

(No Model.)

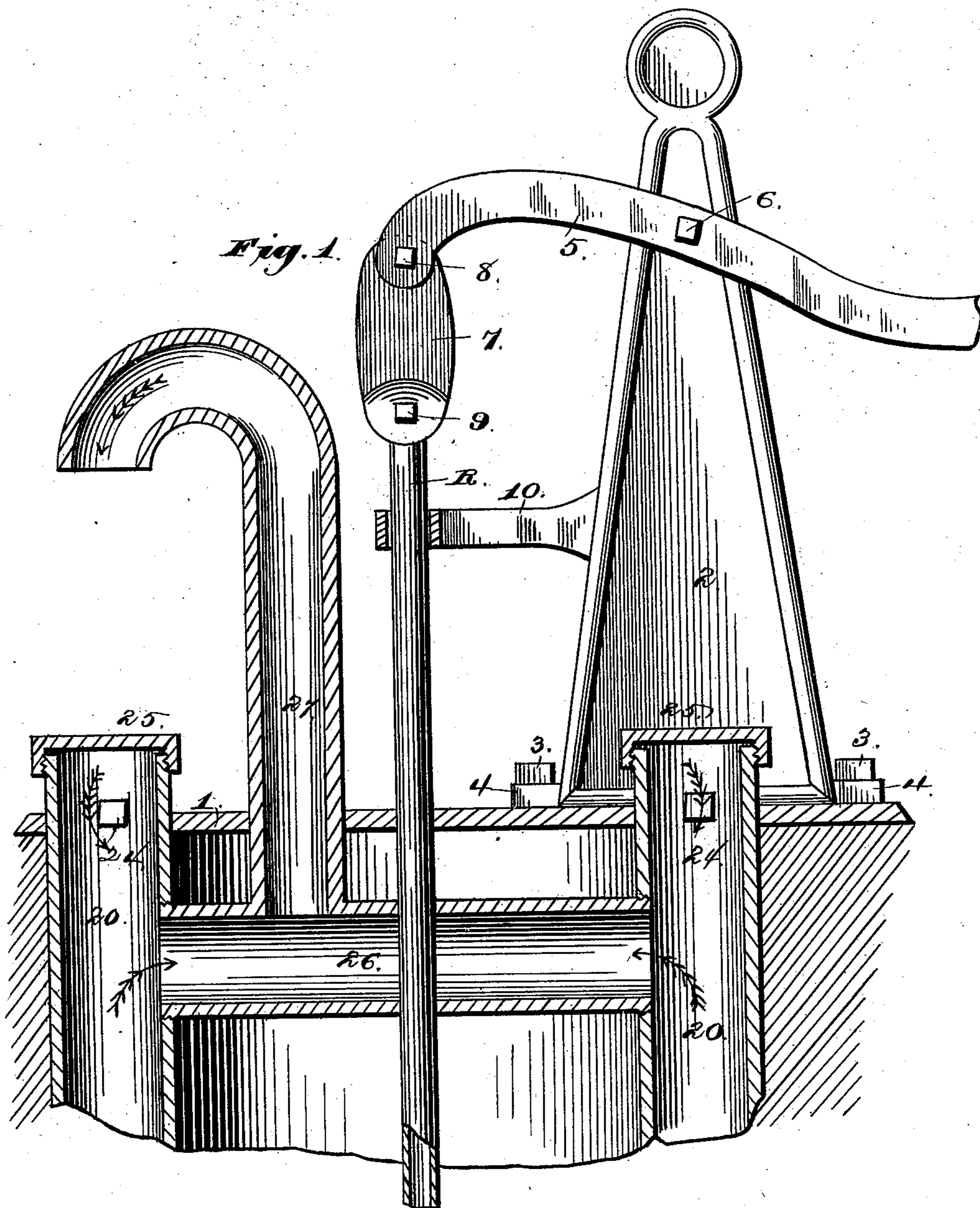
3 Sheets—Sheet 1.

H. Q. HOOD.

FORCE PUMP.

No. 373,367.

Patented Nov. 15, 1887.



