F. SHOLLAR.

PUMP.

No. 185,787. Patented Dec. 26, 1876.

Fig 1.

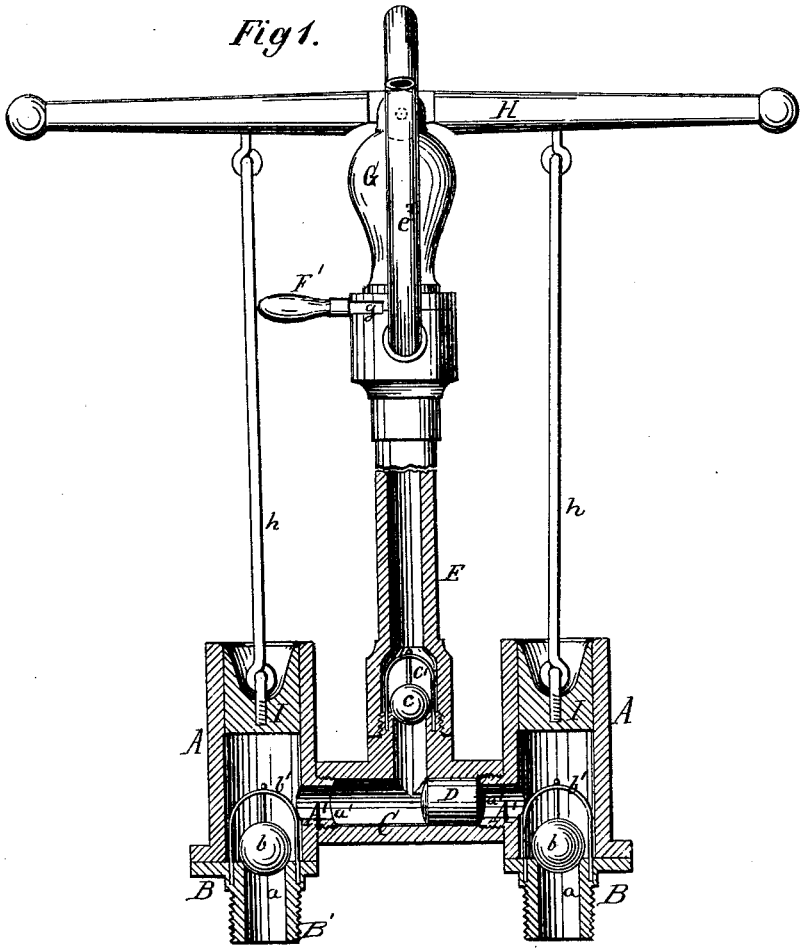


Fig 2.

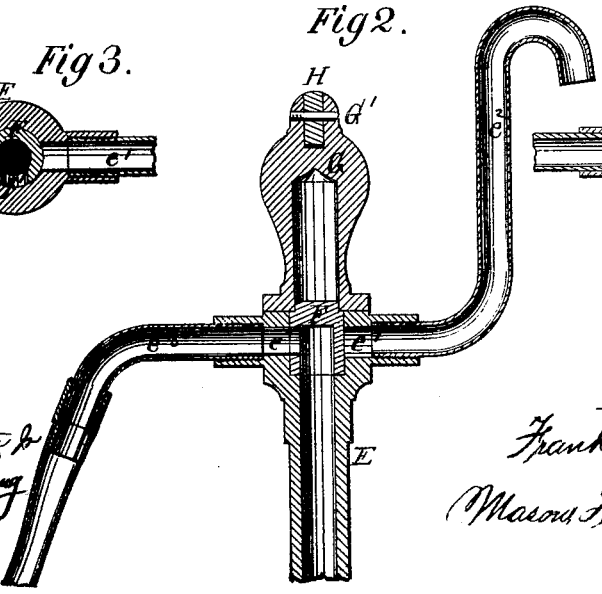


Fig 3.

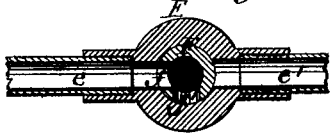
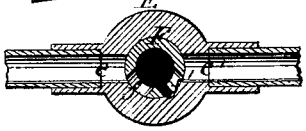


Fig 4.



Witnesses.
James Marten Jr
J. P. Theodore Lang

Inventor.
Frank Sholla
by
Mason Fenwick & Lawrence
his attys

UNITED STATES PATENT OFFICE.

FRANK SHOLLAR, OF OTSEGO LAKE, MICHIGAN, ASSIGNOR OF ONE-HALF OF HIS RIGHT TO REUBEN MURRAY, OF SAME PLACE.

IMPROVEMENT IN PUMPS.

Specification forming part of Letters Patent No. **185,787**, dated December 26, 1876; application filed September 28, 1876.

