S. DOMINGUEZ.

POWER MECHANISM.

APPLICATION FILED JAN. 9, 1917.

1,227,593.

Patented May 29, 1917.

2 SHEETS—SHEET 1.

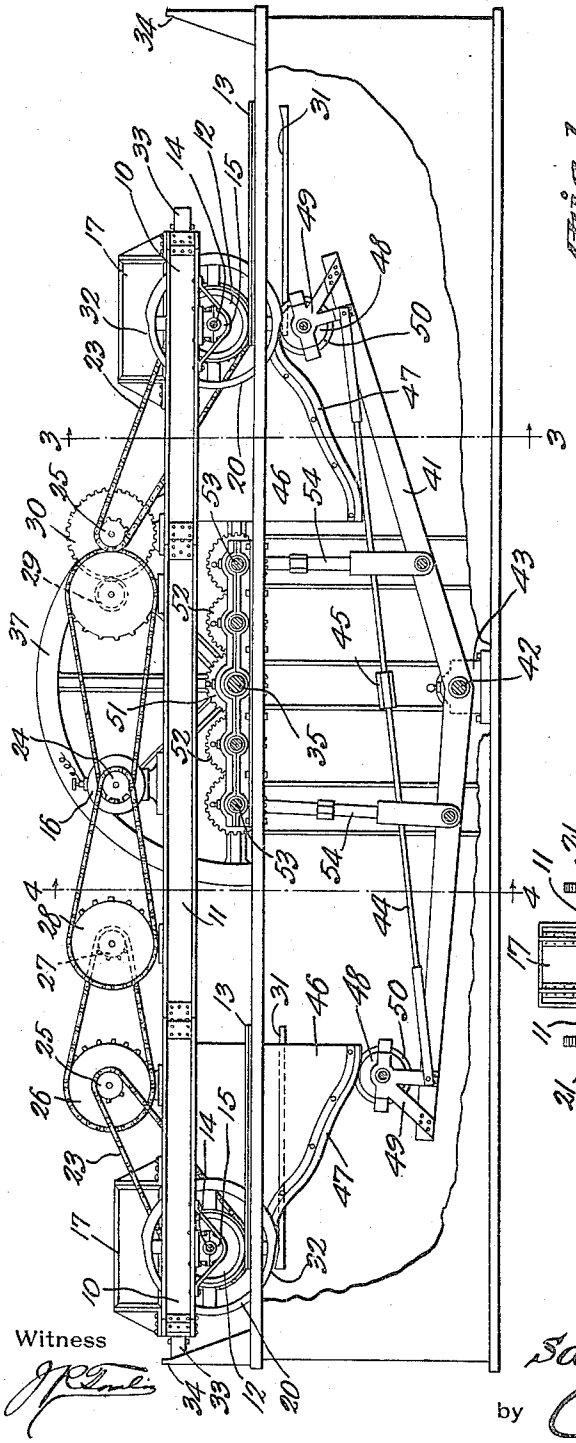


Fig. 1.

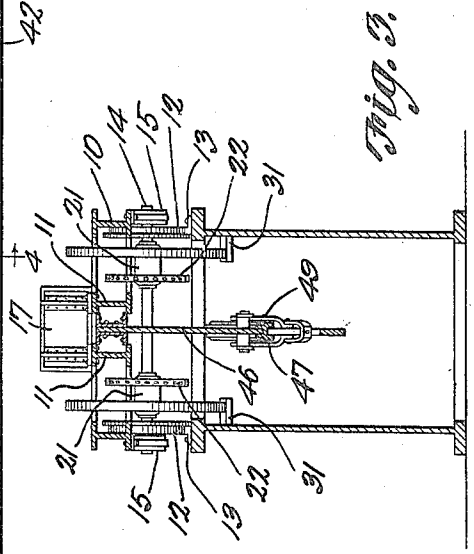


Fig. 3.

Witness

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2 SHEETS—SHEET 2.

Fig. 2.

