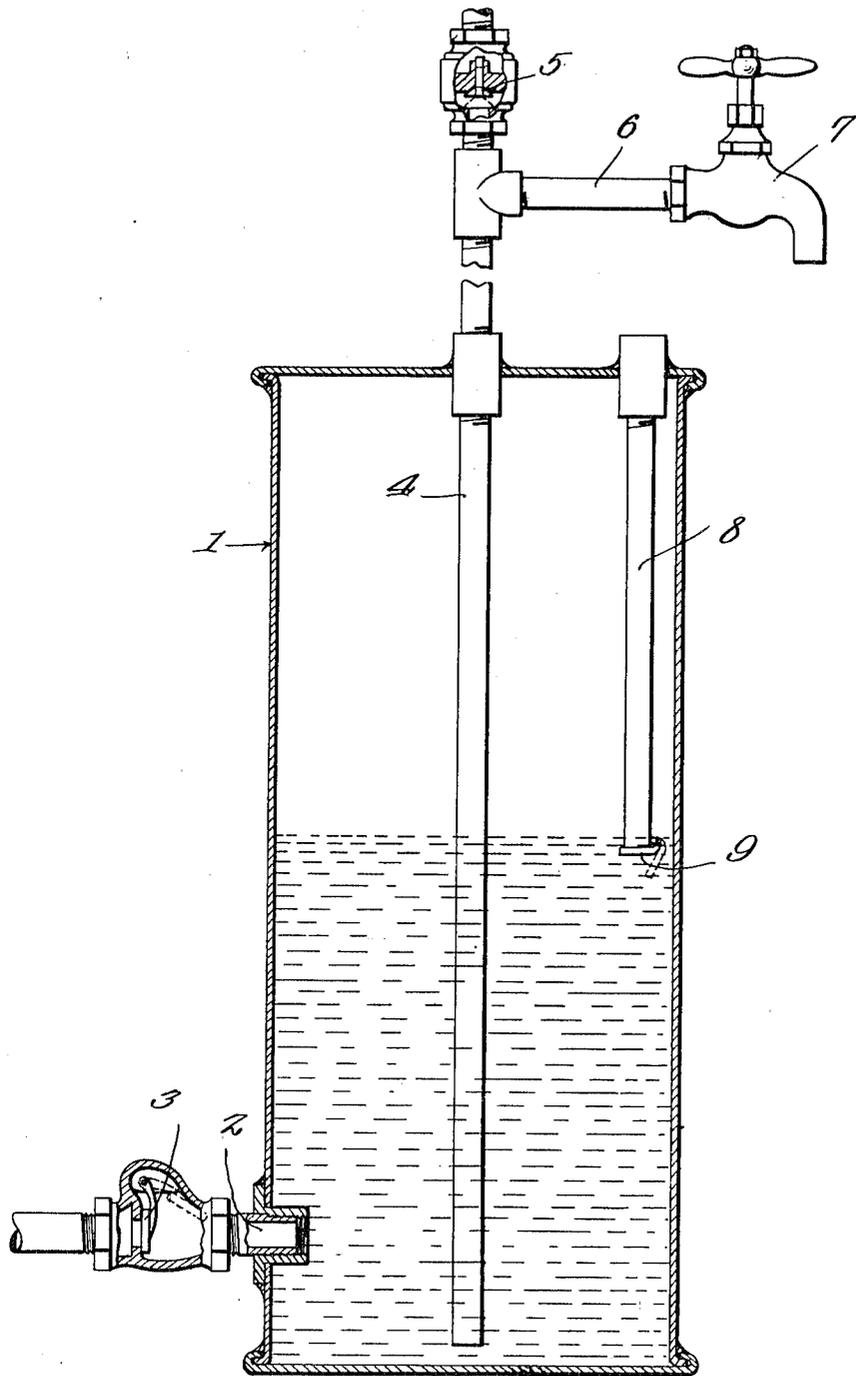


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WATER ELEVATING APPARATUS.  
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1,090,244.

Patented Mar. 17, 1914.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

JOHN A. STAPLES, OF WALKERTOWN, NORTH CAROLINA.

