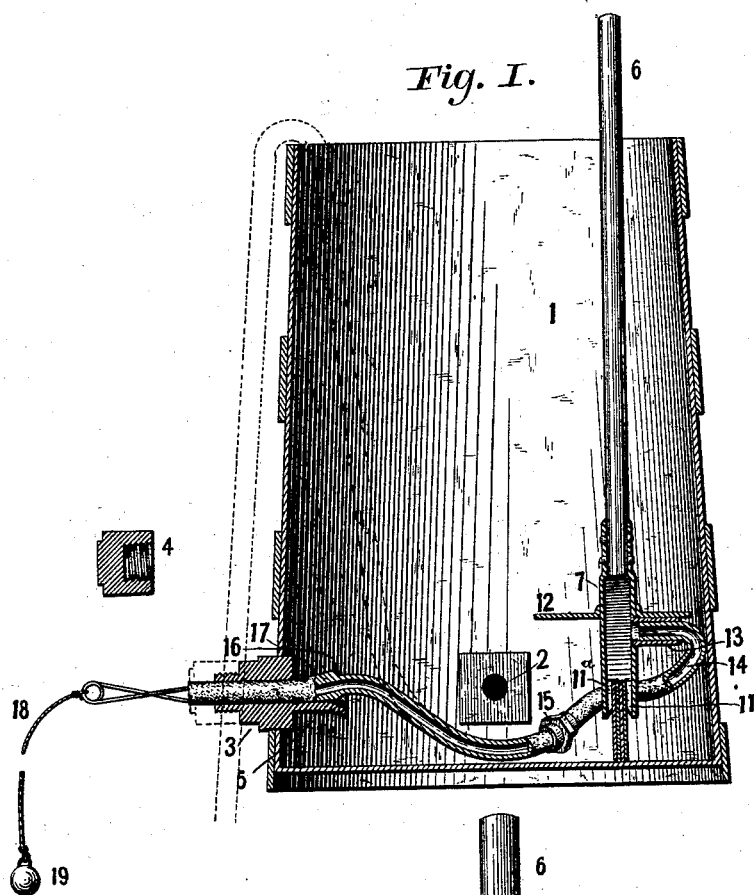


(No Model.)

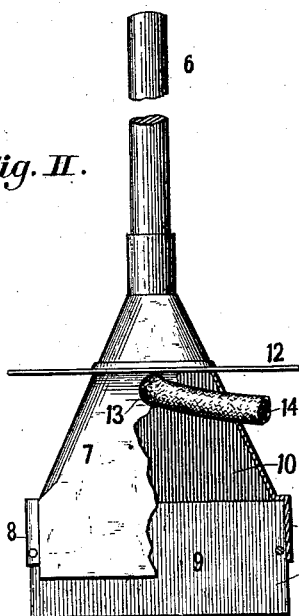
J. E. PATTISON.  
CISTERN AND TANK CLEANER.

No. 302,353.

Patented July 22, 1884.



*Fig. II.*



ATTEST.

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# UNITED STATES PATENT OFFICE.

JOHN E. PATTISON, OF NEW ORLEANS, LOUISIANA.

## CISTERN AND TANK CLEANER.

SPECIFICATION forming part of Letters Patent No. 302,353, dated July 22, 1884.

Application filed September 11, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN E. PATTISON, a citizen of the United States, residing at New Orleans, in the State of Louisiana, have invented certain new and useful Improvements in Devices for Removing Sediment from Cisterns, Tanks, &c., of which the following is a specification.

The invention is specially adapted for use in cisterns or water-tanks placed above the surface of the ground, or in the large tanks employed on plantations where sugar is manufactured, or, in fact, in any tank or receptacle containing wine or any other liquid from which sediment requires to be removed. After continuous use for some time, such cisterns or tanks become covered at the bottom with a heavy sediment, at times four or five inches deep. The ordinary method of removing such sediment is to empty the cistern for the purpose of cleaning it out, an operation involving much trouble and a great loss of liquid. To avoid this difficulty, I have provided a cleaning apparatus adapted to sweep or scrape the bottom of the cistern and having passages into which the sediment is forced by the superincumbent pressure of the liquid. A flexible tube connecting with the passages in the sweeping apparatus or suction-head has removable or fixed connection with a discharge-plug at or near the bottom of the cistern or with a siphon for the purpose of drawing off the sediment.

In order that my invention may be more fully understood, I will proceed to describe it with reference to the accompanying drawings, in which—

Figure I is a vertical section of the cistern to which is applied my improved cleaning device. Fig. II is a side elevation of the sweeper.

1 may represent a common cistern or tank placed above the surface of the ground, and having ordinary discharge-faucet, 2. The cistern is also provided with discharge-plug 3, near its bottom, adapted to be closed by screw-cap 4, and having its inner end projecting somewhat within the body of the tank, and so cut away as to form a flared lip, 5, the purpose of which will be presently set forth.