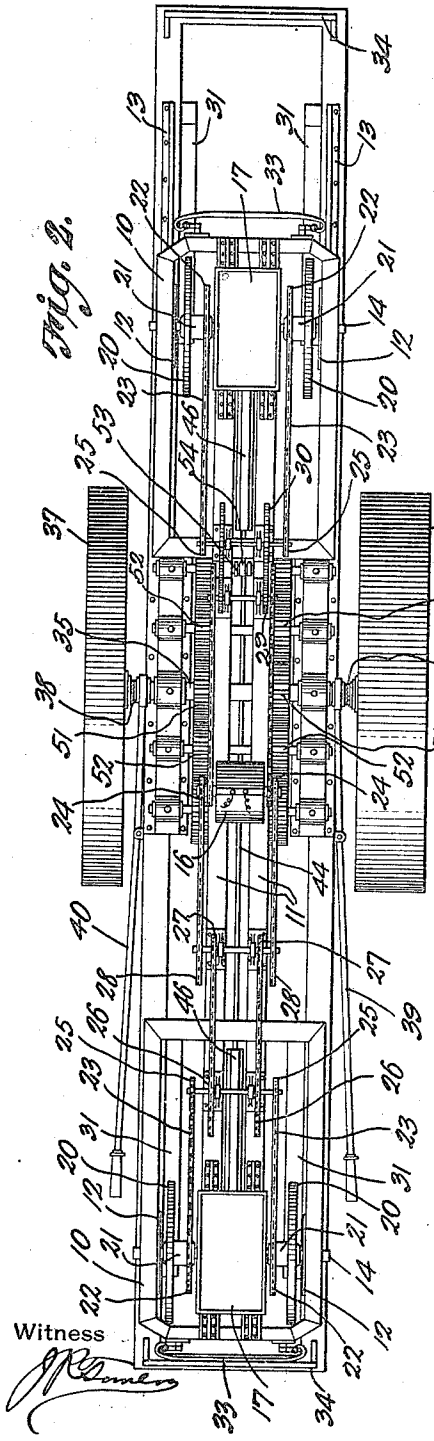


Fig. 3.

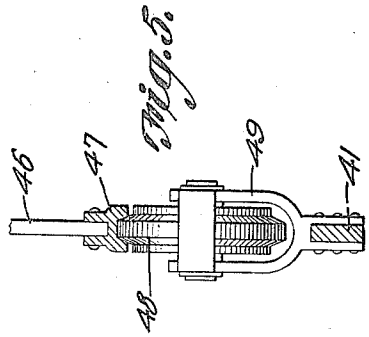
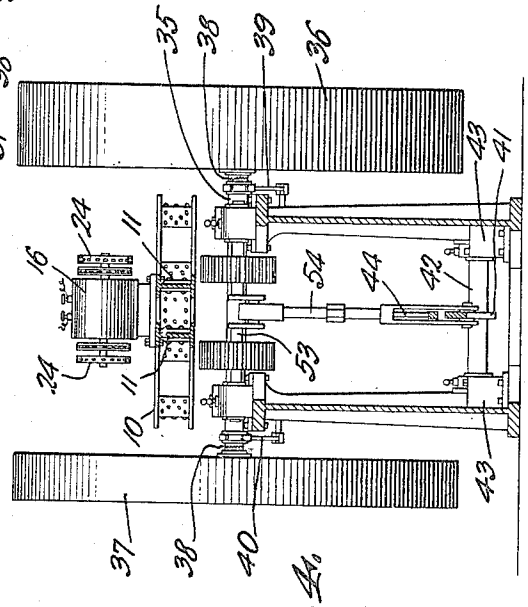


Fig. 4.



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UNITED STATES PATENT OFFICE.

SALVADOR DOMINGUEZ, OF SAN ANTONIO, TEXAS, ASSIGNOR TO MEXICA POWER-INCREASING MACHINE CO., OF SAN ANTONIO, TEXAS.

POWER MECHANISM.

1,227,593. Specification of Letters Patent. Patented May 29, 1917.

Application filed January 9, 1917. Serial No. 141,430.

To all whom it may concern:

Be it known that I, SALVADOR DOMINGUEZ, a citizen of Mexico, residing at San Antonio, in the county of Bexar and State of Texas, have invented a new and useful Power Mechanism, of which the following is a specification.

