

June 19, 1923.

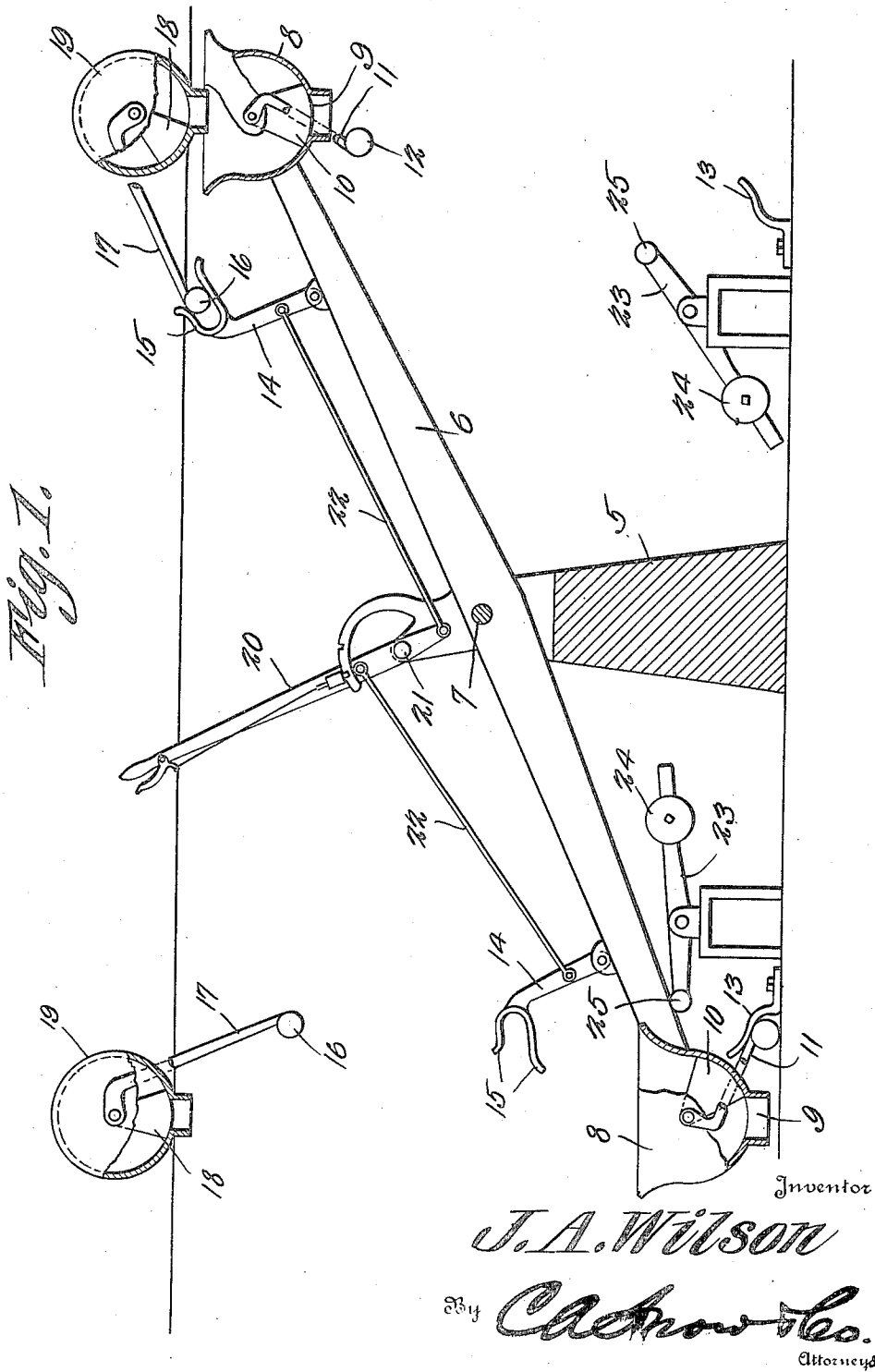
J. A. WILSON

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WALKING BEAM SYSTEM FOR PUMPING WATER

