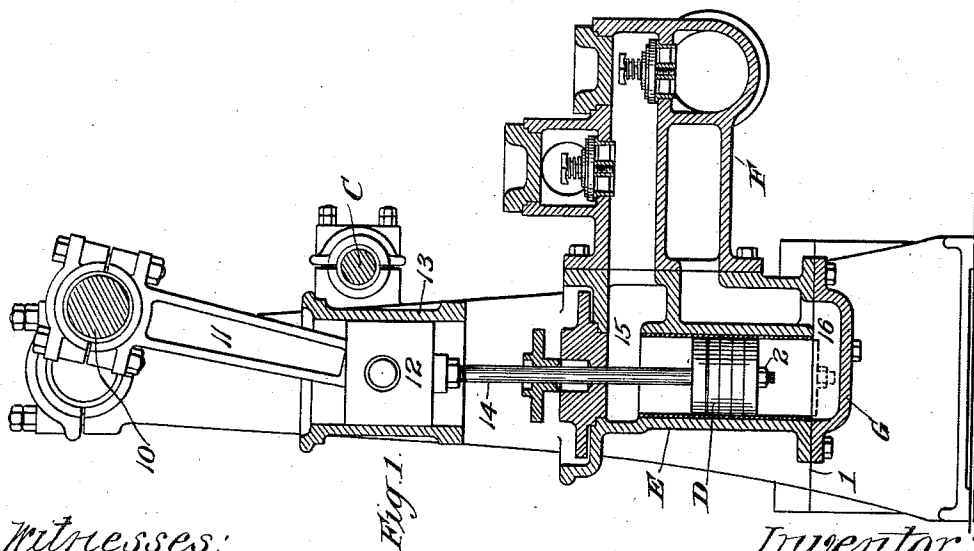
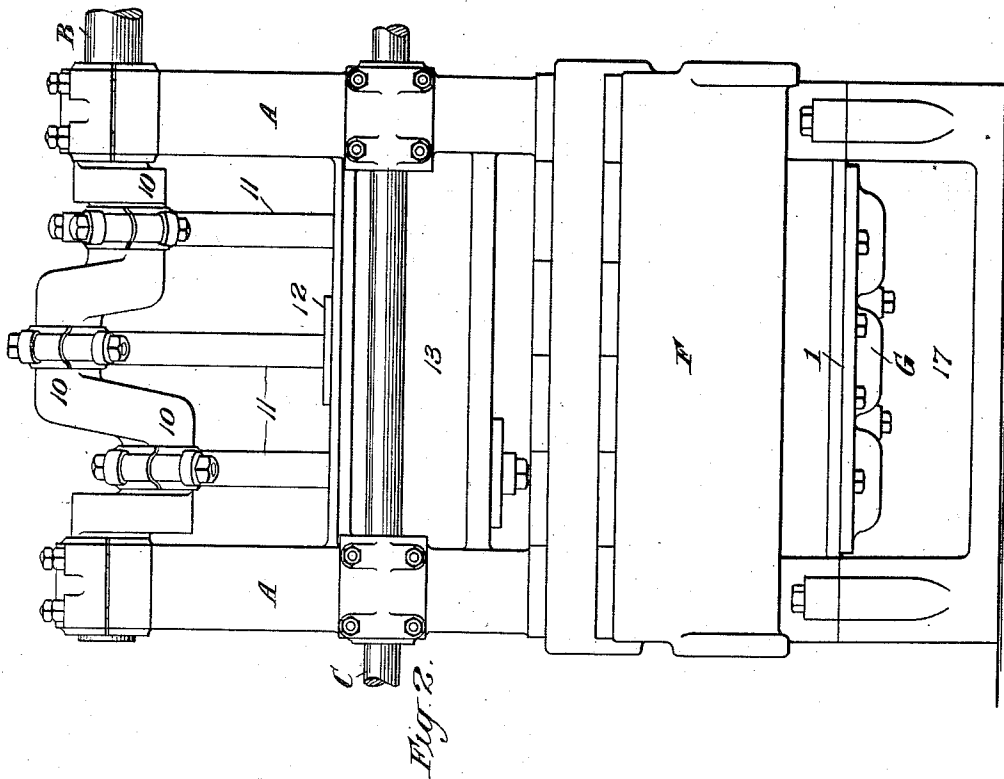


W. M. FLEMING.
PUMP.

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1,018,751.

Patented Feb. 27, 1912.



Witnesses:
W. H. Kennedy.
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UNITED STATES PATENT OFFICE.

