

W. C. CULBERTSON.
Pump-Pistons.

No. 142,004.

Patented August 19, 1873.

Fig. 1.

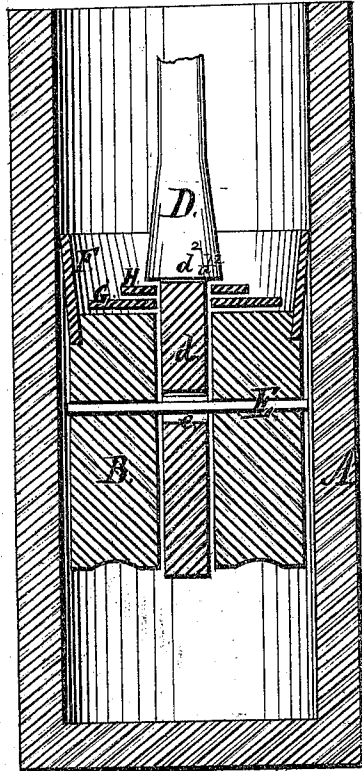
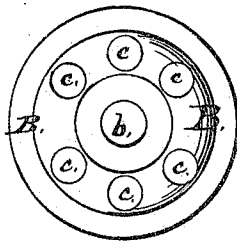


Fig. 2.



Attest,
E. C. Brown
L. Lees

Inventor,
William C. Culbertson,
by E. R. Brown,
Attorney.

UNITED STATES PATENT OFFICE.

WILLIAM C. CULBERTSON, OF GIRARD, PENNSYLVANIA.

IMPROVEMENT IN PUMP-PISTONS.

Specification forming part of Letters Patent No. 142,004, dated August 19, 1873; application filed March 10, 1873.

To all whom it may concern:

Be it known that I, WILLIAM C. CULBERTSON, of Girard, in the county of Erie and State of Pennsylvania, have invented a new and useful Improved Pump-Piston; and I do hereby declare that the following is a full, clear, and exact description thereof, sufficient to enable those skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawing making part of this specification and to the letters and figures marked thereon.

The nature of my invention consists in the peculiar construction and arrangement of parts, as hereinafter particularly described.

In the drawing, Figure 1 is a central vertical section of my improvement. Fig. 2 is a bottom view.

A represents a portion of a pump with my piston attached. B is a cylindrical wooden plug, with a central perforation, *b*, for the reception of the piston-rod, and a series of perforations, *c*, surrounding said central one, to allow the passage of water through the plug. The piston-rod D has a shank, *d*, formed on its lower end, which is inserted in the central perforation *b* in the plug, and secured by a rod, *E*, passing through a round hole in the plug B, and through an elliptical hole or slot, *e*, in the shank *d*, so as to allow a slight vertical play to the piston-rod without affecting the plug. Surrounding the upper end of the plug is a flange, *F*, of rubber, leather, or similar suitable material, flaring outward, so as to form a packing for the plug, and a cup for holding and raising water. G is an annular washer of leather or rubber, surrounding the shank *d*, and covering the perforations *c* in the plug. H is a washer of similar form, but smaller than the washer G, and made of metal of suitable thickness to give it the proper degree of weight. It rests upon the

top of the washer G surrounding the shank *d*. The two washers G H have slight vertical play between the top of the plug B and a shoulder, *d*², on the rod D at the point where the shank *d* begins.

The piston-rod D is of a length sufficient to allow the piston to work at or near the surface of the water in the well or cistern to which the pump is applied. As the piston descends the shoulder *d*² presses the washers H and G closely down upon the top of the plug B, so as to close the apertures *c*, and cause the plug to operate, during the down stroke, as a solid plunger or piston, and to displace and force down the water in the cylinder or pump-tube by displacing the water on the outside of said cylinder, and forcing it upward. When the piston reaches the lowest point to which the force applied thereto is able to send it, the instant that said force is removed, preparatory to commencing the upstroke, the slight vertical play of the piston-rod before referred to allows the washers G H to rise, so as to permit the water to flow through the apertures *c*. In regaining its equilibrium the water outside of the cylinder falls, and the water inside thereof rises, and is forced rapidly through the apertures *c*, before the actual commencement of the upstroke of the piston.

What I claim as new, and desire to secure by Letters Patent, is—

The rod D, formed with the shoulder *d*² and slot *e*, in combination with the plug B and washers G H, arranged and operating substantially as shown and described.

The above specification of my invention signed by me this 13th day of September, 1872.

W. C. CULBERTSON.

Witnesses:

CALVIN J. HINES,
GEO. H. CUTLER.