

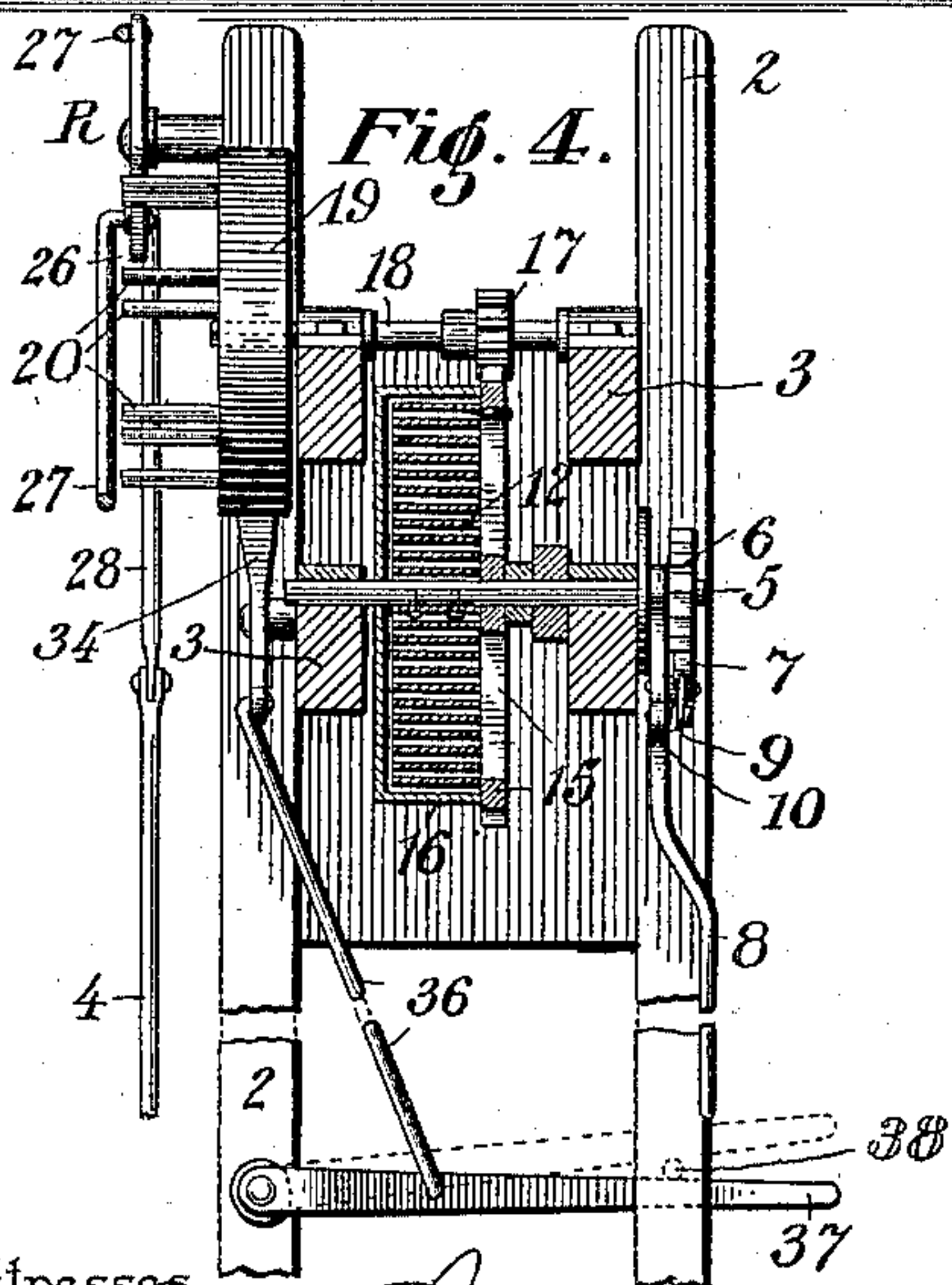
