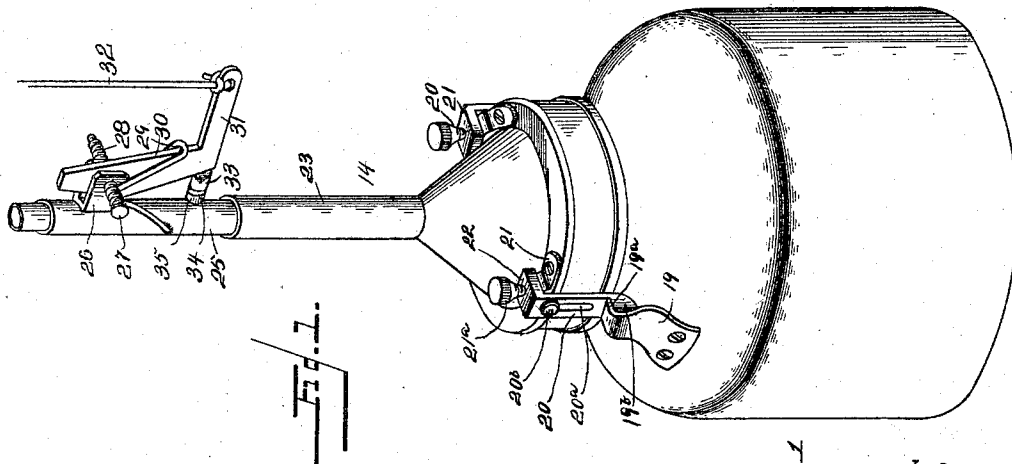
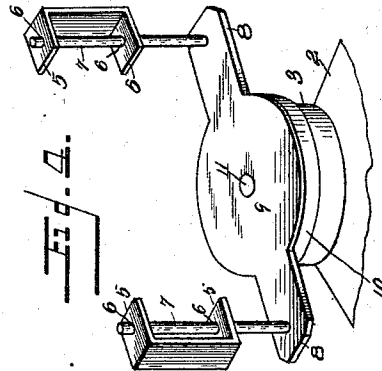
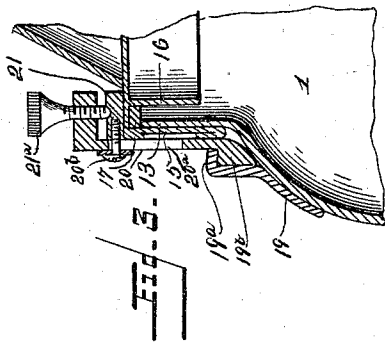
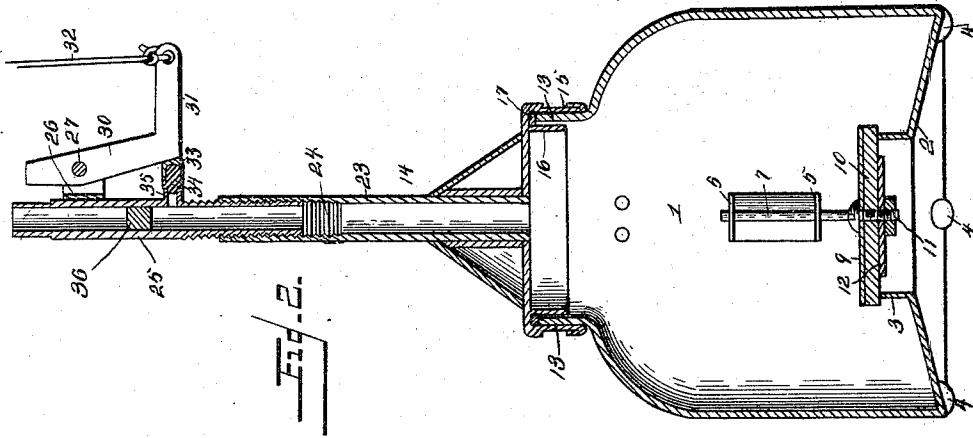


(No Model.)

W. A. LATHAM.
CISTERN, WELL, OR TANK CLEANER.

No. 541,937.

Patented July 2, 1895.



Inventor

William A. Latham.

Witnesses

Thos W. Riley
J. B. Owens

By his Attorneys.

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

WILLIAM AUGUSTUS LATHAM, OF DE WITT, IOWA, ASSIGNOR OF ONE-HALF
TO CHARLES A. BUTTERFIELD, OF SAME PLACE.

CISTERN, WELL, OR TANK CLEANER.

SPECIFICATION forming part of Letters Patent No. 541,937, dated July 2, 1895.

Application filed September 19, 1894. Serial No. 523,481. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM AUGUSTUS LATHAM, a citizen of the United States, residing at De Witt, in the county of Clinton and State of Iowa, have invented a new and useful Cistern, Well, or Tank Cleaner, of which the following is a specification.

