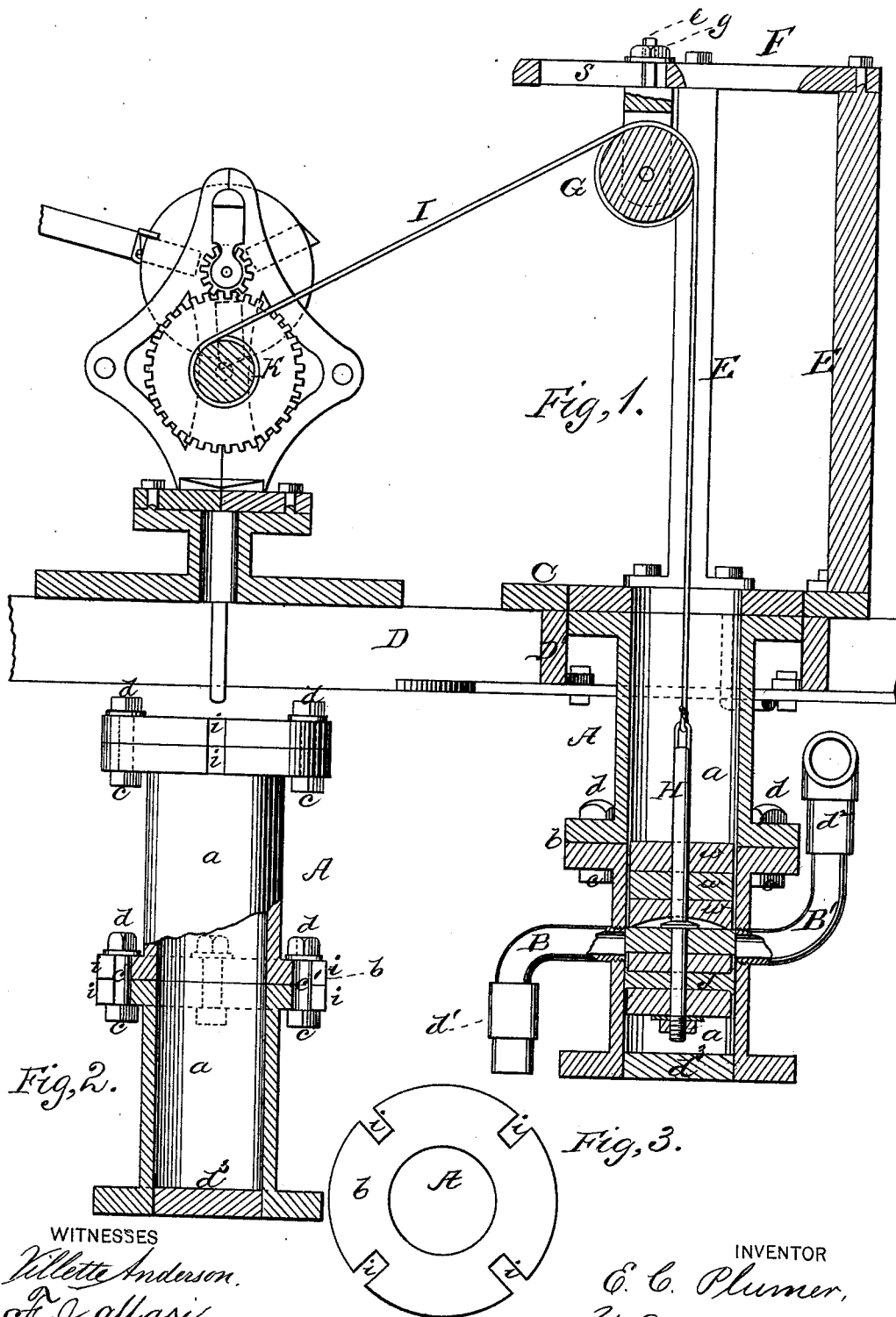


E. C. PLUMER.
Water-Elevator.

No. 214,444.

Patented April 15, 1879.