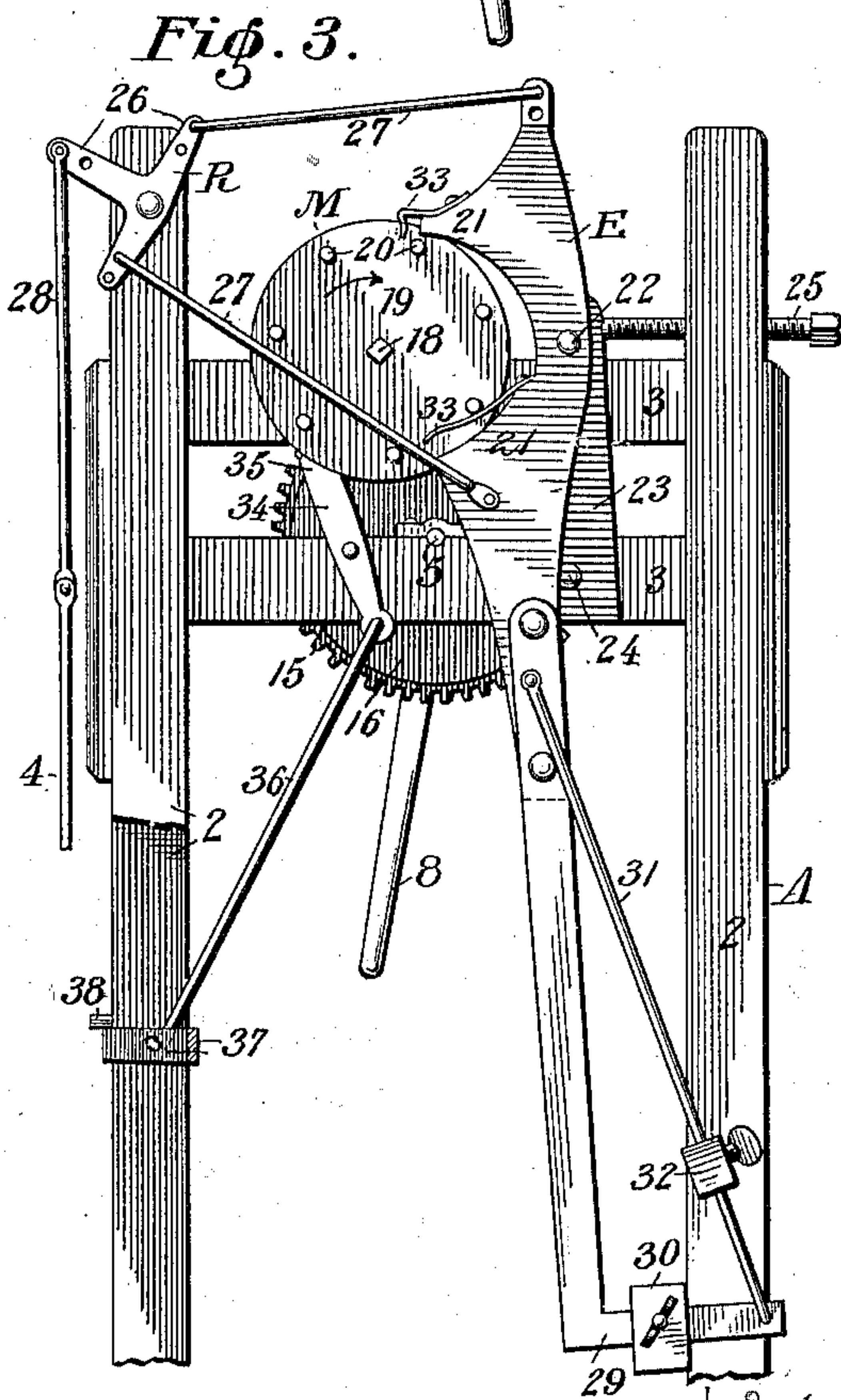
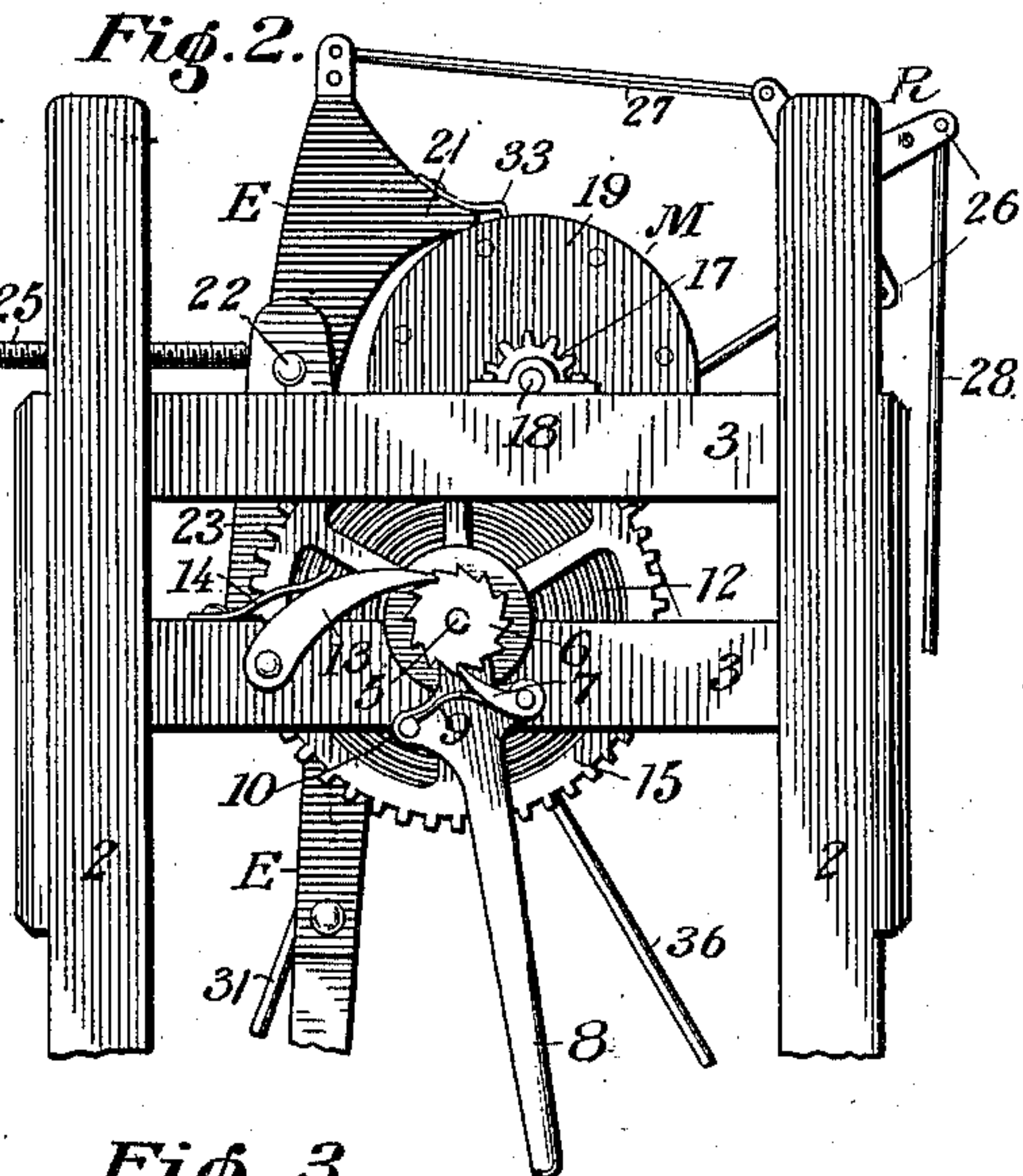
