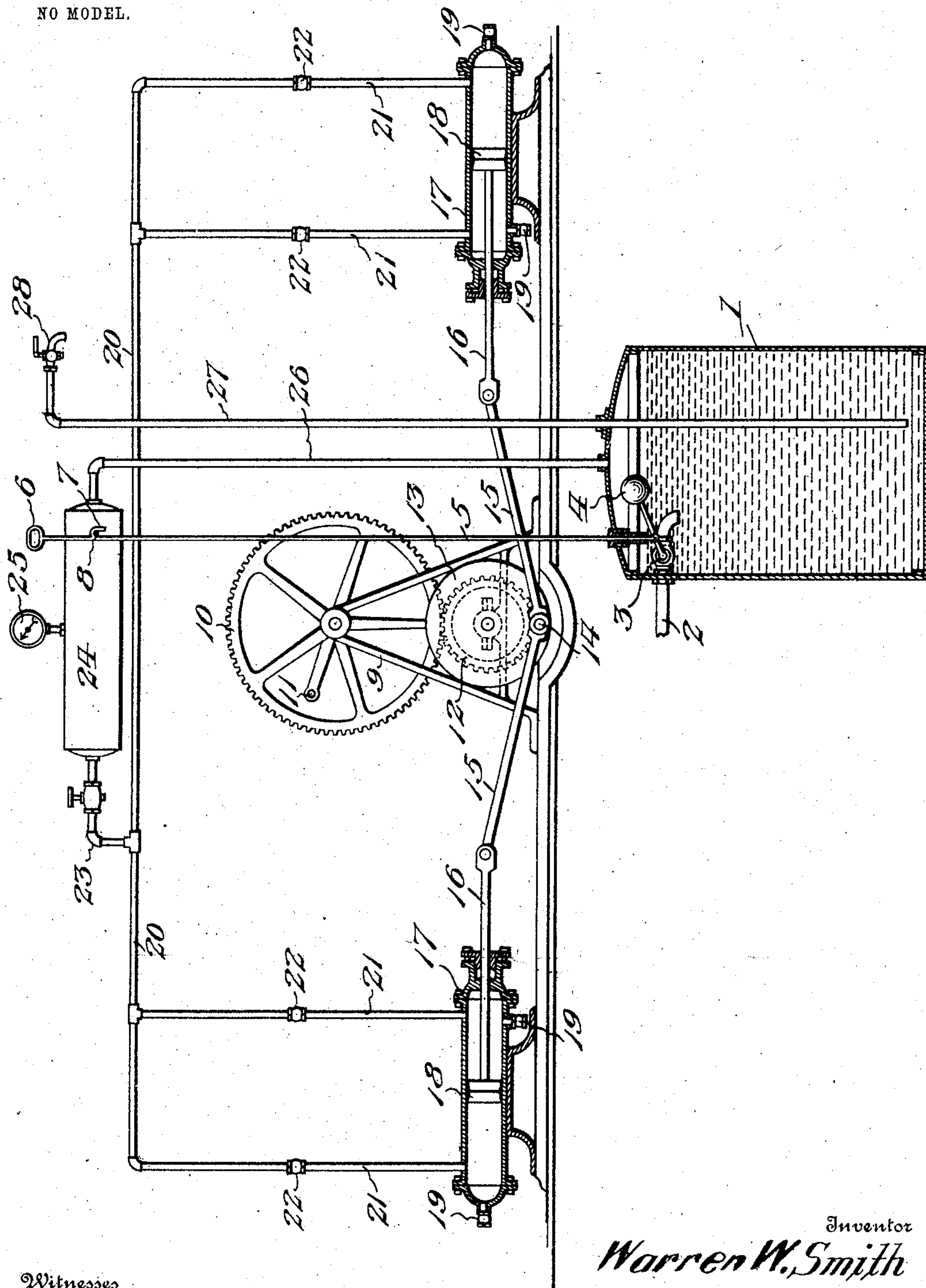


No. 778,081.

PATENTED DEC. 20, 1904.

W. W. SMITH.
IRRIGATING MACHINE.
APPLICATION FILED JUNE 7, 1904.

NO MODEL.



Witnesses

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UNITED STATES PATENT OFFICE.

WARREN W. SMITH, OF WACO, TEXAS.

IRRIGATING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 778,081, dated December 20, 1904.

Application filed June 7, 1904. Serial No. 211,548.

To all whom it may concern:

Be it known that I, WARREN W. SMITH, a citizen of the United States, residing at Waco, in the county of McLennan and State of Texas, have invented new and useful Improvements in Irrigating-Machines, of which the following is a specification.

My invention relates to new and useful improvements in water-hoisting apparatus; and its object is to provide an apparatus of this character which is particularly adapted for domestic use and by means of which water may be readily raised from a well or other source to any desired height.

