

No. 773,693.

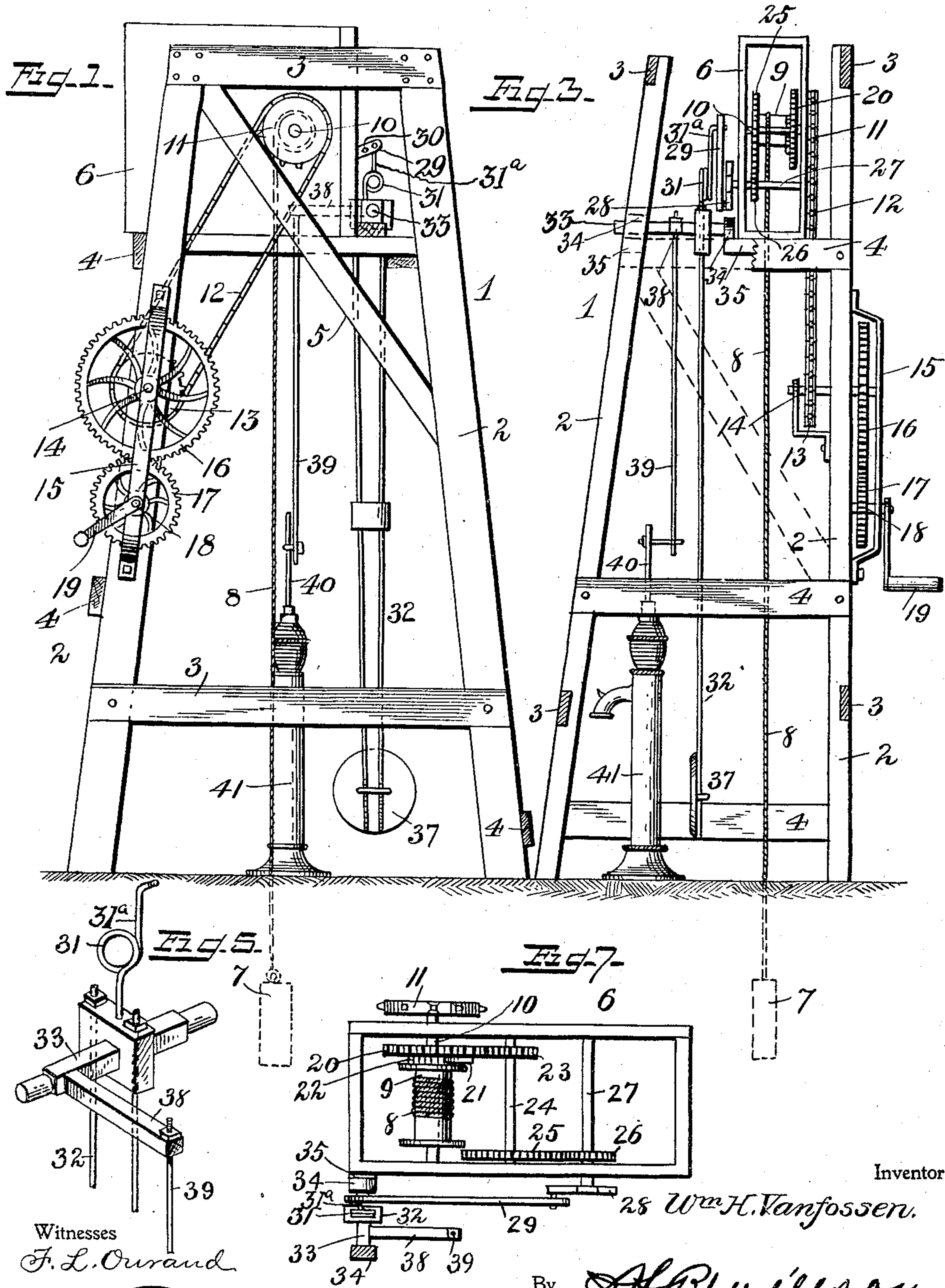
PATENTED NOV. 1, 1904.

W. H. VANFOSSEN.  
MECHANICAL MOTOR.

APPLICATION FILED NOV. 12, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses  
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2 SHEETS—SHEET 2.

Fig. 2.

