No. 840,855. PATENTED JAN. 8, 1907.

T. LYDON.

APPARATUS FOR DRAWING WATER FROM CISTERNS.

APPLICATION FILED MAY 16, 1906.

Fig. 1.

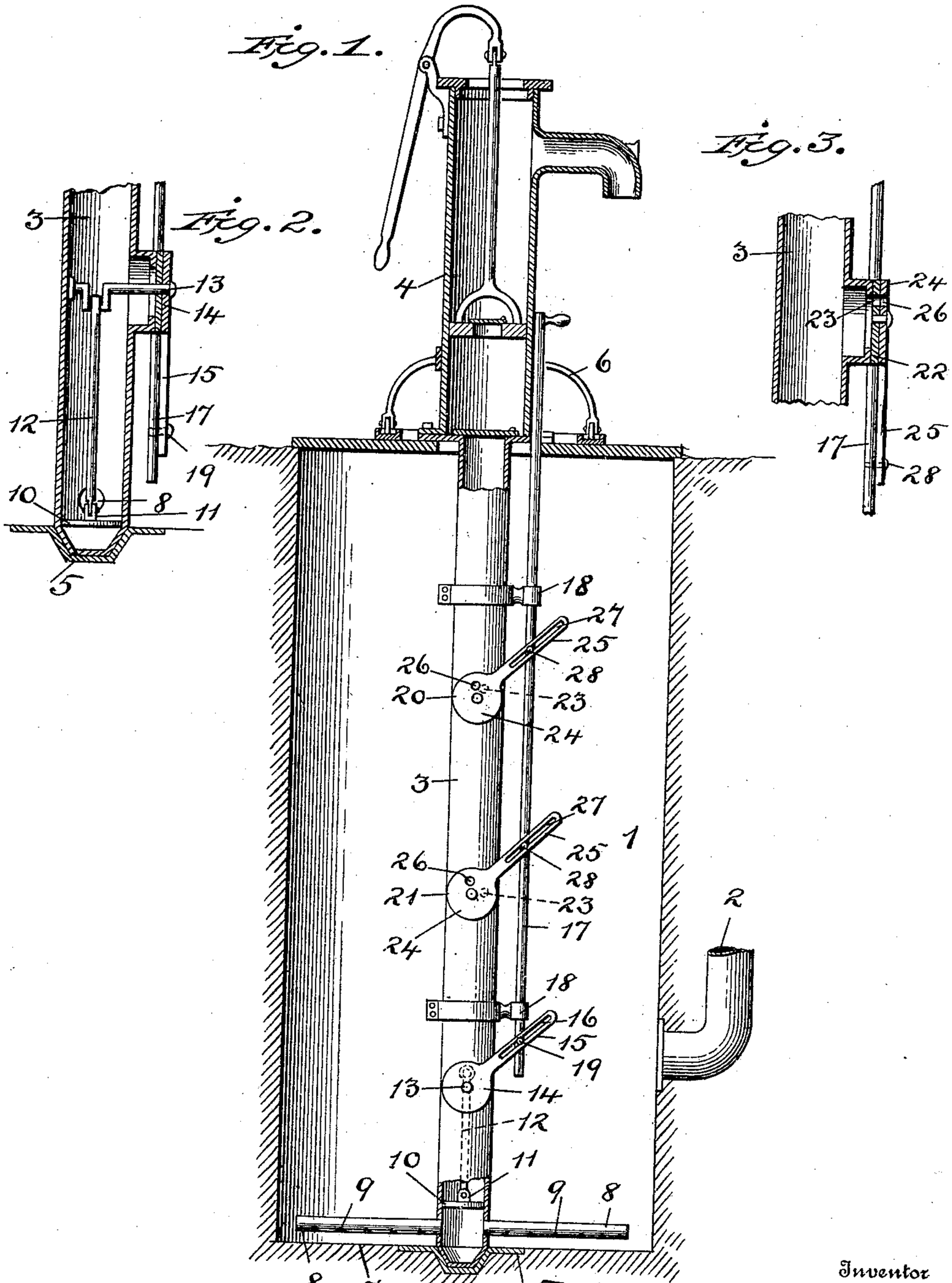

Fig. 2.

Fig. 3.

Witnesses

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APPARATUS FOR DRAWING WATER FROM CISTERNS.

No. 840,855. Specification of Letters Patent. Patented Jan. 8, 1907.

Application filed May 16, 1906. Serial No. 317,059.

To all whom it may concern:

Be it known that I, TIMOTHY LYDON, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Apparatus for Drawing Water from Cisterns, of which the following is a specification.

My invention relates to improvements in an apparatus for drawing water from cisterns.

One object of the invention is to provide improved devices to be used in conjunction with a pump for drawing water from cisterns or tanks by which the water may be drawn from or near the surface or water-level, although the depth of water in the cistern or tank may vary.

Another object of the invention is to provide a device whereby the water may be drawn by the pump from the extreme lowermost point of the cistern, so that the dirt and sediment which accumulates at the bottom of such receptacles may be drawn off without the necessity of draining the receptacle.

Another object of the invention is to provide a construction whereby the lowermost outlet or sediment draw-off from the cistern may be closed when it is desired to draw clear water.

The accompanying drawings illustrate the invention, in which—

Figure 1 shows a vertical sectional view of the apparatus and the cistern. Fig. 2 is a detail view of the sediment-cut-off device, and Fig. 3 illustrates a sectional view through one of the valves.

The drawings illustrate one form of construction for carrying the inventive idea into practical effect without, however, limiting the invention to the particular construction shown.

