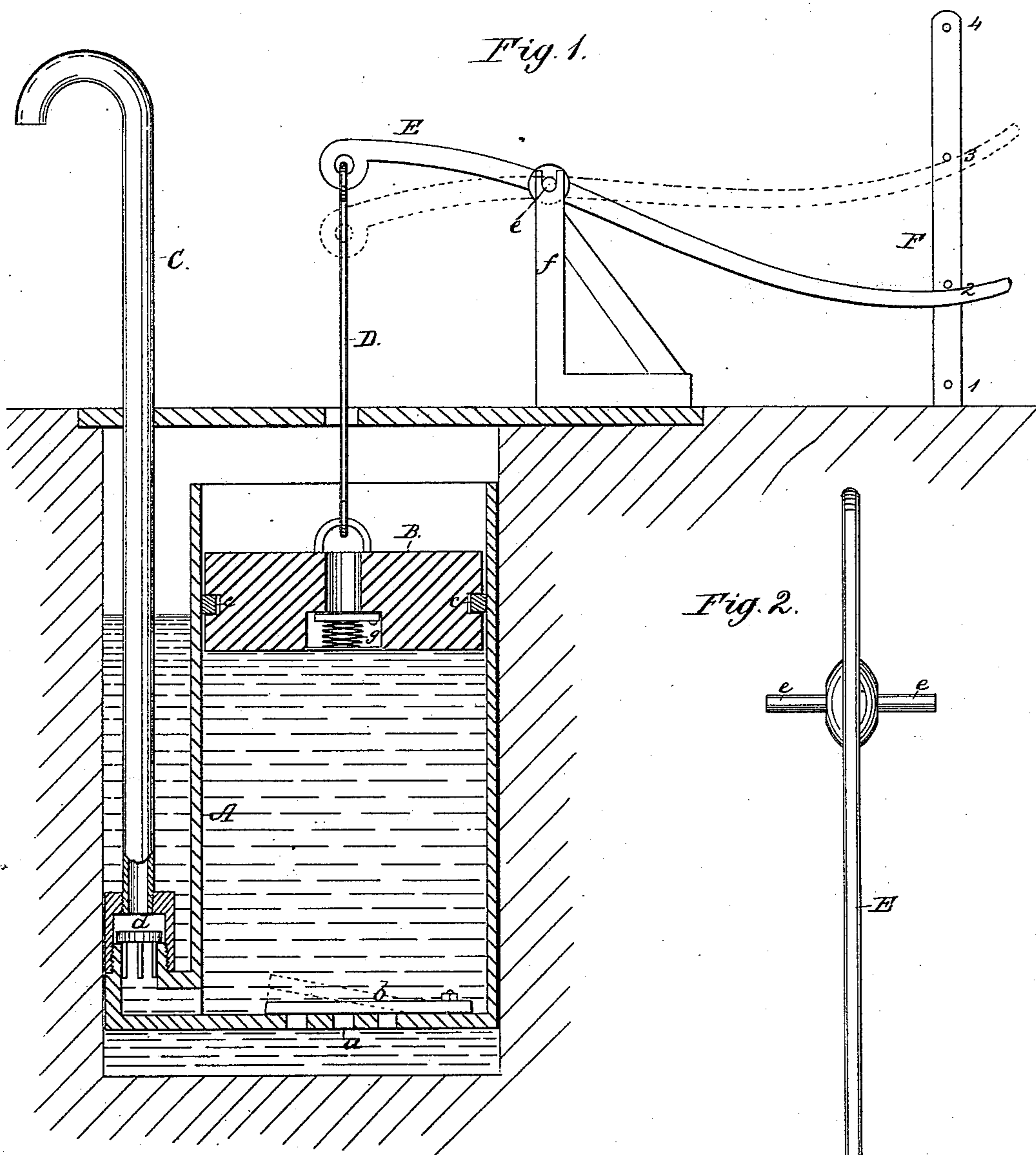


A. W. COATES.
Water-Elevator.

No. 213,173

Patented Mar. 11, 1879.



WITNESSES:

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AMOS W. COATES, OF ALLIANCE, OHIO.

IMPROVEMENT IN WATER-ELEVATORS.

Specification forming part of Letters Patent No. **213,173**, dated March 11, 1879; application filed February 5, 1879.

To all whom it may concern:

Be it known that I, AMOS W. COATES, of Alliance, in the county of Stark and State of Ohio, have invented a new and Improved Water-Elevator; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a sectional view; Fig. 2, a detail of the trunnioned lever-handle.

My invention relates to an improved water-elevator designed to permit a measured quantity of water to be raised from a well, and to reduce the labor of raising it.

The improvement consists in the particular construction and arrangement of devices operating upon the general principle of a weighted plunger descending from gravity in a chamber to force the water beneath up through a stand-pipe to the desired level, as hereinafter more fully described.

In the drawings, A represents a cylinder immersed in a well and opening into said well through holes *a* in the bottom of the same, which are closed by an inwardly-opening valve, *b*. In this cylinder is suspended a weighted plunger, B, having a packing-ring, *c*, to cause it to fit snugly in the cylinder.

C is the stand-pipe, which is provided with an outwardly-opening check-valve, *d*, and which communicates with the cylinder at the bottom, and is extended up to the level at which the water is to be drawn, at which point it is provided with a spout.

To the upper side of the plunger is securely attached a clevis or loop, and to this is loosely connected the lower end of a link or pitman, D, the upper end of which is loosely connected to the short end of a lever, E. This lever, in order to carry the great weight of the plunger in a steady manner, is fulcrumed upon trunnions *e e* in a support, *f*.

The handle or long end of the lever is retained by lugs or notches on a bar, F, which lugs are graduated or located a given distance apart, so as to regulate the distance of the fall of the plunger.

Now, I am aware that the general principle of the weighted plunger, cylinder, and stand-pipe as a means for raising water is not new, the same being shown in Patent No. 32,348. The following features are, however, peculiar to my invention. The employment of the lever not only permits the plunger to be quickly adjusted to act, (thus reducing the percentage of leakage about the plunger by reducing the time of its action,) but it also affords a means for increasing or supplementing the lifting effect of the plunger by direct upward pressure on the handle. Means for obtaining a measured quantity of water are also provided by the graduated lugs of the retaining-bar. The trunnioned fulcrum of the lever also gives steadiness to the lever and prevents lateral movement, which would have a tendency to unseat the handle of the lever from its retaining-lugs.

I also locate in the plunger a downwardly-opening valve, *g*, held up by a spring, whereby any leakage to the upper side of the plunger may, when the plunger is lifted, be restored to the under side of the same.

After the plunger is once set at the top of the cylinder no labor is required to draw the water, as the gravity of the plunger does this, and when thus set by stronger and more capable hands women and children are enabled afterward to draw the water fresh and cool, as desired, with but little exertion.

To prevent the water from freezing in the stand-pipe in winter or becoming warm in summer, a suitable vent-hole may be provided to let it out.

Having thus described my invention, what I claim as new is—

The cylinder A, provided with valves and stand-pipe, as described, the weighted plunger B, the pitman D, the trunnion-fulcrumed lever E, and the retaining-bar F, provided with graduated lugs, all combined substantially as shown and described.

AMOS W. COATES.

Witnesses:

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