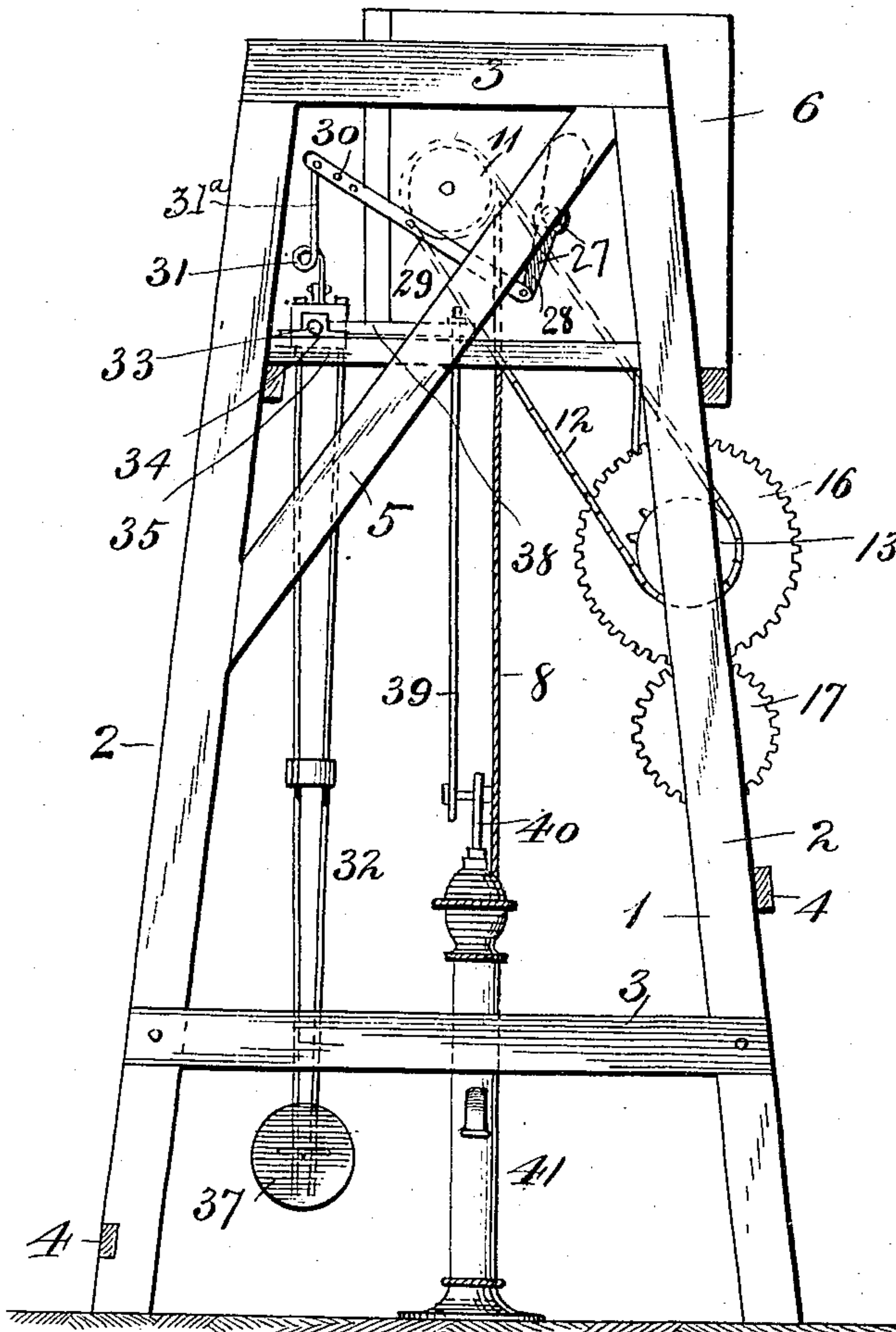


Fig. 4.