6 represents the handle or shaft of the clean-

ing device. It bears upon its lower end a hollow metallic suction-head, 7, preferably of broom shape. Said head is extended at its sides 8, to enable it receive a brush or scraper, 9, of rubber or other suitable material. Sufficient space is left on each side between the brush and side walls of the suction-head to permit the passage of the water and sediment into the chamber 10 in the upper part of the head. The brush is preferably of flexible material, so as to yield when pressed against the bottom of the cistern, thus closing the passage 11 or 11<sup>a</sup>, which is for the time being in the rear. If the sweep be moved in the opposite direction, the brush will be bent to the opposite side, closing the passage 11<sup>a</sup> and opening the passage 11.

At 12 is shown a diaphragm or guide fixed to the head of the cleaner to arrest the upward flow of the sediment when disturbed by the scraper.

Leading from the chamber 10 is a pipe, 13, connecting with flexible tube 14. Said tube is provided at an intermediate point of its length with swivel-joint 15, to facilitate the turning or twisting of the apparatus in any direction. Near its outer end the tube 14 is provided with a shoulder, 16, having inclined or beveled portion 17, adapted to occupy the inner end of the escape-plug 3 and prevent escape of water around the tube. The extreme end of the tube is provided with a cord or chain, 18, fixed thereto in any suitable manner—such, for example, as a spring bent or coiled in the center and having its two ends bent outward in the direction of its pressure to form teeth for engaging with the inside of the pipe, said cord being provided with a ball or weight, 19, for sinking it. The lip 5 is flared to increase its area in a horizontal direction, in order to catch and guide the ball 19 more quickly to the orifice.

When it is desired to apply the apparatus, the sweep being hung in convenient position to a nail on the inside top of the cistern, the metallic ball 19 is let down into the contents of the cistern till it rests upon the projecting lip 5 of the escape-plug. The outside screw-cap 4 is then taken off and the rush of water through the plug will force the ball through. It is then quickly grasped and pulled out,

dragging with it chain 18 and flexible tube 14 until the shoulder 16 of said tube is forced tightly against the flared inner end of the plug. Before letting the sweep itself down, the outer end of the hose must now be closed with any suitable stopper—the hand, for example. The sweep is then pushed down until it rests upon the bottom of the cistern at the far side from the plug. The stopper being now removed, the sediment will rise into the chamber in the head of the sweep, and thence flow through the tube to the discharge. By gently pressing the sweep downward and forward the sediment will be banked up and forced up by the superincumbent body of water into the interior of the sweep without escaping upward into the purer contents of the cistern. By passing the sweep over every part of the bottom the sediment will be all drawn up and discharged through the tube.

It is evident that certain portions of the invention here described may be employed with discharge-tubes of various kinds. For example, the said tube, instead of leading to a discharge-plug near the bottom of the cistern, may act through a siphon for discharging the contents over the top thereof, as shown in dotted lines in Fig. 1; or other suitable means may be employed, so long as the direct pressure of the superincumbent water within the cistern is employed to remove or drive off the sediment.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. An apparatus for removing sediment from the bottoms of cisterns, tanks, &c., consisting of a hollow suction-head and a flexible discharge-tube connected therewith, through which the sediment is adapted to be driven by the superincumbent pressure of water, and a suitable staff or handle for manipulation, as set forth.

2. In an apparatus for cleaning cisterns, tanks, &c., the combination of the flexible discharge-tube, the hollow head connected therewith, having a brush or scraper for loosening the sediment, and a staff or handle for operating the apparatus, substantially as set forth.

3. In an apparatus for removing sediment from the bottoms of cisterns, tanks, &c., the combination, with a hollow suction-head and a discharge-pipe connected therewith, of a diaphragm or guard attached transversely to said head for preventing the sediment from commingling with the pure water above, as set forth.

4. In an apparatus for removing sediment from the bottoms of cisterns, tanks, &c., the combination of a brush or scraper for freeing the sediment, a hollow suction-head having a flexible discharge-tube, and a diaphragm or guard attached transversely to said head, as and for the purpose set forth.

5. In an apparatus for removing sediment from the bottoms of cisterns, tanks, &c., the combination, with a hollow suction-head and a suitable discharge-tube, of a flexible brush secured centrally within the opening in said hollow head, as and for the purpose set forth.

6. In combination with a cistern having discharge-aperture near its bottom, as described, the sediment discharge-tube having a weighted chain or cord fixed to its outer end to enable the drawing of the tube to its place within the discharge-plug, substantially as set forth.

7. The discharge-plug having inwardly-projecting lip and screw-cap, for the purposes set forth.

8. In an apparatus for cleaning cisterns, tanks, &c., the combination, with a hollow suction-head having suitable handle, of a flexible discharge-tube having a swivel-joint, as and for the purpose set forth.

9. In an apparatus for cleaning cisterns, tanks, &c., the combination, with a hollow suction-head having suitable handle, of a flexible discharge-tube having an enlarged beveled portion, as and for the purpose set forth.

10. The discharge-plug having inwardly-projecting flared lip, as and for the purpose set forth.

JOHN E. PATTISON.

Witnesses:

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