(No Model.)

J. J. DEAL.

FORCE PUMP.

No. 337,749. Patented Mar. 9, 1886.

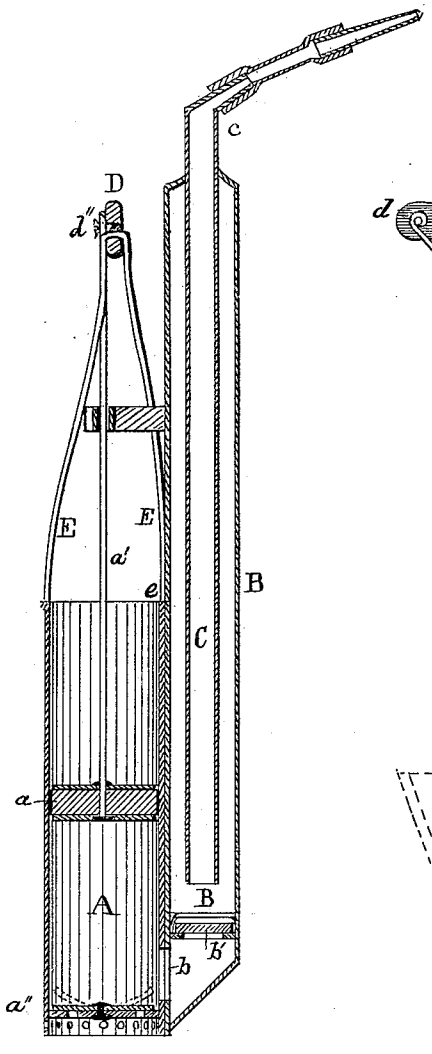


Fig. 1.

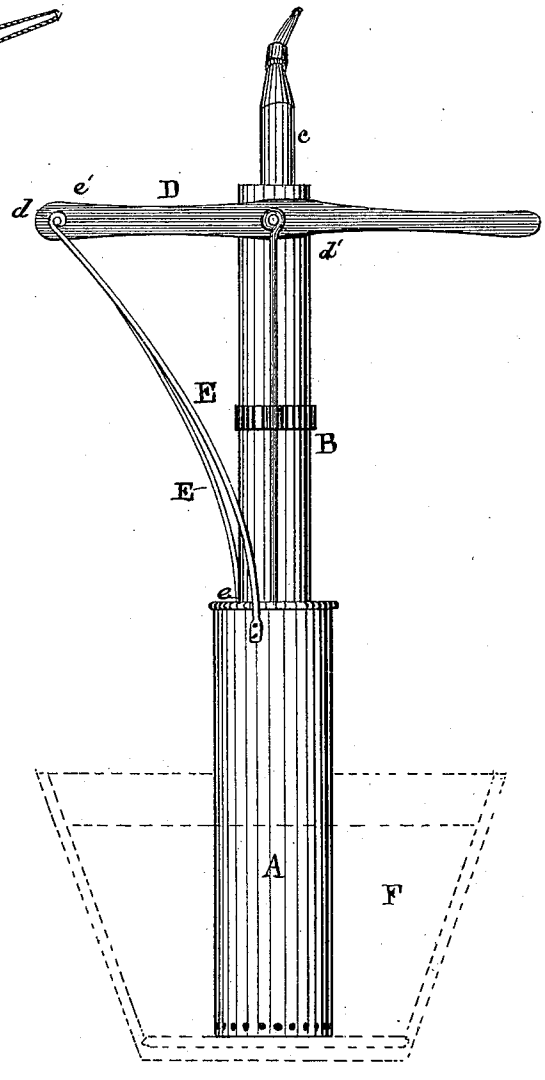


Fig. 2.

Witnesses

M L Hull

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UNITED STATES PATENT OFFICE.

JOSIAH J. DEAL, OF WILMOT, OHIO, ASSIGNOR TO WILLIAM M. JOHNSTON, OF SAME PLACE.

FORCE-PUMP.

SPECIFICATION forming part of Letters Patent No. 337,749, dated March 9, 1886.

Application filed July 27, 1885. Serial No. 172,709. (No model.)

To all whom it may concern:

Be it known that I, JOSIAH J. DEAL, a citizen of the United States, residing at Wilmot, in the county of Stark and State of Ohio, have invented a new and useful Improvement in Force-Pumps, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to certain improvements in hand force-pumps, and more particularly of a pump patented to William M. Johnston, November 11, 1884, numbered 307,954; and it consists, mainly, in the manner of supporting the end of the pump handle or lever, all of which will be more particularly hereinafter described, and pointed out in the claim.

In the accompanying drawings, forming part of this specification, Figure 1 is a vertical transverse section of the pump. Fig. 2 is an elevation of the pump.

A is the pump-cylinder, made, as is usual, with plunger or piston *a*, piston-rod *a'*, and lower valve, *a''*. There is an opening, *b*, from the pump-cylinder A leading into the air-chamber B. Near the bottom of air-chamber B is placed a valve, *b'*. Within air-chamber B is the eduction-pipe C, having its lower end open, and but a small distance above the valve *b'*, and carried up to the top and through it, as shown in the drawings, or may be taken out through the side, as shown in patent of William M. Johnston, referred to above, and carried up to the top on the outside, or stop at any convenient point below the top. The goose-neck *c* has attached to it a flexible tube with any form of nozzle or rose at its end for a sprinkler.

It will be observed that the pump-cylinder and the air-chamber are parallel and joined to each other; hence the distance between their axes is very short in small pumps, and the extent of the movement of the handle D would not give, practically, a sufficient distance for the plunger *a* to work effectively; hence in small pumps it has been customary to place these cylinders at such an angle to each other that the proper distance for the handle could be given. This method of construction, however, was much against putting the pumps in packages for transportation. The present form is found to be better in practice.

It is necessary to adopt some simple and efficacious method of supporting the handle, that it may work properly and give the pump all the power for forcing water. To accomplish this I use one or two flexible rods, E, to be made of steel or spring-hardened brass, which are properly secured to the top of the pump-cylinder, as shown in the drawings. Where two are used, they are placed on opposite sides to brace each other, and thus steady the end of the handle, as seen in Fig. 1. When one rod only is used, it may be fastened at the junction of the two cylinders, or on any side, to suit convenience. In practice where the double rod is used, a long rod is taken, double the height required, passed through a hole in the handle, and then doubled, so as to form a flat loop. The two ends are then secured on opposite sides of the cylinder.

In the drawings, Fig. 2, is represented another method of fastening the rods to the handle, which is by wood-screws passing through eyes formed on the ends of the rods. Fig. 1 represents the first method for the double rod.

The purpose of a flexible supporting-rod for the pump-handle is to allow the end of the handle to "give" when the handle is moved vertically, and is in place of the usual slot in the handle or support in other pumps, and is more economical and simple in construction.

F is a tub, which is used as a tank in which the water is put when the pump is to be used.

I claim—

In a hand force-pump, the combination of the cylinder, a flexible fulcrum consisting of a metal rod bent into a loop in the middle and its ends attached to opposite sides of the cylinder, the handle secured in the loop of the fulcrum, and operating piston and rod, substantially as and for the purpose described.

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

JOSIAH J. DEAL.

Witnesses:

O. E. JOHNSTON,

JAMES CRISE.