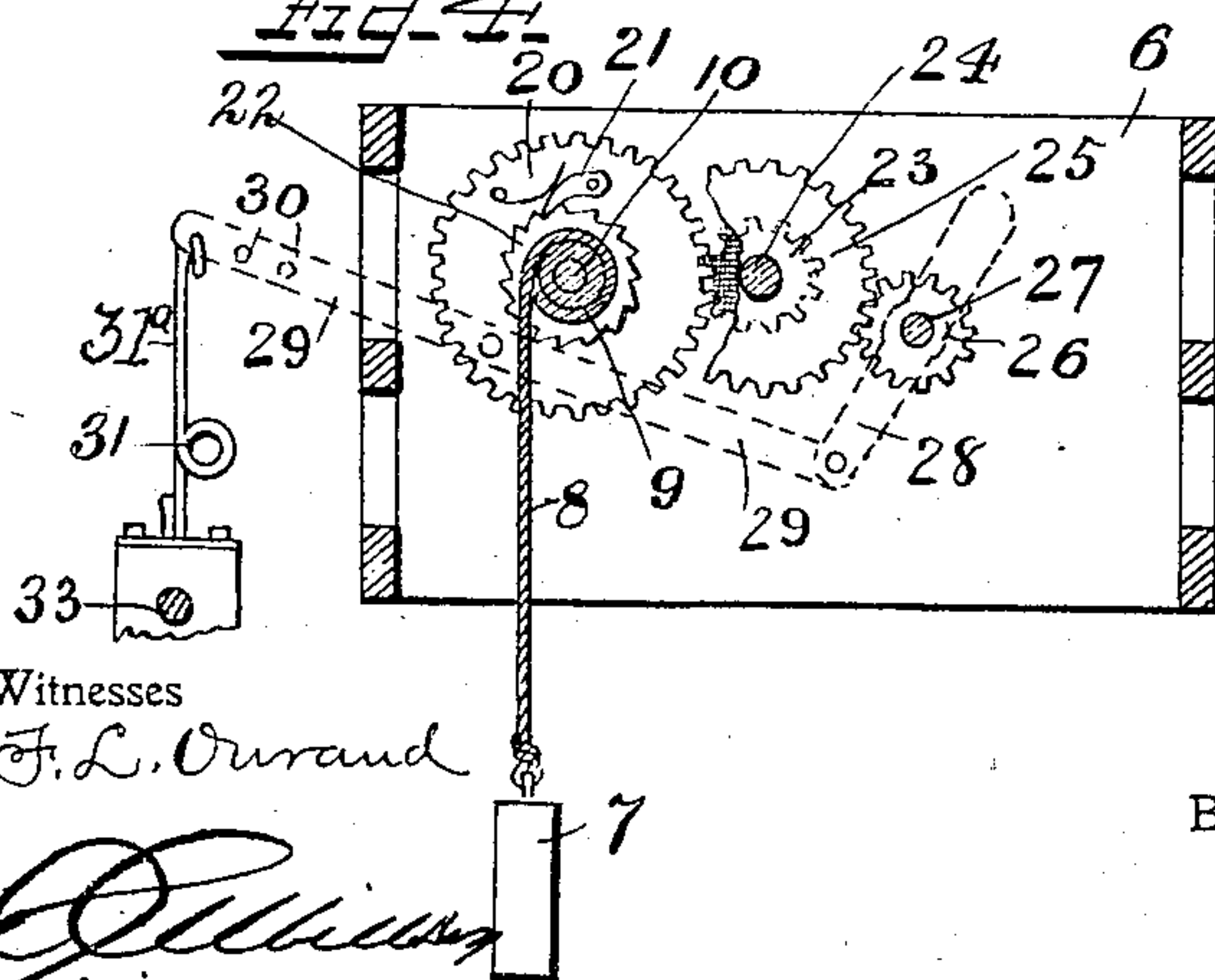
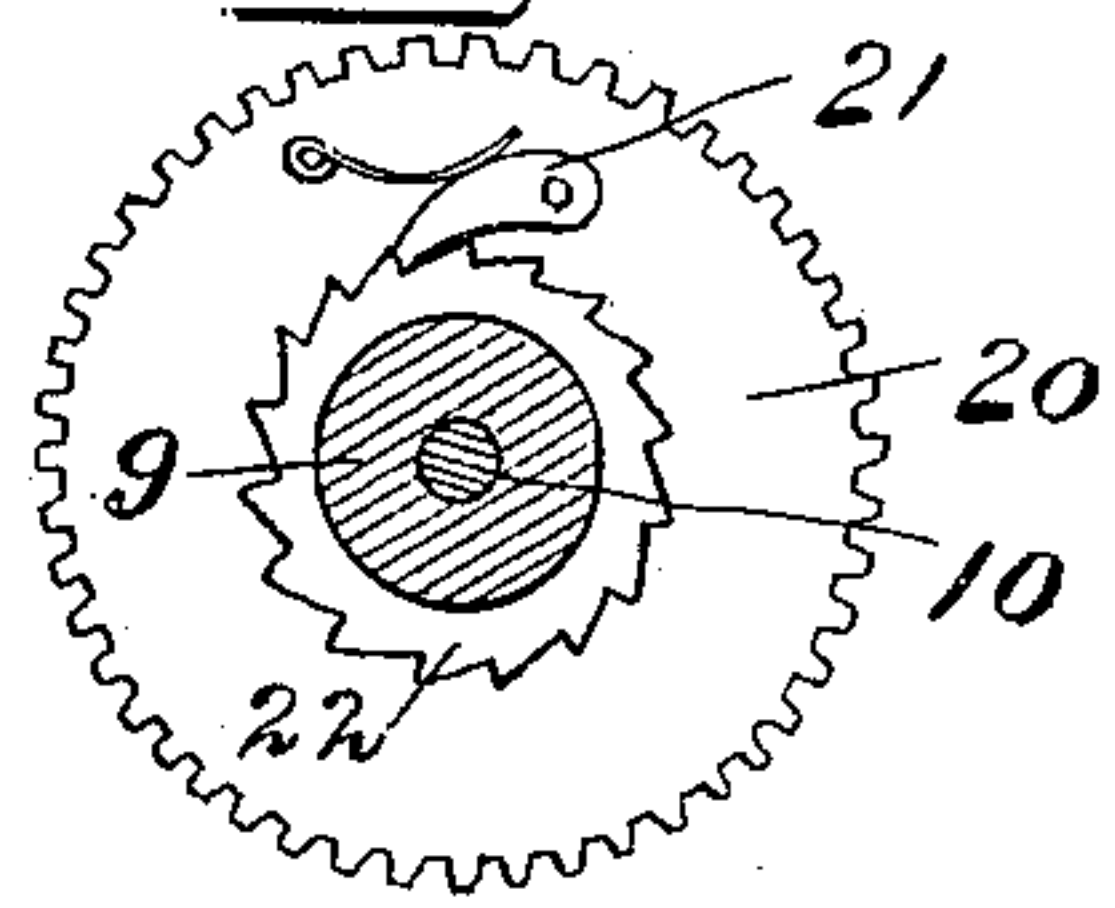


