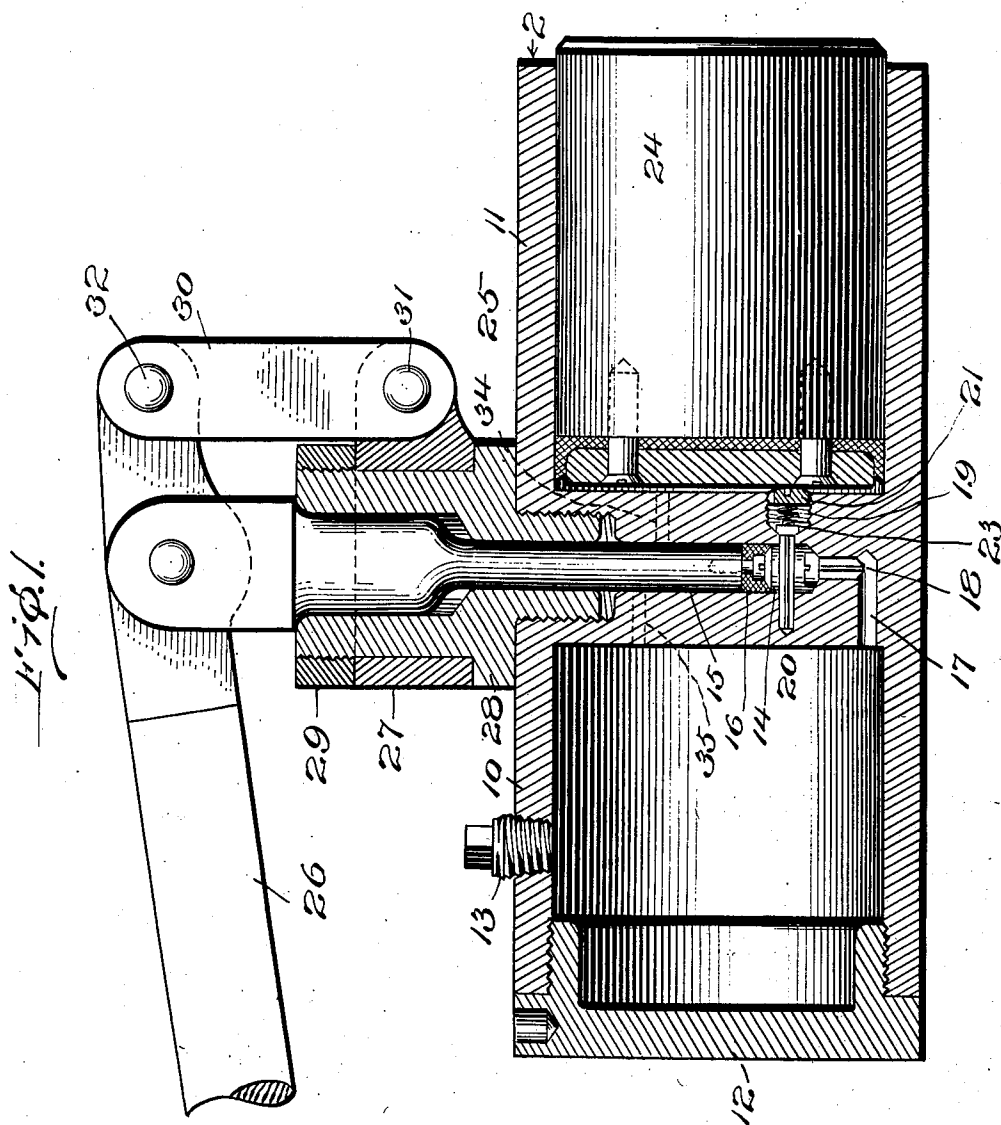


H. CORDELL.
HYDRAULIC JACK.
APPLICATION FILED MAR. 12, 1912.

1,032,993.

Patented July 16, 1912.

2 SHEETS—SHEET 1.



Witnesses

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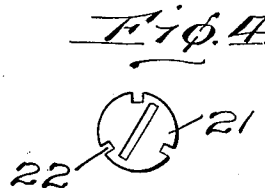
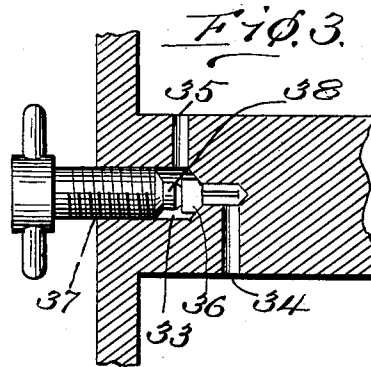
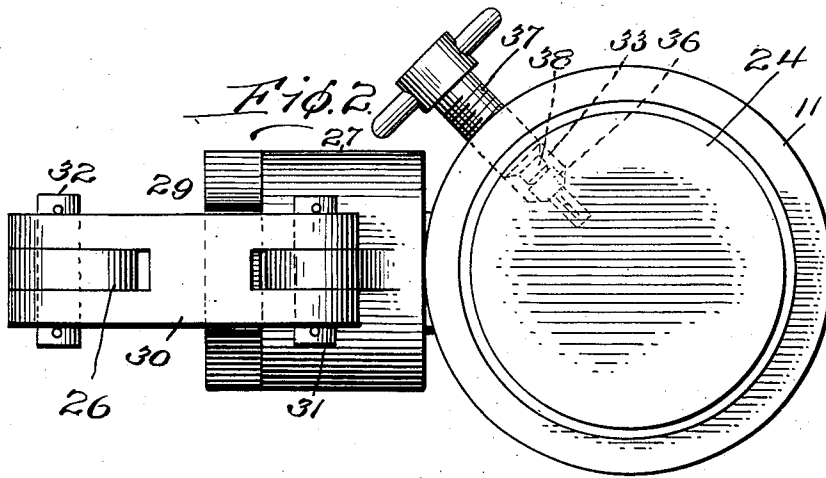
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UNITED STATES PATENT OFFICE.

