

(No Model.)

G. S. WILSON.
WATER ELEVATOR.

No. 580,745.

Patented Apr. 13, 1897.

Fig. 1

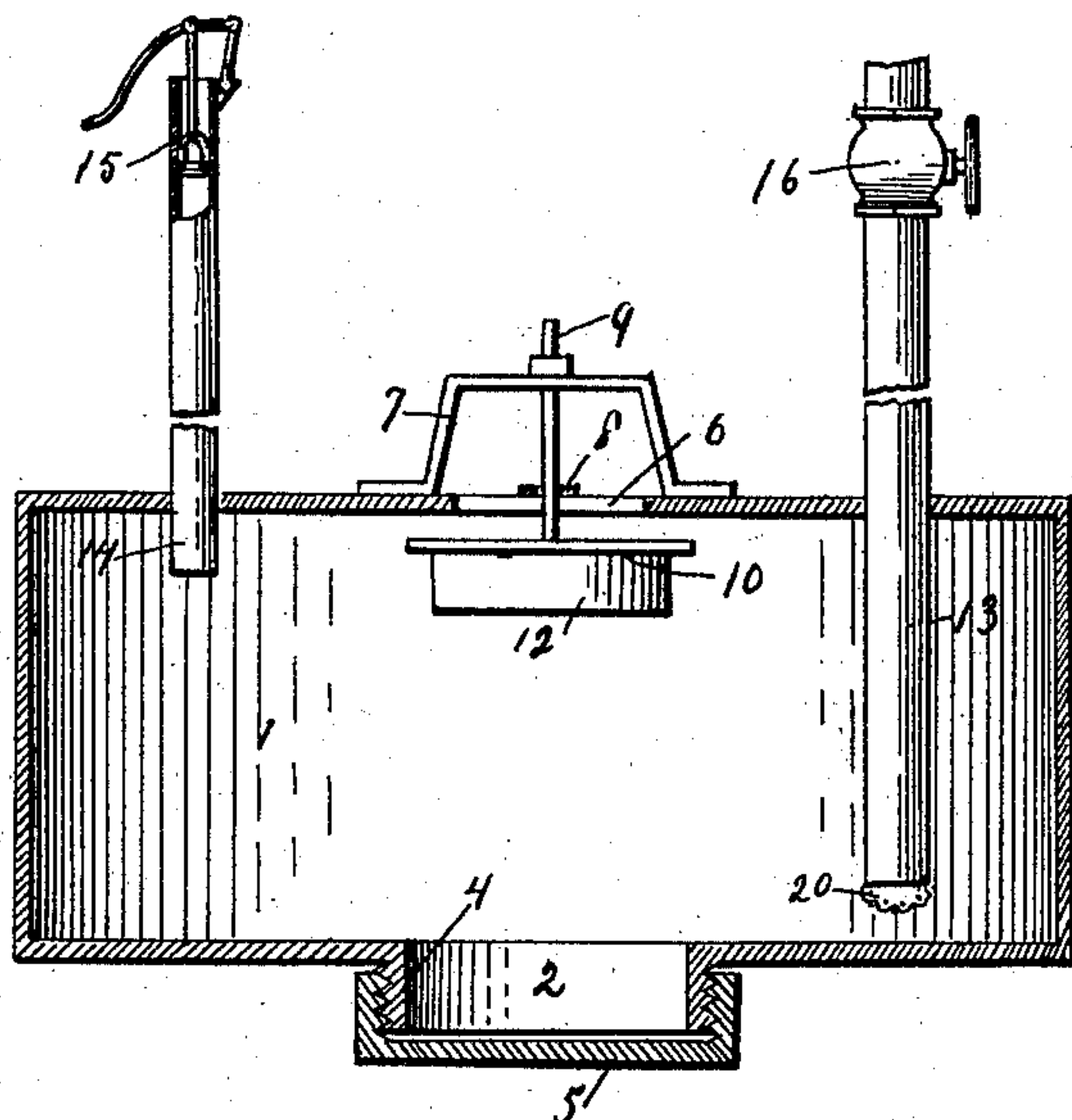
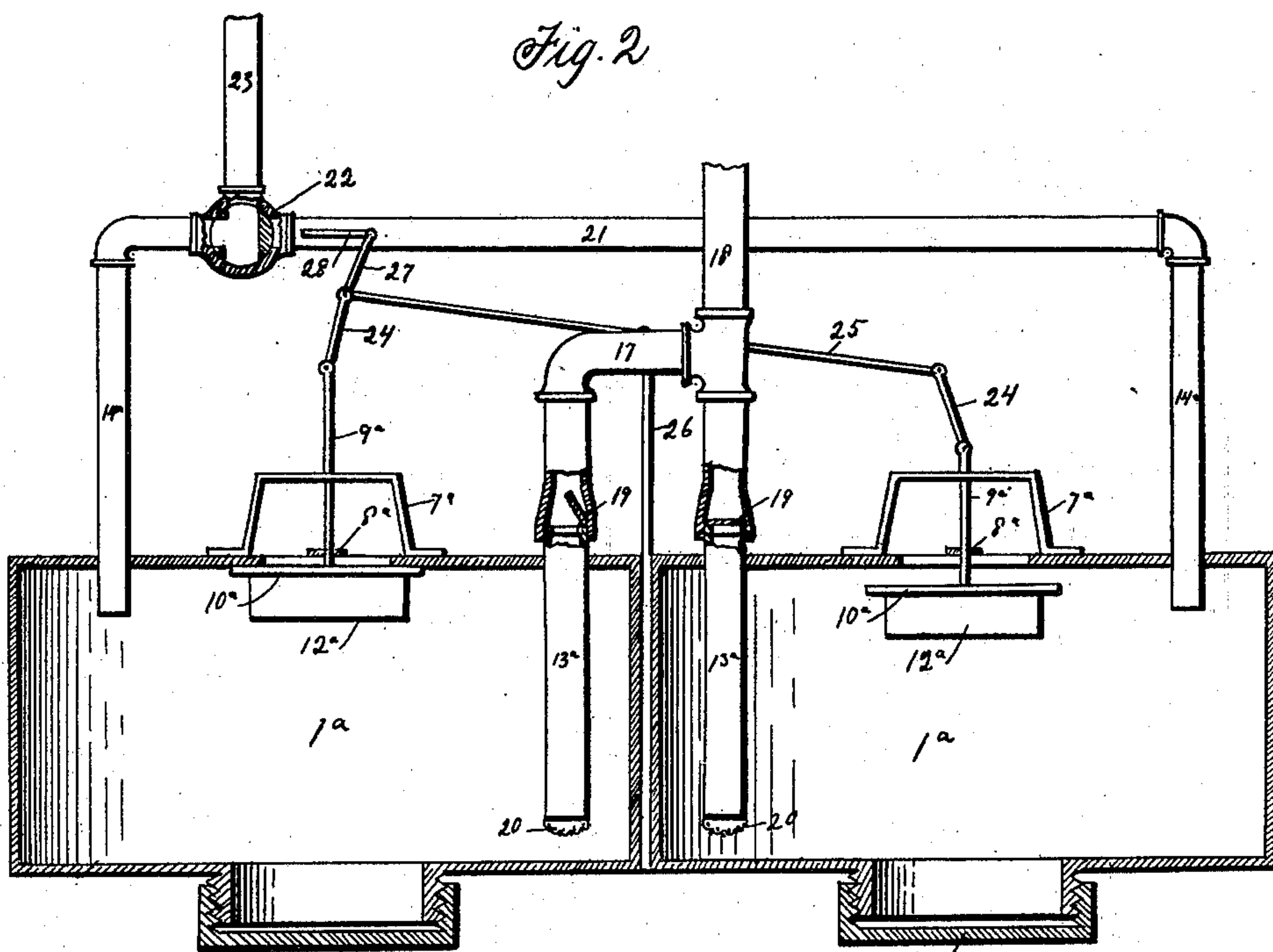


