

L. G. ROSE.  
 WATER LIFTING DEVICE.  
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1,100,491.

Patented June 16, 1914.

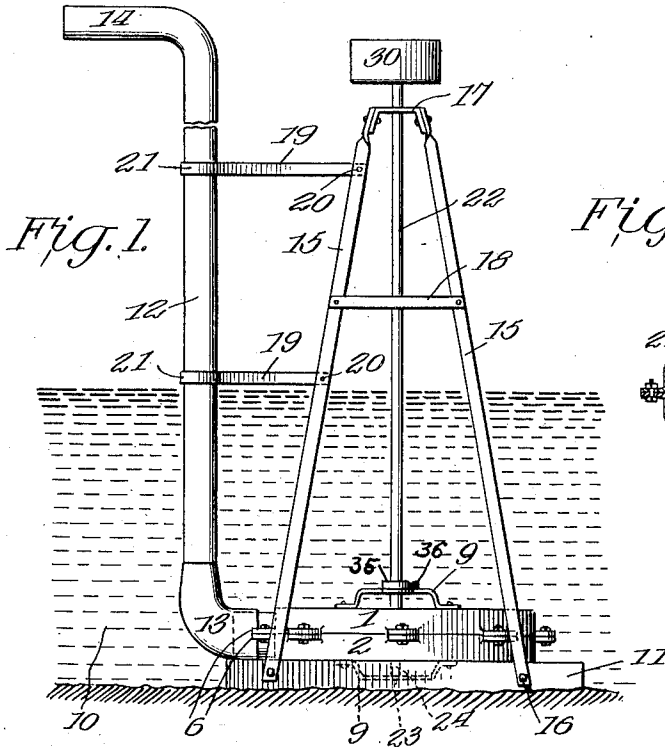


Fig. 3.

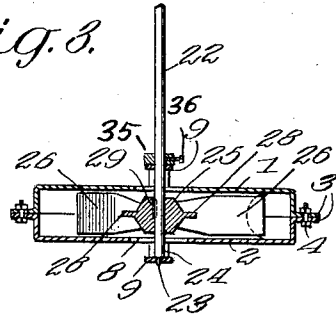


Fig. 4.

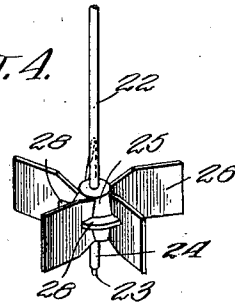
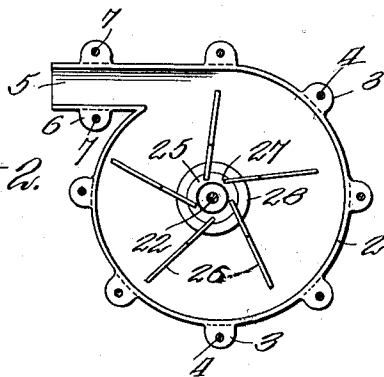


Fig. 2.



WITNESSES  
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# UNITED STATES PATENT OFFICE.

LUCIUS G. ROSE, OF PARMA, IDAHO.

## WATER-LIFTING DEVICE.

1,100,491.

Specification of Letters Patent.

Patented June 16, 1914.

Application filed December 9, 1912. Serial No. 735,658.

*To all whom it may concern:*

Be it known that I, LUCIUS G. ROSE, a citizen of the United States, and a resident of Parma, in the county of Canyon and State of Idaho, have invented an Improvement in Water-Lifting Devices, of which the following is a specification.

My invention is an improvement in water lifting devices, and has for its object the provision of a simple, inexpensive, and portable device of the character specified, especially adapted for use in irrigating ditches for lifting the water from the ditch to the ground to be irrigated, when the said ground is at a higher level than the ditch, and which may be easily transported from place to place, and wherein valves of all character are dispensed with.

In the drawings, Figure 1 is a side view of the improvement in place in a ditch, Fig. 2 is a top plan view of the water wheel and the lower part of the casing, Fig. 3 is a transverse vertical section through the lifting mechanism, and Fig. 4 is a perspective view of the wheel.