Fig. 5.



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# UNITED STATES PATENT OFFICE.

WILLIAM H. VANFOSSEN, OF EUREKA, ILLINOIS.

## MECHANICAL MOTOR.

SPECIFICATION forming part of Letters Patent No. 773,693, dated November 1, 1904.

Application filed November 12, 1903. Serial No. 180,886. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. VANFOSSEN, a citizen of the United States, residing at Eureka, in the county of Woodford and State of Illinois, have invented certain new and useful Improvements in Mechanical Motors; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it ap-  
 10 pertains to make and use the same.

My invention relates to improvements in mechanical motors for operating pumps or the like.

The object of my invention is to provide a  
 15 machine of this character which will be simple in construction, durable in use, efficient in operation, and comparatively inexpensive to manufacture.

With this and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be more fully described, and particularly pointed out in the appended claim.

In the accompanying drawings, Figure 1 is a front elevation of my improved motor. Fig. 2 is a rear elevation of the same. Fig. 3 is an end elevation. Fig. 4 is a vertical sectional view through the gear-casing. Fig. 5 is a detail view of the pendulum. Fig. 6 is a detail  
 30 view of one of the motor-gears. Fig. 7 is a top plan view of my improved motor.

Referring to the drawings by numeral, 1 denotes a suitable open-work frame made, preferably, of iron or steel and comprising uprights or corner-beams 2, connecting side bars 3, connecting end bars 4, and diagonal braces 5. The two front uprights 2 are preferably inclined inwardly toward the top of the frame, and the  
 40 uprights at one end may also be inclined inwardly and upwardly, as shown. In the upper portion of the frame is secured a casing 6, in which the gearing of the motor is mounted. The motor may be spring-actuated, but  
 45 is preferably actuated by a weight 7, attached to a cable 8, which is wound upon a drum 9, secured to a shaft 10, journaled in the sides of the casing. The lowering of the weight will unwind the cable and rotate the shaft 10, and  
 50 in order to wind up said cable a sprocket-

wheel 11 is secured upon the outer end of the shaft 10 and connected by a sprocket-chain 12 to a sprocket-wheel 13 upon the inner end of a short shaft 14, which projects through one of the rear uprights and is journaled in bearings 15 upon the same. Secured upon the  
 55 outer end of the shaft 14 is a gear 16, which meshes with a pinion 17 upon a shaft 18, journaled in one of the bearing-brackets 15 and having an operating-crank handle 19 at its  
 60 outer end. By turning said crank the shaft 10 will be rotated.

