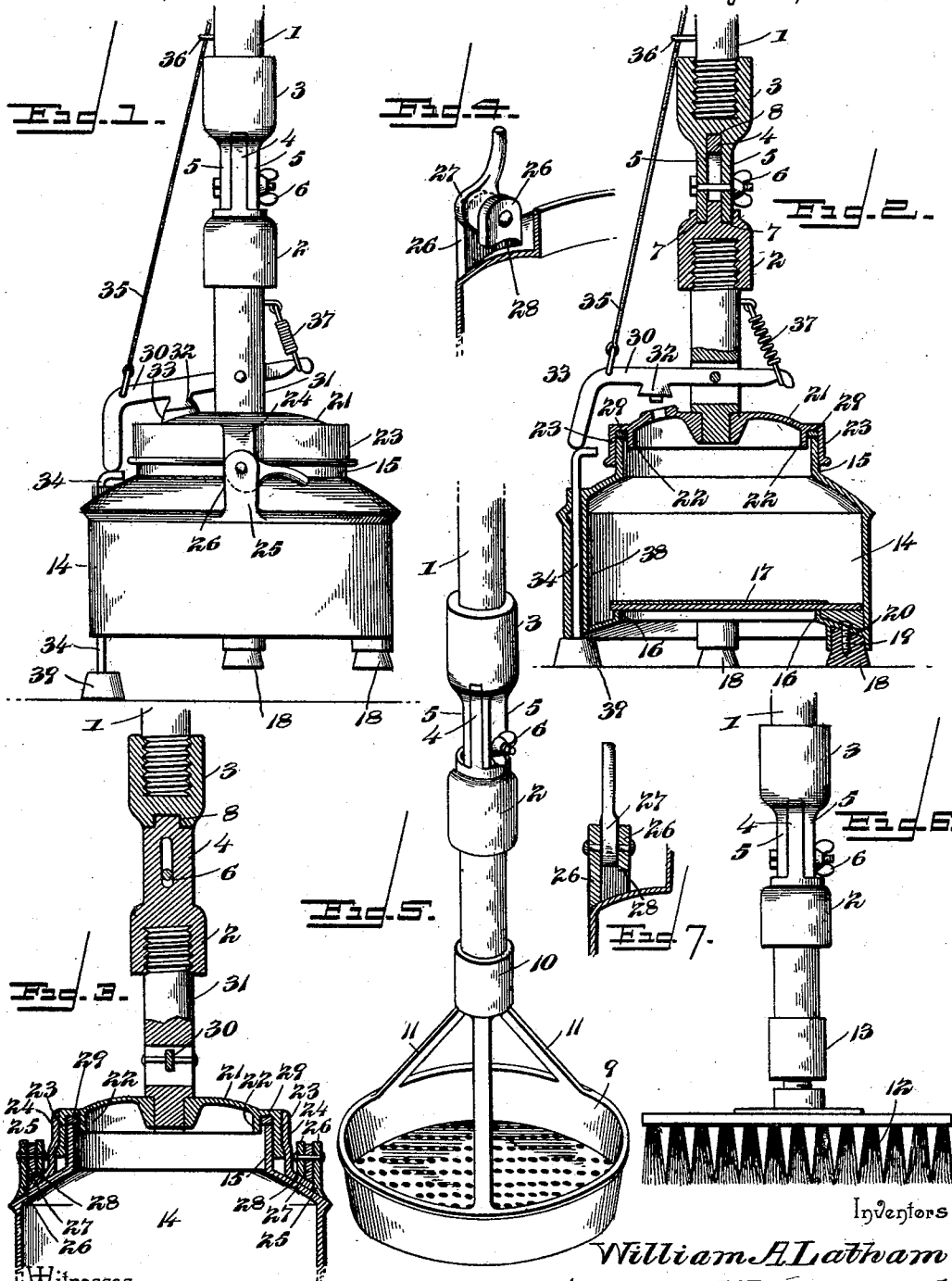


(No Model)

W. A. LATHAM & C. A. BUTTERFIELD.
CISTERN CLEANER.

No. 583,185.

Patented May 25, 1897.



Inventors

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CISTERN-CLEANER.

SPECIFICATION forming part of Letters Patent No. 583,185, dated May 25, 1897.

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To all whom it may concern:

Be it known that we, WILLIAM AUGUSTUS LATHAM and CHARLES ALMUS BUTTERFIELD, citizens of the United States, residing at De Witt, in the county of Clinton and State of Iowa, have invented a new and useful Cistern-Cleaner, of which the following is a specification.

