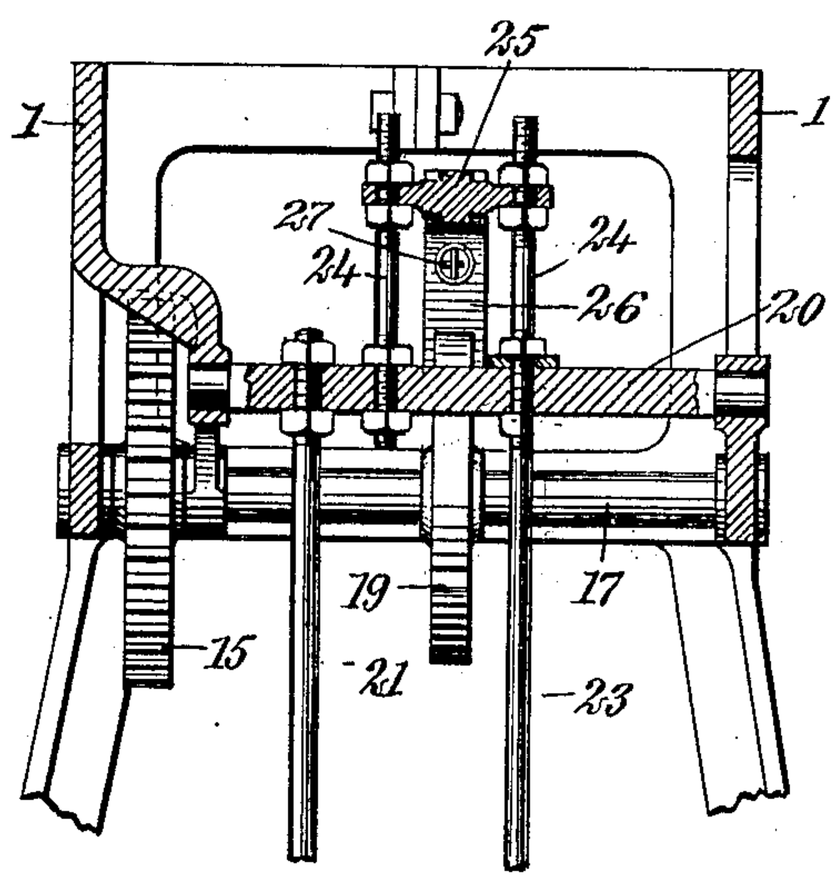

Fig. 5.