Referring to the drawings by numerals, 1 designates a cistern, tank, or other receptacle, having an inlet-pipe 2 through which the water may flow into said tank and also having an outlet-pipe 3, with a pump 4 of any suitable construction at the upper end. The lower end of the outlet-pipe 3 in the present instance is seated in a socket or depression 5 at the bottom of the cistern or tank and at the upper end the pump and outlet-pipe are supported by a stand 6, so as to be revolved.

At the lower end and immediately above the bottom 7 of the cistern or tank the outlet-pipe is provided with laterally-projecting branch pipes 8, which are provided in their lower sides with a plurality of perforations 9, which open downward and in close proximity to the said bottom 7.

One of the objects of this invention is to provide devices that will enable water and sediment to be drawn off entirely from the bottom of the cistern in order to clean the latter, and during this operation all other openings into the discharge-pipe from the cistern will be closed. In order to accomplish this, I provide a valve device at the lower end of the discharge-pipe, which in the present instance has the form of a piston-valve 10, with a stem 11 extending vertically at the center of said pipe. A link 12 has one end pivotally connected to the upper end of the stem, and the other end of said link is connected to a crank on horizontal stem 13, which projects into the discharge-pipe and which is carried on a revoluble plate 14 on the exterior of the said outlet-pipe. An arm 15 projects laterally from the plate 14, and said arm is provided with a slot 16 in its outer end.

An operating-rod 17 runs parallel with and at the side of the outlet-pipe, and the upper end of this rod terminates at a point within convenient reach at the side of the pump 4. This rod is sustained by passing through bearings 18, which are clamped about the outlet-pipe, and the vertical position of the rod is such that it will lie at one side of the slotted arm 15 on the plate 14, and a pin 19 projects from the rod 17 and through the slot 16 of said arm, so that the arm may be moved vertically with the rod. The vertical movement of the rod and arm 15 will cause a like movement to the piston-valve 10, so the latter may be moved in the outlet-pipe to a point above or below the inlet ends of the branch pipes 8 at the bottom of the cistern.

Above the plate 14 the outlet-pipe 3 is provided with a plurality of valves 20 and 21, each of which comprises a stationary plate 22, having a port 23, and a movable plate 24, with an operating-arm 25. Each movable plate 24 is provided with a port 26. The arms 25 are also provided with slots 27, and pins 28 project from the rod 17 and enter these slots, so that all the arms 25 and 15 of the valves are connected to the operating-rod 17.

It will be noted that the ports 23 and 26 in valve 20 normally have a slightly different position with respect to each other than the

same ports in valve 21. The ports in the latter valve are normally farther apart, so that the movable plate of valve 21 will have to travel farther to cause its two ports to register than the plate of valve 20. The object of this is to insure that only one valve will be opened at a time. By slightly depressing the rod 17 the upper valve 20 will be opened, and while the plate of the next lower valve will move its ports will not be opened until the rod has been depressed far enough to close the ports in the upper valve.

By pushing the rod all the way down both valves 20 and 21 will be closed and the piston-valve 10 will move down below the inlet ends of the branch pipes 8 and establish communication between them and the outlet-pipe 3.

It will thus be seen that by operating the rod 17 the piston-valve 10 may be opened, so that when the pump is operated the water and dirt at the bottom of the tank or cistern will be drawn through the perforated branch pipes up through the pipe 3 and discharged at the pump, and in this manner the dirt may be readily removed from the bottom of the cistern or tank. When it is desired to draw clear water, the rod 17 will be raised, so as to first close the piston-valve 10 and open one or the other of the upper valves, according to the height of the water in the cistern, and the operation of the pump will draw water through such opened valve. By mounting the pump on the stand 6 the entire apparatus may be revolved, so that during the cleaning operation the branch pipes 8 may be made to pass over the entire bottom surface of the cistern and draw the dirt therefrom.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an apparatus for drawing water from cisterns the combination with a draw-off pipe having a plurality of draw-off passages in its lower end adjacent the bottom of the cistern, of a valve in said pipe to control the said bottom draw-off passages; a valve in said pipe above the draw-off passages; means whereby said valves may be opened one at a time, and a pump connected to the draw-off pipe.

2. In an apparatus for drawing water from cisterns the combination with a draw-off pipe having an inlet near its bottom and another inlet above the bottom inlet, of means for governing said inlets; means for permitting the outlet-pipe to be revolved; means carried by the outlet-pipe and projecting laterally therefrom and adjacent to the bottom of the cistern for directing the sediment in the cistern toward the outlet-pipe, and a pump connected to the outlet-pipe.

3. In an apparatus for drawing water from cisterns the combination with a draw-off pipe, of a branch pipe at the lower end of said draw-off pipe and adjacent the bottom of the cistern—said branch pipe being in communication with the cistern; a port in the draw-off pipe above the branch pipe; means whereby the branch pipe may be moved over the bottom of the cistern, and a pump connected to the draw-off pipe.

4. In an apparatus for drawing water from cisterns the combination with a draw-off pipe, of branch pipes carried by the draw-off pipe and opening into the latter and provided with a plurality of perforations; a valve in the draw-off pipe to control the passage of water and sediment from the branch pipes; a valve in the draw-off pipe above the branch pipes for the passage of clear water; means connecting said two valves whereby they may be opened and closed successively; and a pump connected to the draw-off pipe.

5. In an apparatus for drawing water from cisterns the combination with a draw-off pipe, of a perforated branch pipe carried by the draw-off pipe and opening into the latter and projecting laterally adjacent the bottom of the cistern; a valve to control the passage in the perforated pipe; a valve in the draw-off pipe above the branch pipe; a rod extending parallel with the draw-off pipe and connected to said valves; a pump connected to said draw-off pipe; and means for sustaining said pump and draw-off pipe so they may be revolved.

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

TIMOTHY LYDON.

Witnesses:
CHARLES B. MANN, Jr.,
JOHN W. HEWES.