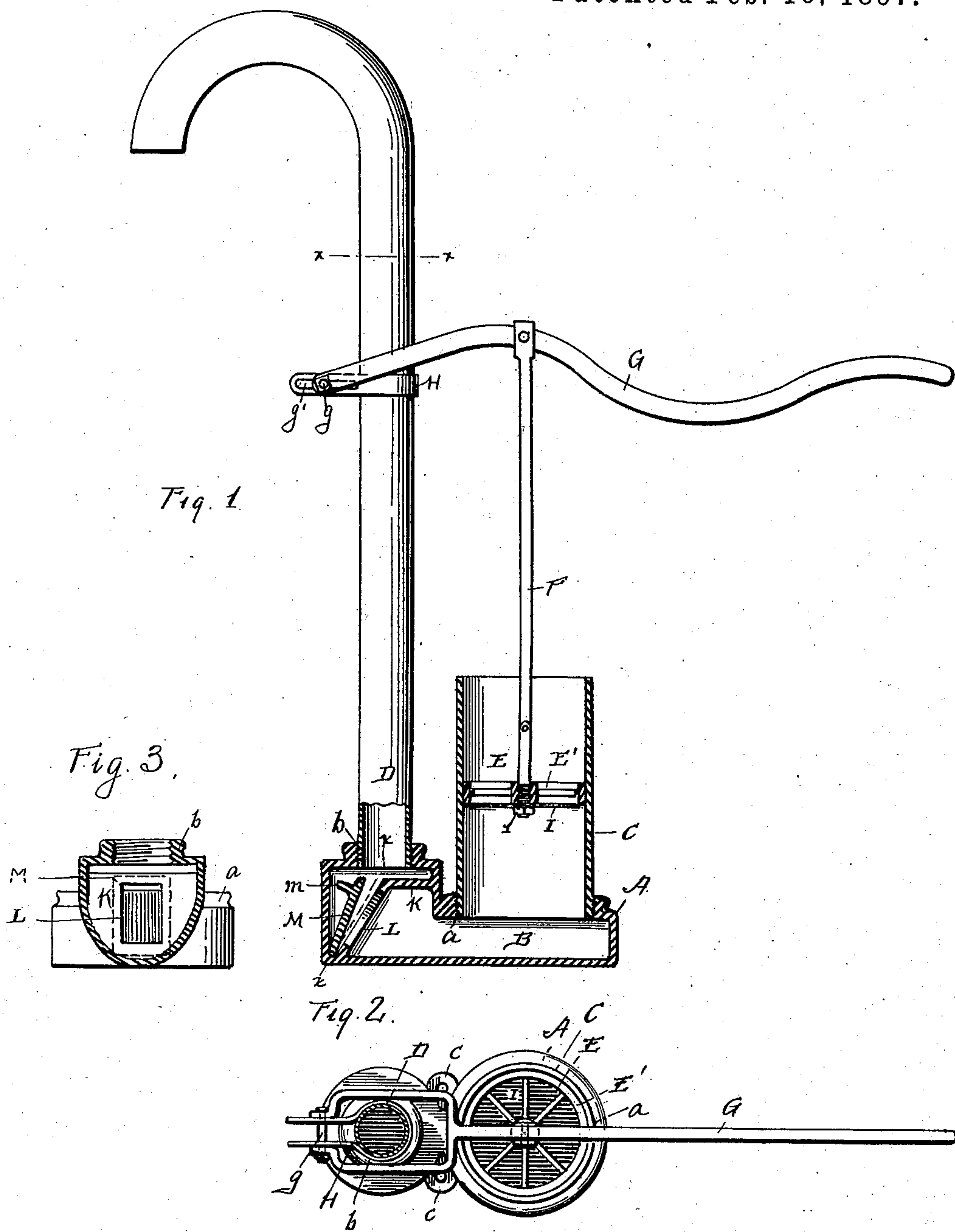


(No Model.)

L. MYERS.  
FORCE PUMP FOR WELLS OR CISTERNS.

No. 577,058.

Patented Feb. 16, 1897.



WITNESSES

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# UNITED STATES PATENT OFFICE.

LUTHER MYERS, OF MAUMEE, OHIO.

## FORCE-PUMP FOR WELLS OR CISTERNS.

SPECIFICATION forming part of Letters Patent No. 577,058, dated February 16, 1897.

Application filed February 27, 1896. Serial No. 580,952. (No model.)

*To all whom it may concern:*

Be it known that I, LUTHER MYERS, a citizen of the United States, and a resident of Maumee, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in Force-Pumps for Wells or Cisterns; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a representation of a central vertical section through pump. Fig. 2 is a section on line *xx*, Fig. 1. Fig. 3 is a section on the line *xx*, Fig. 2, the position of the valve being indicated by dotted lines.