This invention relates to power mechanism of that type disclosed in Patent No. 1,199,164, issued to me on September 26, 1916.

One of the objects of the invention is to provide a comparatively simple mechanism for use in connection with a prime mover of any of the well known types using as a motive agent steam, oil, gas, electricity, etc., said mechanism being more particularly an improvement upon the patented structure herein referred to.

A further object is to increase the efficiency of the mechanism by rendering it more positive in operation, and by reducing the number of parts required in its construction.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, can be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings:—

Figure 1 is a side elevation of the power machine, the main fly wheel and a portion of the base being broken away.

Fig. 2 is a plan view of the machine.

Fig. 3 is a vertical section on line 3—3 Fig. 1.

Fig. 4 is a vertical section on line 4—4 Fig. 1.

Fig. 5 is a detail view showing the engagement between the rocker and one of its actuators.

The mechanism embodies essentially a motor car, actuated by a prime mover, a stator embodying a base or support and cooperating with the motor car, and transmission mechanism by which the power is conveyed to the driven element, from which it may be taken to perform the desired work.

In the illustrated embodiment of the invention the motor car which in this instance consists of a frame, having terminal trucks 10 suitably connected as by bars 11 and having bearing wheels 12, which are of the flanged type, having tires of rubber or other suitable material, to traverse tracks 13, supported by the base, said bearing wheels being secured to spindles 14 operating in bearing boxes 15 at opposite sides of each truck.

The motor car also includes a prime mover 16 which may be of any of the well known types, an electrically driven motor being shown in this illustration, which is carried by the connecting bars 11, between the trucks in common with weights suitably arranged in boxes 17, to secure the desired efficiency and operating effect, as will appear hereinafter. Driving wheels 20 are also mounted on the trucks, two for each truck; each driving wheel having a sleeve shaft 21 fitted upon the spindle 14 and carrying a toothed pulley or sprocket wheel 22 which is actuated through the medium of chains 23 and the necessary intermediate transmission gears 25, 26, 27 and 28 by the driving gear 24 of the prime mover. The direction of rotation of the driving wheels 20 on one truck is reversed through the installation of an intermediate gear transmission 29 and 30, so as to impart to the driving wheels at opposite ends of the motor motion in opposite directions; that is, from the top downward toward the prime mover.

These driving wheels contact peripherally with traction surfaces 31 secured permanently in the base and consisting, in the construction illustrated, of horizontal bars which are preferably superficially roughened to insure the proper advance of the motor car in one direction or the other.

It will be noted that with the construction so far described the rotation of the driving wheels is continuous, the set at one end of the motor car turning in the opposite direction from the set at the other end, and these driving wheels are designed to contact with their respective traction surfaces alternately in the required length. To accomplish this the necessary part of the periphery of each driving wheel is reduced in diameter or in other words, cut away, so

that throughout approximately one-half of the periphery of the wheel the latter is radially reduced as shown at 32. When the driving wheels of one truck are in contact with their traction surfaces they support the weight of the truck and the driving wheels of the other truck are out of contact and its weight is supported by the corresponding set of flanged bearing wheels 12. As the reduced portions of the sets of driving wheels face in the same direction, the motor car, by the operation of the driving wheels, shall be moved in one direction to the limit of its path and then the motion of its frame will be reversed by the action of the driving wheels of the other truck. It will be observed that the driving wheels 20 of the rear truck are the ones always engaged with the traction surface, thus pushing the car ahead and that the bearing wheels 12 are mounted as hereinbefore described to turn independently of the driving wheels.

In order to guard against injury to the base or the stationary portion of the mechanism, and at the same time to utilize the rebound and momentum incident thereto, the motor car is equipped at its extremities with buffer springs 33 which contact with the bumpers 34 erected at the extremities of the stator.

A driving shaft 35 is suitably mounted in the stationary frame to actuate main and auxiliary fly wheels 36 and 37, either or both of which may be engaged with the shaft, clutches 38, independently operable by levers 39 and 40, being employed for this purpose.

