(No Model.)

J. BOYERS.

PUMP.

No. 249,154. Patented Nov. 8, 1881.

Fig. 1.

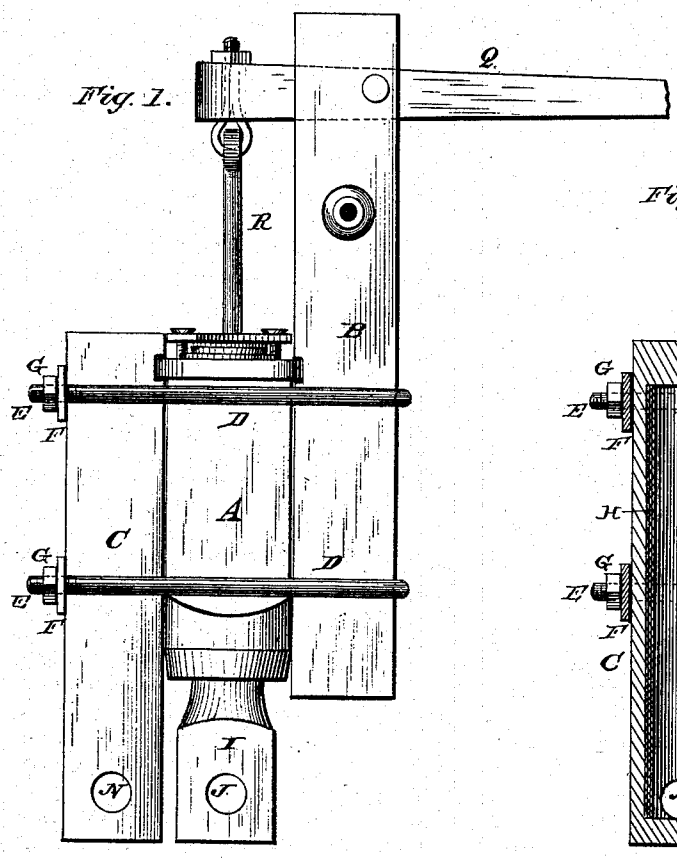


Fig. 2.

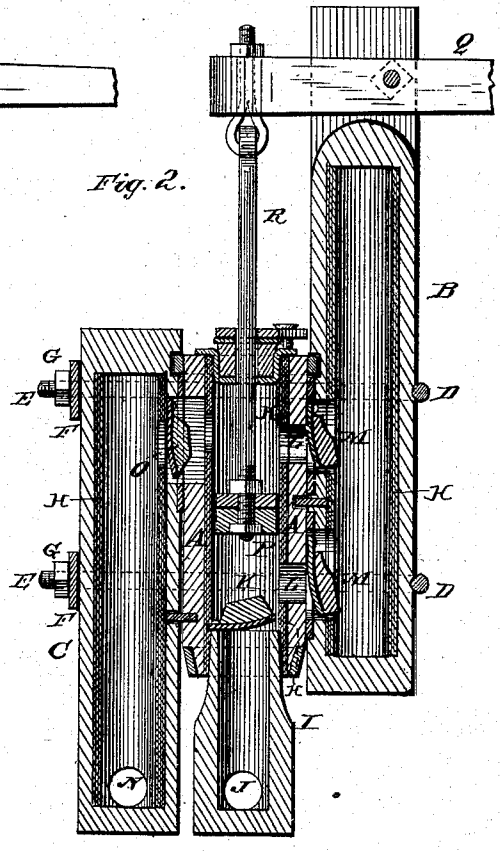
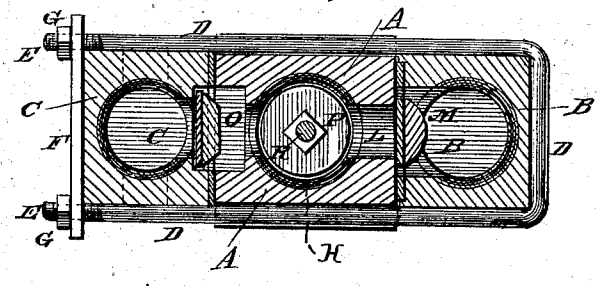


Fig. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

JACOB BOYERS, OF BALTIMORE, OHIO.

PUMP.

SPECIFICATION forming part of Letters Patent No. 249,154, dated November 8, 1881.

Application filed August 2, 1881. (No model.)

To all whom it may concern:

Be it known that I, JACOB BOYERS, of Baltimore, in the county of Fairfield and State of Ohio, have invented certain new and useful Improvements in Pumps; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

Figure 1 is a side view of my improved pump. Fig. 2 is a vertical sectional view, and Fig. 3 is a horizontal sectional view.

Corresponding parts in the several figures are denoted by like letters of reference.

This invention relates to pumps; and it consists in certain improvements in the construction of the same, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, A represents the pump-cylinder, B the water-tube, and C an auxiliary cylinder, all of which are firmly connected or clamped together by means of bails D, having screw-threaded ends E, connected by cross pieces F and nuts G.

The pump-cylinder A, which may be made of soft wood, consists of a suitable casing having a lining, H, of any proper kind of hard wood, which is prepared by sawing the said hard wood crosswise, steaming, and bending it, after which it is adjusted so as to leave the pump-bore of any desired size or caliber. Suitable grooves or notches may be formed in the cylinder for the reception of the lining; but while this may be desirable when the lining is made in several pieces or sections, it is by no means necessary or indispensable.

To the lower end of the pump-cylinder is connected a chamber, I, having one or more openings, J, for the admission of water. The upper end of said chamber is provided with a valve, K, opening upward into the cylinder.

The cylinder A is provided upon the side adjoining the pump-barrel or water-tube with two openings, L L, having valves M opening into the said tube or barrel. The auxiliary cylinder C, which is provided at its lower end with openings N for the admission of the water, has near its upper end a valve, O, opening into the cylinder A.

P is the piston or plunger, which moves vertically in the main cylinder A, it being operated by means of a suitably-arranged lever, Q, to which it is connected by a stem, R.

In operation, the downward motion of the piston creates a suction in the auxiliary cylinder, by which the water is raised and passes through the valve O into the main cylinder A above the piston. Meanwhile the valve K is closed, and the fluid below the plunger or piston is forced through the lower valve, M, into the pump-barrel, up through the latter, and out through a suitably-arranged spout. On the upstroke of the piston the valve O is closed, the valve M opened, and water enters the lower end of the main cylinder, while the fluid above the plunger is forced through the upper valve, M, into the pump-barrel, through the spout of which it escapes.

I would have it understood that the auxiliary cylinder and the pump-barrel, as well as the main cylinder, may be provided with the improved hard-wood lining herein described; also, that the said lining, when employed, may be made in a single piece or in several sections, segmental or annular, or both, as may be found suitable and desirable.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. A pump constructed of soft wood or other material, and having a hard-wood lining, as herein described, for the purpose shown and specified.

2. A pump provided with a hard-wood lining having the end of the grain presented to the action of the piston and fluid, as herein described, for the purpose shown and specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

JACOB BOYERS.

Witnesses:
J. A. COFFMAN,
J. R. LITTELL.