

(No Model.)

P. KOHNZ.
HAND FORCE PUMP.

No. 408,183.

Patented July 30, 1889.

Fig-1.

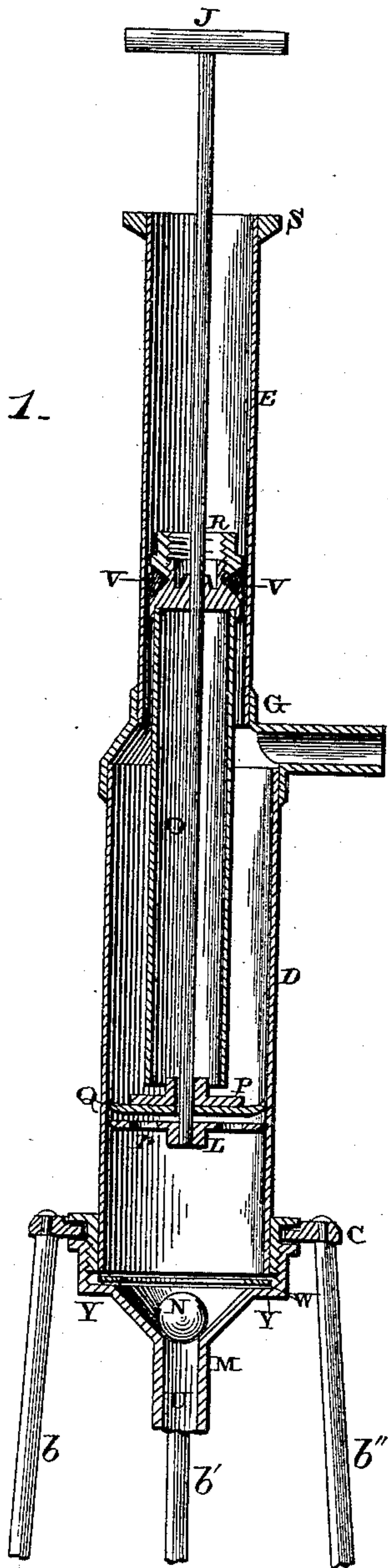
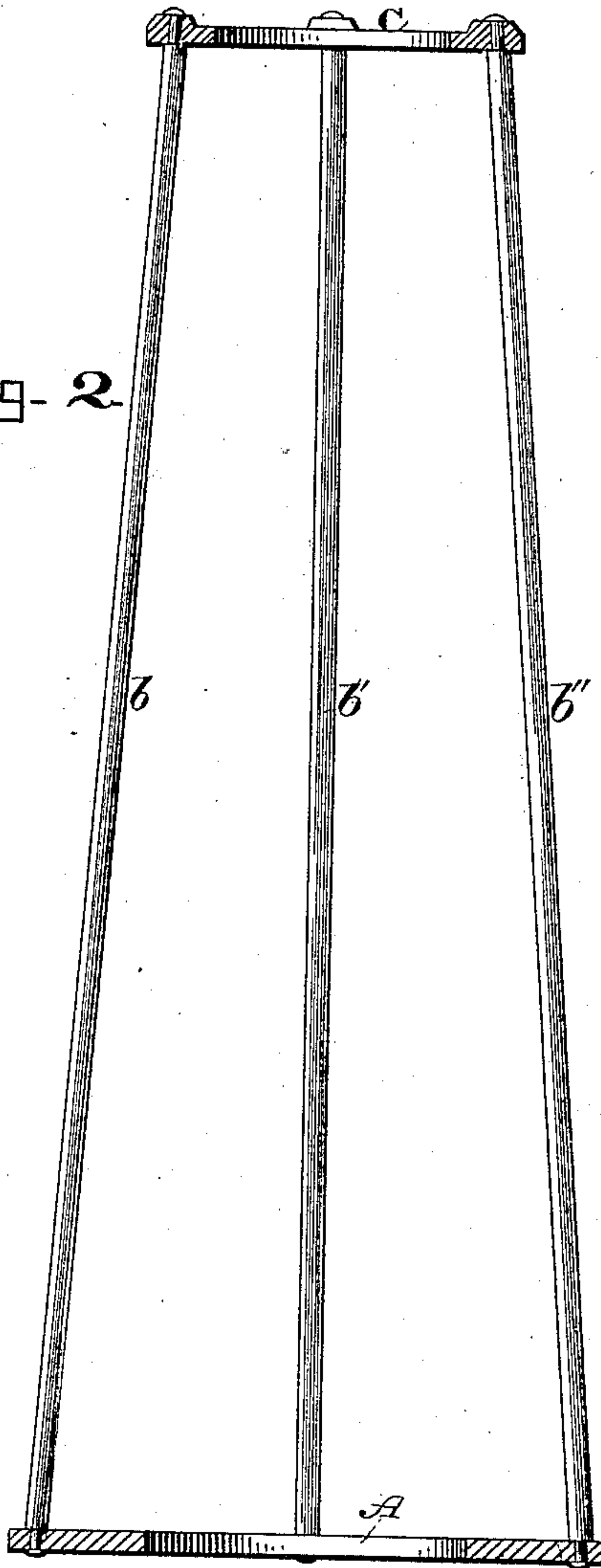


Fig-2.



