

No. 617,794.

Patented Jan. 17, 1899.

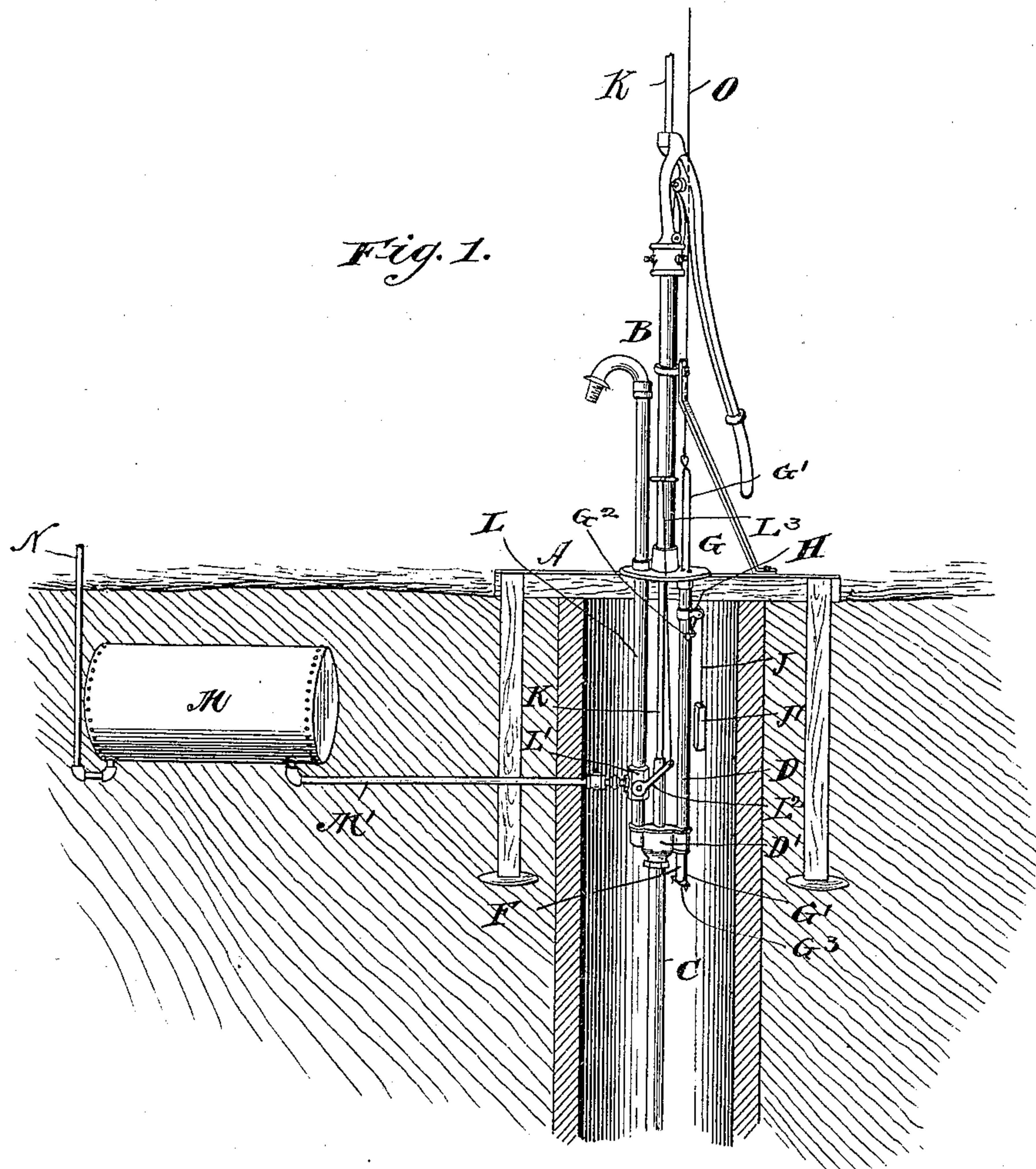
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AUTOMATIC HYDRAULIC REGULATOR FOR WINDMILLS.

(Application filed Oct. 22, 1898.)

(No Model.)