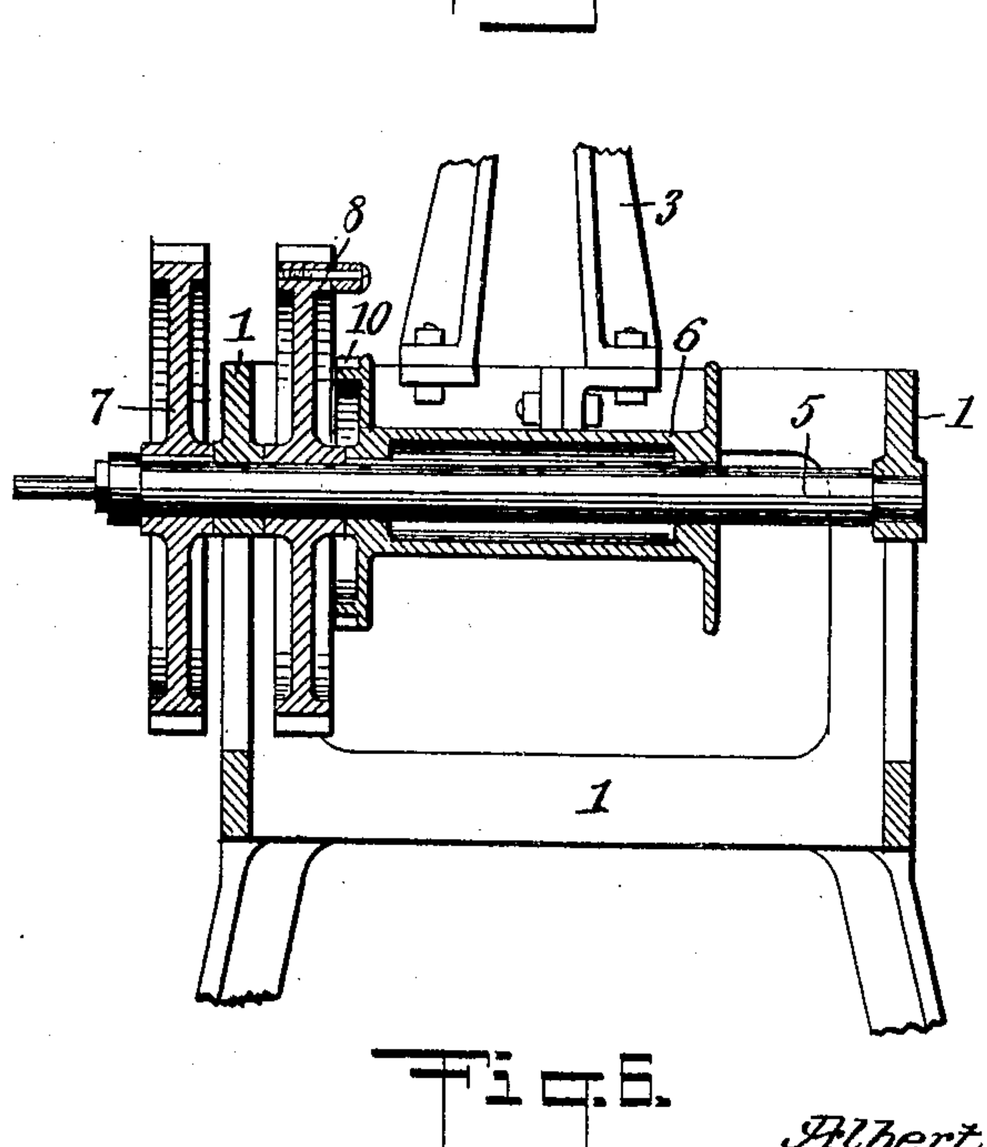

Fig. 6.

WITNESSES

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UNITED STATES PATENT OFFICE.

ALBERT PERRY BARNES AND OLIVER SCHMITT, OF BOLCKOW, MISSOURI.

MOTOR.

No. 925,860. Specification of Letters Patent. Patented June 22, 1909.

Application filed May 27, 1908. Serial No. 435,282.

To all whom it may concern:

Be it known that we, ALBERT PERRY BARNES and OLIVER SCHMITT, citizens of the United States, and residents of Bolckow, in the county of Andrew and State of Missouri, have invented a new and Improved Motor, of which the following is a full, clear, and exact description.

Our invention relates to motors, and it has for its object to provide one with twin escapement wheels which are engaged by pallets mounted on pallet arms, the pallet arms being pivoted to a rocking head, and being adapted to rest against the peripheries of the escapement wheels so that the pallets will be lifted from recesses in the escapement wheels periodically during the operation of the motor by the contact of the pallet arms with the escapement wheels at increasing distances from the pallets.

In this specification we will describe the preferred form of our invention, but we do not limit ourselves thereto as it will be understood that we claim all forms and embodiments of the invention which may be held to fall within the scope of the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures, in which—

Figure 1 is a side elevation of the invention; Fig. 2 is a plan view thereof; Fig. 3 is an enlarged sectional view on the line 3—3 of Fig. 2; Fig. 4 is a transverse sectional view on the line 4—4 of Fig. 3; Fig. 5 is a transverse sectional view on the line 5—5 of Fig. 3; and Fig. 6 is a transverse sectional view on the line 6—6 of Fig. 3.

By referring to the drawings, it will be seen that we provide a frame 1, which has its body of a sufficient height to permit the gearing to be operated with a sufficient space for the swing of the pendulum 2. At one end of the frame 1 are secured standards 3 which have a pulley 4 therebetween at their upper terminals. In the frame 1 is journaled a shaft 5 to which a drum 6 and a gear wheel 7 are secured, the gear wheel 7 being disposed beyond the frame 1. A gear wheel 8 is also mounted loosely on this shaft 5 and to this gear wheel 8 is secured a pawl 9 which engages a ratchet 10, which is disposed at one end of the drum 6. The gear wheel 8 meshes with a pinion 11, which is secured to a shaft 12, journaled in the frame of the machine. There is also a gear wheel 13 mounted on this shaft 12, the gear wheel 13 engaging the gear wheel 14 which meshes with a twin gear wheel 15, these gear wheels 14 and 15 being secured to shafts 16 and 17, which are journaled in the frame of the machine. To these shafts 16 and 17 are secured escapement wheels 18 and 19 respectively.

A rock shaft 20 is journaled in the frame of the machine and to this rock shaft is secured the pendulum rod 21, and a lateral arm 22 to which is bolted a pump rod 23. The lateral arm 22 may project beyond both sides of the rock shaft 20 and although the drawings show only one end of the arm 22 connected with a pump rod, it is obvious that the other end may be also connected when desired. There are also bolted to the rock shaft two standards 24, between which is disposed a head 25, each of the standards 24 having a threaded exterior surface, the standards 24 being disposed in orifices in lateral extensions of the head 25; nuts being provided to mesh in the threaded portions of the standards respectively and to screw up and down respectively against the lateral extensions of the head to hold the head in position. To the head are pivoted pallet arms 26. These pallet arms are united by a spring 27 which tends to draw them together. The pallet arms 26 have pallets 28 respectively, which are adapted to engage the escapement wheels 18 and 19. An arm 29 is provided which is adapted to engage the pendulum 2, to prevent the operation of the motor when the operator so desires. The gear wheel 7 engages a pinion 30, which is secured to a shaft 31 to which is also secured a crank 32. The pump rod 23 is adapted to operate the piston rod 33 and thereby operate the pump 34, permitting the water to flow out through the pipe 35.

