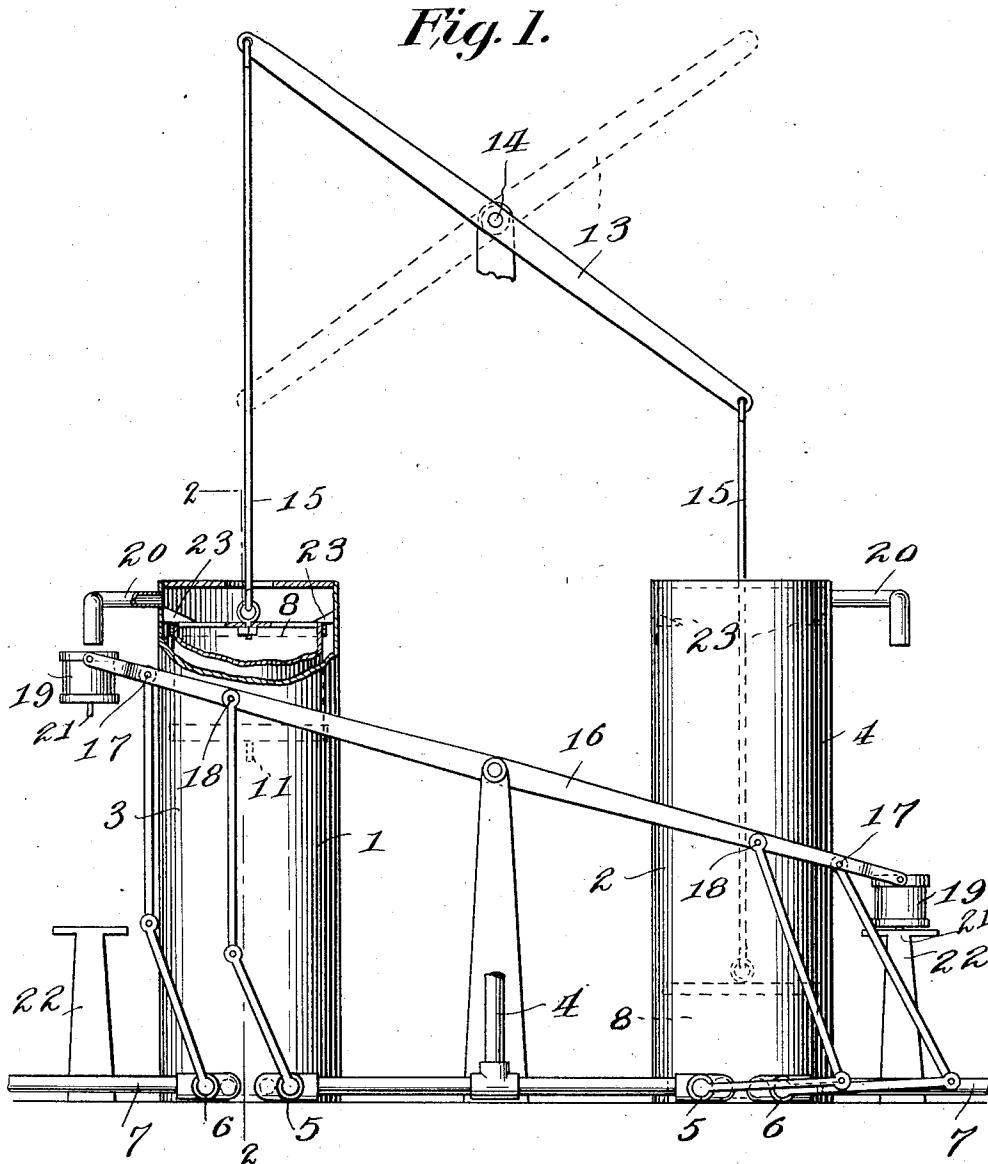


J. R. NEVERS.
HYDRAULIC MOTOR.
APPLICATION FILED AUG. 26, 1911.

1,058,785.

Patented Apr. 15, 1913.