HENRY CORDELL, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO CHARLES CORDELL, OF RUBY, MONTANA.

HYDRAULIC JACK.

1,032,993.

Specification of Letters Patent. Patented July 16, 1912.

Application filed March 12, 1912. Serial No. 633,369.

To all whom it may concern:

Be it known that I, HENRY CORDELL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Hydraulic Jacks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to hydraulic jacks and has for an object to provide a jack of the kind embodying new and improved features of convenience, reliability and strength.

A further object of the invention is to provide improved means for forcing the liquid from the reservoir to the cylinder and improved means for permitting the return of the liquid from the cylinder to the reservoir.

With these and other objects in view the invention comprises certain novel constructions, combinations and arrangement of parts as will be hereinafter more fully described and claimed.

In the drawings:—Figure 1 is a longitudinal diametrical sectional view of the improved jack. Fig. 2 is an end view of the jack as indicated by arrow 2 of Fig. 1. Fig. 3 is a sectional detail view of the passage from the cylinder to the reservoir and the controlling means. Fig. 4 is a detail view of the orificed screw at the passage from the reservoir to the cylinder.

Like characters of reference indicate corresponding parts throughout the several views.

The body of the improved jack comprises a preferably integral structure embodying the reservoir 10 and cylinder 11. The reservoir 10 is provided with a screw head 12 with a screw cap 13 for the introduction of the liquid under ordinary conditions. Between the reservoir 10 and cylinder 11 a smaller cylinder 14 is located in which reciprocates a plunger 15 carrying a packing 16 at its lower end. The cylinder 14 communicates with the reservoir 10 through a passage 17 controlled by a valve 18 and also communicates with the large cylinder 11 through a passage 19 controlled by a valve 20. The valve 20 is held in position by a screw 21 shown in end elevation at Fig. 4, orificed as at 22 to permit the passage of

fluid into the large cylinder 11 and serving also to maintain a spring 23 in position to hold the valve 20 yieldingly to seat. Within the large cylinder 11 a ram 24 is mounted to reciprocate, carrying at its inner end a packing 25 which forms a fluid-tight engagement with the walls of the cylinder 11.

To actuate the plunger 15 a lever 26 is mounted upon the structure by means of a collar 27 rotatably mounted upon the block 28 held in such position rotatably by a screw nut 29. The lever 26 is connected with the collar 27 by means of a link 30 pivoted to the collar as at 31 and to the lever as at 32.

In the diaphragm between the reservoir 10 and large cylinder 11 a socket 33 is formed communicating through the passage 34 with the large cylinder 11 and through the passage 35 with the reservoir 10. Within the socket 33 a valve 36 is located adapted to close such passage and controlled by a screw 37 having an extremity 38 proportioned to engage upon the head of the valve 36 and hold it firmly to seat.

In operation the jack is preferably employed with the reservoir end upwardly and the ram 24 engaging upon a firm base. The lever 26 is then turned by use of the collar 27 to the most convenient location and is oscillated to reciprocate the plunger 15. Liquid from the reservoir 10 is thereby drawn through the passage 17 and forced through the passage 19 into the large cylinder 11 and by reason of the greater area of the ram 24 the force applied to the lever 26 is multiplied in the well known manner.

When it is desired to return the plunger to position the screw 37 is loosened to unseat the valve 36 and the weight of the device forces the liquid through the passages 34 and 35 into the reservoir. If the jack can be removed from the position in which it is employed in lifting it will be found advantageous to invert the jack standing it with the reservoir end downwardly and force the plunger to seat manually.

I claim:—

1. In a hydraulic jack, an integral body comprising a reservoir at one end, a cylinder at the opposite end and a diaphragm in the body separating the reservoir and cylinder, a ram mounted in the cylinder and a plunger disposed between the reservoir and cylinder within the diaphragm adapted to

draw liquid from the reservoir and force it into the cylinder.

2. In a hydraulic jack, an integral body structure comprising a reservoir at one end, a cylinder at the opposite end and a diaphragm in the body separating the reservoir and cylinder, a ram located to reciprocate in the cylinder, a plunger mounted to reciprocate within the diaphragm between the reservoir and cylinder and adapted to draw liquid from the reservoir and force it into the cylinder, a lever for actuating the plunger, and means permitting the rotation of the lever around the plunger as a center.

3. In a hydraulic jack, an integral body comprising a reservoir at one end and a

cylinder at the opposite end separated by a diaphragm and with passage communicating through the diaphragm between the reservoir and cylinder, valves located in the passage, a plunger mounted within the diaphragm communicating with the passage and adapted to draw liquid from the reservoir into the passage and force it from the passage into the cylinder, and a lever rotatably mounted to actuate the plunger.

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

HENRY CORDELL.

Witnesses:

AUG. F. NUNTZ,
ED. BAHR.