R. L. Wright,

Pump.

No. 101,960. Patented Apr. 12. 1870.

Fig. 1.

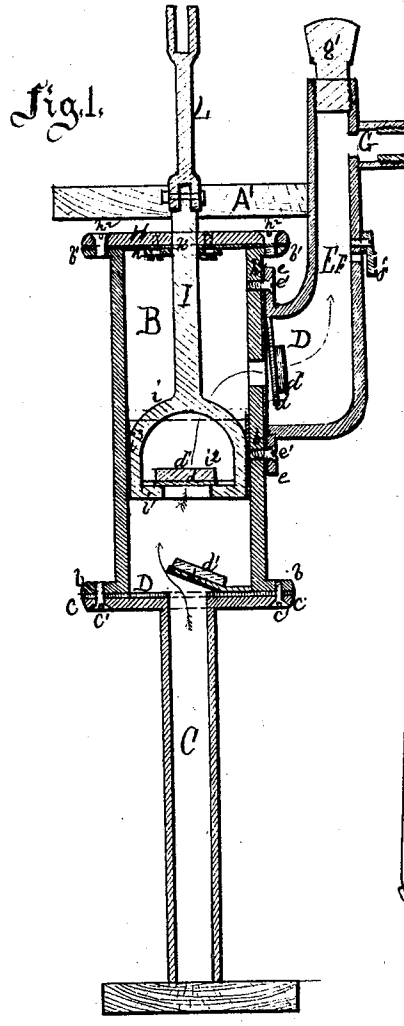

Fig. 2.

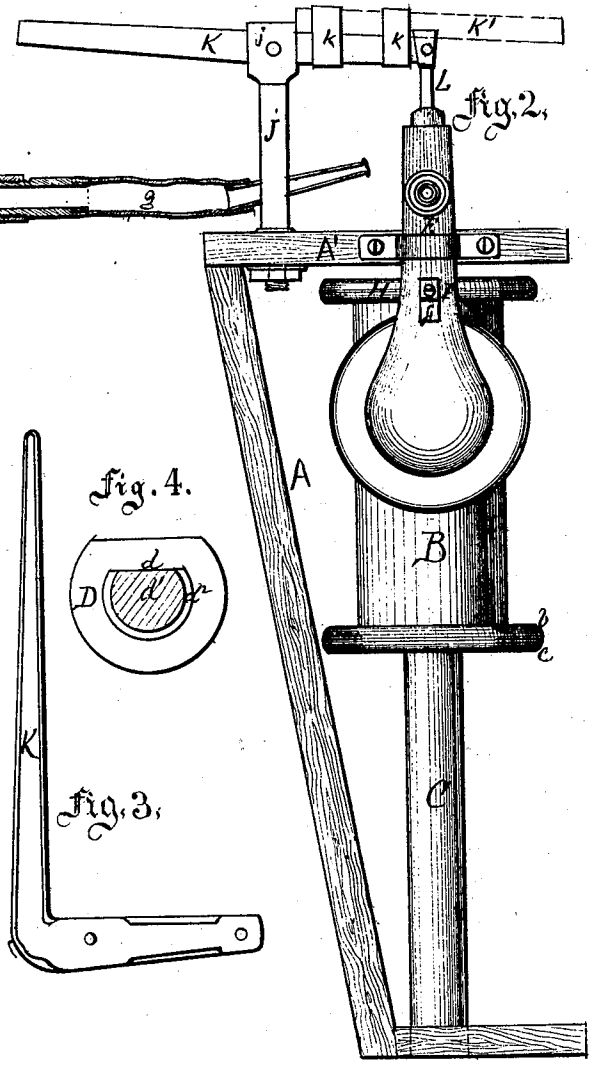

Fig. 4.

Fig. 3.

Witnesses

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ROBERT L. WRIGHT, OF WEST NANTMEAL, PENNSYLVANIA.

Letters Patent No. 101,960, *dated April* 12, 1870.

IMPROVEMENT IN PUMPS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, ROBERT L. WRIGHT, of West Nantmeal, in the county of Chester and State of Pennsylvania, have invented certain new and useful Improvement in Pumps; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing and to the letters of reference marked thereon making part of this specification, in which—

Figure 1 is a longitudinal sectional view of the pump and its operating mechanism.

Figure 2 is a front view, showing the pump and arrangement of levers.

Figure 3 is a plan view of lever.

Figure 4 is a plan view of washer-valve.

The nature of my invention consists is so casting the cylinder of a force or "suck" pump that broad flanges are left at the point of its connection with the supply-pipe, the discharge-pipe, and the seat of the piston-rod; and, also, in securing, by means of disk-plates on the first two of said flanges, washer-valves, so arranged that the same are readily opened by the pressure of the water; and in so securing on the other disk a collar or sleeve that the escape of the water at the upper portion of the cylinder is prevented, and all "waste" and leakage securely guarded against.

The washer-valves, as well as the collar or sleeve, are constructed of leather or other like material, the former being circular in form, and provided with a lip which fits closely over and entirely covers the openings to which the pipes are connected.

My invention also consists in constructing the discharge-pipe with an opening or jet, to prevent all danger of freezing; said opening or jet being provided with a pivoted cap, by means of which it can be opened or closed at pleasure.

