

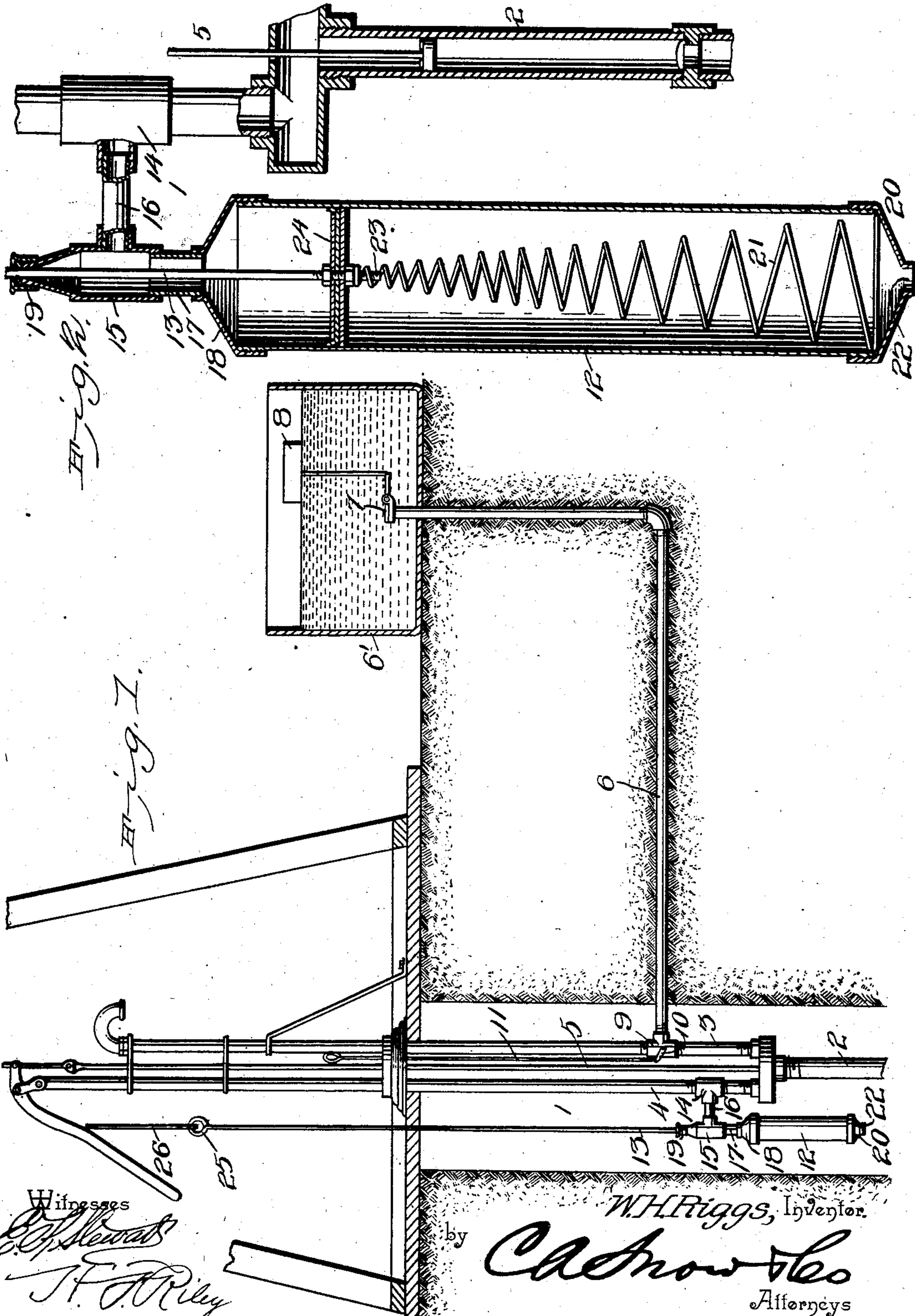
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W. H. RIGGS.
WINDMILL REGULATOR.

APPLICATION FILED JUNE 2, 1902.

NO MODEL.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM H. RIGGS, OF LAPEL, INDIANA, ASSIGNOR OF ONE-HALF TO
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WINDMILL-REGULATOR.

SPECIFICATION forming part of Letters Patent No. 721,328, dated February 24, 1903.

Application filed June 2, 1902. Serial No. 109,949. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. RIGGS, a citizen of the United States, residing at Lapel, in the county of Madison and State of Indiana, have invented a new and useful Windmill-Regulator, of which the following is a specification.

The invention relates to improvements in windmill-regulators.

10 The object of the present invention is to improve the construction of windmill-regulators and to provide a simple and comparatively inexpensive device adapted to be readily connected to a pump at a point below the
15 well-platform and capable when the water within a tank or other receptacle has risen to a predetermined height of automatically stopping the windmill and the pump.

A further object of the invention is to provide a device of this character which when the water falls below a certain height in the tank will automatically start the windmill and the pump and which will be adapted to afford a direct connection between it and the
25 wire, which is connected with the gearing of the windmill to enable the latter to be thrown out of operation without employing a series of pulleys or intermediate levers.

The invention consists in the construction
30 and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a side elevation, partly in section, of a windmill-regulator constructed in accordance with this invention. Fig. 2 is an enlarged sectional view.

