(No Model.)

P. E. JAY.

PUMP.

No. 265,607. Patented Oct. 10, 1882.

Fig. 1.

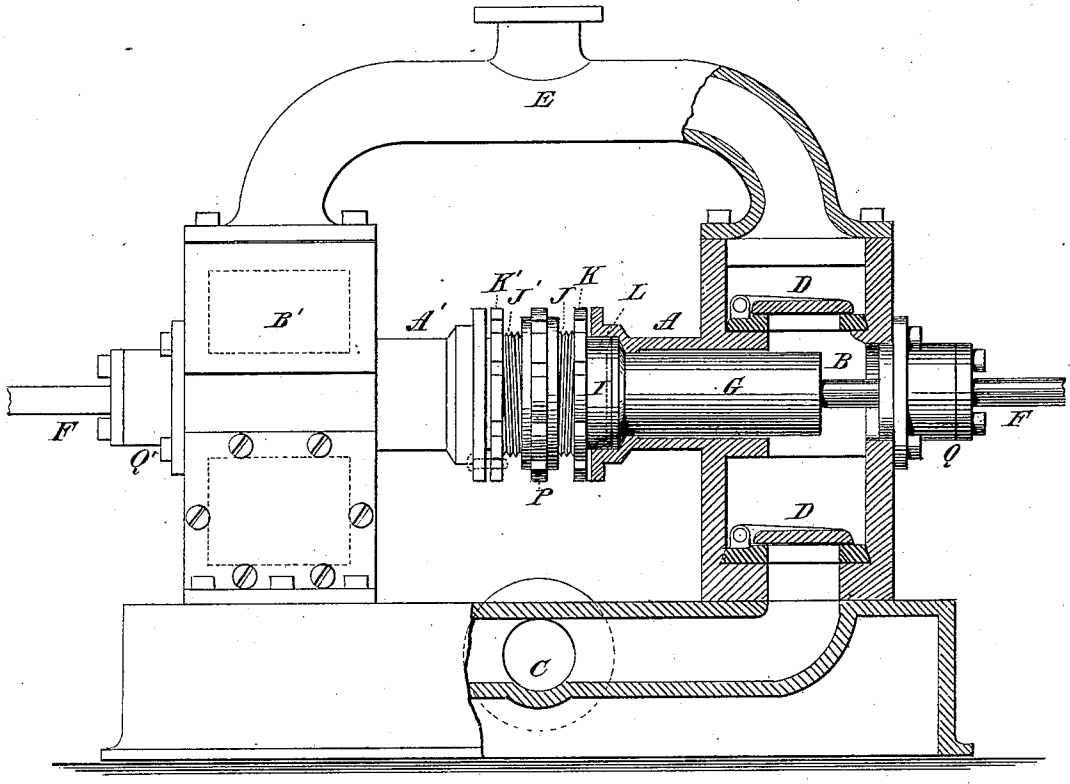


Fig. 2.

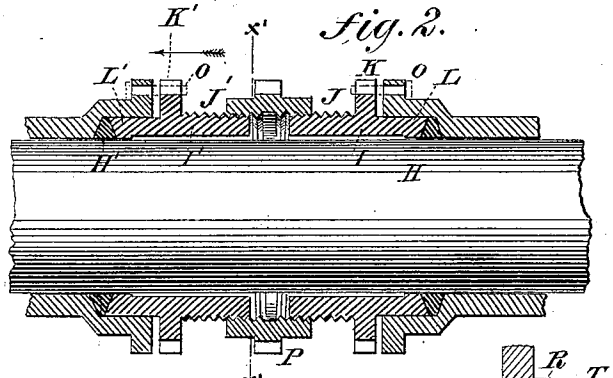


Fig. 3.

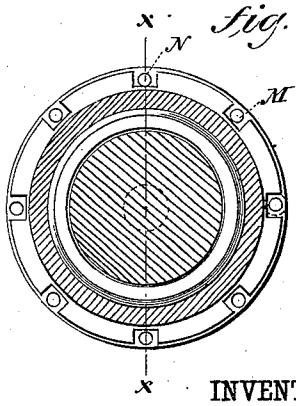
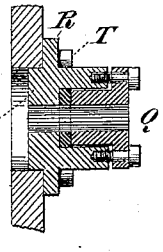


Fig. 4.



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UNITED STATES PATENT OFFICE.

PIERRE E. JAY, OF NEW YORK, N. Y.

PUMP.

SPECIFICATION forming part of Letters Patent No. 265,607, dated October 10, 1882.

Application filed July 12, 1882. (No model.)

To all whom it may concern:

Be it known that I, PIERRE E. JAY, of the city, county, and State of New York, have invented a new and useful Improvement in Pumps, of which the following is a specification.

