

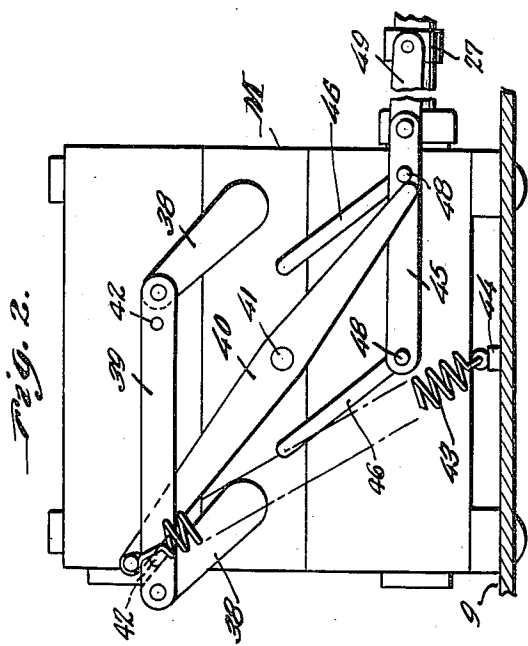
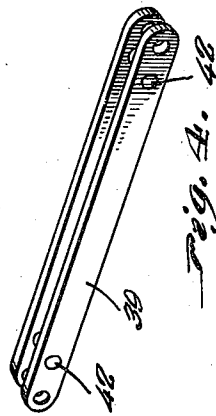
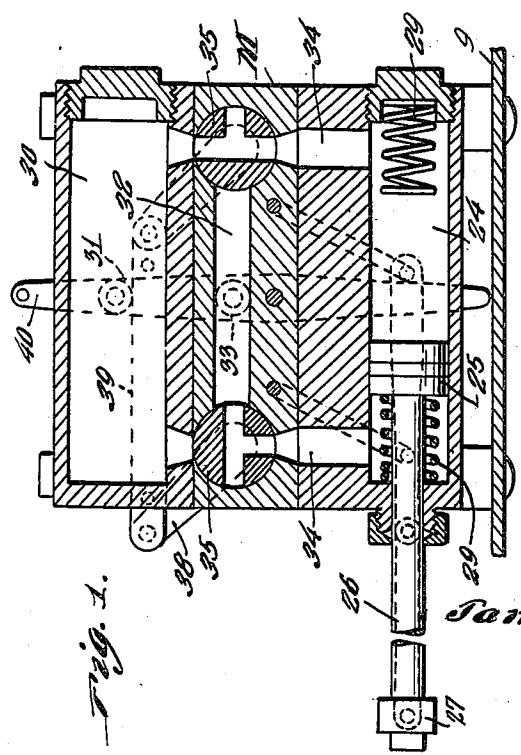
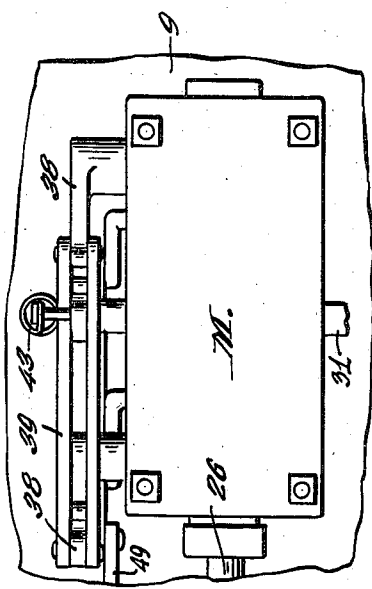
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J. W. BROCKSON

2,283,313

HYDRAULIC MOTOR

Filed March 11, 1940



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HYDRAULIC MOTOR

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1 Claim. (Cl. 121-164)

This invention relates to a hydraulic motor, the general object of the invention being to provide a motor having a cylinder, a piston in the cylinder, a pressure chamber and an outlet chamber with valve means actuated by the movement of the piston rod for alternately supplying liquid under pressure from the pressure chamber to one end of the cylinder and connecting the opposite end to the outlet chamber.

The invention is mainly designed for use for reciprocating a cutter of a mowing machine though it can be used for reciprocating any other member.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts to be hereinafter fully described, illustrated in the accompanying drawing and specifically pointed out in the appended claim.

In describing the invention in detail, reference will be had to the accompanying drawing wherein like characters denote like or corresponding parts throughout the several views, and in which:

Figure 1 is a vertical sectional view through the motor.

Figure 2 is a view looking toward the rear side of the motor and its associated parts.

