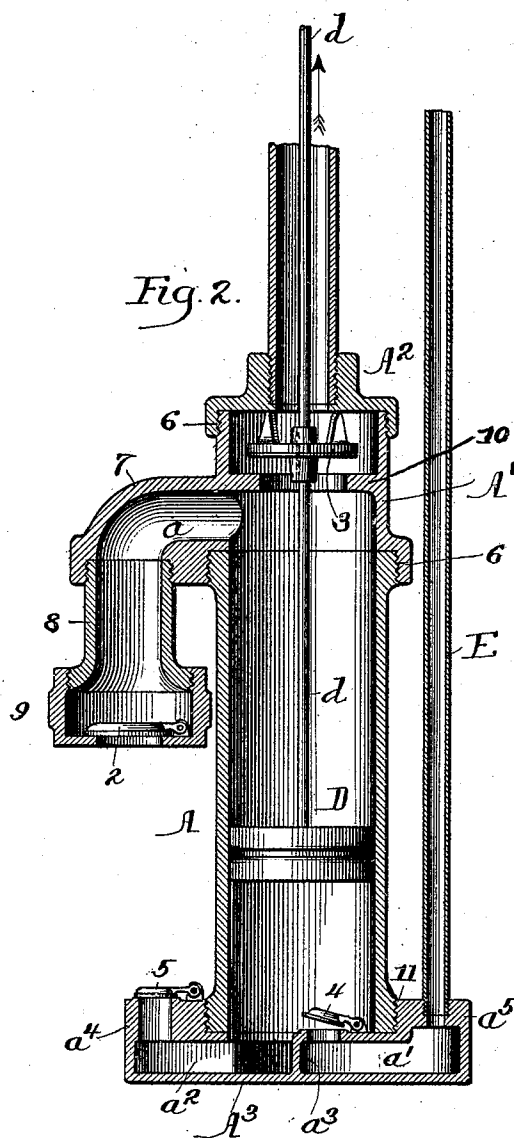
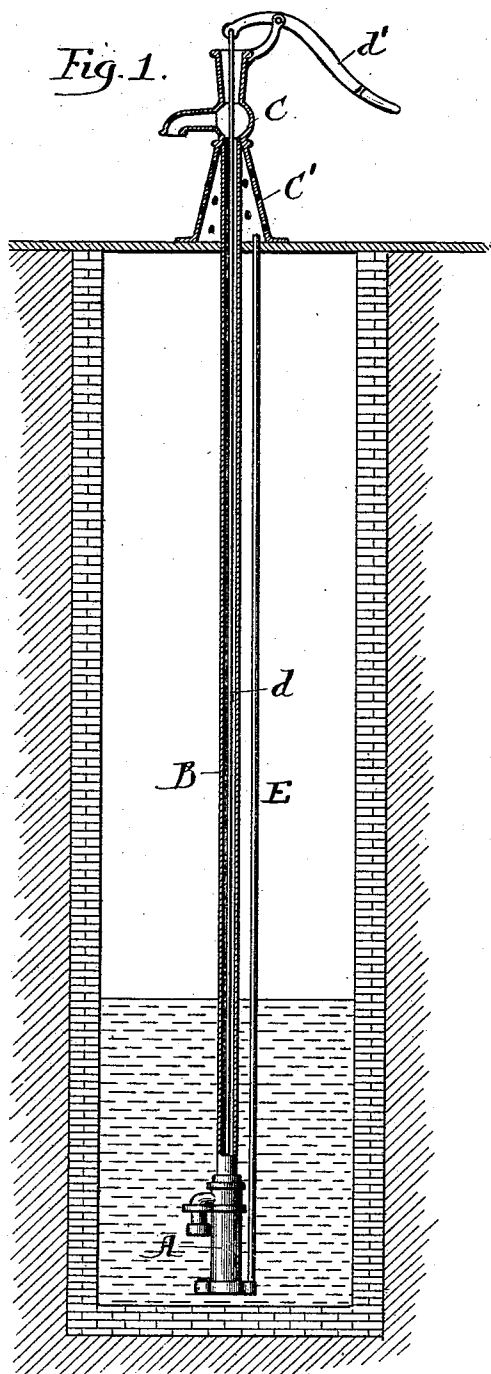


(No Model.)

M. D. TEMPLE.
PUMP.

No. 490,776.

Patented Jan. 31, 1893.



Witnesses:
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UNITED STATES PATENT OFFICE.

MORRIS D. TEMPLE, OF CHICAGO, ILLINOIS.

PUMP.

SPECIFICATION forming part of Letters Patent No. 490,776, dated January 31, 1893.

Application filed July 25, 1892. Serial No. 441,171. (No model.)

To all whom it may concern:

Be it known that I, MORRIS D. TEMPLE, a citizen of the United States, residing at Chicago, county of Cook, in the State of Illinois, have invented certain new and useful Improvements in Pumps, of which I do declare the following to be a full, clear, and exact description, reference being had to the accompanying drawings, forming part of the specification.

