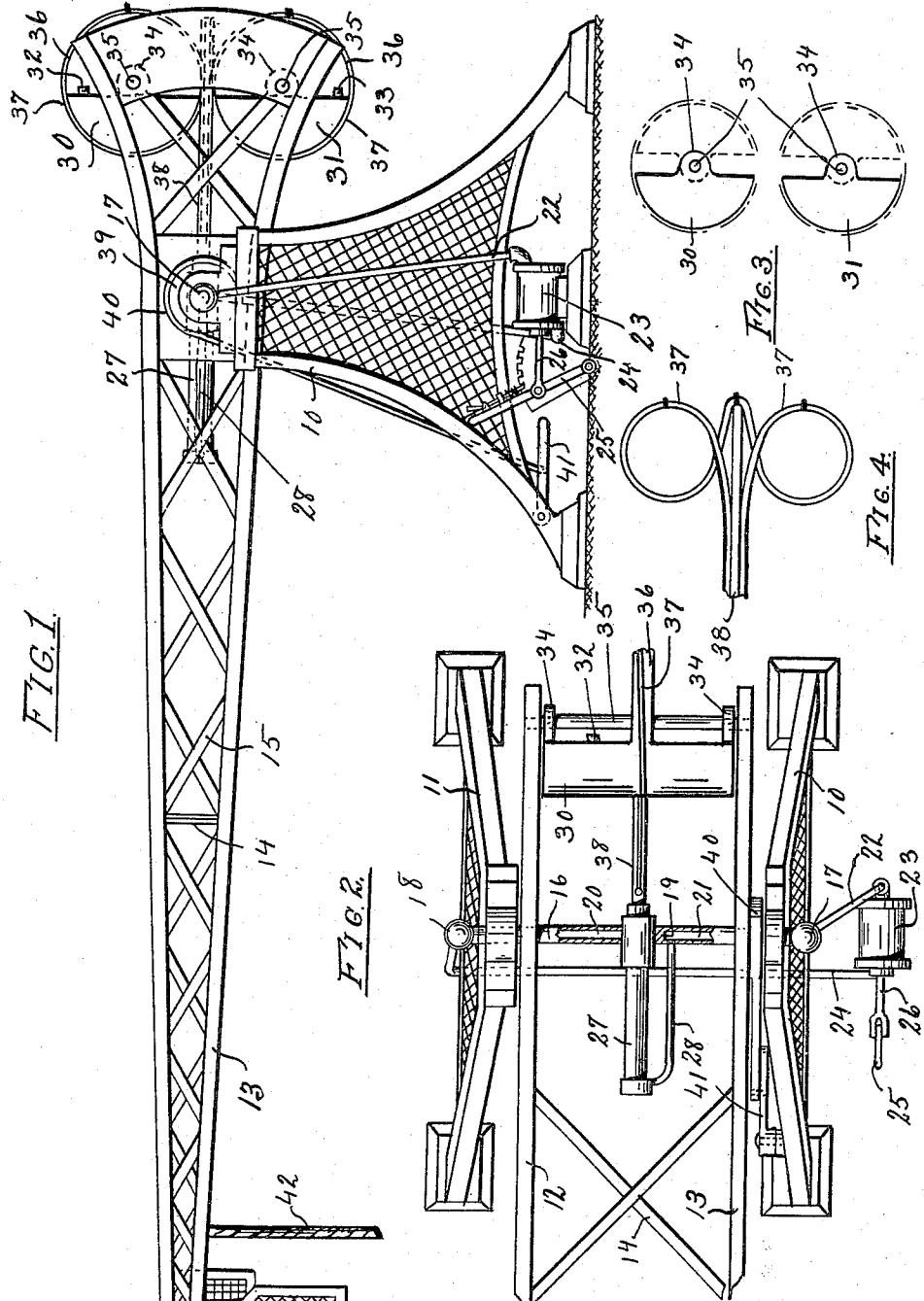


1,163,553.

W. N. PACKER.
SHIFTING WEIGHT POWER MACHINE,
APPLICATION FILED JAN. 12, 1915.

Patented Dec. 7, 1915.



WITNESSES

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SHIFTING-WEIGHT POWER-MACHINE.

1,163,553.

Specification of Letters Patent. Patented Dec. 7, 1915.

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To all whom it may concern:

Be it known that I, WILLARD N. PACKER, a citizen of the United States, residing at the city of Los Angeles, county of Los Angeles, State of California, have invented new and useful Improvements in Shifting-Weight Power-Machines, of which the following is a specification.

My invention relates to a machine in which power is generated by means of weights which are shifted from one position to another thereby increasing or decreasing the power of the machine, and the object thereof is to produce a machine, in which the weights are so arranged that but little energy is required to shift the position of the weights whereby the power of the machine is increased or diminished.

In the drawings forming a part of this application I have illustrated my invention as applied to an amusement device and will so describe it but do not desire to limit myself to such device as the power principle is applicable to many other uses.

Figure 1 is a side elevation of an amusement device for viewing the landscape with the parts thereof in their balanced position. Fig. 2 is a plan view of the operating part of the device. Fig. 3 is an end view of the weights detached. Fig. 4 is a diagrammatic view of a position of the weight operating mechanism.