2 Sheets—Sheet 1.



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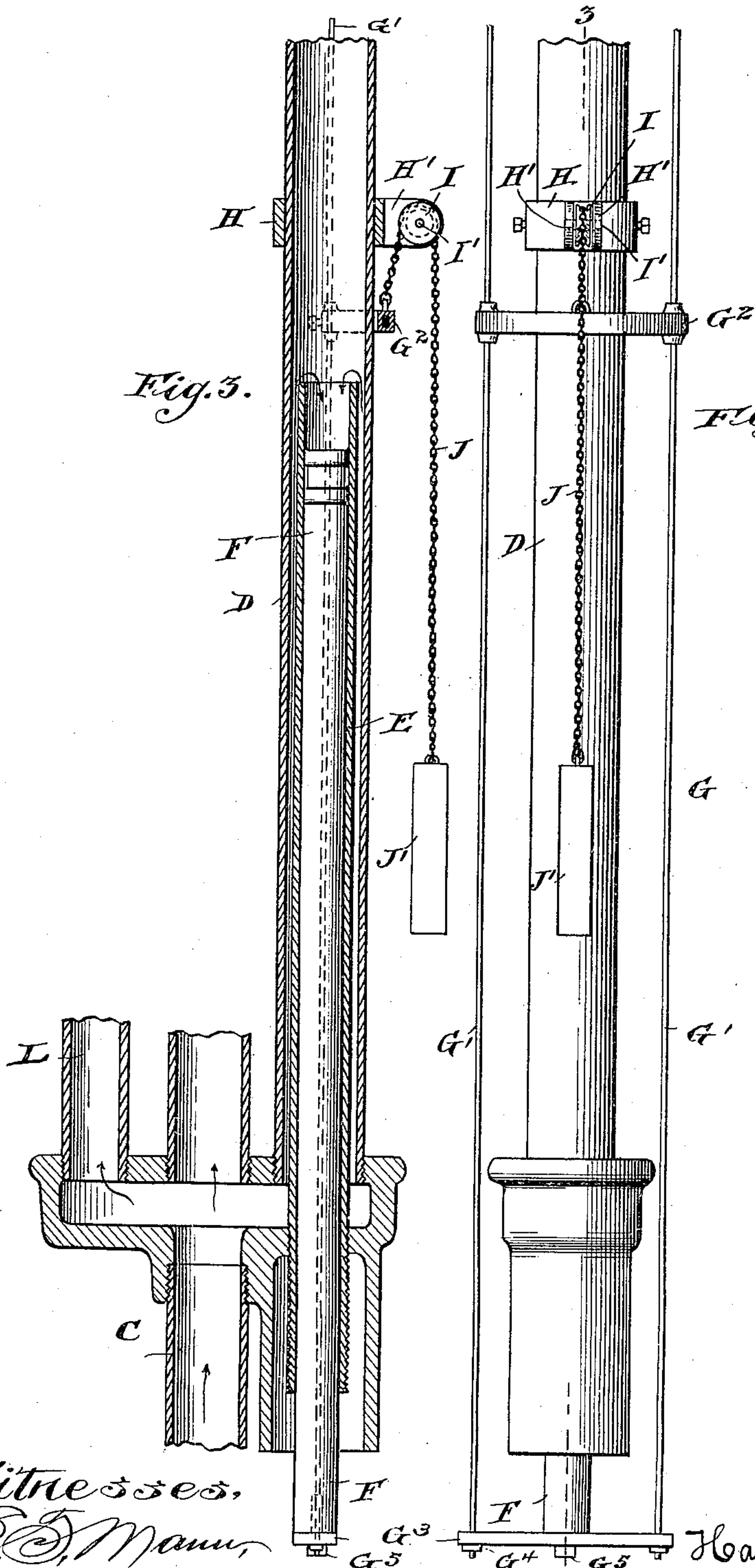
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# UNITED STATES PATENT OFFICE.

HARRISON WOODMANSE, OF FREEPORT, ILLINOIS.

## AUTOMATIC HYDRAULIC REGULATOR FOR WINDMILLS.

SPECIFICATION forming part of Letters Patent No. 617,794, dated January 17, 1899.

Application filed October 22, 1898. Serial No. 694,322. (No model.)

*To all whom it may concern:*

Be it known that I, HARRISON WOODMANSE, a citizen of the United States of America, residing at Freeport, in the county of Stephenson and State of Illinois, have invented certain new and useful Improvements in Automatic Hydraulic Regulators for Windmills, of which the following is a specification.

This invention relates to combined mechanism for automatically throwing windmills out of gear wherein water acted upon by air under pressure is the motive power; and it consists of certain new and useful features of construction and combinations of parts hereinafter fully described, and specifically pointed out in the claims.

Referring to the accompanying drawings, which form a part of this specification, Figure 1 is a side elevation of my improvement connected with a pump and its attachments. Fig. 2 is an enlarged view in detail of parts shown in Fig. 1. Fig. 3 is a section on the line 3 3 in Fig. 2.