To all whom it may concern:

Be it known that I, FRANK SHOLLAR, of Otsego Lake, in the county of Otsego and State of Michigan, have invented a new and useful Improvement in Pumps, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 is a front view of my improved pump, partly in section, and partly in side elevation. Fig. 2 is a central section of the upper part, in detail; and Figs. 3 and 4 are horizontal sections of the same in the line *x x* of Fig. 1, representing two select positions of the stop-cock.

My invention relates to force pumps or pumps with solid pistons; and the same consists in certain constructions, combinations, and arrangements of parts, hereinafter described and specifically claimed, whereby the object of producing a cheap pump of simple construction, great durability, and easy of operation is more effectually accomplished, and at the same time applicable to a variety of purposes for which heretofore only pumps of complicated construction and of high price have been used.

In the drawings, A A represent two pump-barrels, which are provided at their bottom with valve-plates B, having ball-valves *b* in valve-cages *b'*, and tube ends B' with screw-threads to connect with suction pipes or hose. Above the said plates B the pump-barrels are provided with openings *a* and tubular extensions A', wherewith they are fastened to T-shaped connections C, the bore of which is larger than the holes *a*, so that an elongated sliding plug-valve, D, of the same diameter therewith, and properly formed at the ends, may close either of the said holes *a* alternately, and also close the bore of the pump while crossing the same in a right and left hand direction. The holes *a* may for that purpose be provided with valve-seats *a'*. The upright part of the connection C is provided with a ball-valve, *c*, in a valve-cage, *c'*, which serves as a check-valve to the pump-stock E above the said connection. The pump-stock E and the connection C are attached to each other by screw-thread, as shown in the drawings, or by similar means, and the upper part of the said pump-stock may be closed by a vertical cock, F, with two openings, *f f'*, standing at a right angle to each other. The said cock F is fitted into the material of the pump-stock E, which latter has two outlets, *e e*^{1}, in the same level with the holes *f f'*, and diametrically opposite each other, one of which outlets, *e*^{1}, may be provided with a serpentine mouth-piece, *e*^{2}, for the purpose of ordinary supply in yards, stables, kitchens, and so on, while another mouth-piece, *e*^{3}, is fastened to the outlet *e*, and is used in connection with pipes or hose for the purpose of conveying the water to a great distance or height. In the sectional view of Fig. 3 the cock F is turned to the left, and the port *f* opens into the outlet *e*, while the outlet *e*^{1} and the port *f'* are closed. If the cock F is turned to the right the port *f'* will open into the outlet *e*^{1}, and the port *f* and the outlet *e* are closed. If the cock F is moved into a central position both ports *f f'* will partly open into both outlets *e e*^{1}, and supply water on both sides of the pump. Above the pump-stock E is a cap, G, fastened to it in the usual manner of fastening, which bears upon the top of the cock, and thereby keeps it firmly in its seat, leaving a small lateral space, *g*, open for the movements of the cock-handle F'. To the top of the said cap G the fulcrum G' of the operating-lever H is fastened to which the pump-rods *h* are attached. To the lower ends of the pump-rods *h* the plungers I of the pump-barrels A are attached. The said plungers I work without packing, and are therefore provided with a very large friction-surface and are fitted pretty accurately into the barrels A.

Operation: When the right side of the lever H is moved down, the plunger I moves down and pushes the water in the barrel before it. This, in the first instance, closes the valve *b*, and the water is thus forced through the side openings *a* into the connecting-tube C. The plug-valve D is pushed against the abutment or valve-seat *a'* at the end of the extension A' of the other barrel A, and the water lifts the valve *c* and rises in the pump-stock E, enters the cock F, and passes through the port *f* into the pipe *e* if the cock is turned to the left. At the same time the described operation

takes place the other plunger rises and causes the valve *a* below it to rise and admit the so-called suction or supply water from the well. The operation, which has taken place in both barrels A and the connection C, is reversed when the motion of the lever H is reversed.

The described pump may be made entirely of wood where metal is not easily to be had; but the preference is given to metal, on account of its greater durability.

The efficiency of my improved pump would be the same if there were valves of different construction; but the cheapest and most reliable valves are ball valves.

The pump will work best under water, because the suction of the rising plungers would not be impaired by air leaking between its bearings down into the barrel; but even above water this pump answers its purpose better than all other pumps of that class I have yet seen, for it supplies a continuous stream without friction in the barrels, and with a less number of valves, and without the disadvantage of extra valve-chambers below the pump-barrels.

Having thus described my invention, what I claim, and desire to secure by Letter Patent, is—

1. The combination of the elongated plug-valve D, operating as specified, pump-section C, cylinders A A, and barrel or stock E, substantially as and for the purpose described.

2. The cylindrical two-way tubular valve F, arranged in seats of the pump-stock E and cap G, and operated by a horizontal lever, F′, in the manner and for the purpose described.

Witness my hand in the matter of my application for a patent for an improved pump this 26th day of August, 1876.

FRANK SHOLLAR.

Witnesses:
O. H. KELLOGG,
E. C. MORSE.