

(No Model.)

A. D. AUSTIN.

PUMP.

No. 264,024.

Patented Sept. 5, 1882.

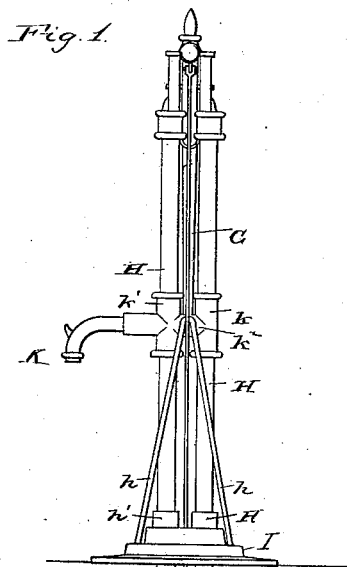


Fig. 4.

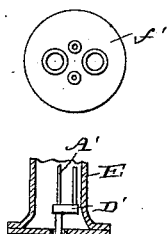
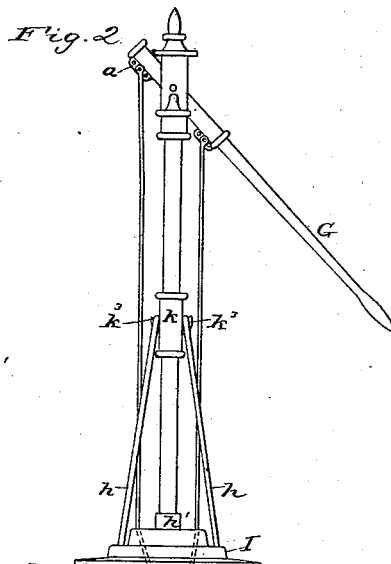
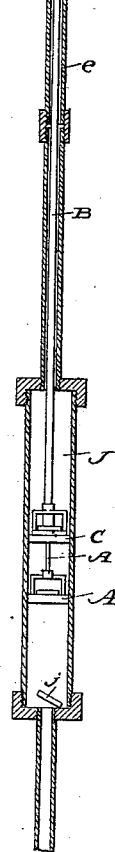


Fig. 3.



Witnesses:
J. S. Barker
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UNITED STATES PATENT OFFICE.

ALONZO D. AUSTIN, OF JACKSON, MICHIGAN, ASSIGNOR OF ONE-HALF TO
BENJAMIN PORTER, OF SAME PLACE.

PUMP.

SPECIFICATION forming part of Letters Patent No. 264,024, dated September 5, 1882.

Application filed June 10, 1882. (No model.)

To all whom it may concern:

Be it known that I, ALONZO DAYTON AUSTIN, a citizen of the United States, residing at Jackson, in the county of Jackson and State of Michigan, have invented certain new and useful Improvements in Pumps, of which the following is a specification, reference being had therein to the accompanying drawings.

Figure 1 is a side elevation of a pump embodying my improvements. Fig. 2 is a vertical section of the lower part, the upper part being shown in elevation. Fig. 3 is a section of the lower parts, illustrating the method of elongating the connection between the pump-barrel and the reservoir. Fig. 4 is a plan view, showing the relative positions of the delivery-tubes and the piston-rods.

In the drawings I have shown my improvements as attached to a pump having a pumping-barrel, J, communicating with the well or the body of water by means of a pipe, there being a valve, *j*, between these two parts. Above the working-barrel J there is a barrel, E, to receive the cross-heads or angle-pieces, to be hereinafter described, this barrel being substantially cylindrical at its lower part, and flaring at its upper, as shown at E'. This barrel E is connected with the barrel J by means of a short narrow tubular connection, *e*, there being suitable bearings between the opposing surfaces. In the working-barrel J, I place a lower piston, A, and an upper piston, C, both being in the same cylinder, the lower one, A, having a piston-rod, A', which passes up through a hollow piston-rod, B, carried by the upper piston.

