Chamberlin & Garrett.

Pump.

No. 74500 Patented Feb. 18, 1868

Fig: 1.

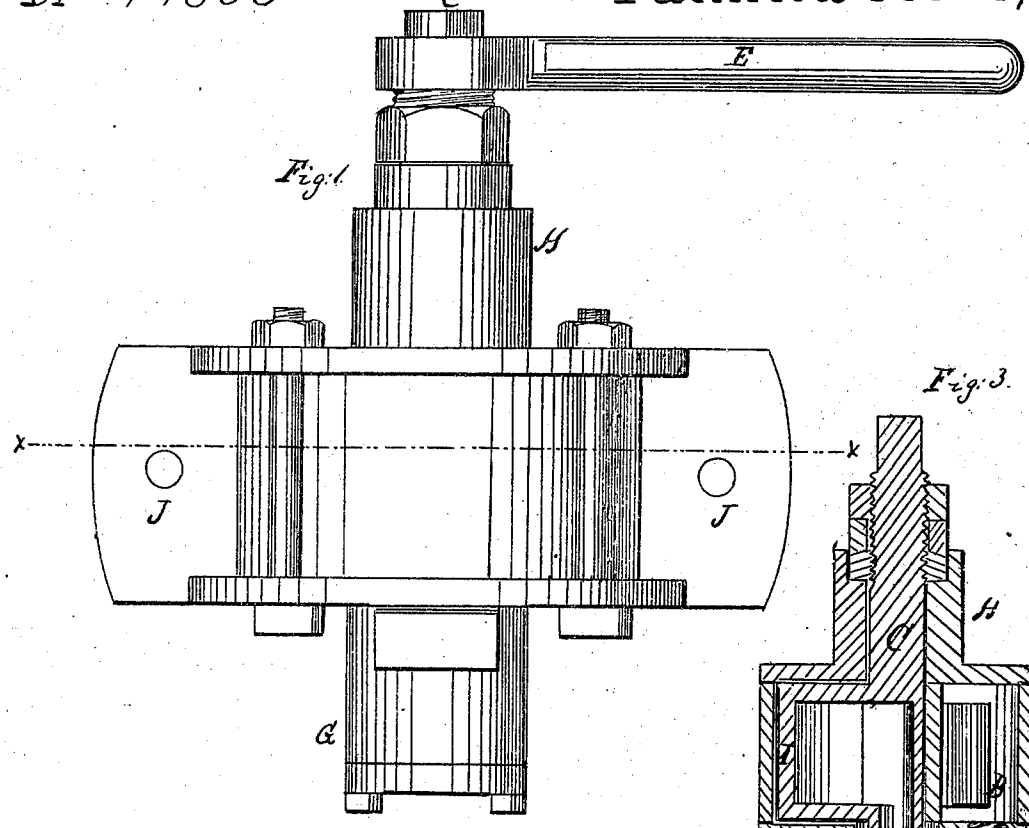
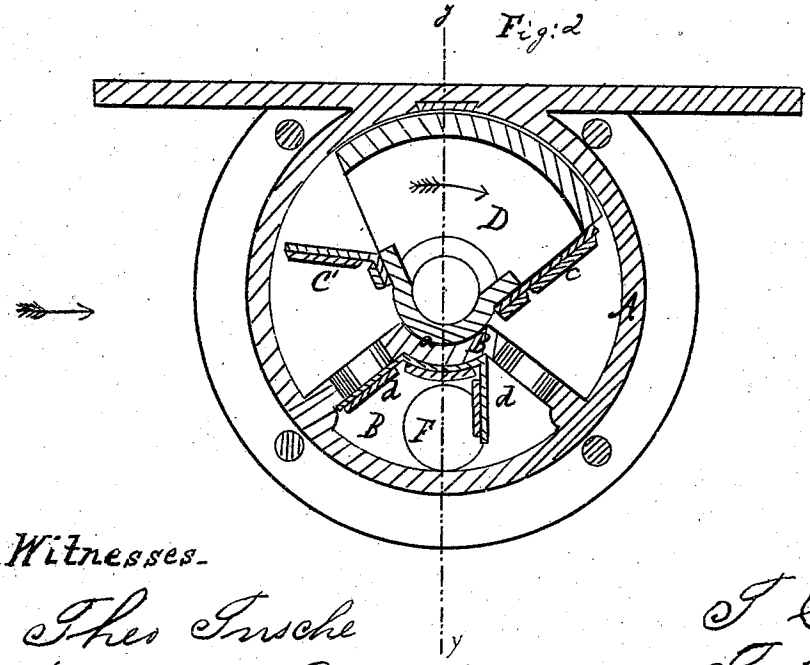


Fig: 3.

Fig: 2



Witnesses.

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TAYLOR CHAMBERLIN AND T. ELWOOD GARRETT, OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 74,500, *dated February* 18, 1868.

IMPROVEMENT IN PUMPS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that we, TAYLOR CHAMBERLIN and T. ELWOOD GARRETT, of Philadelphia, in the county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Pumps; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to a new and improved method of constructing pumps, whereby they are greatly simplified in their parts, and rendered more durable than pumps of ordinary construction; and the invention consists in a hollow shaft and piston, and in the manner in which the cylinder is constructed, and the water discharged therefrom, as will be hereinafter described.

Figure 1 represents an outside view of the pump complete.

Figure 2 is a cross-section through the line *x x* of fig. 1.

Figure 3 is a longitudinal section of fig. 2, through the line *y y*.

Similar letters of reference indicate corresponding parts.

This pump is cylindrical in form, and it is operated by oscillating a hollow piston on a hollow shaft within the cylinder, and forcing the water, by such action of the piston, through valves into a discharge-chamber.

A is the cylinder, which is cast with an abutment section in it, which section forms the discharge-chamber, and is marked B. C is the shaft. D is the piston, which is cast on the shaft. The form of the hollow shaft and piston is seen in fig. 3. The water enters the pump through the hollow shaft, and having free access to the hollow piston, it is forced through the cylinder into the discharge-chamber, by the oscillating motion given the piston by the lever E. F represents the discharge-orifice, to which the hose or discharge-pipe is attached. The water is received into and discharged from the same side of the pump. G is the cylinder-head for the discharge side, and H is the head for the opposite side of the cylinder. This head, H, of the cylinder is packed, so as to prevent leakage around the shaft, as seen in the drawing, and packing may be used within the cylinder, if desired, or found necessary.

It will be noticed that the outer central portion of the discharge-chamber forms a bearing and guide for the shaft at *a*. *c c'* indicate valves on the piston, and *d d'* indicate valves within the discharge-chamber B. As seen in the drawing, the piston is moving in the direction of the arrows, and forcing water into the chamber B, by the valve *d'*. While the piston is thus passing, water is entering the piston through the hollow shaft, and filling the other side of the cylinder, so that, when the motion of the piston is reversed, the valve *c* will open, and *c'* will be closed, while *d*, in the chamber, will be opened, and *d'* will close. J J indicate plates or ears on the cylinder, by which the pump is bolted down.

We do not confine ourselves to the use of packing in the cylinder, or on the heads of the cylinder, nor to any particular kinds of metal, of which to form the pump, or parts of the pump; but, having thus described our invention,

What we claim as new, and desire to secure by Letters Patent, is—

1. The hollow shaft and piston, C D, arranged and operating substantially as shown and described.

2. The combination of the hollow piston and shaft C D, the discharge-chamber B, and the cylinder A, substantially as and for the purposes specified.

TAYLOR CHAMBERLIN,
T. ELWOOD GARRETT.

Witnesses:
ROBERT HUTCHINSON,
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