

J. R. LAMB & J. DAVIES.
 WATER DELIVERING APPARATUS.
 APPLICATION FILED FEB. 17, 1910.

1,008,830.

Patented Nov. 14, 1911.

Fig. 1.

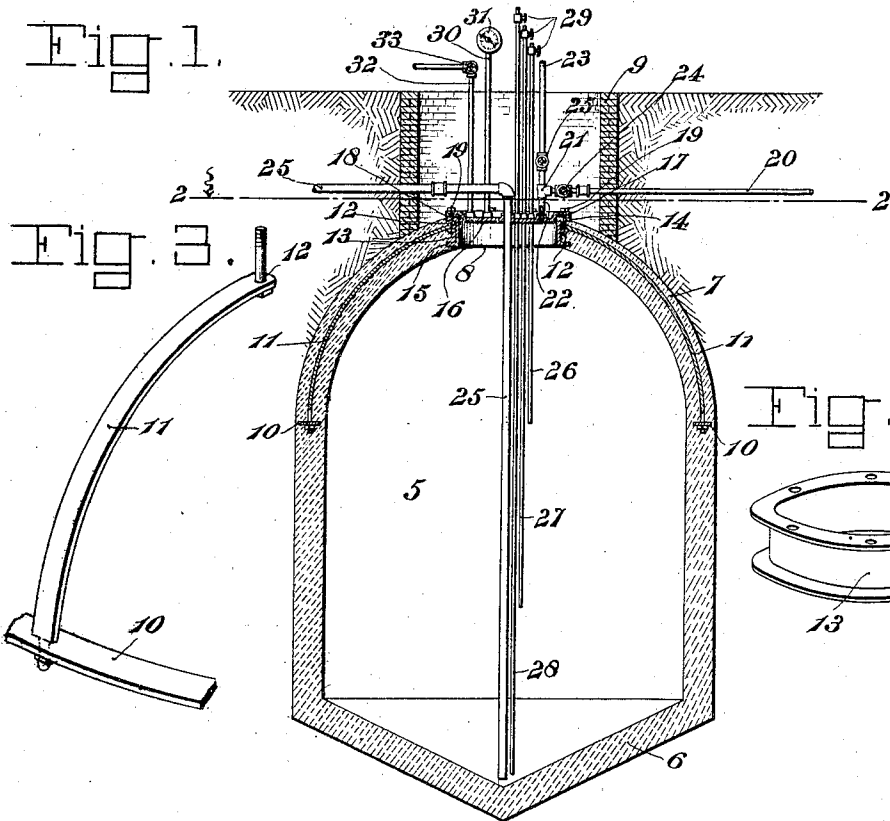


Fig. 3.

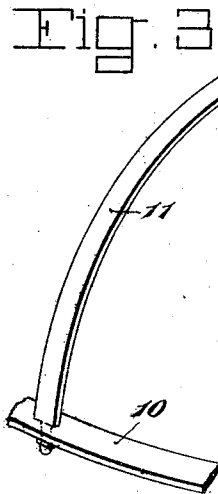


Fig. 4.

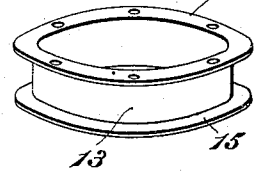
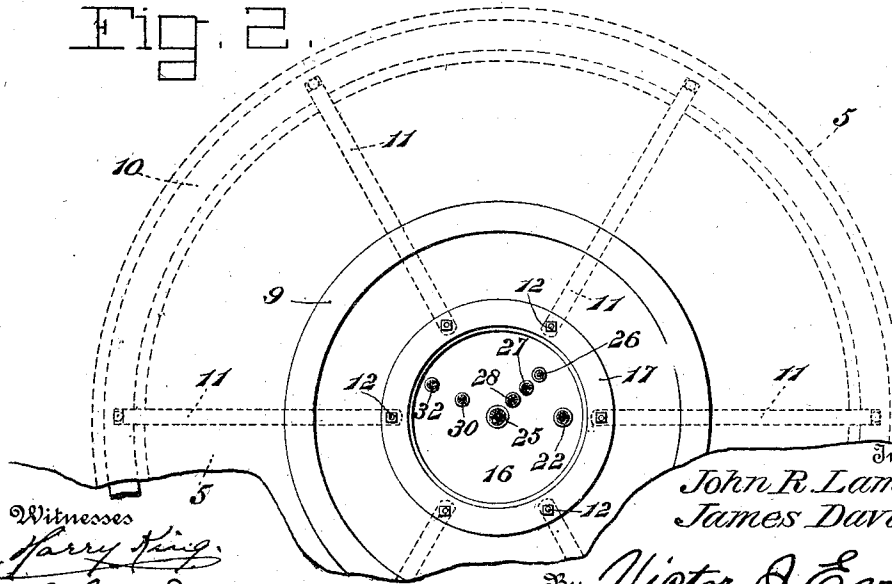