Figure 3 is a plan view of the motor.

Figure 4 is a perspective view of the double link forming a part of the motor.

As shown in the drawing a motor M is supported on a base 9 and said motor includes a lower cylinder 24 containing a piston 25, the rod 26 of which passes through the outer end of the cylinder 24 and is connected to a bracket 27 attached to the knife or cutting bar of the moving machine or other member to be actuated by the motor so that as the piston 25 is reciprocated the knife or cutting bar or other member is also reciprocated. A spring 29 is arranged in each end of the cylinder 24 and these springs act as shock absorbers for the movements of the piston. The motor also includes a top chamber 30 into which leads a pipe 31 which is connected with a source of liquid under pressure and the motor also includes an intermediate chamber 32 from which leads an exhaust pipe 33 so that this pipe 33 acts to return the oil or other liquid from the motor back to the supply. A pair of conduits or passages 34 are formed in the motor and connect the ends of the chamber 30 with the ends of the cylinder 24 and enlarged portions of the passages are formed at the ends of the chamber 32 for receiving the valves 35 which are formed with the T-shaped

ports as shown so that in one position of the valves the chamber 30 is in communication with one end of the cylinder 24 to supply fluid under pressure thereto while the other end of the cylinder 24 is connected by the opposite valve with the chamber 32 so that the fluid being forced from the cylinder by the piston 25 will pass through the lower part of the last-mentioned conduit 34 and through its valve 35 into the chamber 32 and then will pass from the chamber through the pipe 33 back to the supply.

The valves 35 are automatically reversed by the reciprocatory movement of the rod 26 in the following manner.

Upwardly extending arms 38 are connected with the valves 35 exteriorly of the motor and said arms are connected together by a pair of links 39, see Figure 4, and a lever 40 pivoted at its center to a part of the motor as shown at 41 has its upper end extending between the links 39, stop pins 42 passing through end portions of the links for the upper end of said lever 40. A coiled spring 43 has one end connected with the upper end of the lever 40 and its other end to a bracket 44 on base 9 and said bracket 44 which is located in the plane of the pivot 41 so that the spring will tend to move the lever 40 and therefore the links 39 and the valves 35 after the lever 40 has passed from one position to a position slightly past dead-center or a vertical position so that the spring tends to hold the valves in either the position shown in Figure 1 or in a position where the valves are reversed from the position shown in Figure 1. A horizontally arranged bar 45 is supported for swinging movement by the links 46 having their lower ends pivoted to the bar 45 and their upper ends pivoted in a part of the motor and said bar 45 is formed with the spaced pins 48 for engaging the lower end of the lever 40. A link 49 connects the outer end of the bar 45 with a pivot on the bracket 27 to which the piston rod 26 is connected.

Thus as the piston 25 and the parts attached thereto move outwardly the link 49 will exert a pull upon the bar 45 so that one of the pins 48 will engage the lower end of the lever 40 so that the lever is shifted to a vertical position and then the spring 43 will continue movement of the lever to reverse the valves through means of the links 39. Then as the piston 25 with the parts attached thereto move inwardly the link 49 will move the bar 45 to the left in Figure 2 so that the pin 48 engaging the lower end of the lever 40 will shift the lever 40 to vertical

position and then the spring 43 will swing the lever over to the opposite position to again reverse the valves. In this manner the compressed fluid in chamber 30 is caused to impart a reciprocatory movement to the piston 25 and, therefore, to the knife or cutting bar of the cutting assembly.

It is thought from the foregoing description that the advantages and novel features of the invention will be readily apparent.

It is to be understood that changes may be made in the construction and in the combination and arrangement of the several parts provided that such changes fall within the scope of the appended claim.

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

A hydraulic motor comprising a cylinder, an inlet chamber and an outlet chamber located between the first chamber and the cylinder and said motor having passages therein connecting

the ends of the first chamber with the ends of the outlet chamber and the ends of the cylinder, valves in the ends of the outlet chamber having T-shaped ports therein which in one position of the valves connect the first chamber with the cylinder and in another position connect the cylinder with the outlet chamber, a piston in the cylinder, an arm connected with each valve and located exterior of the motor, a link connecting the arms together, a lever pivoted intermediate its ends to an exterior part of the motor, stops on the link for engagement by the upper end of the lever, a spring for moving the lever in either one of its two positions for shifting the valves, after the lever passes dead center, a sliding bar having stops thereon for engaging the lower end of the lever and means for reciprocating the bar from the piston to cause the stops thereon to actuate the lever.

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