2 SHEETS—SHEET 1.



Inventor

John R. Nevers

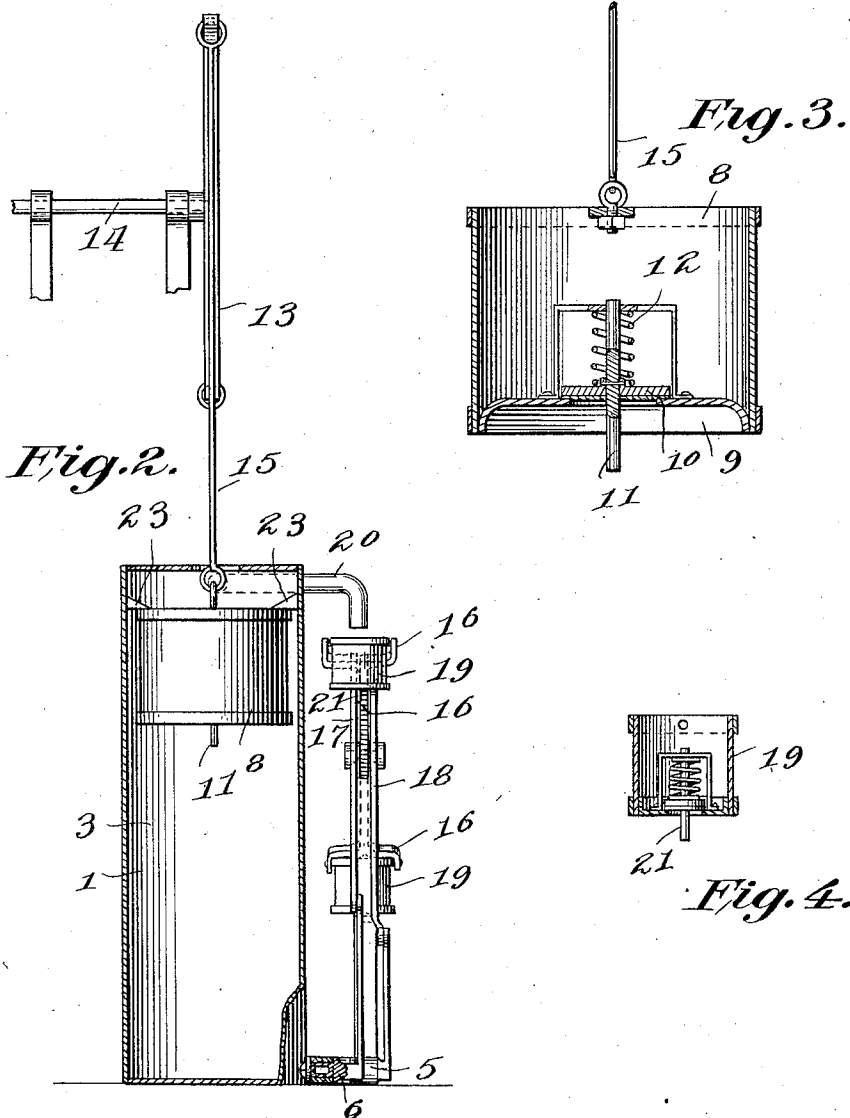
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James A. Moore

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Attorney

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UNITED STATES PATENT OFFICE.

JOHN R. NEVERS, OF GULFPORT, MISSISSIPPI.

HYDRAULIC MOTOR.

1,058,785.

Specification of Letters Patent.

Patented Apr. 15, 1913.

Application filed August 26, 1911. Serial No. 646,100.

To all whom it may concern:

Be it known that I, JOHN R. NEVERS, a citizen of the United States, residing at Gulfport, in the county of Harrison and State of Mississippi, have invented new and useful Improvements in Hydraulic Motors, of which the following is a specification.

This invention relates to hydraulic motors, and certain objects of the invention are to provide means which will include a battery of pumps having oppositely reciprocating pistons which are operatively connected with a driving rocking member adapted to impart oscillatory movements to a shaft, from which latter the power derived from the pump pistons can be converted into rotary motion in any suitable well known manner and utilized for motor or machine driving purposes or the like.

Other objects of the invention are to provide a weight-controlled valve actuating mechanism for governing the alternate admission of water to the pump cylinders and the exhaust of the water therefrom, and the construction of the mechanism and pump respectively, whereby the water after rising to a predetermined level will be conveyed to the mechanism to operate the same.

In the drawings, forming a portion of this specification and in which like numerals of reference indicate similar parts in the several views: Figure 1 is a side view of the apparatus. Fig. 2 is a vertical section therethrough on the line 2—2 of Fig. 1. Fig. 3 is an enlarged section through one of the floats. Fig. 4 is an enlarged section through one of the buckets.