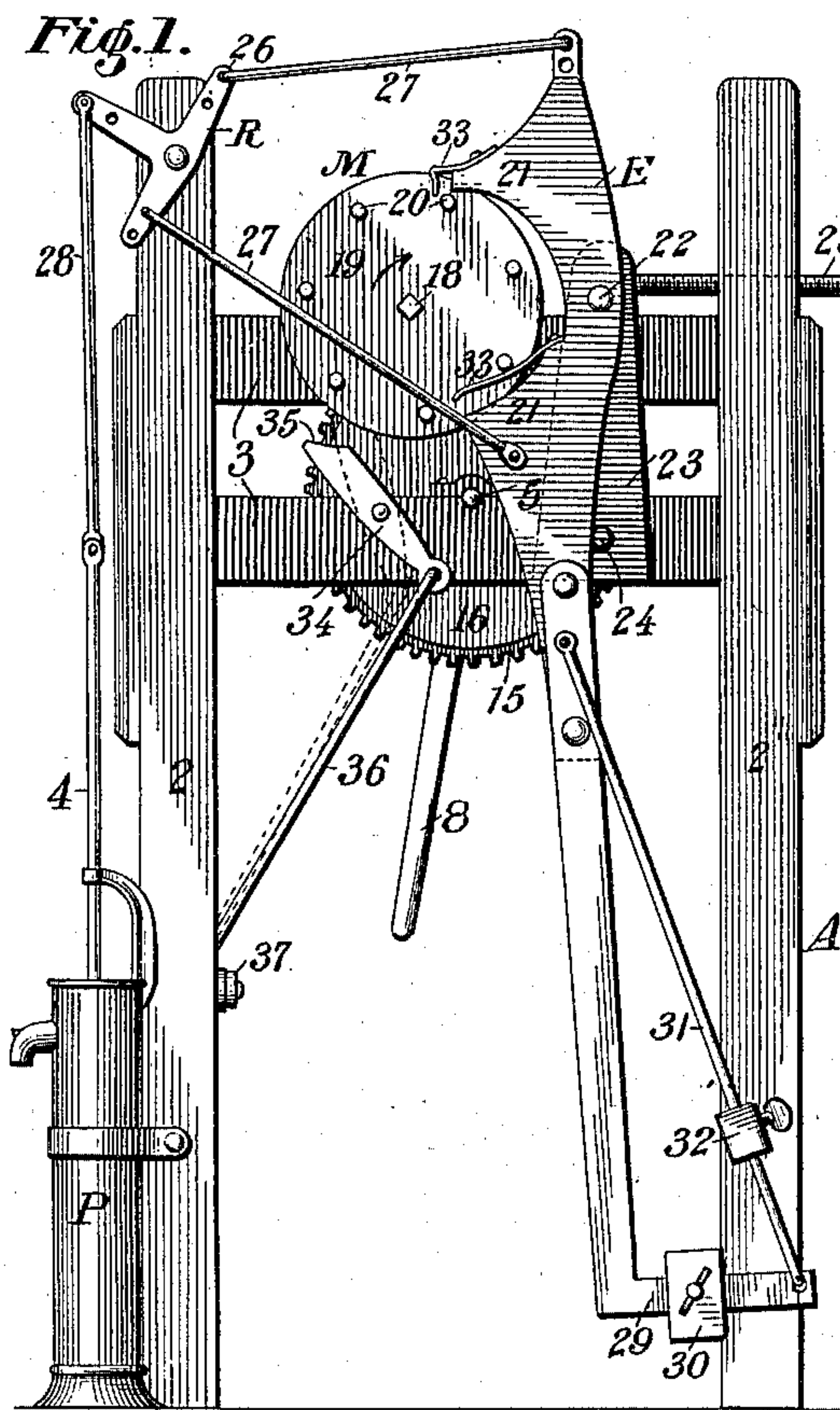
No. 653,275.