The object of this invention is to provide an improved force-pump for use in wells, vats, tanks, &c.; and it consists in the novel construction and combination of parts, all as hereinafter described, and pointed out in the appended claims.

The pump is especially adapted for pumping hot or boiling substances.

Referring to the accompanying drawings, the letter A designates the base-casting of the pump, which is formed with the internal water-chamber B and with cylindrical seats or openings *a* and *b* in its top portion to receive the cylinder-barrel C and the discharge or delivery pipe D. Said casting is also provided with the external lateral perforated lugs *c*, by means of which it may be bolted to a suitable bed or sill of timber.

The cylinder-barrel C is open at the top and is provided with a piston or plunger E, carried by a rod F, whose upper end portion is connected to a pump-lever G.

H is a clamp which is placed around the upper portion of the discharge or delivery pipe and to which is secured the forked arm of lever G. The fulcrum end of the lever G is bifurcated, as shown in Fig. 2, and embraces the pipe D, being pivotally connected with parallel projecting arms of the clamp H by means of a bolt *g*. Said bolt passes through the arms of the bifurcated portion of the lever and through elongated horizontal slots in the clamp-arms, and in addition to its office as a

fulcrum for the lever it also secures the clamp in place upon the pipe D. The slots *g* permit the necessary adjustment of the lever under vertical adjustments of the clamp upon the pipe D, whereby the pump or piston rod may be maintained in proper vertical relation to the piston and lever.

The piston or plunger E is of hollow form and consists of a central hub portion, an outer ring, and a spider connection between the two. Against its lower face is seated a flexible disk I, which may be of metal or leather and which is held in place by a nut *i*, threaded onto the lower end of the rod. The diameter of this disk is equal to the inner diameter of the plunger.

Underneath the opening or seat in which is secured the discharge or delivery pipe is a wall or diaphragm K. This wall or diaphragm extends horizontally from the inner wall of the seat *b* to a point at or near the center thereof, from which point it is carried obliquely downward to the angle of the bottom and end walls of the base-walls, to which it is joined. Formed in this oblique portion is a port L, which in the present instance is of oblong rectangular form.

M designates a stop or check valve which closes said port upon the upper side and which consists of a rectangular plate. The space between the end wall of the base-casting and the lower portion of the wall or diaphragm K is hollowed to form a bearing for the convex lower edge of the valve, which is placed loosely therein and is unsecured.

*m* is a stop-lug on the upper face of the valve. It will be noted that this arrangement of the valve permits it to be readily seated and unseated and removed and replaced through the opening *b* by disconnecting the discharge or delivery pipe.

In operation the pump is placed in the water until the barrel C is entirely submerged. Upon the upstroke of the piston the water passes through the valve or spider E', pressing back the leather washer or disk and flowing into the chamber B. During this movement the valve M is closed. Upon the downstroke the washer or disk closes against the valve or spider E', and the water in the chamber B is forced up through the port L and into the discharge or delivery pipe. In the mean-



time the barrel C fills with water, so that when the downstroke is completed the barrel is entirely refilled. The valve M then closes and prevents backflow from the delivery-pipe.

5 The object in taking the water in at the top of the cylinder D is to insure its being free from sediment and to avoid the common use of a suction, there being no suction to the pump and no vacuum to fill with steam.

10 Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The herein-described force-pump, comprising essentially the elongated chambered  
15 base-casting, the vertical submerged cylinder secured in one end portion of said casting and opening into the chamber thereof, the upper end of said cylinder being open and forming the induct of the pump, the spider-piston  
20 working in said cylinder and having a flexible disk secured centrally to the bottom thereof, the discharge-pipe connected to the opposite end portion of said casting, at the top thereof, the wall or diaphragm underneath  
25 the said pipe and having an oblique portion formed with a port therethrough, and with a horizontal portion above said port, a valve seat or bearing formed between the lower por-

tion of said diaphragm and the adjacent end wall of the base-casting, and a valve loosely  
30 seated thereon and controlling said port, together with means for operating the said piston, substantially as specified.

2. In a pump of the character described, the combination of the chambered base-cast-  
35 ing A, the vertical, open-ended cylinder-barrel C, secured in the upper wall of said casting, the piston having vertical openings there-through and the flexible disk or washer, the piston-rod, the delivery or discharge pipe also  
40 secured in the upper wall of said casting, the wall or diaphragm underneath the lower end of said pipe and having the horizontal and the oblique portions, the latter having a port therein, the stop-valve which controls said  
45 port, the lever connected to the piston-rod, and the slotted clamp adjustably secured to the discharge or delivery pipe and to which said lever is connected, substantially as  
50 specified.

In testimony whereof I affix my signature in presence of two witnesses.

LUTHER MYERS.

Witnesses:

AMOS SAGER,  
JOHN SCHNAPP.