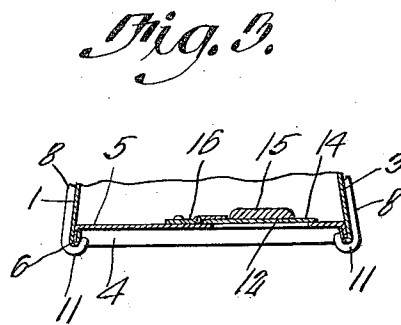
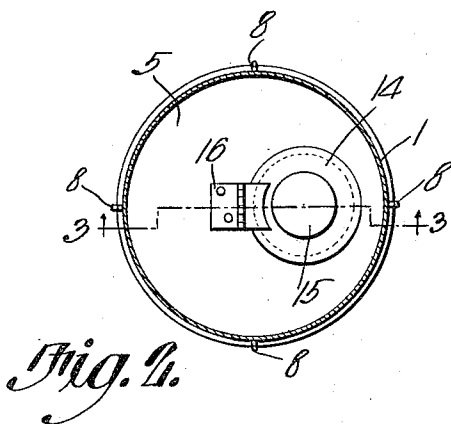
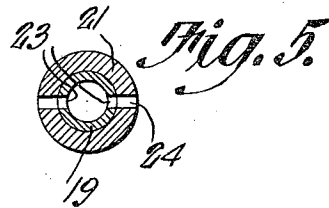
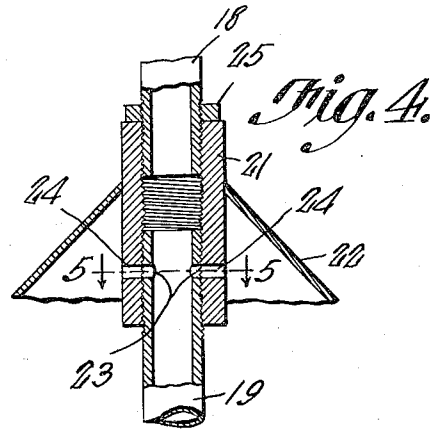
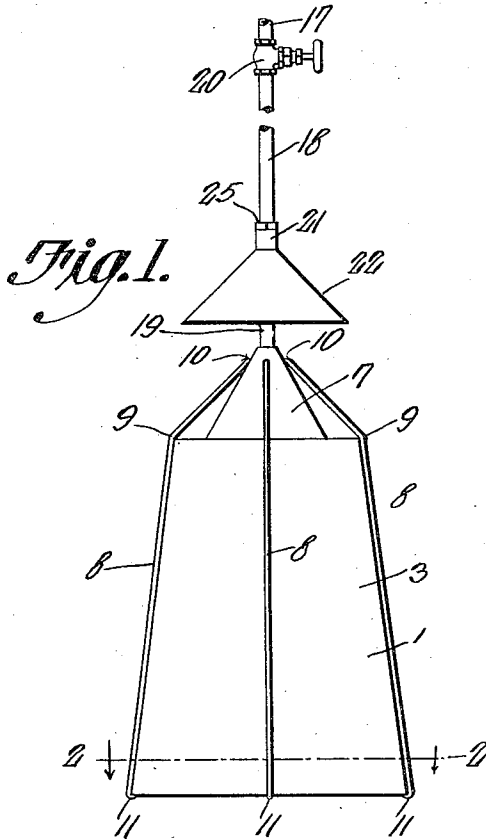


C. D. BEARS.
CISTERN CLEANER.
APPLICATION FILED JUNE 24, 1912.

1,053,140.

Patented Feb. 11, 1913.



Witnesses

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CISTERN-CLEANER.

1,053,140.

Specification of Letters Patent.

Patented Feb. 11, 1913.

Application filed June 24, 1912. Serial No. 705,591.

To all whom it may concern:

Be it known that I, CHARLES D. BEARS, a citizen of the United States, residing at Vincennes, in the county of Knox and State of Indiana, have invented a new and useful Cistern-Cleaner, of which the following is a specification.

One object of the present invention is to provide a cleaner for wells and cisterns, so constituted that, when desired, the air escaping from the cleaner, may be directed toward the bottom of the well or cistern, thereby to establish a circulation through the bottom of the cleaner, for the purpose of removing the sediment remaining in suspension adjacent the bottom of the well or cistern, after the slime upon the bottom of the well or cistern has been removed.

A further object of the invention is to provide novel means for controlling the discharge of air into the deflector whereby the circulation above mentioned is accomplished.

Another object of the invention is to improve generally, and to increase the strength and utility of, devices of the type to which the present invention appertains.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawings,—Figure 1 shows the invention in side elevation, parts being broken away; Fig. 2 is a section on the line 2—2 of Fig. 1; Fig. 3 is a section on the line 3—3 of Fig. 2; Fig. 4 is a vertical section of the deflector and attendant parts; and Fig. 5 is a section on the line 5—5 of Fig. 4.

In carrying out the invention there is provided a receptacle which is denoted generally by the numeral 1. The receptacle 1 is of frusto-conical form, its side wall being denoted by the numeral 3. As shown in Fig. 3, the side wall 3 may be turned inwardly at its lower end to define a bead 4.