This invention relates to an improvement in that class of cistern, well and tank cleaners which are composed of an air-tight receptacle adapted to be submerged in the water to be cleaned, and the air of the receptacle exhausted, thus causing a vacuum into which the dirt, sediment and impure water rush, under the influence of the atmospheric pressure attending a vacuum.

My object is to improve the construction of these devices and to make them capable of more effective action. This end I attain by the use of a substantially bell-shaped body portion, having at its lower end a valve, and at its upper end a pipe arising vertically and provided with a valve for regulating the ejection of the air; while the invention lies in certain novel features of construction and combination and arrangement of parts as will be more fully described hereinafter and finally embodied in the claims.

In the accompanying drawings, Figure 1 represents a perspective view of my complete device, showing it in operative adjustment; Fig. 2, a vertical longitudinal section of the same; Fig. 3, an enlarged and detailed section of one of the clasps for holding the two parts of the body together; Fig. 4, a detail perspective of the foot-valve of the machine, the casing thereof being broken away to disclose the same.

The reference numeral 1 indicates the main portion of the cleaner, and this is formed in the shape shown and of sheet metal stamped, pressed or spun, and provided at its base with an inwardly and upwardly extending flange 2, having at its inner edge a second or supplemental flange 3, which extends vertically and operates with the foot-valve of the machine, as will be more fully described hereinafter.

Rigidly secured to the under side of the flange 2, and equidistant throughout the extent thereof, are the projections 4, which operate as legs for the body portion, and to this

end are extended slightly below the lower edge of the body portion 1. By these means the body portion 1 is supported so that its edge will not engage with the bottom of the cistern, and so that the water and sediment will have a free passage thereunder.

Rigidly secured to the inner side of the body portion 1, and at opposite sides thereof, are the lugs 5, which are four in number, two for each side and which are projected horizontally and inwardly so that their inner ends will project over the opening left by the flange 2. These inner ends are formed each with an opening 6 therein, which openings are vertically aligned in each pair of lugs and which are adapted for the reception of the vertically-reciprocating rods 7 of the foot-valve. These rods 7 are two in number, one for each pair of vertically aligned lugs, and are rigidly secured to the oppositely-disposed ears 8 of the disk or plate 9, which is formed of metal and which composes the top plate of the foot-valve.

Located below the plate 9, and of a size equal to the size thereof, is the leather sheet 10, which is held in place snugly against the under side of the plate 9, by means of the vertical and central bolt 11, passing through the two and having the small metallic plate 12 fixed to its under side, and provided with means whereby to bolt the parts together. The sheet 10 may be of rubber or any analogous material, if leather is not convenient or desired. It will be seen that the foot-valve is so arranged that its sheet 10 of leather will lie normally upon the upper edge of the flange 3, so as to form an air-tight joint, and so as to be capable of arising vertically, guided by the lugs 5, in the opening operation.

The upper end of the main portion 1 of the body is provided with a contracted portion or neck 13, which is disposed with its sides vertically, and which is provided to permit joining the top section 14 thereto. This part consists of a conical main portion having at its base a downwardly-extending flange 15, adapted to fit snugly over the neck 13, and with a concentric and interior flange 16 which fits on the interior of the neck, a gasket 17, being provided and placed between the two flanges so that it will engage with the upper

edge of the neck 13, and upon being pressed thereon will make an air-tight connection.

The top section 14 is held in place by means of the devices shown in Fig. 3 of the drawings; and these consist of the metallic plates 19, which are two in number and which are riveted or otherwise secured to the body portion 1, and on opposite sides thereof. These plates are each formed with an inwardly-projecting portion 19^a, which are respectively adapted to engage with the outwardly-projecting lower ends 19^b of the plates 20. The plates 20 are one for each plate 19 and are vertically elongated and formed with longitudinal slots 20^a therein, through which the screws 20^b respectively pass, such screws being each fixed to the blocks 21.

The blocks 21 are one for each plate 20, and are screwed down upon the horizontal portion of the section 14 and at opposite sides thereof, so that the thumb-screws 21^a of the plates 20 may be engaged therewith. The thumb-screws 21^a, pass through inwardly and horizontally-extending portions 22, of the plates 20, and are capable of passing downwardly upon the blocks 21, as shown and described. By means of these devices the top 14 may be bolted down upon the body portion 1, and the two thereby securely connected. To disconnect the parts in the operation of pouring out their contents all that will be necessary is to release the thumb-screws 21^a, whereupon the plates 20 will be free to swing on the screws 20^b, and thereby permit the top 14 to be removed.

It will be understood that the purpose of the slots 20^a and screws 20^b is to permit the plates 20 to be adjusted in relation to the top 14, as may be seen by reference to the drawings.