*Witnesses:*  
L. Seward Bacon  
Charles S. Hyer

*Inventor:*  
*Hiram Q. Hood.*  
*By* *Edmunds*  
*Atty.*

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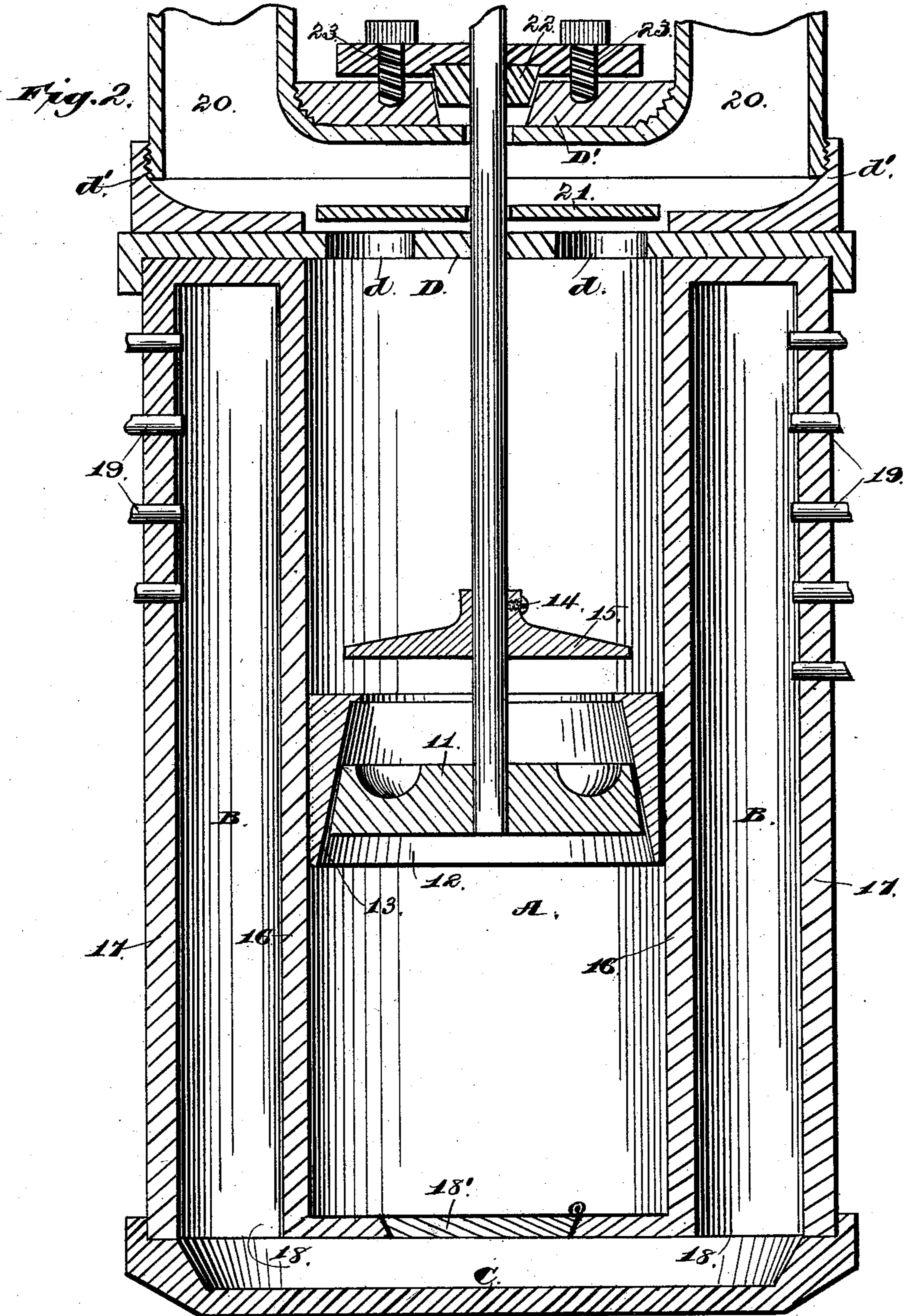
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Inventor:  
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By

