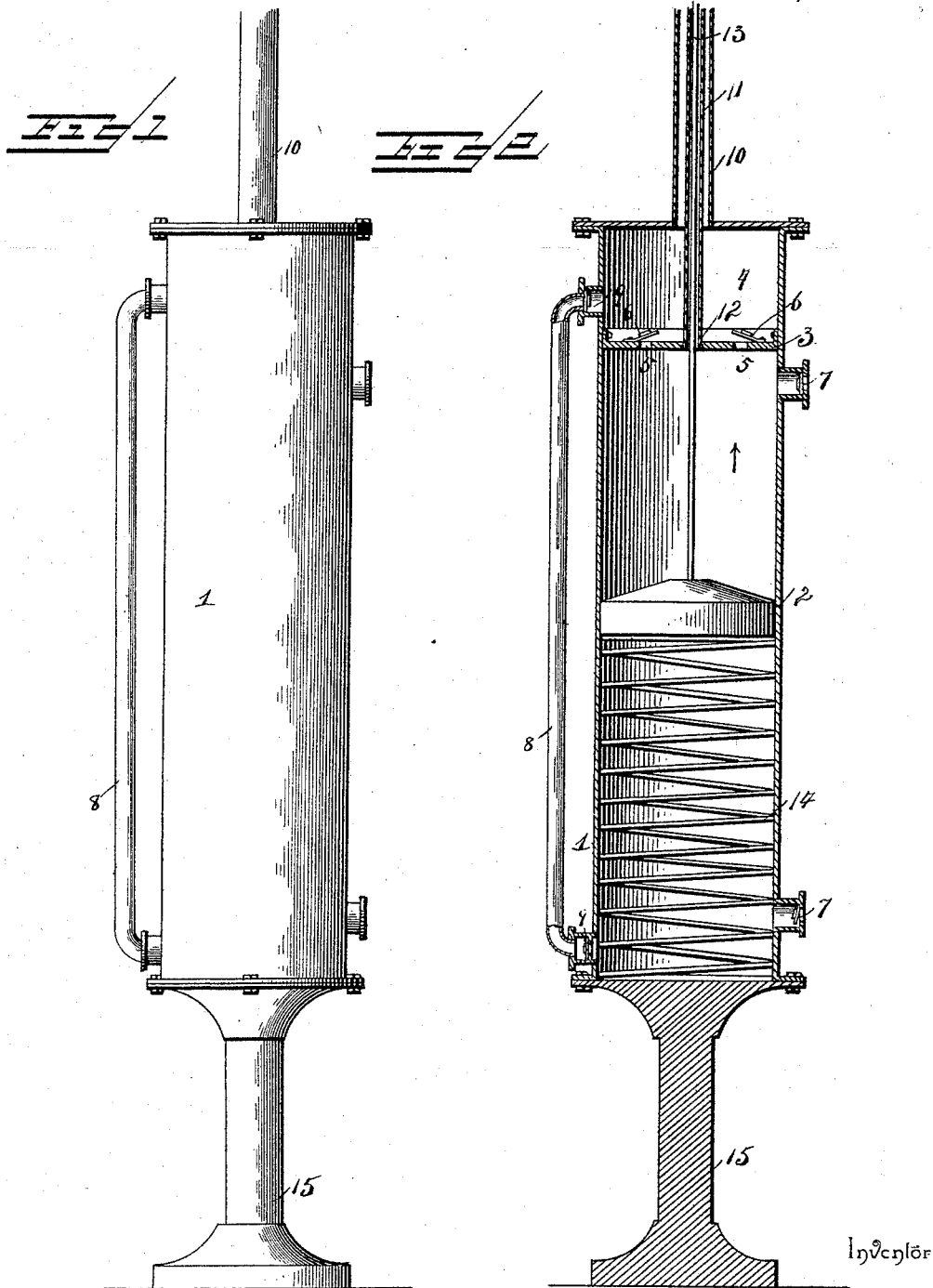


(No Model.)

J. W. THOMPSON.
FORCE PUMP.

No. 526,759.

Patented Oct. 2, 1894.



Witnesses

W. E. Schneider.

By His Attorneys.

O. E. H. H. H.

John W. Thompson.

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

JOHN W. THOMPSON, OF ALVORD, TEXAS, ASSIGNOR, BY MESNE ASSIGNMENTS, OF ONE-THIRD TO J. W. BRANCH, OF SAME PLACE.

