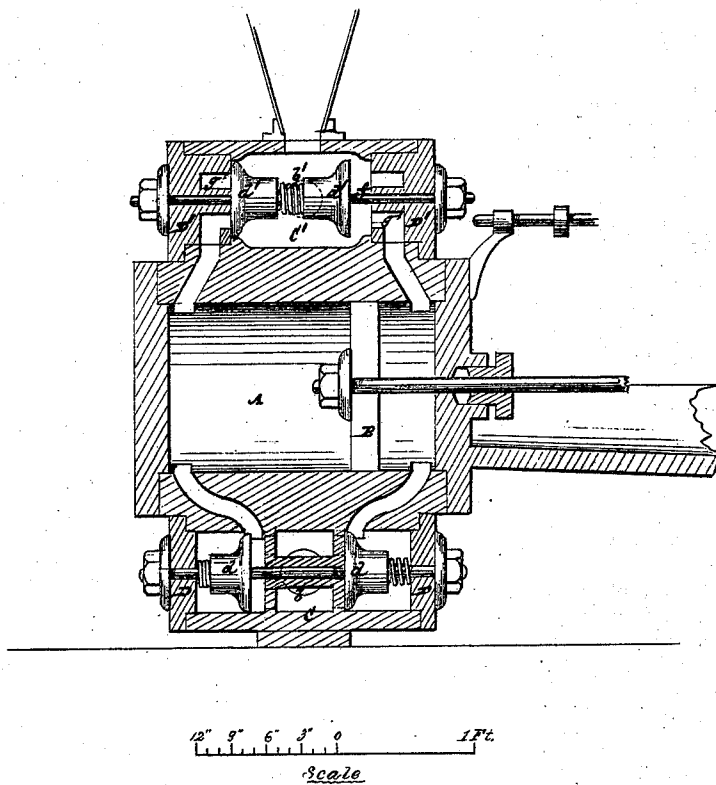


JOSEPH W. HOPKINS.

Improvement in Pumps.

No. 123,175.

Patented Jan. 30, 1872.



Witnesses

Fred Hauser
R. Rabreau

Joseph W. Hopkins

UNITED STATES PATENT OFFICE.

JOSEPH W. HOPKINS, OF NEW YORK, N. Y., ASSIGNOR TO HIMSELF, ALBERT G. BEARUP, AND PATRICK CARRAHER, JR., OF SAME PLACE.

IMPROVEMENT IN PUMPS.

Specification forming part of Letters Patent No. 123,175, dated January 30, 1872.

To all whom it may concern:

Be it known that I, JOSEPH W. HOPKINS, of the city, county, and State of New York, have invented a new and useful Improvement in Pumps; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing forming part of this specification, and which represents a sectional elevation of a pump having my invention applied to it.

My invention relates to pumps in which the valves are arranged to work in boxes or cylinders outside of the pump-barrel; and it consists, first, in a construction of such boxes or cylinders whereby the same bolt that serves to tie the opposite heads of said boxes or cylinders together and to hold them to their places also answers as a guide for the valves. The invention also includes a construction of the heads of said boxes or cylinders whereby they are made to form the seats and ports for the valves.

In the accompanying drawing, A represents the barrel or main cylinder of a steam or other pump, and B its piston or plunger. C C' are the valve-boxes, of cylindrical construction, arranged on opposite sides of the barrel, C being the inlet-valve box provided with an inlet-orifice, *b*, and inlet-valves *d d*, and C' the delivery-valve box having an outlet, *b'*, and delivery-valves *d' d'*. D D and D' D' are the heads or covers to the ends of the valve-cylinders C C'. These heads—that is, each pair at the ends of their respective cylinders—are secured to their places and to each other by a screw-bolt, *f*, arranged to pass longitudinally through the cylinder to which said pair of heads belong, which screw-bolt, in addition to

its forming a simple and expeditious means of fastening on and taking off said heads, also constitutes a guide for the valves *d* or *d'* to slide upon when opening and closing the ports which they respectively control. These ports may be variously arranged or constructed, but it is proposed to form them, for either or both sets of valves, partly within the valve-box heads, as shown for the heads D' D', which are constructed to project within the valve-box C', and are provided with ports *g g* that connect with opposite ends of the main cylinder A, and open into the valve-box through the inner ends or faces of said heads, which ends are faced to form seats for the valves, thereby dispensing with special valve-seats, as illustrated, for instance, in the construction of the valve-box C, and reducing cost; also facilitating accessibility and leaving the interior of the valve-box free from obstruction. By said arrangement, also, a single spring may be made to close or keep closed both valves.

What is here claimed, and desired to be secured by Letters Patent, is—

1. The combination of the screw-bolt *f* with the heads or end covers of either valve-box or cylinder and the valves, whereby said bolt serves the double purpose of securing said heads and of a guide for the valves, substantially as shown and described.

2. The valve-box heads or end corners D' D', constructed to form seats for the valves, and having the ports *g g*, which connect with opposite ends of the pump-barrel, arranged within them, essentially as specified.

JOSEPH W. HOPKINS.

Witnesses:

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