Filed June 8, 1922

2 Sheets-Sheet 1



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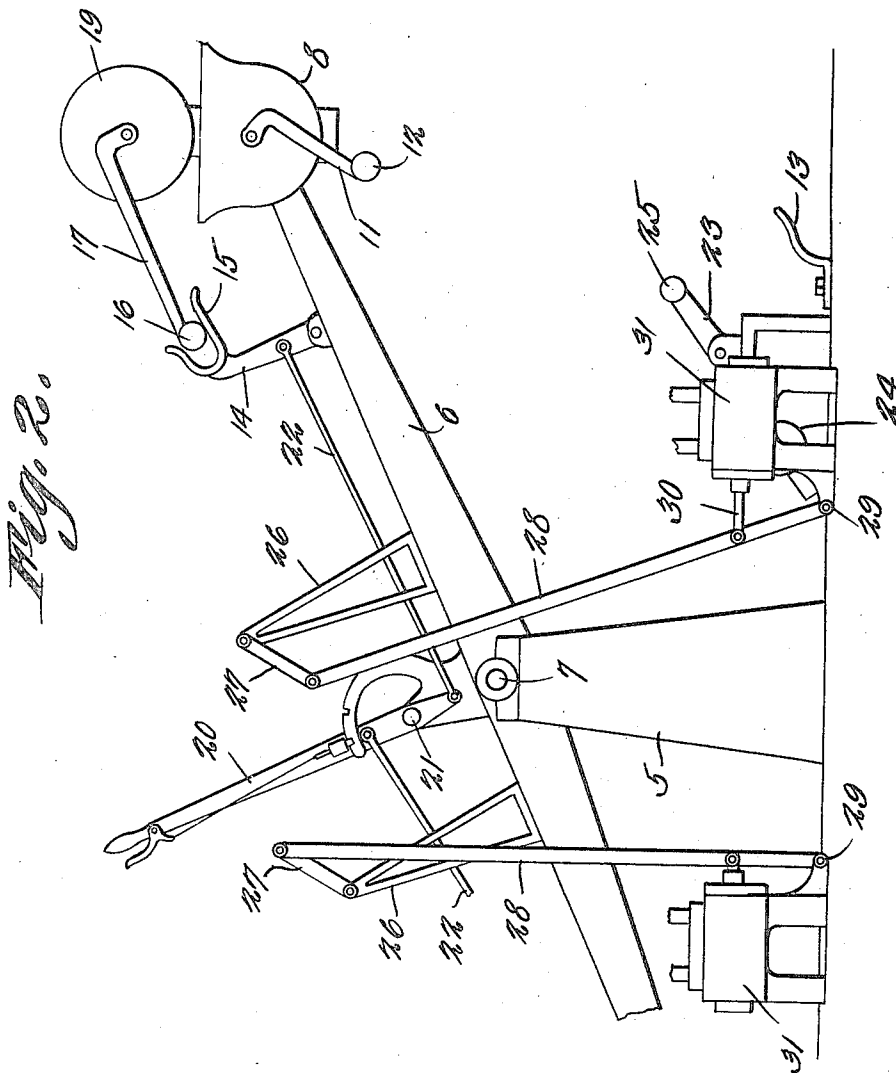
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE.

JOHN A. WILSON, OF BEAUMONT, TEXAS.

WALKING-BEAM SYSTEM FOR PUMPING WATER.

Application filed June 8, 1922. Serial No. 566,795.

To all whom it may concern:

Be it known that I, JOHN A. WILSON, a citizen of the United States, residing at Beaumont, in the county of Jefferson and State of Texas, have invented a new and useful Walking-Beam System for Pumping Water, of which the following is a specification.

This invention relates to weight motors, and aims to provide novel means for utilizing the weight of predetermined volumes of water for oscillating an arm, to generate power.

Another object of the invention is to provide means for controlling the passage of fluid to and from the buckets which are arranged at the free ends of the arm, thereby making the operation of the arm, continuous.

A still further object of the invention is the provision of means for restricting movement of the walking beam, to relieve the bearing thereof of undue strain caused by the bucket contacting with the tripping mechanism, forming an important feature of this invention.

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, may be made within the scope of what is claimed, without departing from the spirit of the invention.