The invention relates to the construction of pumps having reciprocating plungers or pistons, and more especially to that class of pumps in which a single plunger moves in two cylinders having their opposite ends in juxtaposition, and the axial line of one cylinder being a prolongation of the axial line of the other.

The object of the invention is, first, to provide a snug packing for the plunger, constituting the only bearing of the latter during its motion, and, second, a detachable stuffing-box at the outer end of the cylinder, by removing which access is easily had to the interior of the pump-cylinder or to the plunger, and to enable the latter to be taken out.

The invention consists in a novel combination of parts, whereby the packing may be easily adjusted to fit the circumference of the plunger, or whereby the packing may be conveniently removed and replaced, and also in the detachable stuffing-box, as before described.

In the accompanying drawings, Figure 1 is a side elevation of the pump with certain portions broken away and shown in section. Fig. 2 is a longitudinal vertical section on line *x x* of Fig. 3, through the inner ends of the cylinders, glands, and collars, showing also the plunger in place. Fig. 3 is a vertical transverse section on line *x' x'* of Fig. 2. Fig. 4 is a vertical longitudinal section of the detachable stuffing-box.

Similar letters of reference indicate corresponding parts.

A and A' are the pump cylinders or barrels, placed horizontally with their inner ends facing, and arranged the one on a prolongation of the axial line of the other. Said cylinders communicate with the valve-chambers B B', and are substantially formed in and with said chambers, as shown. C is the suction-pipe. D D are the valves in chamber B. E is the delivery-pipe. F is the plunger-rod, and G is the plunger, which is contained in both of the cylinders A and A' and reciprocates therein. The inner ends of the cylinders A and A' are provided with flanges, and are enlarged to receive the packing H H' and glands or covers I I'. The gland I is formed with a screw-threaded portion, J, a collar, K, and a plain portion, L, the last-mentioned part entering the cylinder end, as shown in Fig. 2, and pressing with its inclined edge upon the packing H. The gland I' has the parts J', K', and L' constructed similarly to the parts J K L of the gland I, except that the screw-thread on the part J is in a reverse direction from the screw-thread on the part J'. Around the edge of the collars K K' are formed recesses M, and in the flanges on the inner ends of the cylinders A and A' are made numerous holes, N, Fig. 3.

In Fig. 2 I have shown by dotted lines at O pins or bolts passing through the holes N and entering the recesses M. The object of these pins is, when they are inserted, as shown, to prevent the turning or rotating of the glands I and I'. The screw-threaded ends J J' of the glands I I' enter in opposite sides of a nut, P. Said nut is also formed with a collar having recesses around its periphery to conveniently receive a spanner or other implement for turning the nut.

The packing H H' may be of any suitable material capable of being expanded against the periphery of the plunger when the glands are forced inward to compress it.

The operation of the device is as follows: The pins O being inserted, as described and as shown in Fig. 2, and the glands I I' being thus prevented from rotating, the nut P is turned. The screw-threads on the parts J J' entering said nut being in opposite directions, it follows that when the nut is rotated in one way both glands I I' will be forced outward or into the cylinders A and A', and when it is turned the other way said glands will be drawn inward or out of the cylinders. Hence in order to compress both packings H H' uniformly and simultaneously, thus expanding the same to press tightly around the plunger G, it is simply necessary to turn the nut P in the proper direction.

At Q Q' are shown detachable stuffing-boxes, the interior construction of which is plainly indicated in the sectional view Fig. 4. Through each box the plunger-rod F passes. Each box is provided with a flange, R, and a circular por-

tion, S, which enters a circular aperture in the adjacent valve-chamber, said aperture having its center coincident with the axial line of the cylinders. Bolts T pass through the flange R and into the side of the valve-chamber B and secure the box in place, and similar devices are arranged with the box Q'. By removing said bolts the box is easily taken off, when access may be had through the circular opening to the interior of the valve-chamber and cylinder, thus enabling the plunger to be removed therefrom when desired.

It will be seen that a pump thus constructed may have its plunger-packing kept tight without necessitating the removal of any parts or interfering with the working of the machine, while access is had to the interior for cleaning, removal of obstructions, repairs, &c., with great ease.

What I claim as my invention is—

1. The combination of two pump cylinders or barrels placed with their ends in juxtaposition and arranged one on the prolongation of the axial line of the other, the glands inserted in the proximate ends of said cylinders and provided with reverse screw-threads, the packing between said glands and the cylinders, and the nut receiving the screw-threaded portions of both glands, substantially as described.

2. The combination of the two pumps, barrels, or cylinders, as described, the glands, the packing, the nut, and the pins O, substantially as described.

3. In a pump, the combination of the two pump-cylinders A A', the glands I I', packing H H', and nut P, substantially as described.

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