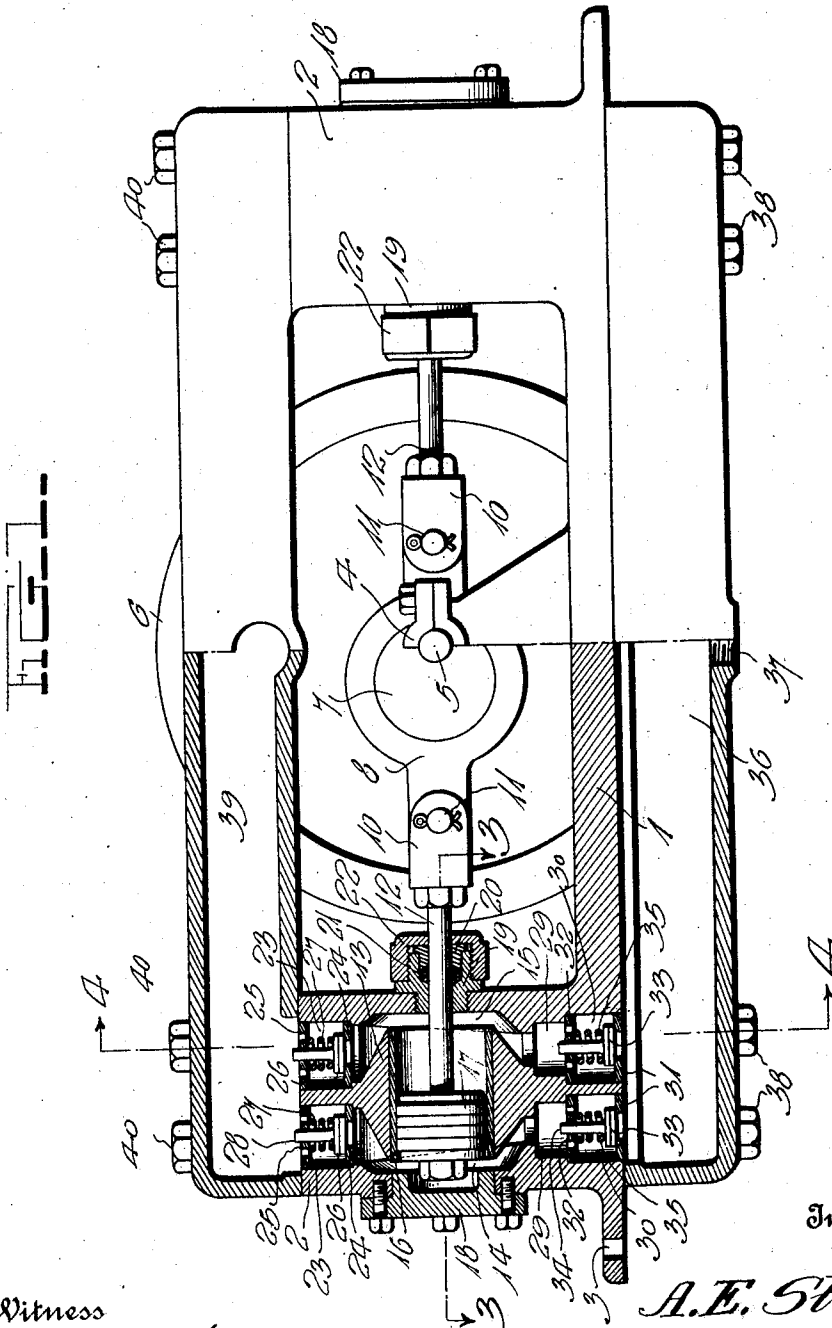


A. E. STANLEY.
PUMP.
APPLICATION FILED NOV. 29, 1920.

1,388,780.

Patented Aug. 23, 1921.
2 SHEETS—SHEET 1.



