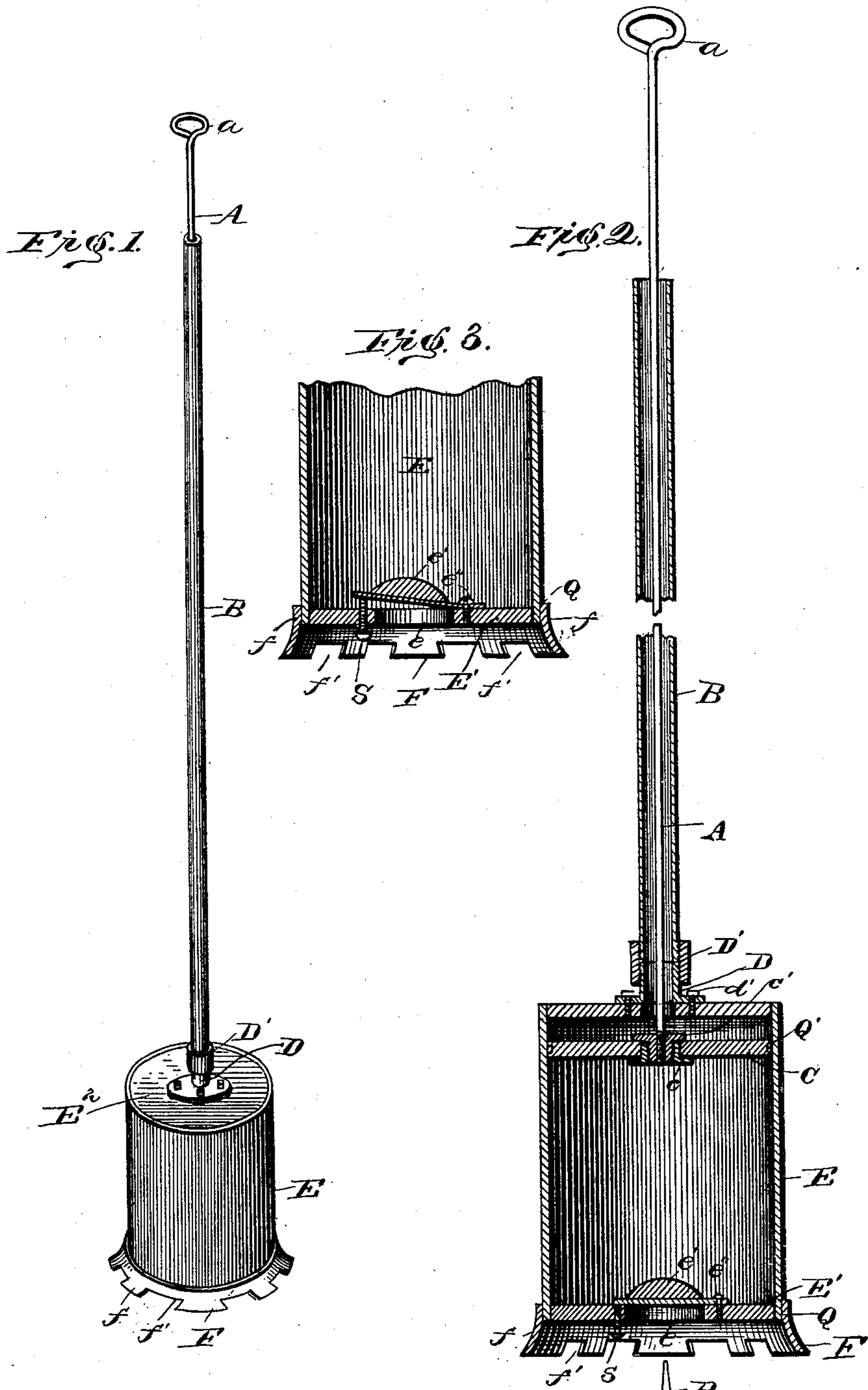


(No Model.)

E. B. RAVENCROFT.
CISTERN CLEANER.

No. 481,423.

Patented Aug. 23, 1892.



Witnesses:

J. M. Fowler Jr.
J. H. Jochum Jr.

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UNITED STATES PATENT OFFICE.

EVAN B. RAVENCROFT, OF NORTH BALTIMORE, OHIO, ASSIGNOR OF ONE-HALF TO THOMAS H. CARTER, OF SAME PLACE.

CISTERN-CLEANER.

SPECIFICATION forming part of Letters Patent No. 481,423, dated August 23, 1892.

Application filed February 13, 1892. Serial No. 421,393. (No model.)

To all whom it may concern:

Be it known that I, EVAN B. RAVENCROFT, a citizen of the United States, residing at North Baltimore, in the county of Wood and State of Ohio, have invented certain new and useful Improvements in Cistern-Cleaners; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to cistern-cleaners; and the object of the same is to provide an improved device for cleaning cisterns and then purifying the water therein by aeration.

To this end the invention consists in a device constructed substantially as hereinafter more fully described and claimed, and as illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of my improved cistern-cleaner ready for use. Fig. 2 is an enlarged central vertical section of the same with the piston raised and the valve closed. Fig. 3 is a similar section of the lower end of the cylinder, showing the means I employ to prevent the valve from completely closing, and this view also illustrates how the device is used as an aerator.