At D there is an angle-piece or cross-head connected with the piston-rod A', said piston-rod being connected at one end to the angle-piece or cross-iron, and the upper rod, A², being connected at the other end of the cross-head. This last said rod is at the upper end connected to the handle G, by means of which the pump is operated. Preferably it is connected adjustably by means of a perforated plate, *a*, adapted to permit the pin or bolt to be moved out or in from the pivot of the handle, so as to adjust the throw of the rod A². The angle-piece or cross-head D' is arranged in the upper end of the barrel E, and at the lower end of said barrel there is arranged another cross-

head, D', connected with the hollow piston-rod B below, and with a rod, B', which extends upwardly to and is pivoted to the handle G on the side of the handle-pivot opposite to that on which the rod A² is pivoted. The rods A² and B' are passed through stuffing-boxes at *f*, which prevent the escape of water at that point, the stuffing-boxes being carried by a plate, *f'*, which is tightly clamped against a flange, *f*², at the upper end of the barrel E. It will be seen that as the handle is oscillated the pistons A and C are caused to alternately approach and recede from each other, and that the valves are so arranged that this alternate approaching and receding shall result in a practically-continuous flow of water. The water is carried upward from the working-cylinder J through the tubular connection *e* into the barrel E. From this barrel it passes into two parallel pipes, H, which are secured to the plate *f'* by means of hubs or bosses *h'*, provided with screw-threads, whereby a tight joining is caused between the tubes and the lower parts of the pump. These tubes both communicate with the spout K by means of a coupling having the pipe *k*, pipe *k'*, and a cross-connecting pipe, *k*². The cross-pipe *k*² not only serves for connecting the tubes and parts of the coupling, but also provides a means of support for the braces, whereby the upper parts of the pump are securely fastened together and the whole is held firmly in position. In the drawings braces for this purpose are shown at *h* *h*, they being bolted or otherwise secured to the base-plate I and engaging at their upper ends with the coupling. They are formed by bending rods, which at the bent parts engage with upwardly-turned lugs or hooks *k*³, formed with or secured rigidly to the cross-pipe *k*².

The parallel delivery-tubes H H pass through the base-plate I, which rests upon the ground or bottom support of the pump, and are extended to a point considerably below the ground-line, whereby the upper parts of the pump are made much stronger, and the stuffing-boxes *f* *f* are placed below the action of frost. These pipes or tubes H H are connected with the coupling *k* *k'* by screw-threads. They are extended above the coupling, and furnish a convenient and firm support and guide for the

handle G, which is pivoted and oscillates between them.

By constructing the barrels J and E in the manner described separately from each other and joining them by an intermediate reduced coupling, I am enabled to make a small working-barrel for the pistons at a much smaller cost than the ordinary long barrels can be made, and I can provide ready means for adapting a pump to any depth of well or reservoir, as two or more coupling-sections can be readily inserted, and can provide a constant guide and guard for the angle-pieces of the piston-rods.

By means of the two parallel delivery-tubes H H, I am enabled to arrange the upper parts of the pump very compactly, as they permit the operating-rods A² and B' and their stuffing-boxes f f to be brought very near the central vertical line of the pump, so that small space in cross-area is required, and short cross-pieces or angle-pieces D D' are needed.

The valve c of the upper piston, C, is arranged to avoid a wearing contact with the piston-rod. It is held out of contact therewith by means of an interposed tube, c', which is supported upon the piston in any suitable manner, the piston-rod A' passing through it. The valve c rises and falls bodily, being guided by the interposed tube c'.

What I claim is—

1. In a pump having the two pistons A C, the combination, with the hollow rod B, attached to one of the pistons, the inner rod, A', attached to the other, and the cross-heads or angle-pieces D D', of the working-barrel B, containing the pistons, the barrel E, containing the angle-pieces or cross-heads D D', and the tubular connection c, as and for the purposes set forth.

2. The combination, with the pistons A and C, the hollow piston-rod B, attached to one, the inner rod, A', attached to the other, and angle-pieces D D', the handle-rods A² and B', and the barrel E, containing the cross-heads or angle-pieces D D', of the stuffing-boxes f for the rods A² and B', substantially as set forth.

3. The combination, with the two pistons, the rods A² B', connected respectively with said pistons, and the barrel E, of the two parallel tubes H H, connected at their lower ends with the barrel E and at the upper ends with the delivery-spout, substantially as set forth.

4. The combination, with the delivery-spout and the parallel pipes or tubes H H, of the connecting-joint having the parallel parts k k' and the connecting-tube k², substantially as set forth.

5. The combination, with the supporting-plate I, the parallel pipes or tubes H H, and the connecting part k², of the braces h h, arranged and operating substantially as set forth.

6. The combination of the barrel E, which receives the water above the pistons, the operating-rods A² and B', passing through the top of the said barrel E, the stuffing-boxes f f, and the delivery-tube secured to the said barrel E below the ground-line, whereby the said barrel and stuffing-boxes can be suspended below the region of frosting, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ALONZO DAYTON AUSTIN.

Witnesses:

ZERAH TOMLINSON,
JAS. A. DYER.