Like numerals of reference designate corresponding parts in all the figures of the drawings.
40

1 designates a pump designed to be arranged in a well in the usual manner and provided with a lower pump-cylinder 2 and having a discharge-pipe 3 and a vertical pipe or
45 tube 4, arranged parallel with the discharge-pipe and communicating at its lower end with the same to form an air-chamber, and the pump-rod is arranged between the pipes 3 and 4. The pump-rod 5 is provided at its
50 lower end with a suitable piston-head, and it is connected at its upper end with a wind-

mill in the usual manner. The piston may be constructed in any desired manner, and the pump-cylinder is preferably valved, the piston being designed to lift the water on the
55 upstroke; but the invention is also applicable to double-acting pumps, as will be readily apparent.

A supply-pipe 6 extends from the discharge-pipe 3 to the interior of a tank 6, and it is
60 provided within the latter with a suitable valve 7, which is controlled by a float 8. The float 8 and the valve 7 may be of any desired construction, and when the water rises within the tank to a predetermined height the float
65 will close the valve 7, and when the water is consumed and the float falls the valve will be opened. The supply-pipe is connected with the discharge-pipe by a suitable coupling 9, having a three-way valve provided
70 with an exterior arm 10, which is connected with a rod 11, extending above the platform of the well and adapted to be operated by hand for controlling the passage of the water to enable the same to be either discharged
75 into the tank or from the discharge-pipe or to be cut off, as desired.

The present invention comprises a vertical cylinder 12, receiving a piston 13 and adapted to be connected with either of the pipes 3
80 and 4, as may be most convenient, and in the accompanying drawings it is shown connected with the pipe 4 by means of couplings 14 and 15. The T-coupling 14 and 15, which connects the sections of the pipe 4, the pipe
85 4 being cut for this purpose, is connected by a short pipe 16 with the T-coupling 15. The T-coupling 15 is connected at its bottom by a short pipe 17 with a cap 18 of the cylinder 12, and it has a stuffing-box 19 at its upper
90 end to receive the stem of the piston 13 to prevent leakage. The cap 18 is interiorly threaded and is screwed to the exterior of the upper end of the cylinder 12, which is provided at its lower end with a cap 20. The
95 cap 20 is interiorly threaded to engage the lower threaded end of the cylinder, and it forms a seat for a conical coiled spring 21, and it is also provided with an opening 22, adapted to permit any water to escape from
100 the cylinder in event of leakage, and it will thereby prevent the regulator from freezing

and becoming inoperative in cold weather. The lower end or base of the coiled spring 21 is seated upon the cap 20, which is preferably tapered to facilitate drainage, and its upper end or apex receives the lower terminal 23 of the stem of the piston 13, which stem is extended below the piston-head 24 for engaging the spring to prevent the latter from becoming displaced.

10 The piston-head may be of any desired construction, and the piston rod or stem, which is provided at its upper end with a ring 25, is connected with the wire 26, which extends to the mechanism for throwing the windmill out of operation. When the windmill is in operation and the water rises in the tank to the predetermined height, the float will close the valve 7 and prevent any more water entering the tank. The back pressure will cause the water to flow into the vertical cylinder 12 and act upon the piston-head 24, which will be depressed or forced downward against the action of the coiled spring until the windmill is thrown out of operation and the pump stops. As soon as the water falls below the predetermined height, the valve 7 will be opened and the water within the supply-pipe and the cylinder will be relieved of pressure and permitted to flow into the tank.

30 The spring will then raise the piston and permit the windmill to come into gear, and the pumping action will then commence and continue until the valve 7 of the tank is again closed.

35 It will be seen that the windmill-regulator is exceedingly simple and inexpensive in construction, that it is located beneath the platform of the well, and that it is connected directly with the wire of a windmill without the aid of intermediate levers or pulleys. It will also be seen that the spring is prevented from being displaced by being engaged with the lower end of the piston stem or rod and that the lower cap of the cylinder is open to permit water to drain from the regulator to prevent the same from freezing and becoming inoperative in cold weather.

What I claim is—

1. In a windmill-regulator, the combination of a cylinder designed to be connected with a pump and provided with an open bottom and

having a seat thereat, a piston having a head arranged within the cylinder, the stem of the piston being extended below the head and being adapted to be connected at its upper end with a windmill, and a conical spring located within the cylinder and arranged on the seat, the apex of the spring receiving the extended end of the piston whereby it is held in position, substantially as and for the purpose described.

2. In a windmill-regulator, the combination of a cylinder designed to be connected with a pump and provided at its bottom with a tapering cap forming a seat and having an opening in its bottom, a piston having a head arranged within the cylinder, the upper end of the stem of the piston being designed to be connected directly with the operating mechanism of a windmill, and the lower end of the stem being projected beyond the piston-head, and a spring arranged within the cylinder and seated on the cap and having its upper end engaged by the extended end of the piston, substantially as described.

3. In a windmill-regulator, the combination with a pump, of a coupling provided at the top with a stuffing-box and connected with the pump, a vertical cylinder having upper and lower caps, the upper cap being connected with the coupling and the lower cap being provided with an opening, a vertical piston having its head arranged within the cylinder, the stem of the piston being projected downward beyond the head and being extended upward through the stuffing-box and arranged to be connected with the operating-wire of a windmill, a supply-pipe extending from the pump and designed to be connected with the tank and having a valve, a valve located at the point of connection between the supply-pipe and the pump and provided with an exterior arm, and a rod extending upward from the arm and adapted to be operated by hand, substantially as described.

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

WILLIAM H. RIGGS.

Witnesses:

FRANK S. McLAUGHLIN,
GEORGE E. BIRD.