In the drawings 10 and 11 are the side members of the base or supporting frame in which is mounted the movable frame which consists of the side members 12 and 13 and the transverse brace members 14 and side brace members 15. The movable frame is revolubly mounted intermediate its ends at the top of the base frame by a pipe 16 the ends of which project into caps 17 and 18. These caps are secured to the base frame and a fluid-tight joint is provided between pipe 16 and the caps but the interior of the caps and pipe are in communication. In pipe 16 preferably at the center is a partition 19 which divides the interior of the pipe into two chambers. Cap 17 is connected by pipe 22 with one end of a hydraulic pump 23. The other end of pump 23 is connected by pipe 24 with cap 18. Pump 23 is operated by lever 25 which is suitably connected to piston stem 26 of the pump. On pipe 16 preferably, at the center is mounted a two way hydraulic jack 27 one end of which is connected with chamber 20

and the other end of which is connected with chamber 21 by pipe 28.

In the longer end of the movable frame is mounted a swinging passenger cage 29. 60 In the shorter end of the movable frame are mounted the shifting weights 30 and 31. These weights comprise receptacles which are preferably constructed of sheet metal shaped into segments of hollow cylinders and form the jackets of the weights. The interior of each jacket is filled with suitable material, such as sand which has weight and is easily put into place after the sheet metal parts are positioned. Suitable filling ports covered by movable caps 32 and 33 are provided for that purpose. At each end of the jackets are ears 34 by means of which the weights are pivotally mounted on the shorter end of the movable frame by shaft 35. Extending centrally from the edges of the weights are cable carrying frames 36 which with the curved surfaces of the jackets form circles. Weight operating cables 37, one for each weight 80 pass around frames 36 and the weights to which they are attached and have the ends secured to the stem 38 of the hydraulic jack 27. One end of each of these cables is secured to the stem of the jack at the outer end thereof and the other end is secured to the stem of the jack at such distance from the outer end that the travel of the jack stem from its outermost to its innermost points will cause the rotation of the weights a half 90 turn. They are also secured to each carrying frame at one point to prevent slipping. A brake drum 39 is secured to the moving frame around pipe 16 and a brake band 40 passes around said drum, one end of which 95 is secured to the base frame and the other to brake lever 41 mounted on said base frame.

In the operation of my apparatus as a pleasure device with the parts in the position of Fig. 1 they balance. By means of a rope 42 the cage is brought to the ground and the desired load of passengers enters the cage. The weights are then shifted to their outermost position which is directly opposite the position shown in Fig. 1. In this position the weights have a little greater lifting power than the weights of the load and the resistance caused by the friction of the moving parts. The bearings will be ball bearings to reduce the friction to the minimum. The cage in its upward move-

ment and the weights in their downward movement will acquire a momentum, and after the cage passes the vertical it will become the power and the weights the load or resistance. At a certain point the operator shifts the weights slightly toward their innermost position and the cage will then come to the ground. To prevent too rapid movement either up or down brake lever 10 41 is operated. The operator then shifts the weights to their outermost position when the cage travels back. The operation is repeated as often as desired.

A derrick for unloading or loading ships 15 can be constructed by using the cage to transport the freight. Water buckets can be used instead of the cage to lift water from one elevation to another.

It will be seen that by shifting the position of the weights from their innermost toward their outermost positions the lifting power of the weighted end of the lever increases until the maximum power is reached by the weights attaining their outermost 25 position. It will also be observed that the weights are connected so as to move together and that one moves downwardly thereby producing power while the other moves upwardly thereby requiring power to lift 30 it, but the power produced by the downwardly moving weight produces the power to lift the other weight and as the weights are balanced against each other, to shift the weights it is only necessary to use enough 35 power to overcome the friction and inertia of the movable parts.

Having described my invention what I claim is:

1. In a power machine a movable lever 40 pivoted intermediate its ends; two weights shiftably mounted on one of the ends of said lever at points equidistant from the fulcrum of said lever, said lever being balanced

when said weights are shifted to their innermost position; and means for shifting the positions of said weights.

2. In a power machine a base frame; a movable frame pivotally mounted intermediate its ends in said base frame; two weights shiftably mounted on one of the ends of 50 said movable frame at points equidistant from the pivot of said movable frame; a load carrying attachment on the other end of said movable frame, said movable frame being so mounted in said base frame that 55 when the weights thereon are shifted to their innermost position the parts are balanced; a brake on said movable frame; and means to shift said weights.

3. In a power machine a base frame; a 60 movable frame pivotally mounted intermediate its ends in said base frame; two weights shiftably mounted on one end of said movable frame at points equidistant from the pivot of said movable frame; a 65 load carrying attachment on the other end of said movable frame, said movable frame being so mounted in said base frame that when the weights thereon are shifted to their innermost position the parts are balanced; 70 a brake on said movable frame; and a hydraulic jack mounted on said movable frame and operatively connected to said weights, whereby when said jack is operated said weights can be shifted; and a hydraulic 75 pump operatively connected to said jack whereby said jack may be operated in either of two directions, by operating said pump.

In witness that I claim the foregoing I have hereunto subscribed my name this 15th 80 day of December, 1914.

WILLARD N. PACKER.

Witnesses:

FRANK WATERFIELD,
G. E. HARPHAM.

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