The bottom of the receptacle 1 is denoted by the numeral 5 and is equipped peripherally with a depending flange 6 which registers within the bead 4.

The receptacle 1 is closed on top, and

supports a funnel-shaped reinforcing member 7. A plurality of reinforcing members are provided, the same ordinarily taking the form of rods 8 which extend along the side wall 3. Adjacent their upper ends, the rods 8 are bent as indicated at 9, across the upper end of the receptacle 1, the upper extremities of the rods 8 being secured in any desired manner, as indicated at 10, to the funnel-shaped reinforcing member 7. The lower ends of the rods 8 terminate in hooks 11 which engage over the bead 4.

In the bottom 5 of the receptacle there is an opening 12, across which extends a flap valve 14, opening upwardly, and counter-weighted as indicated at 15. A hinge 16 unites the flap valve 14 with the bottom 5.

The invention comprises a discharge pipe 17. The discharge pipe 17 ordinarily consists of a plurality of sections, indicated respectively by the numerals 18 and 19, the discharge pipe being fashioned in a plurality of sections for the obvious purpose of permitting the receptacle 1 to be lowered to the bottom of the well or cistern, and to be handled conveniently, irrespective of the depth of the well or cistern. Into the pipe 17, adjacent its upper end, is interposed a valve 20 which may be an ordinary, manually operable globe valve, or any other structure adapted to a like end. The lowermost section 19 of the discharge pipe 17 passes through the reinforcing funnel 7 and enters the top of the collecting receptacle 1.

The adjacent ends of the sections 18 and 19 of the discharge pipe 17 are threaded into a coupling 21, as shown most clearly in Fig. 4. The coupling 21 supports a conical, downwardly flaring deflecting member 22. In the section 19 of the discharge pipe 17 there are openings 23, adapted to be brought into alinement with openings 24 in the coupling 21, the openings 23 and 24, when alined, discharging beneath the conical deflector 22. By rotating the pipe section 19 in the coupling 21, the openings 23 and 24 may be placed out of registration, and to prevent the coupling 21 from rotating upon the section 18 during the aforesaid operation, the coupling 21 may be engaged by a lock nut 25 which is threaded upon the pipe section 18.

In practical operation, the valve 20 is closed, the flap valve 14 remaining closed, due to the action of the counter-weight 15.

The collecting receptacle 1 is then lowered into the cistern, and as the receptacle approaches the bottom of the cistern, the water will enter the receptacle 1, raising the flap valve 14 and putting under pressure, the air which is confined in the collecting receptacle 1 by the closed valve 20. When the collecting receptacle 1 rests upon the bottom of the cistern, or is in close proximity to the bottom of a cistern, the valve 20 is opened, thereby relieving the air pressure within the collecting receptacle 1. The air will thereupon rush upwardly through the pipe 17, and suck into the collecting receptacle 1, through the opening 12, the slime which has accumulated upon the bottom of the cistern. When a state of equilibrium is thus established within the collecting receptacle 1, the weighted valve 14 will close, thereby trapping the slime within the receptacle. By means of the pipe 17, the receptacle 1 is hoisted out of the well, and the accumulated slime is discharged through the opening 12, by elevating the flap valve 14 manually.

The foregoing operation will serve to remove from the well, the slime which, in a more or less solid state, has accumulated upon the bottom of the well. The operation of cleaning the well will not, however, be complete, for the reason that in the operation above mentioned, the water at the bottom of the well will be more or less agitated, a considerable amount of matter being carried in suspension by the water, near the bottom.

During the operation above referred to, the coupling 21 is rotated so that the openings 23 and 24 are out of registration. When the slime has been removed from the bottom of the well, the coupling 21 is rotated so as to bring the openings 23 and 24 into registration. The collecting receptacle 1 is then lowered to the bottom of the well, the valve 20 being closed. Thereupon, the air which is compressed in the receptacle 1 will

flow outwardly through the alined openings 23 and 24, and be engaged by the deflector 22, a down current being thereby established, which will carry the suspended sediment toward the bottom of the well, the sediment being sucked through the opening 12 until equilibrium is established within the receptacle, whereupon the valve 14 will close.

It is to be noted that the opening 12 is located to one side of the axis of the receptacle 1. Owing to this construction, the opening 12 will be located close to the bottom of the well or cistern, when the receptacle 1 stands at a less angle than a right angle with respect to the bottom of a cistern. A thorough cleaning of the cistern will thus be effected, even though the receptacle 1 be not lowered vertically into position.

Having thus described the invention, what is claimed is:—

1. A cistern cleaner comprising a receptacle having a valve in its bottom; a pipe entering the receptacle; a valve in the pipe; a deflector surrounding the pipe below the last specified valve and peripherally spaced from all portions of the receptacle, there being an opening in the pipe, discharging beneath the deflector; and means for closing the opening.

2. A cistern cleaner comprising a receptacle having a valve in its bottom; a pipe entering the receptacle and provided with an opening; a sleeve movable upon the pipe and having an opening adapted to be brought into and out of registration with the opening in the pipe; and a deflector carried by the sleeve and extending downwardly below the openings.

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

CHARLES D. BEARS.

Witnesses:

DAVID N. GALE,

DAN OESTREICHER.