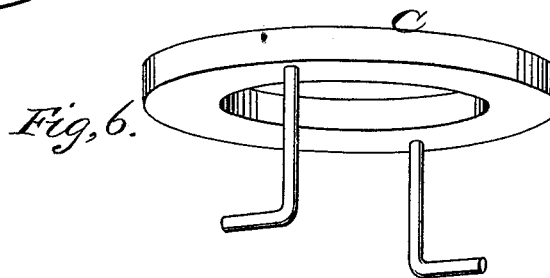
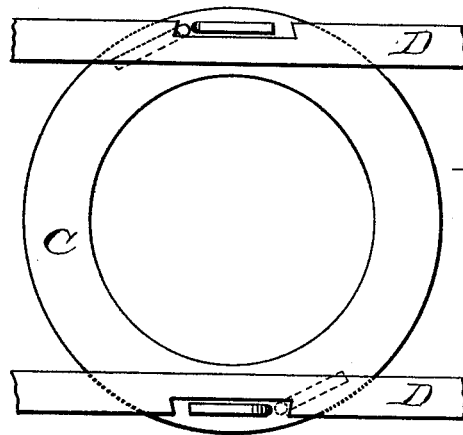
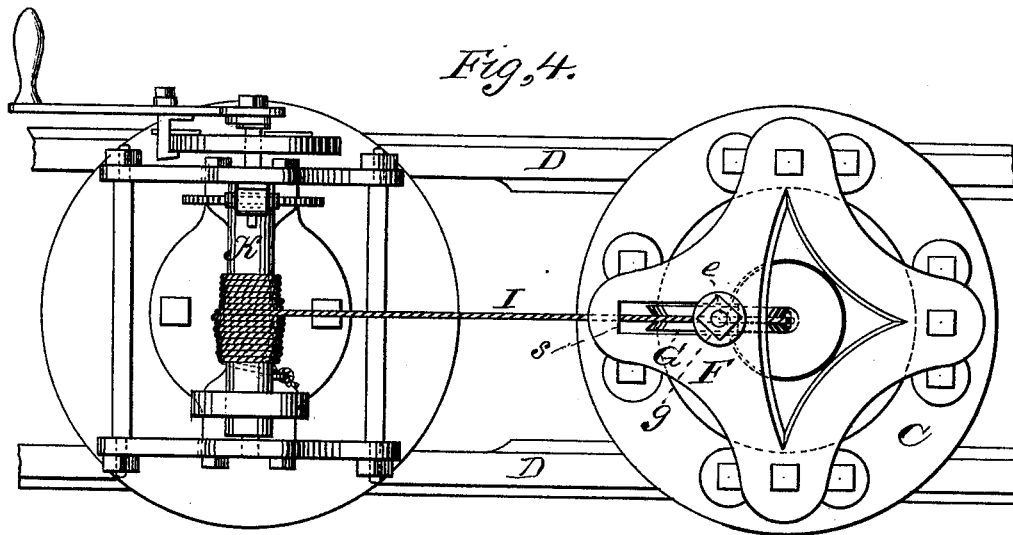
WITNESSES
Villette Anderson.
F. J. Chas.

INVENTOR
E. C. Plumer,
by E. W. Anderson.
ATTORNEY

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UNITED STATES PATENT OFFICE.

EUGENE C. PLUMER, OF COLUMBIA, SOUTH CAROLINA.

IMPROVEMENT IN WATER-ELEVATORS.

Specification forming part of Letters Patent No. **214,444**, dated April 15, 1879; application filed January 11, 1879.

To all whom it may concern:

Be it known that I, E. C. PLUMER, of Columbia, in the county of Richland and State of South Carolina, have invented a new and valuable Improvement in Water-Elevators; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a vertical central section of my improved water-elevator. Fig. 2 is a side view thereof, partly in section. Fig. 4 is a top view of the elevator, and Figs. 3, 5, and 6 are details.

This invention has relation to improvements in pumps for supplying dwellings, offices, and other places with water.

The object of the invention is principally to devise means for maintaining a head or pressure of water, without using a tank or other equivalent device, sufficient to supply the wants of a household.

The nature of the invention consists in the construction and novel arrangement of parts, as hereinafter shown and described.