Referring to the said drawings, the letter E designates a cylinder of suitable dimensions, preferably about eight inches in diameter by twelve inches in length, although the same may be of any suitable size, and is not necessarily cylindrical, as shown. The lower end of this cylinder is provided with an annular base F, secured to the cylinder, and the flaring lower end of the base extends below the lower end of the cylinder and is notched, as at f' , so as to form feet f . The latter rest on the bottom of the cistern and allow the water to enter through the notches f' , while the entire cylinder may be rotated, so that the feet f will scrape the bottom, and by their flaring shape they enter all corners of the cistern, (if the latter flares toward the bottom,) and thus agitate the sediment that may gather there, though the notches f' afford an inlet at all times. The upper end or head of the cylinder E is closed by a disk or plate E^2 , centrally apertured, as at e^2 , and upon this head by

bolts or screws d' is secured the horizontal flanged d of a tube D, which is exteriorly threaded at its upper end, as seen.

B is a tubular handle, (preferably of seven-eighths-inch gas-pipe, eight feet or more in length,) and D' is a coupling or collar which embraces the lower end of the handle and the upper end of the tube and detachably connects them, whereby a longer or shorter handle may be attached to the cylinder, as will be obvious.

The letter C designates the piston, which plays vertically within the cylinder, and through the center of this piston is passed a socket-piece c , having a flange at its lower end standing under the body of the piston. Into the socket-piece is screwed a nut c' , having a flange at its upper end standing over the piston and larger than the aperture e^2 in the upper head of the cylinder. Into the nut is screwed the lower end of a long rod A, which leads up through the handle B and has a hand-hold or handle proper a at its upper end. By this construction the socket-piece and nut can be screwed together to cause their flanges to clamp the piston tightly, and the latter may therefore be of wood or even of leather. The rod A is of metal and screws into a metal nut, and hence these parts will not pull apart when the piston is suddenly and forcibly raised and the flange of the nut strikes the upper head around its aperture e^2 . The piston proper may be removed when desired by separating the nut and socket-piece; but the rod will first be unscrewed from the nut, as will be clear. The lower end or head of the cylinder is closed by a disk or plate E' , centrally apertured, as at e , and e'' is a bolt or screw, which secures a weighted flap-valve e' to this disk at one side of the aperture e , so that the valve may fall to close such aperture. I provide a screw S, taking through this disk on the opposite side of the aperture from the bolt e'' , so as to hold the free edge of the flap-valve raised, as seen in Fig. 3, and the device then serves as an aerator for the cistern.

P is a plug or other post set in the ground and over which the device is placed when it is desired to raise the valve when the screw does not support it, as seen in Fig. 2. This

post is of sufficient length to raise the valve when the flaring foot *f* is used; but the screw *S* can be turned in to raise the valve so that the post will not touch it. Said flaring foot
 5 by projecting below the lower end of the cylinder forms a chamber within which stands the head of said screw, whereby this head is protected from abrasion by the bottom of the cistern.

10 The operation of this improved cistern-cleaner is as follows: The valve being allowed to close and the cylinder being lowered into the cistern or other tank which it is desired to clean, the feet *f* are pressed onto the
 15 bottom and into the corners to stir up the sediment, or at least to free it from the bottom. The rod *A* is then drawn on to raise the piston *C* to the top of the cylinder, and this movement draws in, or, as it were, sucks
 20 in the water and sediment at the bottom of the cistern. The cylinder is then removed by its handle *B* and placed over the plug, which latter lifts the valve, and by depressing the rod *A* the muddy water is forced out of the
 25 cylinder onto the ground or elsewhere, according as the plug *P* is located. After several repetitions of this process and when the water ejected becomes quite clear it is often desirable to impregnate the water at the bottom of
 30 the cistern with clear and pure air to aerate it. This I effect in the following manner: The screw *S*, as seen in Fig. 3, is screwed into such position that it will prevent the flap-valve from completely closing, and the piston
 35 is raised. The cylinder is then lowered into the cistern and the rod *A* depressed forcibly. This motion expells the air which is in the cylinder, and it passes out into the water at the bottom of the cistern and quickly rises to
 40 the top, passing through and aerating the water above in its ascent.

The parts of this improved device are of

any desired size, shape, proportion, and materials, and considerable departure may be made from the specific construction set forth
 45 above without losing sight of the invention. In storing or during transportation of the device the handle *B* and rod *A* are detached from the coupling *D'* and nut *c'*, respectively, as will be clear. For deeper cisterns or wells
 50 these members must be longer. The lower head *E'* is preferably screwed into the cylinder, as shown at *Q*, so that the piston may be removed for cleansing and repair. Said piston may have annular packing *Q'*, as shown, 55 although this is not always necessary, as a perfectly air-tight connection of parts is not essential.

What is claimed as new is—

1. A cistern-cleaner comprising a cylinder 60 having a flaring and notched foot projecting below its lower end, a reciprocating piston in the cylinder, an apertured head in the lower end of the cylinder, an inwardly-opening flap-valve secured to said head and adapted to 65 close the aperture therein, and a screw taking through this head from the exterior and adapted to sustain the free edge of said valve, as and for the purpose set forth.

2. A cistern-cleaner comprising a cylinder 70 having a handle, a piston within said cylinder, means for operating the piston, an apertured head in the lower end of the cylinder, an inwardly-opening flap-valve secured to said head and adapted to close the aperture there- 75 in, and an adjustable support on this head adapted to sustain the free edge of said valve, as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

EVAN B. RAVENCROFT.

Witnesses:

E. H. WESTENHAVER,
 FRANK TAYLOR.