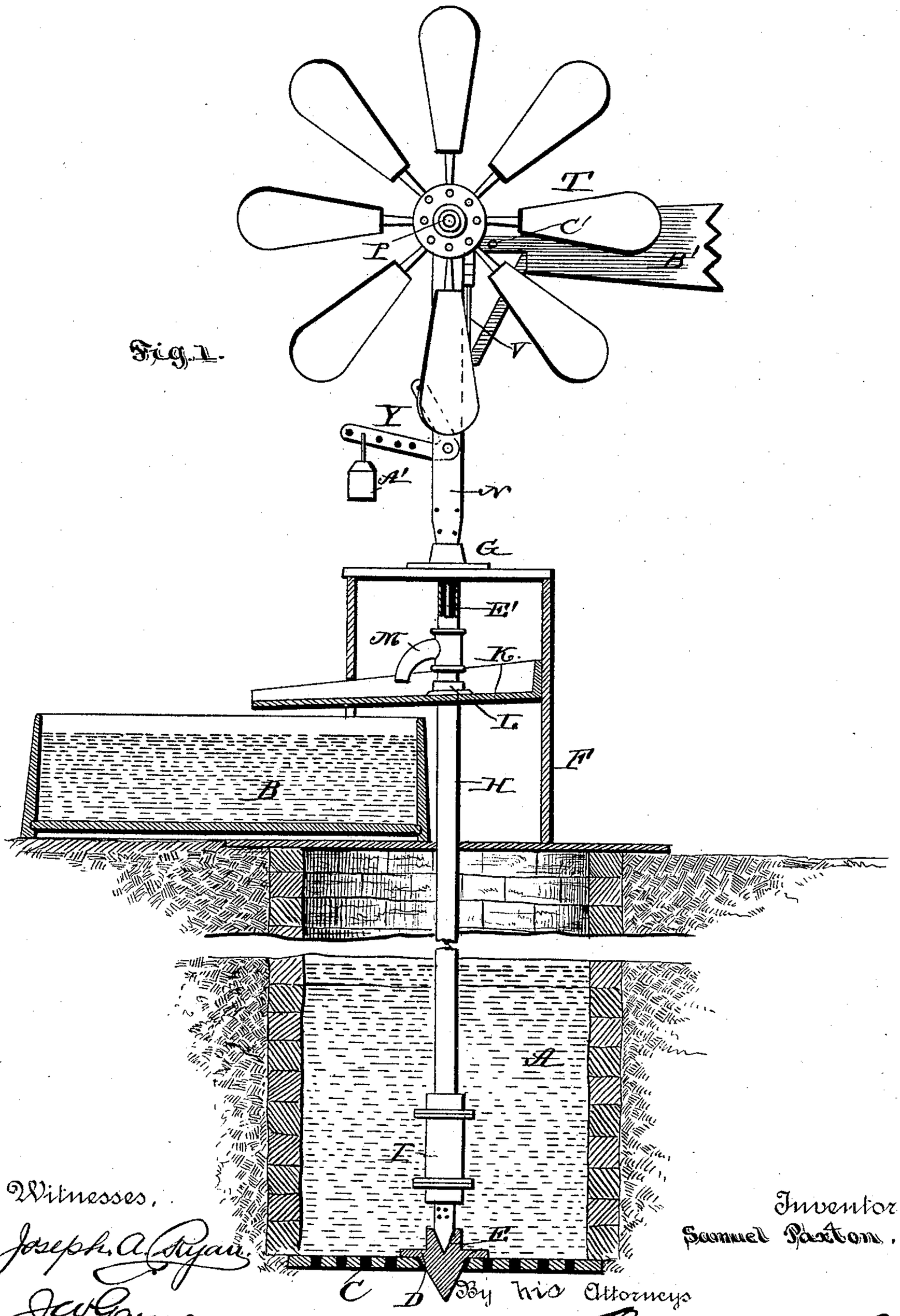
(No Model.) 2 Sheets—Sheet 1.

S. PAXTON.

WINDMILL.

No. 391,856. Patented Oct. 30, 1888.

Fig. 1.



Witnesses,
Joseph A. Ryan.
J. C. Garner.

Inventor,
Samuel Paxton.
By his Attorneys
C. A. Snow & Co.

(No Model.) 2 Sheets—Sheet 2.