Patented July 10, 1900.

W. WEINER.  
PUMP MOTOR.

(Application filed Apr. 1, 1899.)

(No Model.)



Witnesses

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# UNITED STATES PATENT OFFICE.

WILHELM WEINER, OF WYMORE, NEBRASKA, ASSIGNOR OF ONE-HALF TO  
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## PUMP-MOTOR.

SPECIFICATION forming part of Letters Patent No. 653,275, dated July 10, 1900.

Application filed April 1, 1899. Serial No. 711,414. (No model.)

*To all whom it may concern:*

Be it known that I, WILHELM WEINER, a citizen of the United States, residing at Wymore, in the county of Gage and State of Nebraska, have invented a new and useful Pump-Motor, of which the following is a specification.

This invention relates to a motor for operating pumps; and the object of the invention is to provide an apparatus of this character which is powerful in operation and the parts of which are compactly disposed and easy in their action, and the construction is such that a steady, even motion of the plunger-rod of the pump is assured, thereby obtaining the discharge of a continuous unbroken stream of water from the pump.

The apparatus includes in its construction a motor which preferably includes a spring as the agent for furnishing the necessary power, a wheel connected to said motor and having a series of teeth or pins, a pendulous or oscillatory escapement device coöperative with said wheel and having pallets or pawls to alternately engage the teeth of the wheel and counterbalanced to secure the proper motion of the toothed wheel, a rocker, links pivoted to the rocker at opposite sides of its axis and connected to the escapement device at opposite sides of the axis of the latter, and a third link connected to said rocker and also to the plunger-rod of the pump, the mechanism serving to operate the plunger-rod of the pump.

Normally the motor will be held against action by means of suitable locking mechanism involving, preferably, a brake of the friction type adapted to engage the toothed wheel, hereinbefore mentioned. This brake will be connected with a suitable hand-lever or other device by which it can be operated to either start or stop the flow of water.

The escapement device to which reference has been made is carried for adjustment, it being preferably pivoted to a movably-mounted carrying device sustained upon the framework of the apparatus and held in a desired position by means of a set-screw, and by reason of this construction the stroke of

the escapement device can be easily regulated.

