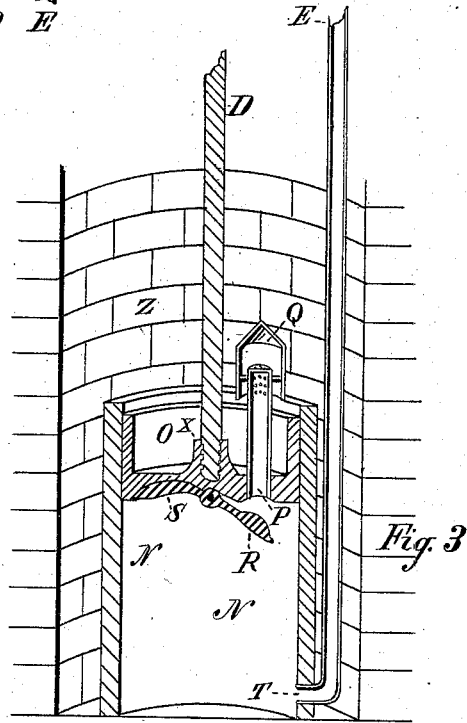
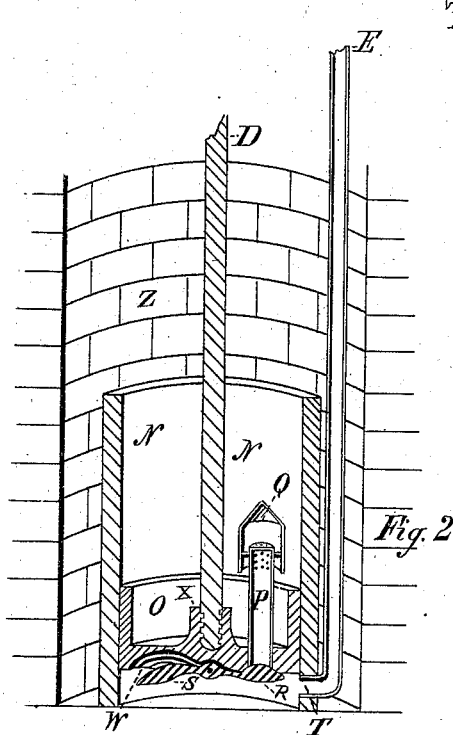
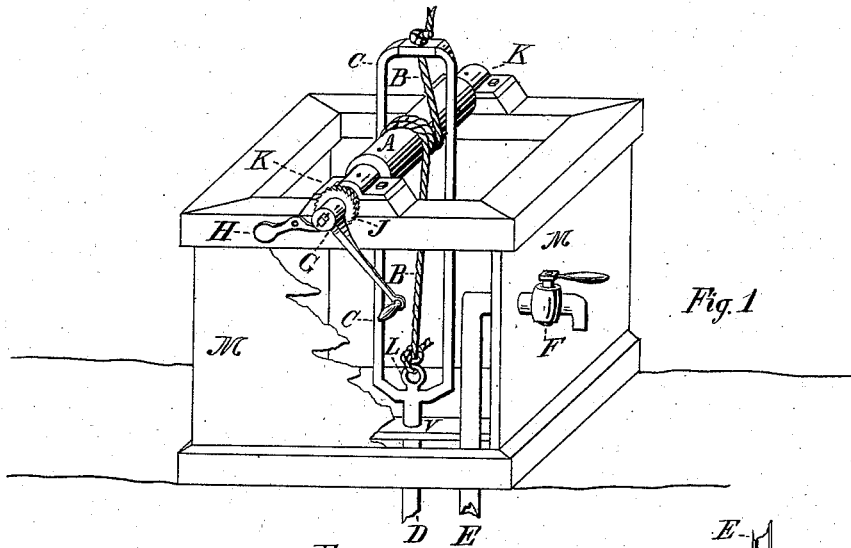


F. J. SEYBOLD.  
 Apparatus for Raising Water.

No. 205,216.

Patented June 25, 1878.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

FREDERICK J. SEYBOLD, OF ST. LOUIS, MISSOURI.