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Fig. 2

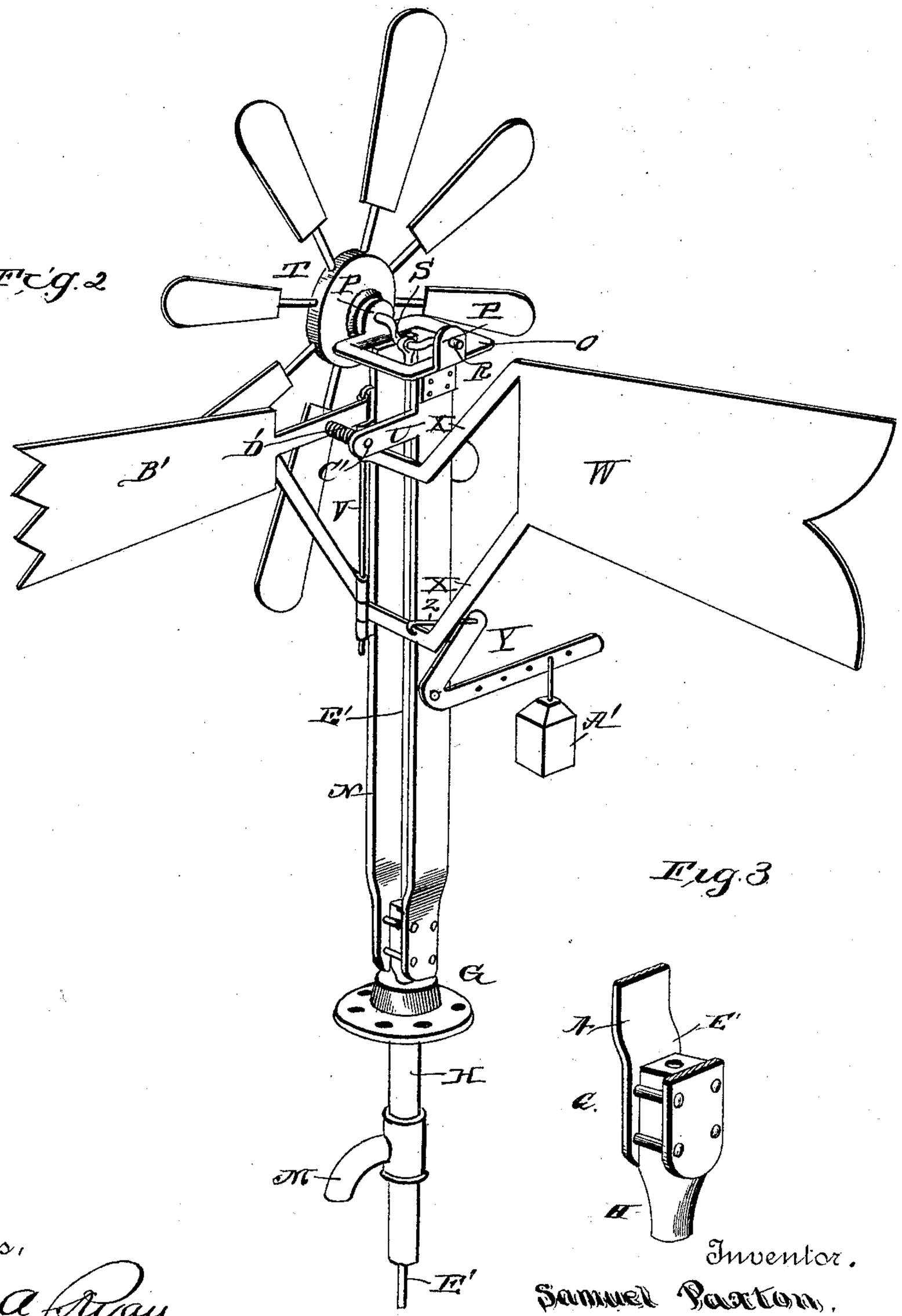

Fig. 3

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UNITED STATES PATENT OFFICE.

SAMUEL PAXTON, OF BOONE, IOWA.

WINDMILL.

SPECIFICATION forming part of Letters Patent No. 391,856, dated October 30, 1888.

Application filed May 15, 1888. Serial No. 273,949. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL PAXTON, a citizen of the United States, residing at Boone, in the county of Boone and State of Iowa, have invented a new and useful Improvement in Windmills, of which the following is a specification.

My invention relates to an improvement in windmills; and it consists in the peculiar construction and combination of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claims.

This invention is particularly adapted for raising water from wells, cisterns, or other sources.

In the accompanying drawings, Figure 1 is partly an elevation and partly a sectional view of a windmill embodying my improvement, showing the same arranged over a well or cistern and provided with my improved pumping apparatus for raising water therefrom. Fig. 2 is a perspective view of the same. Fig. 3 is a detail perspective view.

A represents a well or cistern of the usual construction, and B represents a receiving-vessel which is situated at the mouth of the well. In the bottom of the well or cistern is a perforated plate, C, which has a larger opening in its center.

D represents a plate, which is provided with a depending inverted conical projection which fits in the center of the plate C, and in the upper side of said plate D is formed a cup or socket, E.