With these ends in view the invention consists in the novel combination of elements and in the construction and arrangement of parts, which will be hereinafter fully described and claimed.

To enable others to understand the invention, I have illustrated the preferred embodiment thereof in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a side elevation of a pump-motor constructed in accordance with my invention. Fig. 2 is an elevation of the opposite side of the device and showing the winding mechanism and a portion of the motor. Fig. 3 is a side elevation with a portion broken away and showing the motor-locking means in its effective position. Fig. 4 is a vertical transverse sectional view thereof.

Like characters denote like and corresponding parts in each of the several figures of the drawings.

The framework for supporting the different parts is denoted by A, and it includes in its construction four corner-posts or uprights 2, connected near the top by the cross-pieces or timbers 3, within which latter the motor is supported.

The pump is designated by P and its plunger-rod by 4, and these can be of any suitable character.

The plunger-rod 4 of the pump is operated by a motor M of the spring type, which is supported upon the framework and near the top thereof, and it includes in its construction a shaft 5, having at one end the ratchet 6 fixed thereto and which is adapted to be engaged by the pawl 7, pivoted near the end of the hand-lever 8, which is loosely carried by the shaft. The pawl is maintained in engagement with the ratchet by means of the spring 9, secured, respectively, to the offset 10 on the hand-lever and to the pawl, so that by operating the hand-lever the shaft can be rotated through the intermediate pawl and ratchet, thereby to compress the spring 12, constituting the actuating agent of the mo-



tor. Backward movement of the ratchet will be prevented by the detent or dog 13, pivoted to the frame in proximity to said ratchet, and which is held in its effective position by means of a spring 14, secured, respectively, to said detent 13 and to the framing.

By reference to Fig. 4 of the drawings it will be understood that the spring 12 is connected at one end to the shaft 5, about which it is coiled, and the opposite end thereof is connected to one of the spokes of the master-gear 15, which is loosely mounted upon said shaft. A casing 16 is provided for the spring to protect the same from the effects of the weather, dirt, &c. By operation of the winding-handle 8 the shaft 5 may be turned to wind or compress the spring 12 about said shaft, whereby the spring is adapted to furnish the necessary power for rotating the gear 15. The gear 15 meshes with the pinion 17 upon the shaft 18, supported upon the upper side of the framework, and the controlling-wheel 19 is fixed to the outer end of the shaft 18, and it has near its rim or periphery the circular series of projections or pins 20, adapted to coöperate with the superposed pallets or pawls 21 on the escapement device E, which is pivoted, as at 22, to the adjustable carrier 23, which in turn is pivoted, as at 24, to the framework and is engaged by the set-screw 25, mounted upon the framework. By turning the set-screw the escapement-carrier 23 can be moved toward the escapement-wheel 19, thereby to correspondingly adjust the escapement device for varying the working stroke of the latter.

A rocker is shown at R, and it has three arms 26, and is pivoted upon the upper side of the framework substantially in vertical alinement with the pump. The links 27 are pivoted to two of the arms of the rocker R, at opposite sides of the axis thereof, and the other ends of said links are jointed to the escapement device E at the opposite side of its axis, so that on the oscillation of the escapement device an oscillatory movement will be imparted to the rocker, the third or angular arm of which is pivoted to the link 28, which is likewise jointed to the plunger-rod 4 of the pump.

The escapement device has the transverse foot or extension 29 at the lower end thereof, upon which the sliding weight 30 is mounted, which is movable along said foot to regulate the poise or effect of the escapement-lever and which is held in its adjusted position by means of a set-screw. The rod 31, which is connected at its ends to the transverse foot 30 and to the escapement device, near the axis thereof, is furnished with an adjustable counterweight 32. The adjustment of the weight 30 on the foot 29, which will be substantially in the arc of a circle relatively to the escapement mechanism, and the movement or adjustment of the weight 32 on the rod 31, which is approximately in a straight line relatively to the said escapement mechanism, will regu-

late the bearing on the pins 20 of the wheel 19 and either produce a more positive operation in connection with said pins or an easier play or operation of the actuating device co-acting therewith.

When the motor is free to act, the spring 12 will serve to turn the master gear-wheel 15, and thereby the meshing pinion 17, and consequently the upper shaft 18, so that the escapement-wheel 19 will be turned, and the teeth of said escapement-wheel by acting against the pallets 21 of the escapement device E will oscillate the latter, thereby through the intermediate links 27 vibrating the rocker R and reciprocating the links 28, and consequently the plunger-rod 34, and this motion will follow as long as the motor is free to act. The pallets 21 are provided with contacting devices 33, which are preferably formed of flat spring metal and the uppermost one bent at an angle and the lower one extended to provide an easy riding-surface and both adapted to receive the impact of the pins 20 as the wheel 19 rotates, and thereby oscillating the escapement device E.

