(No Model.)

P. E. JAY.

Pump.

No. 234,407. Patented Nov. 16, 1880.

Fig 1.

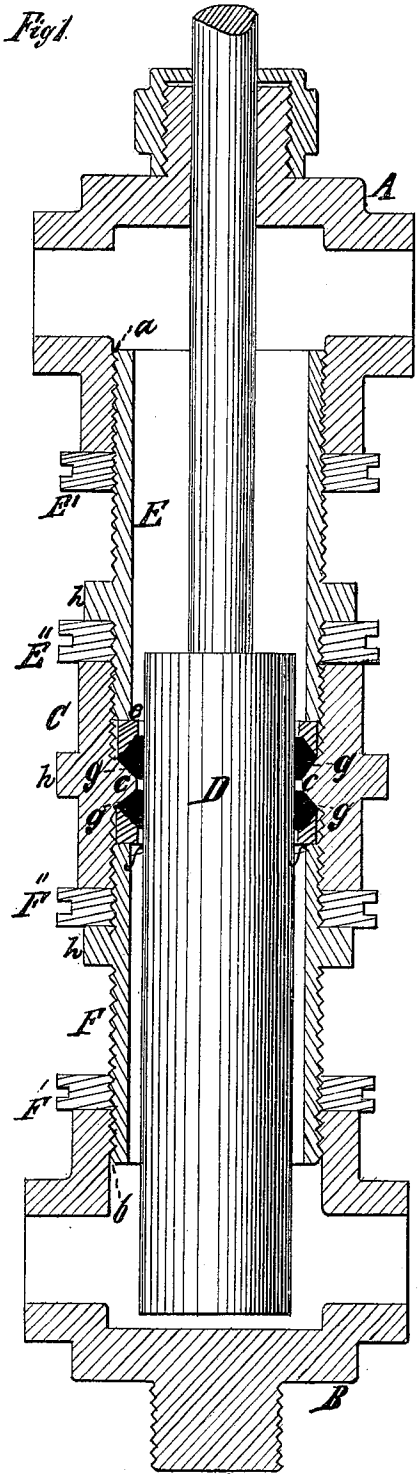
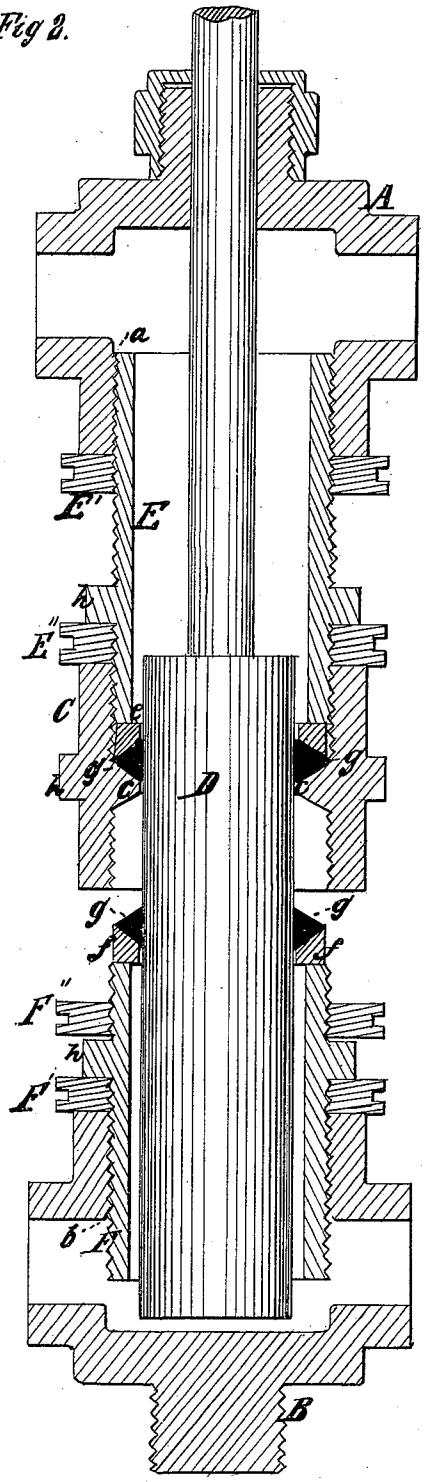


Fig 2.



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UNITED STATES PATENT OFFICE.

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

PUMP.

SPECIFICATION forming part of Letters Patent No. 234,407, dated November 16, 1880.

Application filed August 14, 1880. (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 certain Improvements in Pumps, of which the following is a specification.

The object of this invention is to provide a means whereby the piston-packing of pumps, &c., may be readily adjusted, or, in case of necessity, replaced without disturbing those fixed portions of the pump to which the pipes or connections are ordinarily permanently attached.

The invention comprises certain novel combinations of parts whereby this object is secured.