## WATER-ELEVATING APPARATUS.

1,090,244.

Specification of Letters Patent.

Patented Mar. 17, 1914.

Application filed August 25, 1913. Serial No. 786,550.

*To all whom it may concern:*

Be it known that I, JOHN A. STAPLES, a citizen of the United States, residing at Walkertown, in the county of Forsyth and State of North Carolina, have invented a new and useful Water-Elevating Apparatus, of which the following is a specification.

This invention relates to apparatus for elevating water and more particularly to apparatus of this type utilizing air under compression for the purpose of raising the water to the desired elevation.

Apparatus of this type such as heretofore constructed has included a tank adapted to be submerged, the said tank being formed with a valved inlet for the water and with separate pipes for directing air into the tank and for withdrawing water from the tank.

One of the objects of the present invention is to simplify the structures heretofore devised by utilizing a single pipe for directing air under pressure into the water tank and for use in withdrawing water from the tank.

A further object is to provide apparatus of this character which is simple in construction and will not readily get out of order.

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 the invention herein disclosed, can be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawing, which is a view partly in section and partly in elevation of the apparatus, the preferred form of the invention has been shown.

Referring to the drawing by characters of reference, 1 designates a tank of any suitable proportions adapted to be submerged, the said tank being provided at or near its bottom, with a water inlet 2 provided with a check valve 3 whereby outflow of water there-through will be prevented. Extending into the tank from the top thereof and to a point close to the bottom is a pipe 4 and this pipe extends to any desired distance above the tank. The pipe leads to any desired means for compressing or forcing air and a check valve 5 is located in the pipe so as to prevent the escape of pressure through the pipe toward the compressing means (not shown).

Extending from pipe 4 below the valve 5 is a water outlet pipe 6 having a suitable valved terminal such as an ordinary faucet 7.

Projecting into the top of the tank is an air-vent pipe 8 provided at its lower end with a hinged or flap valve 9. This flap valve is adapted to be closed by the upward pressure of water thereagainst and can be made of any suitable material so as to float to closed position when the water rises to a predetermined level. This vent pipe 8 extends any desired distance into the tank and its length governs the amount of space to be normally filled with air under pressure.

In using the apparatus the tank 1 is almost entirely submerged in the body of water, it being desirable to have the top of the tank above the level of the body of water. Water will gravitate into the tank through the valved inlet 2 and will rise in the tank until the valve 9 closes against the lower end of pipe 8 whereupon air above the level of the water and within the tank will be gradually placed under compression and will finally stop the inflow of water. Air under pressure can then be directed into the tank by way of pipe 4 and will pass out of the lower end of the pipe and through the body of water into the upper portion of the tank. Valve 9 will of course remain closed by the pressure of the water there-against. To withdraw water from the tank the faucet 7 is opened whereupon the compressed air in the upper portion of the tank will bear downwardly on the body of water and force a portion of the water upwardly through pipe 4 and into the water pipe 6 to the faucet. Check valve 5 will of course prevent any of the water passing the pipe 6 and flowing toward the compressing means (not shown).

It will be apparent that by utilizing apparatus such as herein described, a greatly simplified structure is produced, the number of pipes being reduced to the minimum, thus lessening the cost of the apparatus.

What is claimed is:--

1. Water elevating apparatus including a sealed tank adapted to be submerged and having a valved water inlet, an air vent tube depending into the tank, a valve at the lower end of the vent pipe and adapted to be closed by water rising in the tank, a pipe for directing air under pressure into the bottom portion of the tank, said pipe extending into the tank from the top thereof,

and a valved water outlet connected to the last named pipe.

2. Apparatus for elevating water including a tank adapted to be submerged and having a valved water inlet at its bottom, an air vent tube extending downwardly into the tank from the top thereof, a valve for closing the lower end of said pipe when the level of the water rises above the lower end of the pipe, a pipe extending through the top of the tank and down into the tank to a point adjacent the bottom thereof for

directing air under pressure into the tank, a check valve within said last named pipe, and a valved water outlet connected to the last named pipe below the check valve. 15

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

JOHN A. STAPLES.

Witnesses:

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