In operating our motor, a cable 36 is secured to the drum 6 and is disposed over the pulley 4, there being means 37 to secure weights 38 to the cable 36. The crank 32 is then operated, and by means of the pinion 30 and the gear wheel 7 which meshes therewith, the drum 6 is rotated, winding the cable thereon and lifting the weight. This motion of the shaft 5 to which the gear wheel 7 and the drum 6 are secured is not transmitted to the train of gear wheels in the machine, because of the fact that the pawl and ratchet 9 and 10, respectively, do not transmit motion to the gear wheel 8 when the

shaft 5 is rotated in this direction. The pendulum 2 is at this period held at one side by means of the arm 29. The weights 38 having been lifted a considerable distance and the pump rod being connected to the piston rod 33 of the pump 34, the pendulum 2 is freed from the arm 29 and the motor is set in operation, the weights 38 by means of the cable 36, causing the drum 6 to rotate and, inasmuch as the gear wheel 8 is connected by means of the pawl and ratchet with the drum 6, the rotation of the drum 6 in a direction to unwind the cable from the drum, will cause the gear wheel 8 to rotate and set the train of gearing in operation, the gear wheel meshing with the pinion 11 which is mounted on the shaft 12 on which the gear wheel 13 is also mounted, the gear wheel 13 meshing with one wheel, 14, of the twin gear wheels, said gear wheel 14 meshing with its companion gear wheel 15. The shafts 16 and 17 are then caused to rotate in the direction of the arrows shown on the escapement wheels 18 and 19 respectively. As the pendulum swings to the left the standards 24 with the head 25 swing to the right and the right pallet arm 26 moves with the rotation of the escapement wheel 18 until the lower surface of the pallet arms 26 which contacts with the periphery of the escapement wheel 18, lifts the pallet 28 from the indenture in the escapement wheel 18 and frees the pallet 28 from the said escapement wheel. During this period, the escapement wheel 19 has been rotating in the direction shown by the arrow on its face, and the pallet 28 on the left pallet arm 26 engages an indenture in the said escapement wheel at the end of this operation. The movement of the escapement wheel 19 is adapted to cause the standards 24 to move to the left, and with it the pendulum 2 to the right, when the bottom of the left pallet arm will engage the periphery of the escapement wheel 19, until the left-hand pallet 28 is lifted from the indenture in the escapement wheel 19, by means of the contact of the lower side of the pallet arm with the periphery of the escapement wheel.

It should be understood that while the periphery of either of the escapement wheels contacts with the pallet arm near its outer terminals, the pallet is permitted to engage the indenture in the escapement wheel, but as the standards move toward the escapement wheel, a pallet arm engages the periphery of the escapement wheel at a greater distance from its terminal, and because of the construction of the pallets this causes the pallet to free itself from the indenture in the escapement wheel. During this movement of the rock shaft 20, to which are secured the standards 24 with the head 25 to which the pallet arms 26 are pivoted, the arm 22 which is also secured to the rock shaft 20 is rocked therewith and it reciprocates the pump rod 23 pivoted to the arm 22. The pump 34 is thus operated and water is forced upwardly, flowing through the pipe 35. When it is no longer desired to use the motor, the arm 29 is thrown into engagement with the pendulum 2 to prevent its swinging, thus checking the operation of the motor.

Having thus described our invention, we claim as new and desire to secure by Letters Patent:—

1. In a motor, an escapement consisting of twin escapement wheels, a rock shaft, a head mounted thereon, pallet arms pivoted to the head, pallets on the free terminals of the pallet arms which are adapted to engage the escapement wheels respectively and means to rotate the escapement wheels.

2. In a motor, an escapement consisting of a head adapted to rock, twin escapement wheels spaced apart, the axes of the escapement wheels and the head at rest forming substantially an equilateral triangle, pallet arms pivoted to the head, pallets on the pallet arms respectively, and means for holding yieldingly the pallets against the peripheries of the escapement wheels respectively.

3. In a motor, twin escapement wheels having recesses therein, a head adapted to rock, pallet arms pivoted to the head, pallets on the pallet arms which are adapted to engage the recesses in the escapement wheels respectively, and means to hold the pallets yieldingly in constant engagement with the peripheries of the escapement wheels respectively.

4. In a motor, twin escapement wheels, a head adapted for rocking, two pallet arms pivoted to the head, and pallets on the free terminals of the pallet arms which engage recesses in the escapement wheels respectively, the pallet arms being disposed respectively in the same plane with the escapement wheels and which are normally in close proximity thereto to permit of contact therewith during a period in the operation to lift the pallets from the recesses in the escapement wheels respectively.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

ALBERT PERRY BARNES.
OLIVER SCHMITT.

Witnesses:
W. LOGAN WOOD,
F. I. DUNN.