Witnesses:

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UNITED STATES PATENT OFFICE.

PETER KOHNZ, OF AVON, OHIO.

HAND FORCE-PUMP.

SPECIFICATION forming part of Letters Patent No. 408,183, dated July 30, 1889.

Application filed January 10, 1889. Serial No. 296,030. (No model.)

To all whom it may concern:

Be it known that I, PETER KOHNZ, of Avon, in the county of Lorain and State of Ohio, have invented a new Improvement in Hand Force-Pumps, of which the following is a full, clear, and exact description.

The object of my invention is to provide a double-acting force-pump to be mounted on a foot-piece, tank-cart, or wagon to be easily transported around a garden, house, &c.

Reference is to be had to the accompanying drawings, forming a part of this specification.

Figure 1 is a sectional elevation of the pump, showing all the parts in position, with foot-piece attached; and Fig. 2 is a vertical section on the foot-piece.

Referring now more particularly to the construction illustrated in Fig. 1, D and E are two cylinders, which, combined with the mountings F, G, and S, form the body of the pump. The lower cylinder D has twice the capacity of the upper one E. M is a cap provided with valve-seat for the ball N. So is L in combination with washers Q and P. K is a piston provided with a nut R and packing V to keep it water-tight. Piston K and plunger L are fastened to the rod I, the former by means of a pin or solder, the latter by a screw-thread. Ring F is fastened by brazing or soldering to the cylinder D, and is provided with a flange and screw-thread. Cap M also has a flange and screw-thread to correspond with that of ring F, as shown. These two flanges are the means employed to fasten the ring C of the foot-piece to the body of the pump, thus fastening the pump securely to the foot-piece, tank, wagon, or cart, as either ring C or the whole foot-piece can be secured thereto. The middle ring G connects the lower with the upper cylinder, and is provided with an outlet T, to which the discharge-hose is to be secured, which is provided with a suitable nozzle to discharge the water, as required. Top ring S is intended to give the upper cylinder additional strength. Valve-plunger L is provided with a sufficient number of holes *r* to let the water pass by its downstroke, and washer Q, which is of rubber, leather, or any other suitable material, and P, which is of metal, to give washer Q sufficient stiffness and strength. These two washers are intended to

keep plunger L tight on its upstroke. They close and open the valve as it travels up and down. O is an air-chamber consisting simply of a metal cylinder brazed or soldered to the piston K. This air-chamber is added to prevent hammering and secure a steady flow of the water. To the inlet U a piece of hose is to be fastened to take the water out of the pail, tub, or tank. J is the handle.

Referring now to Fig. 2, C is the top ring, to which the pump is fastened, as shown in Fig. 1. A is the bottom piece of sufficient size to let a foot pass between the rods *b b'*. Of these rods four are employed to form a strong and substantial foot-piece by riveting the top and bottom rings to them.

Now, when it is desired to use the pump, one foot is placed on the bottom A, while the right hand, by means of the handle J, works the rod I and with it piston K and air-chamber O, plunger L, and valve Q and P up and down. With the left hand the discharge-hose is held to direct the water where desired. In going up plunger L will cause the lower cylinder to fill with water, which is retained by ball N going down. Piston K and air-chamber O will cause one-half of this water to pass into the discharge while going up again, and plunger L will send the other half into the discharge, and at the same time fill the lower cylinder again. From this it will be seen that this pump will throw a steady stream of water. It will also be seen that by my method of attaching the lower end of the cylinder D to the ring C of the foot-piece a rest or shoulder Y is provided in the cap M for the lower end of said cylinder, and a packing W placed between the end of the cylinder and the shoulder. By this means the pump is attached to the ring without being itself in contact with it, whereby a perfectly tight joint is formed by a single packing-ring when the pump is clamped to the ring.

All the mountings in this pump—that is, rings F, G, and S, valve M, ball N, plunger L, washer P, piston K, and nut R—are to be cast in metal molds with their respective threads of a composition of zinc, tin, and antimony, as this alloy is almost as strong as brass. In this way this pump can be manufactured for less than one-half the price than if cast in brass or iron, because in metal

molds the screw-threads can be cast on them, so they do not need any finishing at all, and the metal is less expensive, costing only about eight cents a pound. The composition consists of eighty pounds of zinc, two and one-half pounds of tin, and one pound of antimony.

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

In a pump, the combination, with the piston and a cylinder therefor, of a collar placed around its lower end having a flange at its upper edge, and an external screw-thread

below said flange, a cap which closes the lower ends of the collar and cylinder, provided with a flange at its upper edge, an internal screw-thread engaging the thread upon the collar, an inwardly-extending horizontal rest for the lower end of the cylinder, and a valve-seat, whereby a support is clamped between the flanges upon the cap and collar and the pump-cylinder within both, substantially as shown and described.

PETER KOHNZ.

Witnesses:

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