F represents a supporting-frame of suitable height, which is erected on the platform that covers the mouth of the well, and is provided on its upper side, at its center, with a plate, G, having a central boss and a central vertical opening. Extending through the said opening and downward into the well is a vertical pipe, H, to the lower end of which is secured a pump-cylinder, I. The lower end of the pipe is perforated and projects below the bottom of the cylinder and has its bearing in the socket or cup E of the plate D. The said vertical pipe or tubular shaft H is thereby adapted to rotate in its bearings.

K represents a spout, which is arranged near the upper end of the frame F, and has an opening in its lower side, through which the pipe H extends and in which the said pipe is adapted to rotate. A suitable packing or socket, L, is provided for the spout to effect water-tight joint with the tube and thereby prevent leakage.

M represents a short discharge-spout, which forms a portion of the pipe H, communicates therewith, and extends outward therefrom.

To the upper end of the pipe H, on opposite sides thereof, are bolted the lower ends of a pair of vertical standards, N, which are connected at their upper ends by a square frame, O, having bearings or ears P on opposite sides. A shaft, R, is journaled in the said bearings, is provided with a crank, S, midway between these bearings, and to the outer end of said shaft is secured a wind-wheel, T.

From the rear standard N, at the upper end thereof, extends a horizontal arm, U, which is arranged at right angles to the crank-shaft and is of suitable length. The front standard N is provided on one side with bearings or ears in which is secured a vertical hinge-rod, V.

W represents the vane, which is provided at its front ends with a pair of arms, X, which have their lower front ends hinged or pivoted on the rod V.

Y represents a bell-crank lever, which is pivoted at its vertex to the rear standard N, at a suitable distance from the lower end of said standard, and has its upwardly-extending arm connected to one of the arms X of the vane W by means of a link, Z.

A′ represents a weight having a hook whereby it may be suspended from one of a series of openings with which the long arm of the bell-crank lever is provided, the said openings enabling the said weight to be adjusted longitudinally on the bell-crank lever, as will be readily understood. The function of this weight is to normally exert sufficient pressure on the vane W to keep the latter parallel with the crank-shaft, so as to direct the wheel to the wind.

B′ represents a governor-vane, which is smaller than the vane W, and has arms at its inner end, which are hinged or pivoted to the rod V. A link-rod, C′, connects one of the arms of the vane B′ with the arm U and extends through the said arms, and on the said link-rod is arranged a coiled extensile spring, D′, which bears between the arm U and the arm of the vane B′, the function of the

said spring being to normally keep the vane B′ at right angles to the crank-shaft. The function of this governor-vane B′ is to turn the wind-wheel obliquely to the wind when the latter increases in force to such an extent as to rotate the wind-wheel at too high rate of speed. By thus turning the wind-wheel obliquely to the wind the wind is caused to act less directly on the wheel, and consequently exert less force thereon, as will be readily understood. When the wind decreases in strength, the spring D′ returns the vane B′ to its initial position.

Connected to the crank-shaft is a plunger-rod, E′, which extends downward through the tube H and has a suitable piston or plunger at its lower end operated in the cylinder I. When the windmill is in operation, rotary motion of the crank-shaft imparts reciprocating motion to the rod E′, thereby operating the pump, and causing the water to be raised from the well or cistern and discharged in the receiving-vessel B, as will be readily understood.

Having thus described my invention, I claim—

1. The combination of the supporting-frame, the windmill having the depending tube H, forming its support and journaled in the frame and in suitable bearings in the well or cistern, the said tube being provided with a suitable discharge-spout, and the plunger-rod connected to the crank-shaft of the windmill and operating the pump-plunger in the well or cistern, substantially as described.

2. The combination of the plate C, arranged in the bottom of the well or cistern, the supporting-frame F, arranged at the mouth of the cistern, the tube H, journaled at top in the said frame and having its lower end journaled in a bearing in the plate C, the pump-cylinder I, attached to the lower end of the tube, the standards N, projecting upward from the upper end of tube H and having suitable bearings, the crank-shaft journaled in said bearings, the wind-wheel attached to the crank-shaft, and the plunger-rod arranged in the tube H and having its upper end connected with the crank-shaft, substantially as described.

3. The combination of the revoluble frame having the lateral arm U, the wind-wheel having its shaft journaled on said frame, the hinge-rod V, secured vertically to said frame, the governor-vane mounted on said hinge-rod, the coiled spring arranged between the governor and the arm U, the vane W, having the arms X, mounted on the hinge-rod V, the weighted lever Y, pivoted on the revoluble frame, and the link connecting said lever to the lower arm, X, as specified.

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

SAML. PAXTON.

Witnesses:
W. H. SPRAGUE,
W. H. CROOKS.