My invention also consists in so arranging the upright that serves as the fulcrum on which the operating-lever works, in connection with said lever, that an adjustable lever may be used, and a single or double-action obtained as occasion may require, or a horizontal or upright leverage obtained, at pleasure.

Among the numerous advantages possessed by my pump may be enumerated its cheapness, portability, and simplicity of construction. It can readily be "seated" and operated in any well, cistern, or stream, and its entire freedom from all complicated mechanism, either in its arrangement of valves or other features, and the lasting material of which it is constructed not only insures its successful operation, but its durability, while by my arrangement of leverage, power can be multiplied as occasion requires.

To enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation.

A represents a well or an ordinary frame-work, in which the pump may be arranged.

A′ is the cover of the well or upper section of the frame on which the upright in which the lever operates rests, and through a suitable opening in which the piston-rod works.

B is a cylinder, and may be constructed of any suitable metal. This cylinder is cast with three openings, one in its upper, one in its lower section, and one at its side. The upper and lower openings are of the same diameter as the main chamber of the cylinder, while the side opening is smaller.

Each of said openings is surrounded by circular flange-plates, as seen at b b^1 b^2.

The lower opening of the cylinder is connected with the supply-pipe C. This supply-pipe C may be constructed of any suitable material, and is provided with a circular flange, c, of the same dimensions, and the exact counterpart of the flange b on the cylinder B.

These flanges b and c are firmly secured together by means of bolts or screws c' c'. The joint is rendered perfectly tight by means of the washer-valve D. This washer-valve D is constructed of leather or any other suitable flexible material, and has a portion of its central surface cut away, and is provided with a lip, d, sufficiently large to close the opening or passage between the cylinder B and pipe C.

The form of this washer-valve is clearly shown at fig. 4, where d^2 represents the circular-formed slot on the surface of the washer, or the portion that is cut away.

The lip d is covered with a metal cap, d^1, which not only strengthens the same, but whose weight presses the lip down closely, covering the opening until the pressure of the water elevates the same, when an unobstructed passage is left for the water.

E is the discharge-pipe, and may be constructed of any suitable material in the form shown at fig. 1, or in any other desired. This pipe E is also provided with a flange, e, which corresponds exactly with the flange b^2 of the cylinder B.

These flanges e and b^2 are united by means of bolts or screws e' e'. Between the same is inserted, and thus rendering the joint perfectly tight, a washer-valve, D, constructed and arranged as before described.

This pipe E is also provided with an opening or jet, F, which is covered by a pivoted cap or cover, f.

This opening or jet is arranged at such a point on the pipe that, when the pump is inserted in the well or frame casing A, it will be below the cover A′. It securely guards against all danger of freezing in winter or severe weather.

At a point above the section A′ the pipe E is provided with a short pipe or nozzle, G, having a female screw-thread cut at its outer opening or mouth, by

means of which can be firmly secured a hose or other discharge-pipe, *g*.

At the upper end of the pipe E there is inserted a tight screw-plug, *g'*, which prevents the escape of water at that point, and insures the discharge through the nozzle G.

H is a flat metallic disk of the same dimensions of the flange b^1 on the upper section of the cylinder B.

On the under surface of this disk H, and around its center opening, is permanently secured, by means of a metal ring, *h*, a leather collar or sleeve, h^1, through which works the piston-rod. While this sleeve or collar *h* allows perfect freedom of motion to the piston-rod, still, at the same time, it hugs the same sufficiently close to prevent all waste or leakage at that point.

Between the disk H and the flange b^1 is inserted a leather washer, which forms a perfectly tight joint when the disk is secured by the screws or bolts h^2.

I is the piston-rod or plunger, and is provided at its lower section with a yoke, *i*, to which is secured a valve-seat or bucket, i^1, on the upper surface of which is permanently hinged a metallic suction-valve, i^2.

This valve is provided with a leather washer, which insures its successful operation.

The yoke and valve are surrounded by a suitable jacket or sleeve, i^3, all of which is clearly shown in fig. 1.

J is an upright standard, which is firmly secured to the upper section of the frame, or the cover of the well A'. The upper section of this upright or standard is provided with a slotted head, *j'*, in which is secured the operating-lever K.

The outer end of this lever is bolted to a short arm, L, which is secured to and operates the piston-rod I.

This lever K is provided with slotted caps *k k*, in which can be inserted an additional lever, K', when the same is considered desirable, or, instead of the system of leverage shown in fig. 2, an L-shaped lever, such as shown in fig. 3, can be inserted and used.

Thus it will be seen that I can multiply the power of the levers at pleasure, and work the pump by means of either an upright or horizontal leverage.

The plug *g'* and the hose *g* are so constructed that they can be made to exchange places, thus causing the pump to throw an upright stream instead of a horizontal one.

Having thus fully described my invention,

What I claim therein as new, and desire to secure by Letters Patent of the United States, is—

A pump, consisting of the cylinder B, pipes C and E, the latter having jet F and cap *f*, and also being so arranged that the stream can be caused to issue either in a an upright or horizontal direction, plunger I, washer-valves D D, and lever K, the whole being so arranged as to operate substantially as described, as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ROBERT L. WRIGHT.

Witnesses:

H. A. BOSSIER,

ELIJAH BUTT.