Fig. 2.



Witnesses

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WATER-DELIVERING APPARATUS.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, JOHN R. LAMB and JAMES DAVIES, citizens of the United States, residing at Mason City and Ansley, respectively, in the county of Custer and State of Nebraska, have invented new and useful Improvements in Water-Delivering Apparatus, of which the following is a specification.

This invention relates to improvements in an apparatus for delivering water from a well or other source of supply to the faucets located in a house remote from and above the water level of the well.

One object of the invention is the provision of a receptacle provided with a dome-shaped upper end having a central opening and a plurality of reinforcing ribs embedded into the dome-shaped end and having secured to their upper ends a plurality of studs to engage with a closure for the opening in the dome-shaped end.

Another object is the provision of a reservoir provided with a plurality of gage pipes the lower ends of which are located at different heights above the bottom of the receptacle, whereby the height of the water in the latter may be readily determined whenever desired.

With these and other objects in view, which will more fully hereinafter appear, the present invention consists in certain novel details of construction and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings and more particularly pointed out in the appended claim; it being understood that various changes in the form, proportion, size, and minor details of the device may be made, within the scope of the appended claim, without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, forming a part of the specification:—Figure 1 is a vertical sectional view of the device. Fig. 2 is a fragmentary sectional plan view on the line 2—2 of Fig. 1. Fig. 3 is a detail perspective of one of the reinforcing elements and studs. Fig. 4 is a similar view of the bearing collar.

Similar numerals of reference are employed to designate corresponding parts throughout.

The device is intended primarily for use in rural districts where access is not had to

the city mains and is intended to receive a quantity of water forced therein by a pump from an adjacent well and thence to be discharged with compressed air so that the contained water will, by the air pressure be lifted through the outlet pipe and to the house or other place where it is desired to use the water.

What will subsequently be termed the reservoir is designated in general by the numeral 5 and is preferably of concrete or analogous plastic material. The body portion of the reservoir is a hollow cylindrical-shaped structure the lower end of which is sealed by an outwardly bulged bottom 6 arcuate in cross section. The upper end of the body terminates in a dome-shaped upper end designated by the numeral 7. The central portion of said dome-shaped end being provided with an opening 8.

Rising from the dome-shaped end 7 and surrounding and spaced from the opening 8 thereof is an annular wall 9. It might here be stated that the receptacle 5 is designed to be embedded in the ground so that the upper end of the cylindrical wall 9 will be flush, or substantially so with the surface of the ground and when the device is so positioned, it will be obvious, by virtue of the wall 9 that access may be had to the opening 8 through the space bounded by the wall 9.

Embedded in the body 5 and directly beneath the dome-shaped end 7 is an annular metallic strip 10, and secured in any preferred manner to the strip 10 are a plurality of metallic reinforcing elements 11. The reinforcing elements 11 are curved to the degree of curvature of the dome-shaped end 7 and correspond in length to the same and are embedded therein at the time of molding the reservoir. The upper ends of the reinforcing elements 11 are provided with studs 12. These members surround the opening 8 of the dome-shaped end and project through the surface of the reservoir and have their projecting end portions screw-threaded.