Witness
H. Woodard

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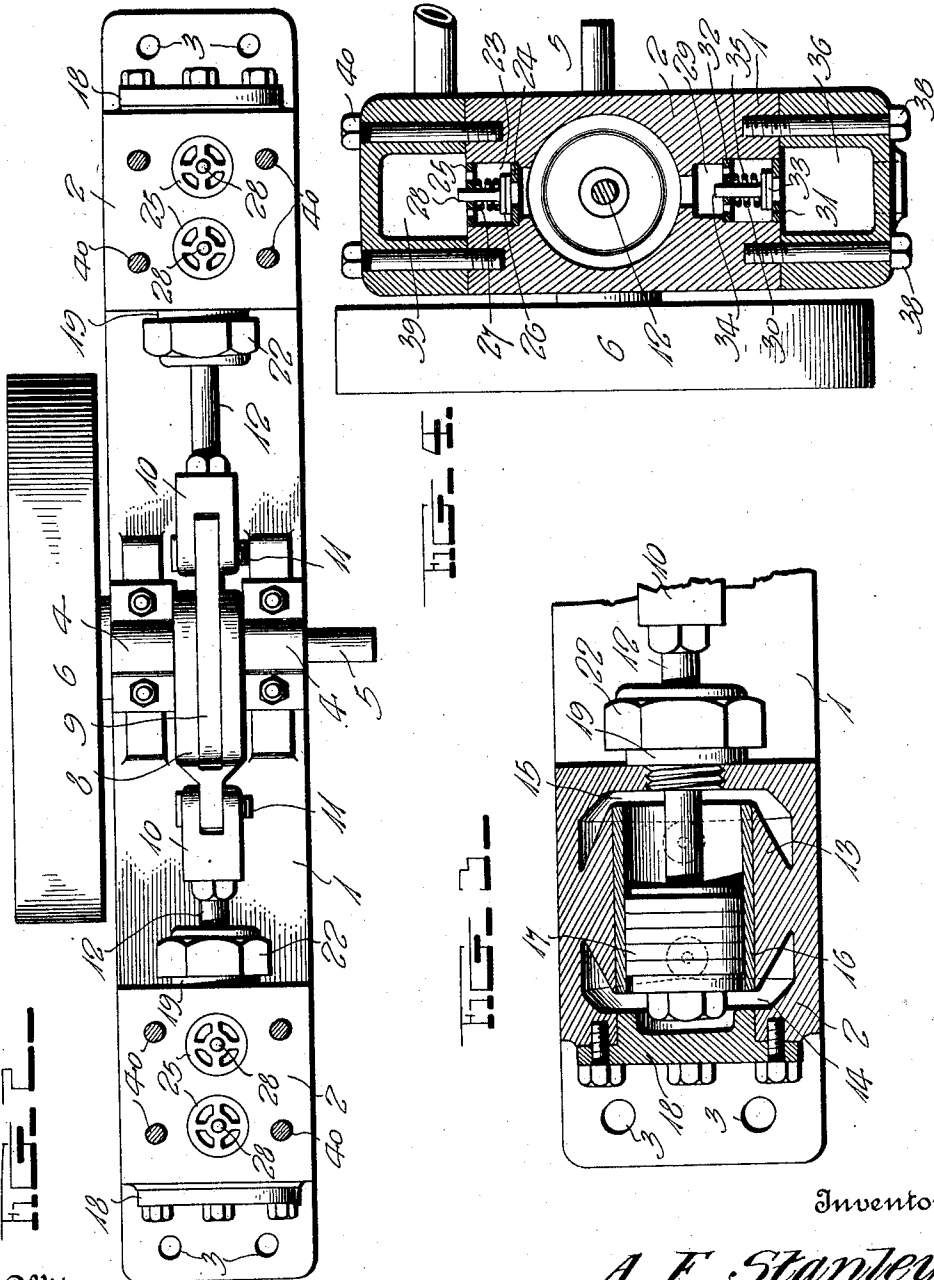
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UNITED STATES PATENT OFFICE.

ARTHUR E. STANLEY, OF ELKHART, INDIANA.

PUMP.

1,388,780.

Specification of Letters Patent. Patented Aug. 23, 1921.

Application filed November 29, 1920. Serial No. 427,058.