The present embodiment of the invention comprises a casing of cylindrical form and composed of upper and lower sections 1 and 2, which sections have laterally extending lugs 3, the lugs of the two sections registering and the said lugs being perforated to receive bolts 4 for holding the sections together. Each of the sections 1 and 2 is provided with a section of outlet 5, the said outlet being tangential to the casing and the sections cooperating to form a cylindrical nipple or pipe. Each of the said sections 5 is provided with lateral lugs 6, and the said lugs register and are perforated to receive bolts 7 for holding the outlet sections together. Each of the sections 1 and 2 of the casing is provided at its center or axis with an opening 8, and a bearing bracket 9 is connected with each section, the bearing of each of the brackets being at the axis of the casing. The casing is supported in the ditch 10 in any suitable manner, and on the bottom thereof, as for instance by means of the beams 11 arranged on the bottom of the ditch.

A discharge pipe 12 is connected with the outlet of the casing, the said pipe having an elbow 13 at its lower end which fits on the outlet consisting of the sections 5, and the discharge pipe is also provided with a lateral extension 14 at its upper end. A tower

is connected with the supports 11 and extends above the casing, the said tower consisting of four standards or uprights 15 which are secured to the supports 11 at their lower ends, as indicated at 16, and which converge toward their upper ends and are connected as shown at 17. The uprights 15 are connected intermediate their ends by means of cross bars 18, and the pipe 12 is braced against or connected to the tower by means of arms 19, each arm having one end secured to the uprights, as indicated at 20, while the other end is provided with a bearing 21 encircling the pipe 12. A shaft 22 is journaled in a vertical position axially of the casing, in the bearing brackets 9 and in the connections 17 at the upper ends of the uprights. It will be noticed from an inspection of Figs. 3 and 4 that the lower end of the shaft 22 is reduced to form a journal pin 23, and the shoulder 24 formed between the journal pin and the shaft proper, rests against the upper face of the lower bearing bracket 9, to prevent downward movement of the shaft 22.

The water lifting mechanism is arranged in the casing composed of the casing section 1—2, and said mechanism is secured to the lower end of the shaft 22. A hub 25 is secured to the shaft near its lower end, and blades 26 are arranged in slots 27 in the hub, the said slots and the blades being parallel with tangents of the shaft. The blades are braced against each other and supported by means of an arc-shaped rib 28 on the hub, the said rib being also slotted to receive the blades. The hub 25 is keyed to the shaft, as indicated in Fig. 3, by means of a key 29.

It will be noticed from inspection of Fig. 4, that the casing is eccentric to the shaft 22, and that the blades 26 do not move in contact with the peripheral wall of the casing except at one point. The water enters the casing through the openings 8, and it will be evident that when the shaft 22 is rotated, the water will be drawn into the casing through the axial openings 8, and will be driven out of the casing through the outlet formed by the sections 5 and through the pipe 12 and the elbows 13 and 14 to the place of delivery. A pulley 30 is secured to the upper end of the shaft 22 and a belt from a suitable driving mechanism, as for instance a gasoline engine or an electric motor may be connected with the said pulley to drive the water wheel.

In operation, the device is placed in the irrigating ditch, as indicated in Fig. 1, the supports 11 resting on the bottom of the ditch. When the shaft 22 is rotated, water  
 5 is drawn through the openings 8 into the casing, and the action of the wheel forces the water out through the pipe 12 to the place of delivery. The device may be moved from  
 10 place to place, and there are no valves to get out of order. It will be noted that a collar 35 is arranged above the upper bearing of the shaft 22, the said collar being held in place by  
 15 a set-screw 36 to prevent downward movement of the shaft with respect to the casing. The said collar supports the shaft and when it becomes worn, it may be moved downward to compensate for wear, or a new collar may be supplied.

I claim:—

20 In a device of the character specified, a substantially cylindrical casing consisting of

upper and lower sections pivotally connected together, said casing having an axial inlet and a tangential outlet, bearing brackets secured to the opposite faces of the casing and  
 25 in spaced relation with respect to the casing, a tower extending above the casing and provided in its upper end with a bearing alined with the bearings of the casing, a shaft  
 30 journaled in the bearing of the tower and casing, means at the upper end of the shaft for rotating the same, a water wheel secured to the shaft within the casing, a discharge pipe extending upwardly from the outlet of  
 35 the casing to near the level of the top of the tower, and supporting arms extending laterally from the tower and engaging the discharge pipe.

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Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."