Figure 1 is a vertical longitudinal sectional view of a pump embracing my said invention, with the parts and the relation occupied by them when the pump is ready for use. Fig. 2 is a similar view of the same, but showing the parts as arranged or disposed in order to afford access to the packing.

A and B are, respectively, the upper and lower portions of the pump body or barrel, to which said portions are ordinarily attached the pipes, connections, &c., of the pump, and which are fixed stationary or permanent. The inner end of each of the portions A B is provided with an internal screw-thread, as shown at *a* on the part A and at *b* on the part B. C is the central portion of the pump barrel or body, and is internally threaded at both ends, as represented in the drawings. This central portion, C, is connected with the upper part, A, by an externally-threaded section, E, which, at one end, is screwed into the section A and at the other into the section C. In like manner the central portion, C, is connected with the lower part, B, by another externally-threaded section, F. The sections E F are of cylindrical form, have the same internal diameter, and are placed in the same axial line. Apart from the space occupied by the packing herein presently explained, the sections E F constitute the bore of the pump, as more fully illustrated in Fig. 1. Provided internally to the central portion, C, is an inwardly-projecting circumferential rib, *c*, having a transverse section, substantially such as is represented in the drawings—that is to say, wedge shape, with its upper and lower surfaces, respectively, sloping inward. Placed between this internal wedge-shaped rib *c* and the adjacent inner end of the sections E F are two rings, *e f*, the inner surfaces of which are made sloping at an angle to the adjacent surface of the rib *c*, as represented in the drawings. A double packing, or rather two separate packings, are provided by placing a suitable gasket or packing-ring in each of the spaces between the internal rib, *c*, and the rings *e f*, it being manifest that by turning the sections E F to force their inner ends inward toward the internal rib, *c*, the packing indicated at *g* will be crowded inward around and against the circumference of the pump-plunger, which in the drawings is represented at D. The sections E F, and also the central portion, C, are provided with hexagonal collars *h*, which may be grasped by a wrench in order to turn the sections E F or either of them with reference to other parts of the pump-barrel, as herein presently explained. Placed upon the threaded exterior of the section E are jam-nuts E′ E″, and in like manner upon the threaded exterior of the section F are placed similar jam-nuts, F′ F″, the use and object of which are to provide for making snug the joints between the sections E F and the adjacent parts at which they are connected, as hereinbefore explained.

In order to gain access to the lower packing, G, it is only necessary to turn the lower section, F, to screw the same in a downward direction into the lower part, B, of the pump-barrel, which, of course, brings the said section F out of and away from the central portion, C, the internal screw-thread of the central portion, C, being, of course, coincident in character and pitch with that of the part B aforesaid. By thus bringing downward the lower section, F, sufficient space is provided to afford access to the lowermost of the packing-rings *g*, which said space may be further increased by screwing the upper section, E, upward into the part A. When it is desired to have access to the uppermost of the packing-rings the section E is operated in like manner, the said section E being in that case screwed upward into the part A and out of the central portion, C. It is, of course, to be understood that in thus manipulating either the section E or the section F, the jam-nut F′ or E′, as the case may be, is screwed as far as may be away

from the outer end of the section to be moved, the outer ends of the jam-nuts E′ E″ and F′ F″ being simply to hold snugly against the ends of the two sections E F and of the central portion, C, respectively, when the parts are in position for the use of the pump, and also to render more tight and snug the joints between the central portion and the sections E F, and those between the sections E F and the upper and lower parts, A B.

It will be particularly observed that by my aforesaid invention all the effects of expansion and contraction, the cause of changes of temperature in the pump-barrel, are provided against, inasmuch as the packing is readily compressed to any required degree against the plunger, and any expansion which would vary the vertical width of the receptacles of the packing is thereby easily compensated.

It will further be understood by reference to the drawings that the plunger being of less diameter than the bowl of the pump-barrel there is no friction whatever, except where the two packing-rings come in contact with the plunger, and that this friction is only proportioned to the pressure with which the packing is forced inward against the plunger by the operation of the sections, as hereinbefore explained.

What I claim as my invention is—

1. A pump body or barrel constructed with one or more screw-sections capable of longitudinal adjustment to afford access to the interior of the said barrel, substantially as and for the purpose herein set forth.

2. In a pump-barrel, the combination of the internally screw-threaded end parts A and B, the externally screw-threaded sections E and F, and the internally screw-threaded central portion, C, carrying a suitable packing and a plunger, D, all substantially as and for the purpose herein set forth.

3. The internally-threaded central portion, C, constructed with the internal circumferential rib *c*, the two packing-rings *e f*, the externally-threaded sections E F, the internally-threaded end parts A B, and the piston D, all substantially as and for the purpose herein set forth.

4. The combination of the jam-nuts F′ F″ and E′ E″ with the internally-threaded end parts, A B, the externally-threaded sections E F, and the internally-threaded central portion, C, of the pump-barrel, all substantially as and for the purpose herein set forth.

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