Like letters of reference indicate corresponding parts throughout the several views.

A is any suitable platform. B is a force-pump mounted thereon.

C is a pump supply-pipe extending downward into a pump-cylinder. (Not shown.)

D is a stand-pipe closed at its upper end and connected by its lower and open end with the pump supply-pipe C by means of a connecting-chamber D'.

E is a cylinder open at both ends of less diameter and length than the stand-pipe D and included therein and having its lower end extended through the connecting-chamber D'.

F is a plunger adapted to reciprocate in the included cylinder E.

G is a pull-out bail formed of a slender rod G', bent double and passed through the half-collar G<sup>2</sup> and the cross-head G<sup>3</sup>, to which it is secured by means of nuts G<sup>4</sup>. The cross-head G<sup>3</sup> is also secured to the plunger F by means of a set-screw G<sup>5</sup>.

H is a collar having bearings H' projecting therefrom and fast to the stand-pipe D.

I is a pulley mounted on a pintle I' in the bearings H' on the collar H.

J is a chain passing over the pulley I, fast by one end to the half-collar G<sup>2</sup> and having a

weight J' on its other end to counterbalance the plunger F and pull-out bail G.

K is a pump-rod extending downward through the pump supply-pipe C and connecting with a piston in the pump-cylinder. (The two latter not shown.)

L is a spout connecting by its lower end with the connecting-chamber D'.

L' is a three-way valve in the spout L and is operated by means of the lever L<sup>2</sup> and connecting-rod L<sup>3</sup>.

M is an air-pressure tank and is connected by means of a pipe M' and the three-way valve L' and through the connecting-chamber D' and stand-pipe D with the cylinder E.

N is a service-pipe.)

O is a wire connecting the pull-out bail G with the pull-out chain of a windmill. (The two latter not shown.)

The three-way valve L' is so set as to allow water to be forced by the pump through the pipe M' into the air-pressure tank M. A windmill connected with the pump in the manner already indicated will continue to operate the same, and thereby force water into the tank M until the air therein is under sufficient pressure to react upon water therein and communicating pressure therethrough force the plunger downward until the wind-wheel of the mill is out of the wind and ceases to rotate. Whenever sufficient water has been drawn through the service-pipe N to lower the air-pressure in the tank M a predetermined amount, the wind-wheel will swing into the wind, pulling the plunger F upward to its original position, and operate the pump until the air-pressure in the tank M again throws it out of action.

Whenever it is desired to obtain water through the spout L, pull the connecting-rod L<sup>3</sup> until the lever L<sup>2</sup> is in a vertical position.

I claim—

1. In an automatic hydraulic windmill-regulator, in combination, a pump supply-pipe, a stand-pipe connected therewith—by means of a connecting-chamber—by its lower and open end, and closed at its upper end, a cylinder, open at both ends, of less diameter and length than the stand-pipe and included therein, and having its lower end extended through the connecting-chamber, a plunger adapted to reciprocate in the included cylinder



der, and means for connecting the plunger with the wind-wheel of a windmill, substantially as and for the purpose specified.

2. In an automatic hydraulic windmill-regulator, in combination, a pump supply-pipe, a stand-pipe connected therewith—by means of a connecting-chamber—by its lower and open end, and closed at its upper end, a cylinder, open at both ends, of less diameter and length than the stand-pipe and included therein, and having its lower end extended through the connecting-chamber, a plunger adapted to reciprocate in the included cylinder, and a pull-out bail connected with the lower end of the plunger, substantially as and for the purpose specified.

3. In an automatic hydraulic windmill-regulator, in combination, a pump supply-pipe, a stand-pipe connected therewith—by means of a connecting-chamber—by its lower and open end, and closed at its upper end, a cylinder, open at both ends, of less diameter and length than the stand-pipe and included therein, and having its lower end extended through the connecting-chamber, a plunger

adapted to reciprocate in the included cylinder, a pull-out bail connected with the lower end of the plunger, and a weight to counter-balance the plunger and pull-out bail, substantially as and for the purpose specified.

4. In an automatic hydraulic windmill-regulator, in combination, a pump supply-pipe, a stand-pipe connected therewith—by means of a connecting-chamber—by its lower and open end, and closed at its upper end, a cylinder, open at both ends, of less diameter and length than the stand-pipe and included therein, and having its lower end extended through the connecting-chamber, a plunger adapted to reciprocate in the included cylinder, means for connecting the plunger with the wind-wheel of a windmill, and an air-pressure tank connected intermediately with the included cylinder, substantially as and for the purpose specified.

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