Upon the shaft 10 is a gear 20, which is locked to turn with the shaft 10 in one direction and is free to rotate independently of the  
 65 shaft in the opposite direction. This is accomplished by means of a spring-actuated pawl 21, pivoted to one side of the gear and engaging a ratchet 22, secured to the shaft, as clearly  
 70 shown in Fig. 6. When the cable is unwinding, said gear 20 is rotated by the shaft, and when the cable is being wound up the shaft turns independently of the gear. Said gear 20  
 75 is in mesh with a pinion 23 upon a shaft 24, journaled in the sides of said casing, and upon said shaft 24 is a gear 25, which meshes with a pinion 26 upon a drive-shaft 27. The outer  
 80 and front end of the shaft 27 is provided with a crank 28, the outer end of which is pivotally connected to one end of a connecting rod or  
 85 link 29, which has its opposite end provided with a series of apertures 30. An arm 31<sup>a</sup> provides a connection between said connecting-rod and a pendulum 32. Said pendulum  
 90 is secured adjacent to its upper end upon a shaft 33, which is journaled in bearings 34, secured to brackets 35 upon the casing 6 and one of the uprights 2. The arm 31<sup>a</sup> has one  
 95 of its ends secured to the short upper end of the pendulum and its opposite end adjustably engaged with one of the apertures in the end of the connecting-rod 29. The said arm 31<sup>a</sup>  
 100 has its central portion bent to form a spring-coil 31, which lies in a plane substantially parallel with that of the arm and renders the  
 105 arm elastic, so that its outer end is movable angularly with reference to its inner end, and the said coil also forms a brace which greatly strengthens the said arm. The pendulum  
 110 may be of any desired construction and has



secured at its lower end an adjustable weight 37, by means of which its swing or stroke may be regulated.

5 Secured to the shaft 33 at right angles to the pendulum is a rocking bar or beam 38, which is connected by a link or rod 39 to the object it is desired to reciprocate or oscillate. In the drawings I have shown said link or rod 39 pivotally connected to the reciprocating  
10 rod 40 of a pump 41, above which the frame 1 is disposed. As here shown the pump is secured upon the cover of a well or cistern and the weight 7 of the motor is hung in the well. When the pump is used in a bored  
15 well, said weight 7 is suspended by the cable in a suitable tower, or the frame is made of sufficient height to permit the weight to have the desired movement.

The operation of my invention will be  
20 readily understood. The crank 19 is first turned to wind up the cable 8 and elevate the weight 7, which as it descends will rotate the train of gears in the casing 6 and drive the shaft 27. The pendulum 32 is then started  
25 and will be kept in its oscillatory motion by the crank 28, rod 29, and spring 31, which connect it to the drive-shaft 27. As the pendulum is oscillated the pump-rod 40 will be raised and lowered, owing to the connection  
30 of the rocking beam 38 and its rod 39. By adjusting the weight 37 upon the pendulum the speed of the motor may be readily controlled.

From the foregoing description, taken in

connection with the accompanying drawings, 35 the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be 40 resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters 45 Patent, is—

A motor of the class described, having a driving-shaft, a crank rotated thereby, a rock-shaft having a rocker-beam projecting therefrom, for the purpose set forth, a block on 50 the rock-shaft, a pendulum attached to the said block, an arm projecting upwardly from the block and having a spring-coil formed therein at a point between its ends and lying in a plane substantially parallel with that of 55 the arm, so that the outer end of the latter is movable angularly with reference to its inner end and said arm is braced by said spring-coil, and a pitman connecting the crank to the upper end of the said spring-arm. 60

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

WILLIAM H. VANFOSSEN.

Witnesses:

HENRY C. BAIRD,

A. V. S. BAIRD.