My improved motor comprises substantially identically constructed pumps 1 and 2 each including a vertical cylinder 3 which is closed at both ends. A main supply pipe 4 opens into the pump cylinders 3 at their lower ends, the said supply pipe being provided with automatically controlled inlet valves 5 to permit of the introduction of water to the cylinders. Similar valves 6 are located in the exhaust or discharge pipes 7 which are located in the bottom of the pump cylinders.

A float 8 is mounted in each pump cylinder, being adapted for reciprocatory movement therein, and as illustrated, each float is provided with a concaved bottom 9 in which is mounted a centrally disposed valve 10 having a stem 11 which extends below the plane of the bottom of the float so as

to be engaged by the bottom of the pump cylinder on the downward limit of the movement of the float. A strong spring 12 operates to hold the valve normally in a closed position, it being understood that the strength of the spring is such as to prevent the valve from opening in the initial upward movement of the float and to permit the opening of the same on a predetermined position of the float. A driving rocking lever 13 is mounted in suitable bearing members above the pump cylinder and is connected with an oscillatory shaft 14. The floats 8 are adapted to reciprocate in opposite directions in the pump cylinders, and as illustrated, they are operatively connected, at 15, to the opposite ends of the rocking lever 13.

The valve actuating mechanism comprises a rocking lever 16 which is operatively connected, at 17 and 18, respectively, to the inlet and exhaust valves 5 and 6, respectively, of the pump cylinders, being adapted to alternately actuate the valve to govern the inlet and the exhaust of the water. The rocking lever 16 is provided at its ends with fixed buckets 19 which are movable in the direction of the overflow pipes 20 at the top of the pump cylinders. These buckets are provided with inwardly opening valves 21 which are adapted to be actuated by the fixed obstructing or controlling members 22 which may be located adjacent to the pump cylinders and mounted thereon, if desired, in any suitable manner.

In operation of the apparatus water is alternately admitted by way of the valves 5 to the pump cylinders 1 and 2, respectively. When the water rises in the cylinders the floats 8 will be moved upwardly into positions where they will engage the stops 23 which are located within the cylinders and disposed below the plane of the overflow members 20. When the floats have reached the just described positions, the valves 11 are opened automatically under the pressure of the rising water so as to permit the floats to be filled with water and weighted thereby so as to return to their initial positions at the bottom of the pump cylinders. As the water will overflow from the cylinders before the floats 8 become weighted, the water will be conveyed to the buckets 19 so as to actuate the rocking lever 16 and thereby alternately control the exhaust valve 6. From this construction it will be seen that on the

rise of the float in one cylinder and on the introduction of water therinto, the companion cylinder will have been operated so as to permit of the exhaust of the water therefrom, whereby a continuous oscillation of the levers 13 and 16, respectively, is effectively obtained. It will of course be understood that displacement of the water in the buckets 19 is obtained through the contact of the valves 21 with the members 22.

I claim:

1. A hydraulic motor comprising cylinders having oppositely reciprocating floating receptacles therein, each receptacle being provided with an automatically controlled valve operating to permit fluid to enter the receptacle on movement of the same to a predetermined position in its cylinder, means for controlling the inlet and exhaust of the fluid to and from the cylinders, overflow pipes projecting from the cylinders and disposed above the said receptacles, and means controlling the first mentioned means and including a pair of oppositely movable receptacles located exterior of said cylinders and movable in direction of said pipes and operated on overflow of the said fluid therefrom.

2. A hydraulic motor including a cylinder, means for controlling the admission of water to the cylinder, a floating receptacle mounted within the cylinder and adapted to be moved in one direction by water flowing

into the cylinder, a valve inlet in the receptacle, means adapted to limit the movement of the receptacle so as to permit the water entering the cylinder to unseat the valve and to enter the receptacle, means controlling the escape of water from the cylinder and including a movable receptacle located exterior thereof, said receptacle being provided with a valve in the bottom thereof, and a fixed controlling member for the said valve located adjacent said cylinder and in the path of said receptacle, and adapted to operate said valve upon movement of the last mentioned receptacle in one direction.

3. A hydraulic motor including a cylinder, a floating valve receptacle movable in the cylinder, means for limiting the movement of the said receptacle, means for regulating the inlet and outlet of the water from the cylinder, the valve in said receptacle being adapted to be opened by the inflow of the water in the cylinder when the receptacle reaches the limit of its movement, and means for governing the inlet and the exhaust of water to and from the cylinder on the rise and fall of the water in the cylinder.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN R. NEVERS.

Witnesses:

T. W. MILNER,
L. B. JOSE.

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