## IMPROVEMENT IN APPARATUS FOR RAISING WATER.

Specification forming part of Letters Patent No. **205,216**, dated June 25, 1878; application filed February 8, 1878.

*To all whom it may concern:*

Be it known that I, FREDERICK J. SEYBOLD, of the city of St. Louis, in the county of St. Louis and State of Missouri, have invented a new and useful Improvement in Apparatus for Raising Water, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings.

My invention pertains to that class of articles denominated in a general way "apparatus for raising water;" and consists in an open cylinder, which may be immersed in a well, cistern, or other water-reservoir. This open cylinder is supplied with a piston-head, fitting snugly in the same. Through this piston-head is an orifice, communicating at the one end with the inside of the cylinder below the piston-head, the other end communicating with the water in the well or other reservoir. On the under side of this piston-head is fitted a valve on the mouth of the orifice, which opens downward into the hollow cylinder. The valve has an arm-extension with a heavy end. The valve is so pivoted that the heavy end outweighs the valve end, and, thus weighing down, keeps the valve end closed tightly against the orifice through the piston-head; but when the piston is raised, and the water pours into the cylinder through the orifice in the piston-head, it presses the valve away and fills the cylinder beneath the piston-head; but immediately the piston-head is at rest, or is moved downward, the heavy end of the valve closes the light end against the mouth of the orifice through the piston-head; and as the piston-head moves downward, the valve being closed tightly, the water in the cylinder is forced out through a pipe opening into the cylinder, near the bottom of the same, the pipe reaching up to and out of the mouth of the well or other reservoir of water. A stream of water is thus forced up through this pipe, and flows continually out of the same, so long as the piston-head is forced downward or settles downward of its own weight into the cylinder. To this piston-head is attached a shaft that reaches up to the top of the well or other reservoir of water, where a rope or chain is attached to the shaft, one end of the rope being attached to the end of the shaft and the

other end of the rope being attached to the shaft at some distance below the end, the middle of the rope encircling, by two or three coils, a windlass between the two ends of the rope, the construction and arrangement being such that as the windlass is revolved in one direction one end of the rope is coiled on the same, and pulls the end of the shaft downward toward the windlass and into the well, forcing the piston down into the cylinder. As the windlass is revolved in the other direction the other end of the rope is coiled around the same, which raises the shaft and piston-head upward out of the cylinder, allowing the cylinder to fill with water through the piston-head by means of the orifice in the same and the weighted valve before described.

The construction and working of this apparatus will be more readily understood by a reference to the drawings accompanying this specification, in which the same parts of the apparatus are referred to by the same letters in the different figures.

In the drawing, Figure 1 represents the curbing of a well over and around the top of the same. In this figure, A is the windlass. B is the rope coiling around the windlass. C is one-half of the shaft, which is divided at the top, and embraces the windlass A. D is the shaft below the divided or double portion of the same. E is the pipe or conduit, reaching up from the base of the cylinder at the bottom of the well and opening out of the curbing at one side of the same. F is a faucet in the pipe E, that can be opened or closed as it is desired to draw water from the pipe E. G is a crank, by means of which the windlass A is turned. H is a weighted pivoted pawl, that works in the ratchet J and prevents the windlass A from turning backward, which it tends to do, on account of the weight of the piston-head that is pulling downward. K are boxes, which hold the windlass A securely onto the curbing M. L is an eye or hole in the shaft C D, into which the rope B is fastened at its lower end.