Fig. 2



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UNITED STATES PATENT OFFICE.

GEORGE S. WILSON, OF MOUNT VERNON, MISSOURI, ASSIGNOR OF ONE-THIRD TO LOY LE BOW, OF SAME PLACE.

WATER-ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 580,745, dated April 13, 1897.

Application filed May 19, 1896. Serial No. 592,186. (No model.)

To all whom it may concern:

Be it known that I, GEORGE S. WILSON, a citizen of the United States, and a resident of Mount Vernon, in the county of Lawrence and State of Missouri, have invented certain new and useful Improvements in Water-Elevators; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to apparatus for elevating water by compressed air of that class or description in which a tank provided with an automatically-operating inlet-valve and air and water pipes is submerged in a well or cistern and the water elevated by forcing air thereinto through the air-pipe.

The object of the invention is to provide an improved construction of the same which shall possess superior advantages with respect to efficiency in operation.

The invention consists in the novel construction and combination of parts hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a longitudinal sectional view of a water-elevating apparatus constructed in accordance with my invention. Fig. 2 is similar view of a duplex apparatus for continuous operation.

In the said drawings the reference-numeral 1 designates the tank to be submerged in a well or cistern, being shown in the present instance as cylindrical in form, although any other shape may be given to the same found convenient or desirable. There is an opening 2 in the bottom of the tank provided with a screw-threaded boss 4 to receive a screw-cap 5, which may be removed to allow the tank to be cleaned. In the upper end of the tank there is an inlet-opening 6 and above the same a bracket 7, secured to the tank. Passing loosely through an opening in the said bracket and also through an aperture in a bracket 8, below bracket 7, is a valve-rod 9, to which is secured a vertically-operating valve 10 and a float 12, the construction being such that as the water rises in the tank the valve will rise and close said opening.

The numeral 13 designates a vertical pipe passing through the upper part of the tank and extending to near the bottom thereof. This pipe leads to the top of the well or cistern and may extend to different rooms in a house or other building, being provided with faucets in such rooms as desired. A hose may also be connected with said pipe for lawn-sprinkling or other purposes. Also passing through said upper end of the tank is an air-pipe 14, which terminates just below the top of the tank. This pipe extends up through the well or cistern to any point desired and is provided with an air-pump 15, by which air may be forced into the tank. This pipe may also extend to the different rooms, and at such points desired may be provided with additional air-pumps wherever found convenient, so that the water may be elevated from such points and thus enable a person to elevate the water in any room desired without leaving the room. Suitable stop-cocks 16 are placed in the air and water pipes wherever necessary.

In Fig. 2 I have shown a duplex or double apparatus having two tanks 1^a, one of which is filling while the other is being emptied, whereby the elevation of the water may be continuous without the necessity of waiting for the tank to refill after being emptied, as is the case in the apparatus just described. In this case the tanks are identical in construction to the one above described, each being provided with brackets 7^a and 8^a, valve-rod 9^a, valve 10^a, float 12^a, and screw-cap 5^a. The water-pipes 13^a of these tanks are connected together by a horizontal pipe 17, with which is connected a vertical pipe 18, constructed similarly to and performing the same purpose as pipe 13 in Fig. 1. The pipes 13^a are provided with check or foot valves 19, which automatically open when the water is being emptied from one tank and close while it is being refilled. They are also provided at the lower ends with strainers or screens 20.

The numeral 14^a designates the air-pipes extending into the tanks, connected together by a horizontal pipe 21 with a three-way valve 22, with which is connected a pipe 23, extending above the well or cistern and provided with one or more air-pumps, as before set forth with respect to pipe 14.

The valve-rods 9^a are pivoted to rods 24, which are connected with an oscillating lever 25, pivoted to a standard 26. Pivoted to one end of this lever is a rod 27, which is connected with a lever 28, secured to the stem of the three-way valve 22.

The operation is as follows: Referring now more particularly to Fig. 1, the tank is lowered into the well or cistern, being completely submerged by the water therein. As the tank is being lowered the air therein will, by the water entering the inlet-opening, be forced up through the water, purifying the same. As the tank is filling the float will rise until the valve comes up against the inlet-opening and closes the same. Compressed air is now forced into the tank by means of the air-pump and pipe, which will force the water up through the water-pipe under a pressure corresponding with the air-pressure. When the tank is emptied, the air will escape into the water-pipe, and the pressure on the valve being relieved it will open to allow the water to enter to refill the tank. In the duplex apparatus shown in Fig. 2 the operation is the same except that as one valve closes when the tank is filled the other opens. By this movement of the valves the three-way valve 22 will be operated by the connections with said valves, so that the air will be directed into the closed tank. When this tank is emptied, the valve therein will open and the valve in the other tank close, thereby reversing the

three-way valve, cutting off the supply to the first tank and directing it to the other one, when the operation will be repeated.

Having thus fully described my invention, what I claim is—

In a duplex water-elevator of the character described, the combination with the two tanks, the connected water-pipes extending down into said tanks to near the bottom thereof, and said tanks provided with openings in their upper ends and with guide-brackets located above said openings, of the air-pipes extending into said tanks and terminating near the upper ends thereof, the horizontal pipe with which said pipes are connected, the supply-pipe connected therewith provided with a three-way cock, the rod connected with said cock, the rod with which it is pivotally connected, the oscillating lever, the links pivoted thereto, the vertical rods pivotally connected with said links, passing through said guide-brackets and extending into the tanks, the valves secured to the lower ends thereof and the floats secured to said valves, substantially as described.

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

GEORGE S. WILSON.

Witnesses:

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