WILLS M. FLEMING, OF HOLYOKE, MASSACHUSETTS, ASSIGNOR TO INTERNATIONAL STEAM PUMP COMPANY, A CORPORATION OF NEW JERSEY.

PUMP.

1,018,751.

Specification of Letters Patent.

Patented Feb. 27, 1912.

Application filed March 15, 1911. Serial No. 614,565.

To all whom it may concern:

Be it known that I, WILLS M. FLEMING, a citizen of the United States, residing at Holyoke, county of Hampden, and State of Massachusetts, have invented certain new and useful Improvements in Pumps, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

The especial object of the present invention is to provide a double acting triplex power pump of the piston or inside packed type, in which the pistons may readily be packed from below, while the pump is simple, compact and cheap of manufacture, but the invention may be applied also to such vertical double acting pumps having only one or two cylinders. The construction of these vertical double acting power pumps has heretofore been such as to necessitate the repacking of the pistons from above, which involves such labor on account of the stuffing boxes, glands and piston follower, and the difficulty of packing in the very restricted space between the cylinder head and cross head guides, that double acting power pumps of this type are little used, although the advantages of this type of pump are well known. I secure the desired result by parting the cylinder at the lower end of the piston movement and providing a removable bottom cover which forms the pulsation chamber at the bottom of the pump, so that the piston rod nut projects below the open bottom of the cylinder, and the removal of the cover leaves this fully exposed and the piston readily accessible and removable at the bottom of the cylinder for packing. The cover for the three cylinders is preferably made in a single piece, forming the three pulsation chambers, but separate covers for the three cylinders may be used if desired.

In the accompanying drawing forming part of this specification a triplex power pump of a common type is shown, embodying the invention in its preferred form, and this construction will now be described in detail and the features forming the invention then specifically pointed out in the claims.

In the drawings:—Figure 1 is a vertical cross section of the pump through one of the cylinders. Fig. 2 is a rear elevation of the pump.

Referring to said drawings, A is the frame

having the usual standards in which are mounted the crank shaft B, operated by gears (not shown) from driving shaft C, the crank shaft B being connected by cranks 10 and crank rods 11 to cross heads 12 sliding in guides 13 on frame A, said cross heads being connected directly to the piston rods 14 of double acting pistons D moving in vertical cylinders E, which cylinders E have the upper and lower pulsation chambers or passages 15, 16, connecting with the suction and delivery chambers within the casing F secured on the rear side of the pump. All the parts thus far described may be of any common or suitable construction, and, so far as shown, are the same as the well known Deane pump, except as follows:—The cylinder casing is parted on the line 1, just at the bottom of the piston movement, so that at the end of the downward movement of the pistons, the piston rod nuts 2 extend below the cylinder, as shown in dotted lines in Fig. 1, and the chambers 16 below the cylinder are formed in a removable cover G, which is bolted onto the bottom of the cylinder casing. The cover is preferably formed as shown, in a single piece extending over the three cylinders, this cover being readily accessible for removal and the pistons conveniently packed within the open space left between the frame standards below the pump cylinders.

It will be seen that the invention provides for the freest access to and most convenient packing of the pistons at the bottom of the pump, where ample space is available, thus avoiding wholly the difficulties attendant on packing the pistons from above as in previous vertical double acting pumps of this type.

What I claim is:—

1. A vertical double acting pump having the cylinder parted at the lower end of the piston movement, and a removable cover forming the pulsation chamber below the cylinder, said cover being removable on the line on which the cylinder is parted whereby the removal of the cover leaves the piston accessible for removal and packing at the lower end of the cylinder.

2. In a vertical double acting power pump, the combination with the frame, crank shaft, crank rod, cross head, and piston, of a pump cylinder in line with and below the cross head, said cylinder being parted at the lower end of the piston movement, and a remov-

able cover forming the pulsation chamber below the cylinder, said cover being removable on the line on which the cylinder is parted whereby the removal of the cover
5 leaves the piston accessible for removal and packing at the lower end of the cylinder.

3. In a vertical double acting power pump, the combination with the frame, crank shaft and operating connections, of a plurality of
10 pump cylinders arranged below the shaft and parted at the lower end of the piston movement, and a cover extending over the cylinders and forming the pulsation cham-

bers, said cover being removable on the line on which the cylinders are parted and space 15 being provided below the cylinders for the removal of the cover and access to the pistons for packing.

In testimony whereof, I have hereunto set my hand, in the presence of two subscribing 20 witnesses.

WILLS M. FLEMING.

Witnesses:

ORPHIR H. A. RIVEST,
ELLIS B. HARTMAN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