Referring to the drawings:

Figure 1 is a side elevational view of a pivoted arm supporting buckets at the ends thereof, the buckets being shown as partly broken away.

Figure 2 is an elevational view disclosing the application of the structure.

Referring to the drawings in detail, the reference character 5 designates the support for the arm or walking beam which is indicated at 6.

The upper portion of the support 5 is cut away to provide a clearance for the arm 6, a pivot rod 7 being provided to support the arm 6.

As shown, the arm 6 is pivotally supported intermediate its ends and carries the buckets 8 at the outer ends thereof, which

buckets are especially constructed and are formed with openings 9 in the bottoms thereof. The upper portion of each bucket is open to permit fluid to pass thereinto, a valve member 10 which is of the sliding type, being provided in each bucket for controlling the passage of fluid therefrom. Carried by each valve member 10 is an arm 11 which carries a ball 12 at the free end thereof, the ball being of a construction to fit under the operating arm 13 which is supported at the base of the device, for holding the arm in a position to open the valve member 10 and allow fluid to pass therefrom.

Mounted on the arm 6 at points adjacent to the free ends thereof are the pivoted controlling arms 14, each of which being provided with spaced fingers 15 adapted to receive the balls 16 formed on the free ends of the arms 17, which arms control the movements of the valve members 18 associated therewith, which in turn control the passage of fluid through the pipe 19 so that the fluid will be discharged into the buckets supported thereunder, at intervals.

A controlling lever 20 is supported at 21 and has connection with the rods 22 which in turn are connected to the arms 14, whereby movement of the lever 20 will result in a relative movement of the arm 14 to move the same into and out of the paths of travel of the arms 17 to control the movement of the arms 16.

In order that the movements of the arm 6 will be restricted, pivoted arms 23 are provided, which arms carry adjustable weights 24 at one of the ends thereof, the opposite ends of the arms having an extension 25 adopted to contact with the arm C when the same reaches the limit of its downward movement.

Thus it will be seen that as the arm moves downwardly and contacts with the extension 25, of one of the arms 23, the weight is moved upwardly, to the end that a downward movement of the arm is restricted.

As shown by Figure 2 of the drawings, brackets 26 are supported on the arms 6, each of which supports an arm 27 that in turn has connection with the upper end of the arm 28, associated therewith. These arms 28 have their lower ends pivoted as at 29 and have connection with horizontal piston rods 30 that operate in suitable cylin-

ders 31. Thus it will be seen that as the arm 6 is moved, the rods 30 are reciprocated in their cylinders for pumping.

In the operation of the device, the pipes 19 are in communication with a suitable source of fluid supply. As shown by Figure 1 of the drawings, the bucket at the upper end of the arm 6 is receiving fluid from the pipe 19, the arm 14 having been moved to a position to contact with the arm 17 to open the valve member 18. As the water fills the bucket 8, the weight of the water in the bucket overbalances the weight of the empty bucket at the opposite end of the arm 6, to the end that the arm 6 pivots downwardly, the empty bucket moving to a position to receive fluid from the pipe 19 at the opposite side of the motor.

As the bucket which has been filled, descends, the ball 12 moves under the controlling arm 13 to the ends that the valve member 10 is operated to release the fluid contained in the bucket. While this bucket is discharging, the bucket at the opposite end having been raised, is being filled, and when the weight of the water in this bucket overcomes the weight of the empty bucket, the arm again swings to repeat the operation.

Having thus described the invention, what is claimed as new is:—

In a device of the character described, an arm pivotally supported intermediate its ends, buckets supported at the ends of the arm, valve members operating in the buckets, means for controlling the movements of the valve members to cause them to automatically discharge the contents of the buckets, pipes disposed above the buckets and having discharge openings arranged to discharge fluid into the buckets, valve members for controlling the passage of fluid through the pipes, weight controlled arms for normally holding the valves in their closed positions, pivoted controlling arms supported on the first mentioned arm, and adapted to contact with the weight controlled arms to move the valve members controlling the passage of fluid through the pipes, and means for adjusting the last mentioned arms to cause the operation of the valves in the pipes, at predetermined intervals.

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

JOHN A. WILSON.

Witnesses:

F. M. SHEFFIELD,
JOHN D. MCCALL.