My present invention has for its object to provide a simple, cheap and effective pump, which shall serve not only to raise water from wells, cisterns, or like receptacles, but which shall serve also to purify the water of such receptacles by forcing a supply of air into the body of the water, thereby destroying animalcula, organic matter or like disease germs contained therein, and so rendering and maintaining the water in a pure and wholesome condition.

Prior to my invention it has been proposed to construct pump mechanism for "aerating" the water of wells and cisterns, and I do not wish, therefore to be understood as claiming broadly a pump designed for such purpose, my invention residing in the novel feature of construction hereinafter described, illustrated in the accompanying drawings and particularly defined in the claims at end of this specification.

Figure 1 is a view in vertical section through a well or cistern in which my improved pump is located, parts being shown in section and parts in elevation. Fig. 2 is an enlarged view in central vertical section through the submerged cylinder and adjacent parts, certain parts being shown in elevation.

A designates a submerged cylinder attached by a water discharge pipe B, to a pump head C, which may be of any of the ordinary constructions for suction and lift pumps. The cylinder A is supplied with water through the inlet passage a , this passage being provided with a check-valve 2 of suitable construction. A suitable check-valve 3 in the top of the cylinder serves to prevent the water from running down from the discharge pipe B when downward movement is imparted to operating piston D by the piston rod d , and pump handle d' . In the base of the cylinder A is formed an air inlet passage a' , leading into

the cylinder below the piston, and an air outlet passage a^2 through which the air supply will pass into the body of the water within the well or cistern. These passages a' and a^2 will be furnished with suitable check valves 4 and 5, the valve 5 serving to prevent the passage of water into the base of the cylinder and valve 4 insuring the passage of the air from the cylinder into the water as the piston is forced downward. When the cylinder A is submerged, an air inlet pipe E will connect with the air inlet passage a' , this pipe E leading preferably to the top of the well or cistern and terminating beneath the perforated casing C' provided for the pump.

From the foregoing description it will be seen that as the piston D is operated it will upon its up stroke raise through the pipe B the water admitted by the water inlet passage above the piston and at the same time will draw air through the pipe E and the air inlet passage a' into the cylinder beneath the piston; while upon the down stroke of the piston the check valve 3 will prevent the descent of the water column, the check valve 2 will open to admit water to the cylinder, the check valve 4 will close to prevent the return of air through air inlet passage a' , and the check valve 5 will open to permit the escape of air from below the piston through the air outlet passage a^2 into the body of water within the well or cistern. The volume of air thus forced into the body of water serves to aerate it and thus effectively destroy the bacteria and like deleterious matters and renders the water pure and potable.

In the preferred embodiment of my invention the cylinder A is formed with a cap A' at its top, this cap being attached to the main body of the cylinder by a threaded joint 6 and having a lateral extension 7 to which is connected the pipe 8, to the lower end of which pipe is threaded the valve chamber 9. Preferably a transverse wall 10 formed in the cap A' serves as a seat for the check valve 3, and the upper part of the cap A' is closed by a threaded cover A² into which is tapped the lower end of the water discharge pipe B. Preferably also the base A³ of the cylinder is formed separate from the body thereof and is connected thereto by a threaded joint 11. In this base A³ are formed the air inlet and out-

let passages a' and a^2 , separated by the division wall a^3 and the base A^3 has an extension a^4 whereon is seated the check valve 5 and an extension a^5 into which the lower end of the air inlet valve is tapped.

The piston D is an imperforate piston of suitable construction, the supply of air being admitted through the cylinder and beneath the piston in the manner above described.

10 Having thus described my invention what I claim as new and desire to secure by Letters-Patent is:

1. The combination of a pump cylinder having at or near one and the same end stationary
15 air in-let and out-let passages whereby air is admitted to and discharged from said cylinder and having at or near its opposite end water in-let and out-let passages, an air in-let pipe connecting the stationary air in-let passage with the outer air, suitable valves for
20 controlling said several passages and a piston closed against access of air and working between said air passage at one end of the cylinder and the water passages at the opposite
25 end of the cylinder, substantially as described.

2. A pump comprising a cylinder having its base formed with air inlet and outlet passages and its upper part formed with water inlet and outlet passages, suitable valves for controlling said passages, air inlet pipe connecting the base of the cylinder with the outer air, and a piston working between said water passages and said air passages, substantially as described.

3. A pump comprising the combination of a cylinder A having a base formed separate therefrom and provided with air inlet and outlet passages, having the cap formed separate therefrom and provided with water inlet and outlet passages, an air inlet pipe E forming a continuance of the air inlet passage, suitable valves for controlling the several inlet and outlet passages and a piston working between the base and cap of the cylinder, substantially as described.

MORRIS D. TEMPLE.

In presence of—

GEORGE P. FISHER, Jr.,
FRED GERLACH.