This invention relates to provisions for cleaning wells, cisterns, tanks, &c., in which fluids are stored and which require the removal therefrom at stated periods of sediment and other foreign matter which is precipitated in the solid form.

The improvement consists of the novel features and the peculiar construction and combination of the parts, which hereinafter will be more particularly set forth and claimed, and which are illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a cistern-cleaner constructed in accordance with this invention. Fig. 2 is a vertical central section thereof, showing the manner of opening the vent. Fig. 3 is a detail section of the upper portion of the device, taken on a line at right angles to Fig. 2. Fig. 4 is a detail view of one of the fastening devices for securing the top or cover to the body of the cleaner. Fig. 5 is a detail view showing the application of the handle or staff to the pan for removing foreign matter floating upon the surface of the fluid. Fig. 6 shows the handle or staff applied to a device for washing or scrubbing the sides of the well or cistern in which the fluid is stored. Fig. 7 is a detail view of a cleft extension which pivotally supports a cam-lever, by means of which the cover is secured to the body of the cleaner.

Referring by numerals to the drawings, in which similar characters denote corresponding parts in all the figures, 1 indicates the handle or staff, which may be fitted to any one of the different forms of cleaning devices and which is provided at its lower end with a coupling which admits of the cleaning device being located at any required angle with reference to the staff or handle, so as to render accessible any part of the cistern, well, or tank to be cleaned.

The coupling is composed of complementary

parts 2 and 3, which have threaded sockets at their outer ends for attachment therewith of the handle or staff and the cleaning device. The part 2 has a slotted extension 4, and the part 3 has parallel extensions 5, between which is fitted the slotted extension 4, and a binding screw and nut 6 operate through registering openings in the parallel extensions 5 and through the slot of the extension 4, so as to clamp the said extensions and hold the parts of the coupling in the required adjusted position. The terminal ends of the parallel extensions 5 are reduced and enter depressions 7 on opposite sides of the base of the slotted extension 4, so as to hold the parts 2 and 3 in alinement when required. The terminal of the slotted extension 4 is likewise reduced and fits in a depression 8, formed between the base portions of the extensions 5 for a like purpose to the depressions 7 and the reduced terminals of the extensions 5.

When it is required to disengage the terminals of the extensions from their respective depressions, the binding-screw 6 is loosened and the parts 2 and 3 are separated a sufficient distance to withdraw the terminals of the extensions from their depressions, after which the parts of the socket can be turned to any required angle and the located position maintained by retightening the said binding-screw 6.

The cleaning devices may be of various forms according to the nature of the cleaning to be accomplished, and in Fig. 5 the cleaner is a shallow pan 9, having a perforated bottom, and is intended for removing floating matter from the surface of the fluid, and this shallow pan is provided with a socket 10, connected therewith by means of converging stays 11.

In Fig. 6 is shown a form of cleaner for removing dirt and foreign matter from the sides of the well or cistern, and the same consists of a brush 12, having a socket 13 on its back for attachment therewith of the handle or staff. Obviously the brush 12 may be substituted by any form of mop which may be employed in a similar manner for washing and scrubbing the sides of the cistern or well.

The cleaner illustrated in Figs. 1, 2, and 3

comprises a hollow body 14 of substantially cylindrical form and having its upper portion reduced and terminating in a vertical flange or neck 15, and having its bottom centrally apertured and inclining upwardly toward the center and formed with a vertical flange 16, whose upper edge forms a seat for an upwardly-opening flap-valve 17. The bottom of the body 14 is supplied with rubber feet 18, which are attached thereto in any desired manner, and which are intended to prevent injurious contact with the bottom of the cistern or tank when lowering the cleaner thereon. The feet 18, while preferably constructed of rubber, may be of any suitable pliant and elastic material which is provided in the form of blocks and secured in sockets 19, attached to the said bottom. Screws 20 are centrally disposed with respect to the sockets 19, and are soldered or otherwise fastened to the said bottom, so as to form positive means of attachment therewith of the feet 18. The cover or top 21 has an inner depending flange 22, which enters the neck 15, and an outer depending flange 23 to embrace and encircle the said neck, and outwardly-extending projections 24 are secured to the flange 23 at diametrically opposite points and are engaged by fastenings 25, provided on the body, so as to secure the cover or top by positive means.

