

UNITED STATES PATENT OFFICE.

JOHN M. HIRLINGER, OF RED ROCK, PENNSYLVANIA.

IMPROVEMENT IN PUMPS.

Specification forming part of Letters Patent No. 70,842, dated November 12, 1867.

To all whom it may concern:

Be it known that I, JOHN M. HIRLINGER, of Red Rock, in the county of Luzerne, and in the State of Pennsylvania, have invented certain new and useful Improvements in Double-Acting Force-Pumps; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

In the annexed drawings, making part of this specification, A represents the pump-stock, which is closed at both ends, as seen, by the plugs B B'.

D represents the piston or plunger, which plays in the water-chamber of the stock, and C represents the stem or pump-rod, which operates the plunger, said rod passing up through the upper plug, B.

Upon each side of the stock A, or upon two sides of it, are formed recesses, which are covered by the plates F F'. The plates F F' have openings G G' at their centers, for the entrance and exit of water. Near the ends of the recesses are openings S S, which communicate with the water-chamber of the stock.

a and d represent slide-valves, which lie in the recesses, and which are intended for closing and disclosing the openings S U at suitable times, as will be set forth.

Secured upon the inner faces of the slide-valves a and d are pins e e, which project through slots in the pump-stock, and enter

slots or recesses E in the piston D. The pins e e are so arranged upon the slide-valves, and with such reference to the slots in piston, that they are operated upon by the ends of the slots striking them in such a manner that the lower opening s on one side and the upper opening s on the other side are both disclosed at one time, while the other two openings are closed.

At every stroke of the piston water passes in through the hole G', between its plate F and the stock, into the stock, through openings s s on that side, and is discharged through the similar openings on the other side, and passes out through hole G of the other plate F.

It is evident that by this arrangement water is received and discharged at each upward and also by each downward stroke of the piston.

Having thus fully described my invention, what I claim is—

The slide-valves a and d, constructed as described, in combination with the stock and piston, arranged as and for the purpose specified.

In testimony that I claim the foregoing I have hereunto set my hand this 8th day of August, 1867.

JOHN M. HIRLINGER.

Witnesses:

C. M. ALEXANDER,
J. M. MASON.

J. M. Hirlinger,

Force Pump.

No 70,842.

Patented Nov. 12, 1867.

Fig. 1.

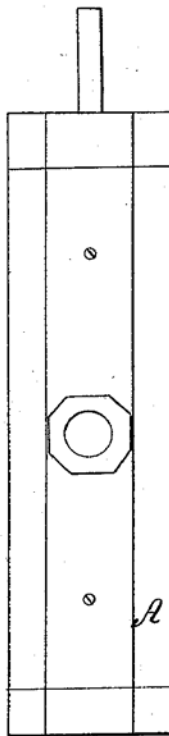
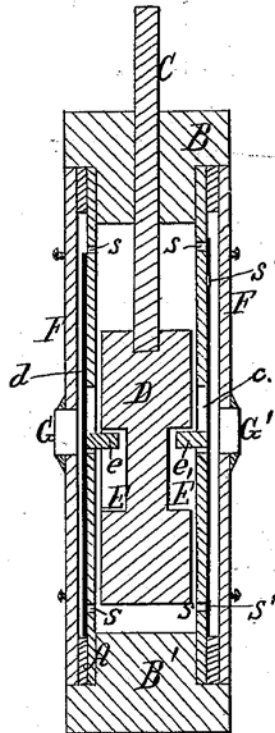


Fig. 2.



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