What will subsequently be termed a bearing collar is arranged in the opening 8. This member includes an annular body portion designated by the numeral 13 and corresponding in diameter to the diameter of the opening 8 and in width to the depth of the opening 8, or approximately so. The opposite sides of the body 13 are provided

with lateral circular flanges 14 and 15 the upper of which bears on the upper surface of the dome-shaped end 7, while the lower is embedded in the wall of the opening 8.

5 A closure plate is designated by the numeral 16 and is of a size to snugly fit within the opening 8. The plate is provided with a peripheral flange 17 designed to bear on the upper flange 14 of the bearing collar 10 13 and provided with a plurality of openings for the reception of the threaded ends of the studs 12. The lower surface of the flange 17 is provided with a gasket 18 which serves to form a tight closure when the 15 plate is inserted into the opening 8 and secured by means of nuts 19 threadable onto the threaded ends of the studs and bearing on the upper surface of the flange 17.

An inlet pipe for the water is shown at 20 20 and terminates at one end in a T-shaped union 21 from one end of which leads a pipe section 22 the lower end of which is tapped into the plate 16 and from the upper end of which extends an air pipe 23. The 25 upper end of the air pipe is connected with a suitable air pump (not shown), and the outer end of the water inlet pipe 20 is connected with a force pump (not shown). Valves 24 and 25 are carried by the air and 30 water pipes 20 and 23 and serve to cut off the supply of air and water whenever desired.

The outlet pipe is designated by the numeral 25 and extends through the plate 16 35 with its lower end extending to a point adjacent the bottom 6 while its opposite or upper end leads to the house or other place to be supplied with water (not shown).

By reference to Fig. 1 it will be seen that 40 extending through the plate 16 are a plurality of water gage pipes designated by the numerals 26, 27 and 28. The upper ends of these pipes extend above the surface of the ground and are provided with cocks 29. 45 The gage pipes are of different lengths, the longest pipe 28 extending to a point adjacent to the center of the bottom 6, the lower end of the intermediate pipe 27 extending to the middle portion of the pipe 50 28, while the shortest pipe 26 extends for a short distance below the closure plate 16. With this construction it will be evident that the approximate height of the water within the reservoir may be determined at 55 any point between the lower ends of the shortest pipe 26 and longest pipe 28, by opening the cocks 29.

A pressure gage pipe is designated by the numeral 30 and has one end tapped into

the closure plate 16, while its upper end is 60 provided with a pressure gage 31 located above the surface of the ground.

A relief pipe is designated by the numeral 32 and has one end tapped into the plate 16, while its upper end is provided 65 with a valve 33 arranged to open when the pressure in reservoir increases above a certain amount.

From the foregoing it can be seen that we have provided a device which is comparatively simple in structure and inexpensive in manufacture, embodying few 70 parts and these so arranged that the danger of derangement will be reduced to a minimum. 75

It will be observed when it is not desired to inject compressed air into the reservoir water may be pumped thereinto, whereby the air within the reservoir will be compressed sufficiently to force the water 80 through the outlet pipe 25, or when it is desired to use compressed air the reservoir may be filled to the required height after which it is charged by the air pump (not shown) connected to the air inlet pipe 23. 85

We claim:—

In a liquid elevating apparatus, a reservoir formed of a plastic material and including a hollow cylindrical body having an outwardly bulged bottom and a dome-shaped upper end provided with a central 90 opening, a plurality of curved reinforcing elements embedded in said dome-shaped end, an annulus in said body portion and engaging the lower ends of said reinforcing 95 elements, the upper ends of said reinforcing elements extending to points adjacent the opening of the dome and provided with a plurality of studs projecting through the outer surface of the dome, a bearing collar 100 arranged on the side of the opening of the dome having at its upper side a lateral flange bearing on the surface of the dome and on its lower side a similar flange embedded in the side of the opening, a closure 105 plate for the opening of the dome and having a plurality of openings adjacent its periphery for the reception of said studs, and nuts threadable onto the studs for clamping the closure plate in position. 110

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN R. LAMB.
JAMES DAVIES.

Witnesses:

EARL SMITH,
RAY TIERNEY.