The fastenings 25 comprise vertical extensions 26, which are cleft in their upper ends, and cam-levers 27, which are pivoted between the cleft portions of the said vertical extensions 26. A notch 28 extends inwardly from one edge of the inner cleft portions of the said extensions 26 to receive the outwardly-extending projections 24, so that the latter may come directly beneath the cam-levers 27 and be engaged thereby when it is required to secure the cover or top 21 to the body 14. The cam-levers provide means for drawing the cover or top close against the body and of forcing the packing-ring 29, located between the flanges 22 and 23, firmly against the upper end of the neck 15, thereby securing a tight joint, which will exclude air and water.

A transversely-disposed lever 30 is fulcrumed between its ends in a vertical slot formed in the socket 31, attached to the top or cover 21, and this lever is provided with a valve 32, which normally closes an air-vent 33 in the said top or cover, and the outer end of this lever is bent downwardly and is adapted to be engaged by the upper end of a vertically-movable trip 34, so as to open the vent 33 when the cleaner reaches the bottom of the well, cistern, or tank. The top or cover 21 can be turned half around and the valve 32 may be raised and vent 33 opened by means of operating-cord 35, attached to the lever 30 and passing through suitable guides 36, provided in the length of the staff or handle and extending within convenient reach, so as to be pulled upon to unseat the valve when it is required to operate the same without the in-

tervention of the trip 34. A spring 37 exerts an upward pressure on one end of the lever 30 and serves to hold the valve 32 upon its seat.

The trip 34 is a rod or bar, and operates in a tubular guide 38, extending through the body 14, and the upper end of the trip is bent laterally to form a stop to limit the downward movement of the trip and prevent its dropping through the tubular guide, and also to provide an extended bearing-surface for the bent end of the lever 30 to obtain a purchase upon. A block 39, of rubber or like substance, is fitted to the lower end of the trip to prevent injury to the bottom of the cistern or tank by the engagement therewith of the said trip when lowering the cleaner into the said cistern or tank.

The operation of the invention is obvious to one skilled in the art from the foregoing detailed description, but it may be of advantage to mention that the hollow body is lowered to the bottom of the cistern, tank, or other fluid-storage chamber filled with air, and when the said body reaches the bottom of the cistern or tank the trip will engage with the said bottom and move upward and unseat the valve 32, and the air contained in the body escaping will admit of the fluid at the bottom of the cistern or tank to rush into the said body and carry therewith the sediment and other foreign matter in the immediate vicinity of the cleaner. When withdrawing the cleaner from the bottom of the cistern or tank, the flap-valve 17 will close and prevent the escape of the sediment contained in the said body. After the cleaner is removed it is freed of the sediment and foreign matter contained therein either by opening the flap-valve or by removing the top or cover.

The operation just described is repeated until the cistern or tank is thoroughly and effectually freed from all deposit and sediment.

The invention will be provided in different sizes, and in the adaptation of the same for any special purpose it is to be understood that 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 thus described the invention, what is claimed as new is—

1. The combination with a cleaner for purifying cisterns, tanks, &c., and a staff or handle, of a coupling composed of complementary parts, one part having parallel extensions and a depression at the inner end of the said extensions, and the other part having a slotted extension operating between the aforesaid parallel extensions and having its terminal adapted to engage with the depression formed between the said parallel extensions, and having depressions at the base of the slotted extension to receive the terminals of the aforementioned parallel extensions, and a binding-screw for securing the parts of the coupling

in the located position by clamping the several extensions together, substantially as set forth for the purpose described.

2. In a cleaner for cisterns, tanks, &c., the
5 combination with a hollow body having its upper portion reduced and terminating in a neck, and a cover to be fitted upon the said neck and having outwardly-extending projections, of fastenings attached to the hollow
10 body and comprising vertical extensions which are cleft in their upper ends, the inner cleft parts of the said vertical extensions having inwardly-extending notches to receive the outwardly-extending projections of the cover,

and cam-levers pivoted between the cleft 15 parts of the vertical extensions and engaging with the aforesaid outwardly-extending projections of the cover, substantially in the manner set forth for the purpose described.

In testimony that we claim the foregoing as 20 our own we have hereto affixed our signatures in the presence of two witnesses.

WILLIAM AUGUSTUS LATHAM.
CHARLES ALMUS BUTTERFIELD.

Witnesses:

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THOMAS WILSON.