Passing through the conical portion of the top 14 is the handle pipe 23, which proceeds perpendicularly from the same, and which has its upper end provided with the internal threads 24, adapted to receive the corresponding and exteriorly-threaded pipe 25, of the top or air-discharging valve. This valve consists of two parallel plates 26, fixed to the pipe 25, and projecting outwardly therefrom, through the outer ends of which the pin 27 passes. Over this pin the coil spring 28 is arranged, and the said spring has its ends bent back and rigidly secured, by soldering or otherwise, to the pipe 25, while it is formed in its center with a loop 29, which projects downwardly and is arranged to embrace the lever 30, which is fulcrumed on the pin 27 and between the plates 26. This lever 30 extends downwardly from the plates 26 and bends outwardly to form an arm 31, perforated at its end and attached to a cord 32, whereby the lever may be swung on its fulcrum.

Fixed to the lower end of the lever 30, is the inwardly-extending socket 33, in which the rubber cap 34 is secured; and this cap is adapted to normally engage and to keep closed the open end of the short tube 35. The lever

30 is given a tendency inward by means of spring 28, which is provided for this purpose. Thus, as the lever 30 is pressed against the tube 35, the said tube is closed; and to open the same, the lever should be disengaged so as to remove cap 34. This swinging of the lever is effected by means of the cord 32 aforesaid. The tube 25 is closed at its ends by means of the block 36, which is placed permanently therein, the opening of the tube being effected by the lever 30 and its attachments.

It will be observed that the tube 25 is capable of screwing down into the internally-threaded handle of the device, and that by these means the relative position of the upper or top valve and the body may be regulated.

In the operation of my invention the valve at the pipe 25 is allowed to close and the body portion submerged in the body of water to be cleaned. When the device rests upon the bottom of the same, the top valve should be opened, whereupon the pressure of the atmosphere will force the air out and simultaneously draw the water and filth into the body. The device should now be withdrawn, which will be followed by an automatic closing of the foot-valve. When it is desired to empty the body portion the top 14 should be disconnected from the main portion 1, which will make it possible to readily empty the body portion.

I have described and entitled my invention as a cistern, well and tank cleaner, and this includes about all the uses to which I contemplate putting it; and it will be understood that the device can be used with equal facility for all these purposes, since each is practically analogous. The invention may also be used for any other purpose which may suggest itself to the operator, and this without departing from the scope of the patent or changing the substance of the machine.

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, I claim—

1. In a cistern, well and tank cleaner, the combination of a hollow body portion having a valve-controlled opening in its bottom, engaging plates secured to opposite sides of the said body near its upper end, a top portion having a valve-controlled vent and removably fitted upon the upper end of the said hollow body, blocks secured to the said top portion at opposite points, slotted plates having their lower ends constructed to form connection with the said engaging plates and having their upper ends bent inward to extend over the said blocks, fastenings passing through the said slotted plates and having connection with the said blocks, and binding screws passing through the bent ends of the slotted plates and adapted to engage with the said blocks,

substantially as described for the purpose set forth.

2. In a cistern cleaner, a main or body portion having an open upper end, a top portion fitted over the main or body portion and closing the upper end thereof, two hooks affixed to the outer side of the body portion and arranged oppositely thereon, two plates slidably mounted on the top portion and provided at their lower ends with projections respectively capable of engaging with the hooks on the body portion, and means for moving the plates upwardly on the top portion, whereby the said portion is clamped against the body, substantially as described.

3. The herein-specified cistern, well and tank cleaner, comprising a hollow body portion provided at its base with a valve-controlled inlet, and having its upper portion contracted, a movable cover for closing the contracted end of the hollow body, oppositely-disposed hooks attached to the sides of the hollow body, two plates adjustably connected with the cover and having outwardly-extending hooks at their lower ends to engage with the hooks on the sides of the hollow body, means for moving the plates upwardly on the cover, whereby the latter is clamped against the top edge of the hollow body, an operating pipe extending vertically from the cover and bracingly connected therewith at its lower

end, and provided with a laterally-extending nipple, said pipe being closed above the nipple, and a valve for closing against the nipple and provided with means for unseating the said valve, substantially as described for the purpose set forth.

4. A cistern, well and tank cleaner consisting of a body portion provided at its lower end with a valve, a pair of oppositely-arranged hooks on the exterior sides of the body portion, a top portion fitting over the open upper end of the body portion and having two oppositely-arranged facing plates thereon, a valve in the top portion, two longitudinally-slotted plates connected to the respective facing plates of the top by fastening devices passing through the slots of the plates, and provided at their lower ends with hooks capable of locking with those on the body portion, and a set-screw for each slotted plate and capable of moving the same up or down on the top portion, whereby said portion may be locked in place, substantially as described.

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

WILLIAM AUGUSTUS LATHAM.

Witnesses:

JOHN B. WEBB,
LYMAN F. BROWN.