With the above and other objects in view the invention consists of a tank which is adapted to be submerged and which has a valved inlet which automatically closes when the water within the tank reaches a predetermined level. An air-inlet pipe connects the tank with an air-reservoir, which is adapted to receive air from pumps which are operated by mechanism provided for that purpose. Any number of pipes may be employed for conducting water from the tank to any desired locality.

The invention also consists in the further novel construction and combination of parts hereinafter more fully described and claimed, and illustrated in the accompanying drawing, which is a diagrammatical view of the apparatus.

Referring to the drawing by numerals of reference, 1 is a tank which is adapted to be submerged within a well or other source of water-supply, and this tank has an inlet 2 in which is arranged a valve 3, having a float 4 connected to its stem, whereby when the water reaches a predetermined level the valve will automatically close. A rod 5 extends from the stem of valve 3 and is for the purpose of operating the valve independently of the float. This rod has a handle 6 at one end and a hook 7, which is adapted to be placed in engagement with a pin 8, so as to lock the valve closed. At any suitable point in relation to the tank 1 is located a standard 9, having a gear 10 journaled thereon and adapted to be operated by turning a crank 11 or in any other suitable manner. This gear meshes with a

smaller gear 12, which rotates with a disk 13, having a wrist-pin 14 thereon. Pitmen 15 are mounted on the wrist-pin and are connected to piston-rods 16, which are adapted to reciprocate in the heads of oppositely-disposed cylinders 17. Pistons 18 are connected to the rods 16 and move therewith, and valved inlets 19 are arranged adjacent opposite ends of the cylinders 17 and are adapted to permit the passage of air into the cylinders, but prevent its escape outward through the valves. A main conducting-pipe 20 extends above the two cylinders 17 and is connected adjacent each end to the opposite ends of one of the cylinders 17 by means of pipes 21, having check-valves 22 therein, which permit the passage of air through the pipes 21 toward pipe 20, but prevent it from flowing in the opposite direction. The conducting-pipe 20 is connected by means of a valve-pipe 23 with a reservoir 24, having an indicator 25 thereon, whereby the pressure of the air within the reservoir may be readily determined. An outlet-pipe 26 extends from this reservoir to the top of tank 1, and a water-outlet pipe 27 extends from a point adjacent the bottom of the tank 1 upward to any desired height and may, if desired, be provided with a valve-outlet 28. When the tank 1 is submerged, the water will flow therein by gravity and will lift the float 4 and cause valve 3 to automatically close. Gear 10 can then be rotated in any desired manner and will transport rotary motion to disk 13 through gear 12. The pistons 18 will therefore be reciprocated in unison and will force air alternately through the pipes 21, 20, and 23. The check-valves 22 will prevent the air from flowing backward toward the cylinders 17, and the air will therefore be compressed within the reservoir 24 and the tank 1. This air-pressure within the tank will force the water downward through pipe 27. The pounds of air-pressure within the tank and reservoir will be accurately determined by the indicator 25.

It will be understood that water may be forced to any desired point by means of this apparatus, the operation thereof being dependent upon the amount of pressure exerted by the air. If it is desired for any purpose

to close the valve 3 and remove the water from tank 1, it is merely necessary to raise rod 5 and place hook 7 in engagement with pin 8.

5 In the foregoing description I have shown the preferred form of my invention; but I do not limit myself thereto, as I am aware that modifications may be made therein without departing from the spirit or sacrificing any
10 of the advantages thereof, and I therefore reserve the right to make such changes as fairly fall within the scope of my invention.

Having thus fully described the invention, what is claimed as new is—

15 1. A hoisting apparatus of the character described, comprising a tank adapted to be submerged, and having an air-inlet and a liquid-outlet, a liquid-inlet to the tank, a float-operated valve therein, a rod connected to said
20 valve, means for engaging the rod and locking the valve in closed position, simultaneously operating air-compressors, and a reservoir connected thereto and to the air-inlet of the tank.

2. A hoisting apparatus of the character 25 described, comprising a tank having a liquid-inlet, a float-operated valve therein, a rod extending from said valve and adapted to operate it, means for engaging the rod and locking the valve in closed position, an air-inlet 30 in one end of the tank, a liquid-outlet extending from a point adjacent the bottom of the tank, a power-gear, a gear meshing therewith, a disk revoluble with the last-mentioned gear, oppositely-disposed cylinders having valved 35 inlets at their ends, pistons within the cylinders and connected to the disk and adapted to be operated simultaneously thereby, valved outlets extending from the ends of the cylinders, and a reservoir connected to said out- 40 lets, said reservoir being also connected to the air-inlet of the tank.

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

WARREN W. SMITH.

Witnesses:

J. A. BROWN,
M. M. SMITH.