In the annexed drawings, the letter A designates the cylinder of my improved pump, composed of a number of cast-iron sections, *a*, flanged at their contiguous ends, as shown at *b*. The faces of sections *a* are ground true, and the flanges *b* are provided, each in a corresponding position, with a notch, *i*, of rectangular form, extending in nearly to the outside of the said sections. These are coupled together by means of headed bolts *c*, having a rectangular part, *c'*, fitting snugly in the notches *i*, and having a screw-threaded end, upon which is applied a nut, *d*, that, being set up, will clamp the sections together tightly. A packing-ring may be interposed between the flanges, if it be deemed expedient.

The advantage of these slots is that I am able to do away with the boring of holes in the flanges, which, from the exceeding difficulty of bringing the said holes exactly in the same line, is a great source of expense and labor, and renders the alignment of the sections with their axes in line exceedingly difficult. This alignment is very necessary to the proper

working of the piston, which, unless its movements be exactly at right angles to the longitudinal axis of the cylinder at all points of its stroke, is apt to cause leakage and consequent loss of power.

The cylinder reaches to the bottom of the well, and its lower end is closed by a plug, *d*³, that serves as a bumping-block or stop to the piston. It is provided with an induct-pipe, B, having an upwardly-opening valve at *d*¹, and with an educt-pipe, B', connected with the service-pipes of the building, and also provided with an upwardly-opening valve at *d*².

The cylinder, at its upper end, extends through an annular metallic curb, C, supported by suitable (preferably metallic) beams D D', and having erected thereon strong (preferably metallic) posts E, carrying at the upper ends a horizontal (preferably metallic) table, F. This table has in it an oblong slot, *s*, through which projects from below the tang *e* of a pulley, G. The tang *e* is screw-threaded, and is secured to the table F by means of a nut, *g*, applied upon the end of said tang projecting through slot *s*. By loosening this nut the pulley G may be adjusted toward the cylinder, so that the axis of the latter prolonged will be exactly tangential to the said pulley; consequently, a cord or chain reeved through said pulley and attached to the upper end of the rod H of a packed piston, J, working in said cylinder will be exactly in line with the longer axis of the cylinder, and the piston will be raised or lowered without binding and in parallel planes. The other end of chain I is secured to a winding-drum, K, actuated by suitable mechanisms, usually a crank. The piston is weighted, as shown at *w w*, and a packed head may be placed at intervals among the weights, if it be deemed expedient.

By operating the windlass the valve in the induct is opened by atmospheric pressure, the valve in the educt-pipe is closed, and water rushes up the induct, and, following the piston, completely fills the cylinder. This being accomplished, the windlass is let go, and the pressure from above on the piston closes the valve in the educt-pipe, keeping the cylinder full. If now a cock or other equivalent device in a service-pipe be opened, the pressure upon the cylinder opens the valve in

the educt, and forces the water up the said pipe through the service-pipes and out of the cock. A sufficient quantity being drawn, the cock is shut off. As water is drawn from the service-pipe the piston in the cylinder is lowered therein; but the operation may be repeated as often as may be required until the said piston falls upon the stop aforesaid, when it will cease.

It will be clear that the operation above described may be repeated as often as required simply by raising the weighted piston through the windlass aforesaid.

This plan is peculiarly adapted for use in locations where water-pressure is not to be had from natural fall.

I am aware that pipes having tongue-and-groove couplings formed on the abutting ends thereof, and V-shaped flanges provided with semi-cylindrical notches on their outer edges, and a round bolt engaging the same, are not new; and I do not claim such devices broadly.

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

1. The combination, with the cylinder A,

composed of sections *a*, having flanges *b*, ground level on their contact-faces, and provided with rectangular notches *i*, extending into said flanges near the cylinder, of the bolts *c*, having correspondingly-rectangular portions *c'* passed edgewise into said notches, and their threaded ends having clamping-nuts applied thereon, whereby said sections are adapted for lateral adjustment on each other, substantially as specified.

2. The combination, with the cylinder A and a packed weighted piston working therein, of a derrick erected on the curb of said cylinder, the table F, having oblong slot *s*, the pulley G, adjustable in said slot, and a rope or chain, secured at one end to the stem of said piston, passing over the pulley, and secured to a winding-drum, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

EUGENE C. PLUMER.

Witnesses:

WALTER C. MASI,
JOHN A. ELLIS.