FORCE-PUMP.

SPECIFICATION forming part of Letters Patent No. 526,759, dated October 2, 1894.

Application filed June 27, 1893. Serial No. 478,967. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. THOMPSON, a citizen of the United States, residing at Alvord, in the county of Wise and State of Texas, have invented a new and useful Force-Pump, of which the following is a specification.

My invention relates to a force pump, the objects in view being to provide a simple, inexpensive, and efficient pump of the type known as "double action," one cylinder and plunger only being employed; and furthermore, to provide means for equalizing the opposite strokes of the plunger when the cylinder is arranged in a vertical position.

A further object of my invention is to provide a common chamber to receive the water from both strokes of the plunger, whereby the service pipe may be connected to said chamber in alignment with the axis of the cylinder to form a casing for the plunger-rod.

Further objects and advantages of the invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claim.

In the drawings: Figure 1 is a side view of a pump embodying my invention. Fig. 2 is a central sectional view of the same.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates the cylinder, in which operates the plunger 2, and 3 represents a transversely-disposed partition, which is arranged near one end of the cylinder, namely, the upper end, when the cylinder is disposed in a vertical position. This partition separates a portion of the interior of the cylinder from the main body thereof to form a chamber 4, and is provided with openings 5, fitted with valves 6, which open upwardly or into the chamber 4. The cylinder is provided at its lower end, and at a point adjacent to the partition 3, with inlet valves 7, and the lower end of the cylinder proper is connected with the chamber 4, by means of an exterior conductor-pipe 8. The conductor-pipe is provided at both ends with valves 9, which open toward the chamber 4, in order to allow water from the under side of the plunger to be

forced into the chamber and prevent the return flow thereof into the cylinder.

Connected to the center of the top of the chamber and in alignment with the axis of the cylinder is a service-pipe 10, which incloses a concentrically-disposed guiding-tube 11, extending axially through the chamber 4, and fixed in an opening 12, at the center of the partition 3. This tube forms the guide for the plunger-rod 13.

This being the construction of my improved pump, the operation thereof will be apparent without particular description. It should be noted, however, that the receiving chamber 4 is formed as a part of the cylinder and is separated from the body portion thereof by a readily insertible partition, thus simplifying and, obviously, cheapening the construction of the device. Furthermore, the service-pipe is utilized as a guide or casing for the plunger-rod, and the concentric guide-tube which is arranged in said pipe serves to prevent water, after reaching the chamber, from flowing back into the cylinder.

In operating a pump having a vertically-disposed cylinder, the downward stroke is assisted by gravity while the upward stroke is opposed thereby, and hence in order to equalize the resistance to enable the operating mechanism to move smoothly and steadily, I employ a resistance spring 14, which is arranged between the under side of the plunger and the lower end of the cylinder. This spring, while not interfering with the free passage of the water, resists the downward pressure of the plunger and assists the upward movement thereof; and by graduating the strength of the spring in proportion to the weight of the plunger, the opposite strokes of the pump may be accurately balanced. I preferably mount the cylinder, in practice, upon a pedestal 15, having an enlarged base-portion 16, to rest upon the bottom of the well or inclosure from which the water is pumped. Such pedestal serves to prevent the cylinder from sinking into the soft earth at the bottom and interfering with the operation of the valves. The said pedestal 15, is not only provided with an enlarged base portion to rest upon the bottom of a well or wherever the pump is located, but is

also provided with an enlarged upper end to which the lower flanged end of the cylinder is bolted. The lower flanged end of the cylinder that is bolted onto the upper enlarged end or head of the pedestal is open and is therefore inclosed at the bottom by the upper end of the pedestal which forms a bottom cap therefor, and also forms a rest or support for the lower end of the resistance spring 14, as clearly shown in Fig. 2, of the drawings.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having described the invention, what I claim is—

In a pump of the class described, the combination of an upright supporting pedestal provided with enlarged upper and lower ends,

the upright valved cylinder provided with a lower open end secured onto the upper enlarged end of the pedestal which forms a bottom cap therefor, a valved partition arranged within the cylinder, a valved exterior conductor pipe connected with the cylinder above and below said partition, a solid plunger head working within the cylinder below the valved partition, and a resistance spring arranged within the cylinder under said plunger head and resting at its lower end on the enlarged upper end of said supporting pedestal, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN W. THOMPSON.

Witnesses:

G. A. PERKINS,
R. E. FARMER.