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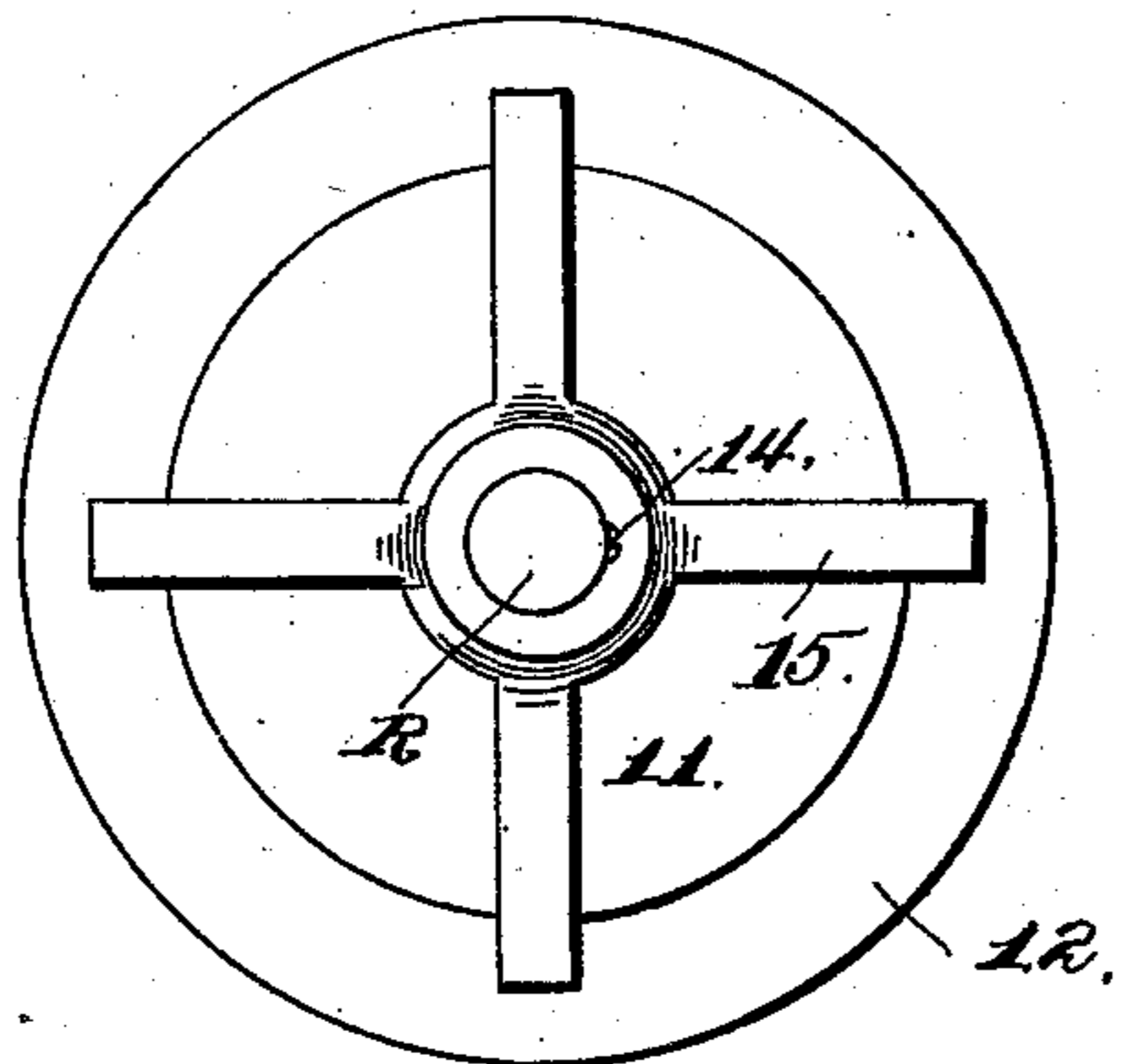
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