To all whom it may concern:

Be it known that I, ARTHUR E. STANLEY, a citizen of the United States, residing at Elkhart, in the county of Elkhart and State of Indiana, have invented certain new and useful Improvements in Pumps; and I do 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 an improved pump and one object of the invention is to provide a pump having the pump body provided with an improved construction whereby opposed pump bodies may be placed upon opposite sides of an actuating mechanism and between a suction chamber and a discharge chamber, with the two chambers serving to brace the pump bodies and inclosing the valve mechanism of the bodies whereby the valves may be easily and quickly removed and cleaned or repaired by simply removing the suction chamber or discharge chamber.

Another object of the invention is to so construct the pump that the piston of each pump body may be slidably mounted in a cylinder which extends longitudinally of the pump body with its end portions communicating with chambers in the inner and outer end portions thereof, the chambers have valve controlled ports leading through the upper and lower ends of the pump body and communicating with the interiors of the suction chamber and discharge chamber.

Another object of the invention is to provide a pump which will be double acting and will be simple in construction and not liable to readily get out of order.

This invention is illustrated in the accompanying drawings, wherein:

Figure 1 is a view showing the improved pump partially in side elevation and partially in longitudinal vertical section.

Fig. 2 is a view showing the improved pump partially in top plan with the discharge chamber or manifold removed and partially in longitudinal transverse section.

Fig. 3 is a longitudinal transverse sectional view taken along the line 3—3 of Fig. 1.

Fig. 4 is a vertical sectional view taken along the line 4—4 of Fig. 1.

This pump is provided with a base 1 which carries the pump bodies 2 located adjacent the ends of the base with the end portions

of the base extending beyond the pump bodies and provided with openings 3 through which fasteners will be passed. Bearings 4 are carried by the base intermediate the pump bodies and these bearings rotatably support a shaft 5 upon which will be mounted a fly wheel 6. An eccentric or disk 7 is mounted upon the shaft 5 between the bearings 4 and has mounted thereon a strap 8 and a second strap 9 each of which is provided with a neck loosely connected with a fork 10 by means of a knuckle pin 11. These forks 10 are carried by the piston rods 12 and from an inspection of Fig. 1 it will be readily seen that when the pump is in operation and the shaft 5 rotated, the piston rods will be moved longitudinally of the base in opposite directions.

Each of the pump bodies is provided with a cylinder 13 which extends longitudinally of the pump body and terminates short of the inner and outer walls thereof and serving not only as a cylinder but further as a partition dividing the pump bodies into end compartments 14 and 15. The outer wall of the pump body is open so that the lining or bushing 16 may be placed in the cylinder and the piston 17 put in place and this open end is closed by the removable cylinder cap or head 18. In order to provide a tight packing around the piston rod 12 there has been provided a flange which includes the flared nut 19 screwed into a threaded opening formed in the inner wall of the pump body, a gland 20 which engages the packing 21 and a packing nut 22 which when screwed tight will force the gland 20 inwardly and thus tightly compress the packing about the piston rod. It will thus be seen that the pump body is so constructed that the piston can be easily put in place through the opening in the outer wall and the cylinder head then put in place, the packing, gland 20 and packing nut being then put in place and tightened and the piston rod connected with its fork.

The upper end of the pump body has been provided with ports 23 which form outlets for the compartments 14 and 15 and each of these compartments is provided with a valve seat 24 and a perforated guide plate 25, a valve 26 being placed in the port and yieldably held in a closed position by the spring 27 which is positioned about the valve stem 28. This stem 28 extends through the guide plate 25 and thus guides the movement

of the valve when opening and closing. The lower end of the pump body is also provided with ports 29 which have enlarged lower end portions forming valve chambers 5 30 in each of which will be placed a valve seat 31 and a guide plate 32. The valve 33 which controls passage of fluid through the ports 29 is placed between the valve seat 31 and the guide plate 32 and provided with 10 a stem 34 which passes through the guide plates 32 and has the springs 35 placed about it and engaging the guide plate and the valve so that the valve is yieldably held in a closed position.