Fig. 2 is a vertical sectional view of a well or other reservoir of water, with the cylinder in the bottom of the same, and with the piston-head near the bottom of the cylinder, showing the valve closed. In this figure, D is

the shaft, before described in Fig. 1, that operates the piston-head. N is the cylinder or tank, in which the piston-head fits air-tight. O is the piston-head, concaved on its upper surface to so large an extent that the cavity becomes a receptacle into which sand or other weighty material may be placed for the purpose of giving increased weight to the piston-head. P is the orifice in the piston-head, that allows the water to pass through the same in filling the hollow cylinder N. Q is a covering over the top of the tubular orifice P. This covering Q prevents the water from passing into the tubular orifice P, except by rising up from beneath the lower edges of the covering Q, and then flowing into the tubular orifice P by means of perforations in the same near the top of the same. This construction prevents any dirt or sediment passing into the orifice P. R S is the valve, pivoted onto the under side of the piston-head O. The end R of the valve R S closes against the orifice P as the piston-head O is at rest or moving downward in the hollow cylinder N. The end S of the valve S R is heavier than the end R. W is a cavity, into which the heavy end S of the valve R S retires as the valve opens away from the orifice P. T is the opening of the discharge-pipe E into the cylinder N. Z is the well or other reservoir, in which is immersed the hollow cylinder N. X is a protuberance with an orifice in the same, into which is cut a screw-thread, into which is screwed the shaft D, on the lower end of which is also a screw-thread. I do not, however, confine myself to the mode of attaching the shaft D to the cylinder-head O here shown, as any suitable desirable mode may be used.

Fig. 3 is the same view as described in Fig. 2, excepting that in Fig. 3 the valve S R is represented as open, with the piston-head O represented as rising and nearly at the top of the cylinder N.

This apparatus is operated as follows: The various parts being constructed, arranged, and put together as shown and described, or in an equivalent manner, with the piston-head O at the bottom of the cylinder N as shown in Fig. 2, and the bifurcated shaft D C and the rope B and windlass A in the position shown in Fig. 1, the windlass A is rotated by means of the shaft G, which action coils the rope B around the windlass A, raising the point L toward the windlass A, and, as a consequence, raising the piston-head O to the top of the hollow cylinder N, during which operation the water in the well or other reservoir, Z, pours into the hollow cylinder N beneath the piston-head O through the orifice P. Then the piston-head can be held in that position from settling down by means of the pawl and ratchet H J; or it will stand in that position without settling down, even if the pawl H is thrown out of the ratchet J, providing the faucet F is kept closed.

When it is desired to draw water by means of this apparatus, the pawl H is released from the ratchet J and the faucet F is opened, when the piston-head O will settle down by its own weight into the hollow cylinder N, and force the water out through the pipe E and faucet F.

When the faucet F is kept closed, it is immaterial whether the pawl H is kept in the ratchet J or not, as when the faucet F is kept closed the piston-head O cannot settle down, even if the pawl H is detached from the ratchet J.

When it is desired, in cases of fire or other emergencies, to throw a stream of water or carry it to a long distance by means of pipes attached to the pipe E at F or otherwise, any force desired can be applied to the piston-head O by means of the shaft D and the arrangement of the windlass and rope A B, as shown in Fig. 1, as by simply reversing the windlass I force the shaft D downward and apply any desired force to the piston-head O.

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

1. In an apparatus for raising water, the piston-head O, constructed with the sand-chamber on its upper side and the orifice P, in combination with the heavy-ended pivoted valve S R, for the purpose set forth.

2. In an apparatus for raising water, the piston-head O, constructed with the sand-chamber and the orifice P, in combination with the valve S R and the shaft D.

3. In an apparatus for raising water, the piston-head O, constructed with the sand-chamber and the orifice P, in combination with the valve S R and the hollow cylinder N, for the purpose set forth.

4. In an apparatus for raising water, the piston-head O, constructed with the sand-chamber, and the orifice P, in combination with the valve S R, the hollow cylinder N, and the pipe E, for the purpose set forth.

5. In an apparatus for raising water, the combination of the piston-rod D, having the guiding-yoke at the top, with the windlass A, inside the yoke, and having the locking device H J, rope B, coiled around the windlass and fastened to the piston-rod above and below the windlass, whereby the piston-rod can be forced up or down by rotating the windlass, substantially as described.

6. In an apparatus for raising water, the combination of the piston-rod D, the windlass A, and the rope B, coiled around it and fastened to the piston-rod above and below the windlass, whereby the piston-rod can be forced up or down by rotating the windlass, as and for the purpose set forth.

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