To make working power available, first start the prime mover which, through the proper transmission, sets the motor car in motion; then engage the auxiliary fly wheel with the driving shaft 35 employing lever 40, after which it is practicable to connect the main fly wheel, employing lever 39. To stop the machine, the reverse procedure should be followed.

Having now described the motor car and the means by which it is caused to reciprocate regularly throughout the length of the tracks provided for it, reference is made to the transmission mechanism by which motion is communicated from the motor car to the driving shaft or element, and which consists essentially of a rocker or walking beam 41 having a suitable spindle 42 mounted in box bearings 43; the rocker consisting of a single beam, the two arms of which radiate from the spindle at an angle to each other which makes practicable the connections and engagements of the rocker with the other working members of the machine, strengthened by a truss rod 44 attached at opposite ends of the rocker and having a turn buckle 45 or other suitable similar device for taking up tension. Rocker actuators 46 consisting of plates of metal are attached to the frame of the motor car near its extremities and extend downward, the lower edges being mounted with metal shoes 47, having a groove or channel track in which the reciprocating member of the rocker travels.

To diminish frictional resistance between the rocker and the rocker actuator's wheels 48 are mounted in suitable brackets 49 at each end of the rocker arms, which engage with the shoes of the rocker actuators; said wheels, as shown in the accompanying illustration, may be faced with solid rubber or other suitable material as at 50 to obviate noise.

Inasmuch as the rocker has an oscillatory movement while the path of the rocker actuator is rectilinear, the bearing faces of the shoes 47 have been developed along lines to insure constant proper contact between the parts.

Carried by the driving shaft 35 are gears 51, one or more of which may be used, and engaging therewith are gears 52 which are mounted in alinement and impart a continuous rotary motion to the gears 51 and hence to the driving shaft 35. Such motion is communicated thereto through the crank shafts 53 which in turn are connected with the rocker 41 through the medium of pitmen 54, adjustable as to length by means of turn buckles or other equivalents.

From the foregoing description it will be understood that the motor car receives its motion from the prime mover, the energy of which is communicated through the chains and transmission wheels to the driving wheels, located at opposite ends of the motor car frame and constructed and mounted to operate alternately and that during these movements in opposite directions the skates or rocker actuators carried by the motor car will act alternately upon the extremities of the rocker through the medium of the wheels mounted on the rocker arms, to cause an oscillatory movement of the rocker; and the movement of the rocker is communicated through the pitman and gears to the driving shaft to cause a continuous motion thereof in one direction.

What is claimed is:—

1. A power mechanism having a motor and a reciprocatory member, said motor having means for imparting reciprocatory movement to said member, a driven element, a rocker connected operably with said driven element, a rocker actuator fixedly attached to each end portion of the reciprocatory member, and friction reducing means engaged by the respective actuators and mounted on the end portions of the rocker.

2. A power mechanism having a motor and a reciprocatory member, said motor

having means for imparting reciprocatory movement to said member, a driven element, a rocker connected operably with said driven element, a rocker actuator fixedly attached to each end portion of the reciprocatory member, and friction reducing means engaged by the respective actuators and mounted on the end portions of the rocker, each of said actuators having a longitudinally grooved shoe for engagement with the friction reducing means.

3. A power mechanism having a motor and a reciprocatory member, said motor having means for imparting reciprocatory movement to said member, a driven element, a rocker connected operably with said driven element, a rocker actuator fixedly attached to each end portion of the reciprocatory member, and friction reducing means engaged by the respective actuators and mounted on the end portions of the rocker, each of said actuators having a longitudinally grooved shoe for engagement with the friction reducing means, each shoe having its active face developed along lines to insure constant contact with said friction reducing means.

4. A power mechanism having a motor including a reciprocatory member, a driven member, and power transmission mechanism including a rocker having a fulcrum, anti-friction wheels mounted on the rocker at opposite sides of the fulcrum, and shoes fixedly connected to the end portions of and movable with the reciprocatory element of the motor for engagement with the anti-friction wheels.

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

SALVADOR DOMINGUEZ.

Witnesses:

IVY E. SIMPSON,

PHILOMENA A. ROCKELLI.

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