15 A suction chamber 36 which forms an inlet manifold and is provided with an inlet opening 37 extends longitudinally of the base beneath the same and is secured by removable fasteners 38 so that the suction 20 chamber can be removed when desired. From an inspection of Fig. 1, it will be seen that the suction chamber incloses the valve controlled ports 29 which extend through the lower ends of the pump bodies and that 25 therefore when the pump is in operation fluid in the suction chamber can be drawn through the ports 29 into the compartments 14 and 15. A discharge chamber or manifold 39 extends longitudinally of the pump 30 and has its end portions resting upon and secured to the upper ends of the pump bodies by the removable fasteners 40, the end portions of the discharge chamber inclosing the valve controlled outlet ports 23 35 which extend through the upper ends of the pump bodies.

When this pump is in operation, the shaft 5 is rotated by any suitable means and as this shaft rotates reciprocating movement is 40 imparted to the piston rods 12 with the rods moving in opposite directions. As each piston reciprocates in its cylinder, fluid from the suction chamber will be drawn into the lower end portions of the compartments 14 45 and 15 and forced out through the upper end portions thereof, the fluid being drawn into one compartment while it is being forced out of the second compartment. The discharge chamber or manifold serves not 50 only as a manifold but also as a brace for the upper ends of the pump bodies. When it is necessary to clean or repair the pump, the two chambers 36 and 39 can be removed and access may be had to the valves. By 55 removing the cylinder heads access may be had to the interiors of the cylinders and the pistons removed by disconnecting the piston rods from the forks and drawing the pistons out through the open ends of the cylinders. 60 A pump has thus been provided which will be very easy to clean and repair and which will be very strongly braced against vibration.

I claim:

65 1. A pump comprising a base, opposed

pump bodies carried by said base and held in spaced relation thereby, each pump body having a cylinder extending longitudinally through the same and communicating with chambers at the inner and outer ends of the 70 pump body, the chambers extending annularly about the end portions of said cylinder and provided with ports leading through the upper and lower ends of the pump body, a suction chamber removably carried by the 75 base and inclosing the ports at the lower ends of the pump bodies, a discharge manifold removably connected with and bracing the pump bodies and inclosing the ports at the upper ends of the pump bodies, remov- 80 able heads for the outer ends of said cylinders, valve elements in said ports yieldably held in a closed position and removable when the suction chamber and discharge manifold are removed, pistons in said cylin- 85 ders having shafts extending through the inner walls of the pump bodies, and actuating means connected with piston shafts.

2. A pump comprising a base, opposed 90 pump bodies carried by the base in spaced relation, actuating means mounted between the pump bodies, each pump body having a cylinder extending longitudinally through the same and communicating with chambers at the inner and outer ends of the pump 95 body, each chamber having ports extending through the upper and lower ends of the pump body, a suction chamber removably carried by the base and inclosing the ports at the lower ends of the pump bodies, a dis- 100 charge chamber removably carried by and bracing the pump bodies and inclosing the ports in the upper ends thereof, valve seats removably mounted in said ports, guides in 105 said ports, valves between said guides and seats and yieldably held in engagement with the seats, guides and valves being removable through the upper and lower ends of the pump body when the suction and discharge 110 chambers are removed, and pistons in said cylinders having shafts extending through the inner ends of the pump bodies and connected with said actuating means.

3. A pump including pump bodies having 115 compartments in their inner and outer end portions and each having a cylinder extending between and communicating with the end compartments, the pump bodies being further provided with valve controlled ports 120 in their upper and lower ends communicating with the end compartments and openings through the upper and lower ends of the pump bodies, valves in said ports removable through the upper and lower ends of the 125 pump bodies, pistons sliding in the cylinders and having shafts extending through the inner walls of the pump bodies, a suction chamber having its end portions removably connected with the lower ends of said pump 130

bodies and inclosing the ports therein, a discharge chamber having its end portions removably connected with the upper ends of the pump bodies and inclosing the ports therein, and operating means between the pump bodies connected with the piston shafts.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ARTHUR E. STANLEY.

Witnesses:

W. R. BERON,
GEORGE W. STANLEY.