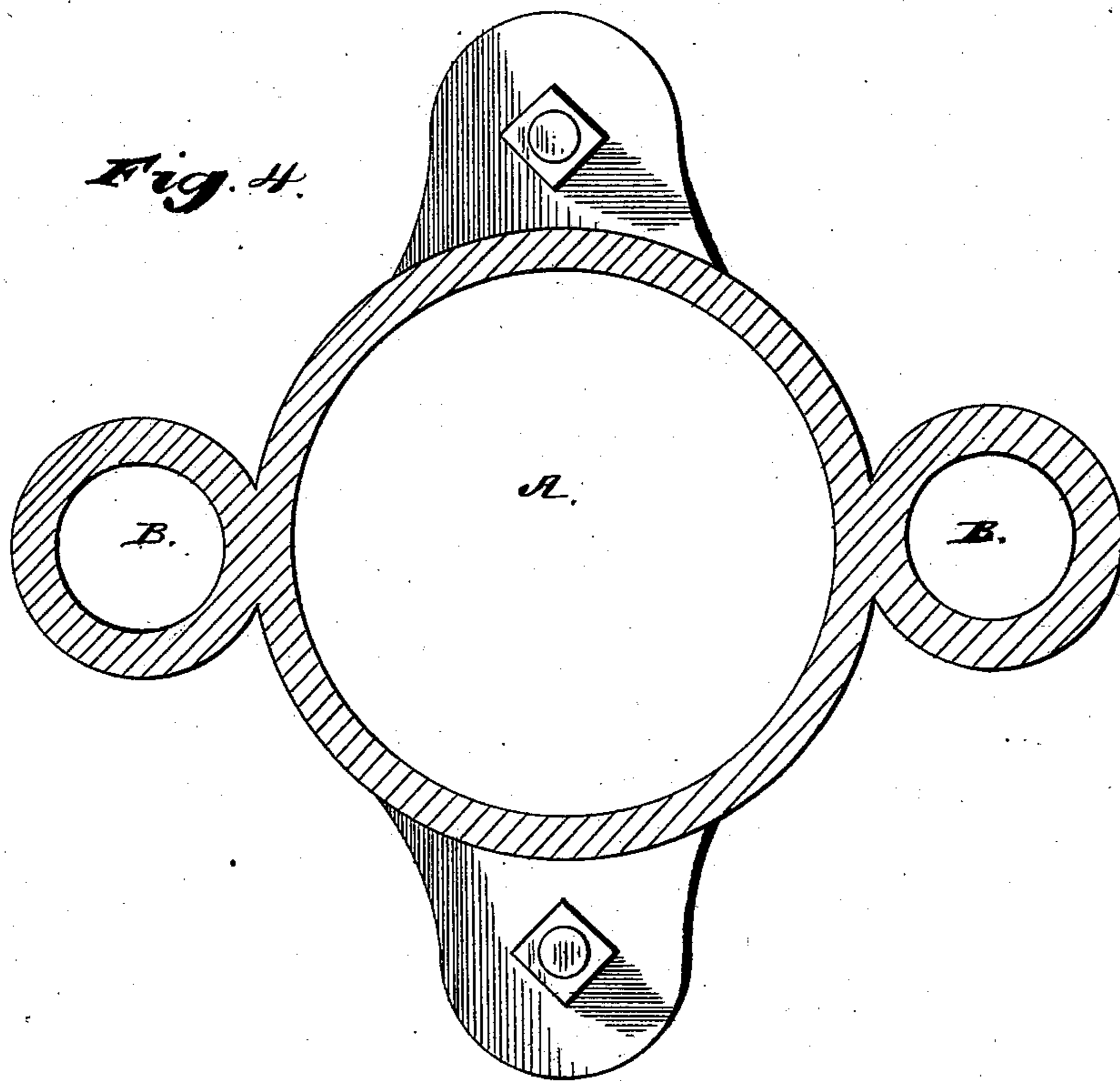
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*Fig. 3.*