Normally the motor will be held out of action by means of a friction-brake 34, consisting of a lever pivoted upon the framework near the escapement-wheel 19 and having a curved edge or shoe 35 at one end adapted to bind against the periphery of said escapement-wheel, thereby to lock the same against rotation. The weights 30 and 32 in a great measure perform the function of a counterpoise to steady the movement of the escapement device. Moreover, it will be observed that the distance between the pivot 22 of the escapement device and the extremity of the upper arm of the latter where the terminal of the link 27 is applied is slightly greater than twice the distance between the pivot of the rocker R and the upper extremity of the arm thereof, to which the outer terminal of the said link 27 is attached. Furthermore, the distance between the pivot 22 and the point of attachment of the rear terminal of the lower link 27 to the lower arm of the escapement device is proportionately less than the distance between the said pivot and the point of attachment of the upper arm to the upper link 27. The same decreased distance between the pivot of the rocker R and the point of attachment of the outer terminal of the lower link 27 to the lower arm of said rocker exists, and by this means it will be observed that the arc described by the outward movement of the upper arm of the rocker is increased a proportionate number of degrees, and the movements of the parts are thereby properly balanced.

The brake-lever 34 is pivoted at its lower end to the rod 36, which is connected at its opposite end to the hand-lever 37, fulcrumed to one of the corner-posts 2 and which when the lever is set is adapted to engage under the stop 38, provided upon the opposite post. When it is desired to release the motor to



procure a supply of water, the hand-lever 37 is grasped and swung out of engagement with the stop 38 and elevated, which action forces the working end of the brake-lever 5 out of contact with the escapement-wheel. To again lock the motor, the action just set forth will be reversed.

Changes in the form, proportion, size, and the minor details of construction within the 10 scope of the appended claims may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

Having thus described the invention, what I claim is—

15 1. The combination with a motor, of a wheel connected thereto and having projections, an escapement device having pallets adapted to engage the said projections, the said escapement device being located to one side of the 20 center of the wheel and having a substantially-vertical normal position, a rocker pivotally mounted in operative relation to and on the opposite side of the wheel and escapement and including a series of arms, links 25 pivoted to two of the arms of the rocker at opposite sides of the axis of the latter and also similarly connected to the escapement device in planes above and below the pivot of the same, and a connection movably attached to 30 the remaining arm of the rocker and adapted to be united to the plunger of the pump or other device.

2. The combination with a motor, of a wheel adapted to be operated thereby and provided 35 with projections, an escapement device pivotally connected adjacent to the said wheel and adjustable to and from the latter, the said escapement device having oppositely-disposed pallets to engage the projections of the 40 said wheel and also provided with a lower extension with an angular extremity, a weight

adjustably mounted on the said angular extremity, a rod connecting the angular extremity and a part of the extension, a weight adjustable on the said rod, a rocker, links connecting opposite portions of the escapement 45 device and a connection also attached to the rocker and adapted to be secured to a plunger-rod of a pump or other device.

3. The combination with a motor, of a wheel 50 having projections extending therefrom, a pivotally-mounted carrier, an escapement device pivotally mounted on the carrier and having oppositely-disposed pallets to engage the projections of the said wheel, said escapement 55 device also being provided with lower adjustable weights, a rocker, links movably attached to the rocker and a connection secured to the rocker and adapted to be attached to the plunger-rod of a pump or other device. 60

4. The combination with a motor, of a wheel having projections extending outwardly therefrom, a pivotally-mounted carrier adjacent the said wheel, an adjusting device for shifting the said carrier, an escapement device 65 pivotally mounted on the carrier and provided with opposite pallets to engage the projections extending of said wheel, and also provided with lower adjustable weights, a brake for the said wheel, a rocker, links connected to the 70 rocker and the pallets on opposite sides of the axes of the said device, and a connection also attached to the rod and adapted to be secured to the plunger-rod of a pump or other device.

In testimony that I claim the foregoing as 75 my own I have hereto affixed my signature in the presence of two witnesses.

WILHELM WEINER.

Witnesses:

JOHN G. HILDER,  
JOHN D. KITE.