*Fig. 4.*



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# UNITED STATES PATENT OFFICE.

HIRAM Q. HOOD, OF WELLINGTON, KANSAS.

## FORCE-PUMP.

SPECIFICATION forming part of Letters Patent No. 373,367, dated November 15, 1887.

Application filed August 16, 1886. Serial No. 211,050. (No model.)

*To all whom it may concern:*

Be it known that I, HIRAM Q. HOOD, a citizen of the United States, residing at Wellington, in the county of Sumner and State of Kansas, have invented certain new and useful Improvements in Force-Pumps; and I do hereby 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.

My invention relates to force-pumps, and has for its object the simplification of parts, whereby a great saving in cost of manufacture is attained, and also in the labor usually required to elevate water from one level to another.

In the accompanying drawings, forming part of this specification, the same numerals and letters of reference indicate the same or corresponding parts.

Figure 1 is a side elevation, partly in section, of the upper portion of my improved pump. Fig. 2 is a sectional elevation of the lower or submerged portion of the pump. Fig. 3 is a top plan view of the follower and plunger with a portion of the piston-rod, showing the spider stop or guard. Fig. 4 is a top plan view of the submerged chambers.

The platform 1 of the pump may be a simple casting, upon which is erected the standard or pedestal 2, being secured by suitable screw-bolts, 3 3, passing through flanges 4 4, formed at the base of the said pedestal. This pedestal may be of any desired ornamental design, and has a crank or operating-lever, 5, pivoted in the upper portion thereof by means of the fulcrum-pivot 6. This operating-lever extends outwardly from each side of the pedestal, and to one end thereof one portion of an elliptical connecting-link, 7, is secured by means of the bolt 8', while the other end of the said link is secured by means of the bolt 9 to the piston-rod R.

Connected to or cast with one side of the pedestal 2 is an arm, 10, which projects outwardly from said pedestal, and through which the piston-rod R passes and is steadied in its movement. This piston-rod R is preferably made of tubing and extends down through the platform 1 into the submerged portion of the pump, having a double-acting plunger, 11,

mounted on the lower portion thereof, which operates in a follower, 12, surrounding the same. The plunger 11 plays in an inclined walled opening, 13, which extends entirely through the follower 12.

Secured to the piston-rod R above the follower 12, by means of a pivot-pin, 14, is a spider, 15, which acts as a stop or guard for the follower. This plunger and follower operate in a chamber, A, which is divided into two compartments alternately formed by the motion of the said plunger. On each side of this chamber A are two receiving-chambers, B B, which are circular in form and bounded by walls 16 17, the walls 16 forming divisional partitions between the chamber A and the said receiving-chambers B B, a passage-way, 18, being left between the bottom plate, C, of these chambers and the lower ends of the wall 16, thus connecting the receiving and central or forcing chambers. This passage is closed by means of the valve 18', opening in an upward direction. The outer walls, 17 17, have apertures or short pipes 19, through which the water is drawn or fed into the receiving-chambers B by the action of the plunger 11 in the chamber A. These receiving-chambers are cylindrical in form, as shown in Fig. 4, and their lower ends are let into the bottom plate, C, while on the top portion of these chambers a cap-plate, D, is placed, having suitable apertures, *d d*, at its central portion, on each side of the plunger R, for the passage of water into the discharge-pipes 20 20.

Immediately above the cap-plate D, surrounding the plunger-rod R, and having free play thereon, is a washer, 21, which acts as a valve cover at the top of the submerged cylinder.

The cap-plate D has projecting sides *d'*, provided with internal screw-threads adapted to receive the screw-threaded ends of the discharge-pipes 20. The inner walls of the discharge-pipes 20 are also engaged by the divisional screw-threaded plate D', which supports the gland 22 for the stuffing-box mounted at this point, said gland being secured to the plate D' by set-screws 23 23.

The discharge-tubes 20 extend upwardly through the platform 1, to which they are secured by means of bolts 24 24, and are provided

with suitable caps, 25 25, which are screwed thereon. The connecting-pipe 26 unites the two discharge-pipes 20 20, the said connecting-pipe having an outflow-pipe, 27, engaging therewith, which extends above the platform 1 a suitable distance for discharge. The plunger-rod R surrounds or straddles the connecting-pipe 26, and thence passes through the platform 1, as heretofore described, a space being left between the connecting pipe and the platform.

The operation of the pump is as follows: The lower cylinder, composed of the several compartments described, having been submerged and the plunger-rod operated to move the plunger down in the chamber A, the water which has entered the chamber A through the valve 18' from the apertures 19 in the receiving-chambers B is forced up between the said plunger 11 and its follower 12, through the spider 15, and into the chamber formed above said depressed parts. When the plunger-rod R is drawn upward, the water is forced through the apertures *d d* in the cap-plate D into the discharge-pipes 20, through the connecting-pipe 26, and into and out of the outflow-pipe 27, where it may be received in a suitable receptacle or conveyed and deposited as desired. The operation being repeated the flow becomes continuous and steady.

It is obvious that many minor details in the construction and arrangement of the parts could be made and substituted for those shown and described without in the least departing from the nature and principle of my invention. 35

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

A force-pump comprising an upper section provided with the platform 1, the standard 2, the lever 5, the piston-rod R, the discharge-pipes 20 and 27, the plate D', the gland 22 and suitable connections to said gland, the cap-plate D, having an upwardly-opening valve, 21, and the lower section provided with the central chamber, A, the lateral receiving-chambers B B, having apertures 19 19, the bottom plate having the connecting-passages 18 18 and the valve 18', and the piston having the conical plunger 11, the follower 12, and the spider 15, substantially as described. 45 50

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

HIRAM Q. HOOD.

Witnesses:

JNO. M. GRAHAM,  
D. S. ROSE.