S. RITTENHOUSE.

WIND-MILLS.

No. 193,728. Patented July 31, 1877.

Fig. 1.

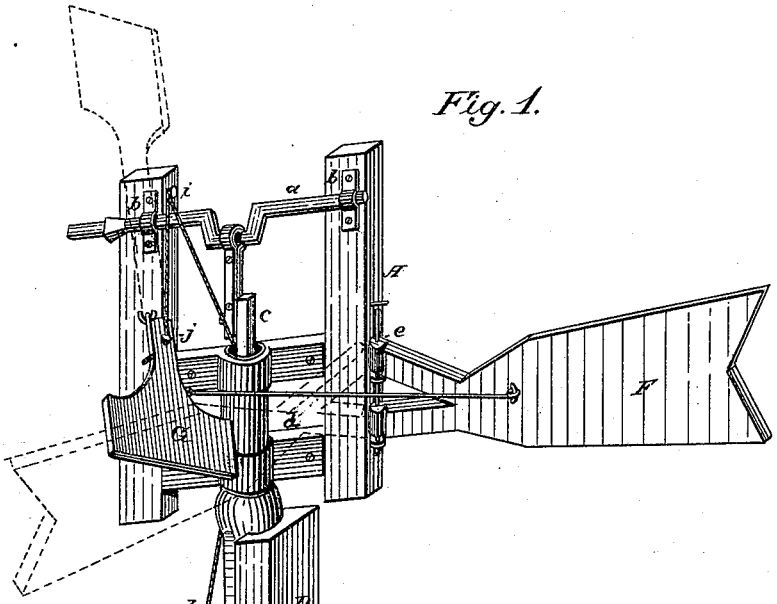
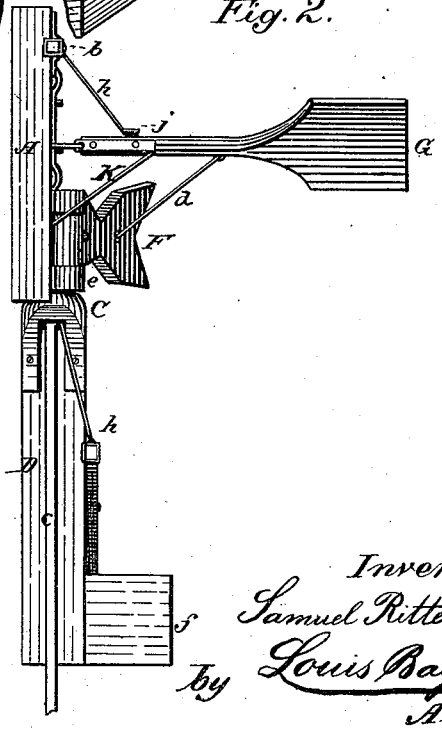


Fig. 2.



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UNITED STATES PATENT OFFICE.

SAMUEL RITTENHOUSE, OF PIONEER, OHIO.

IMPROVEMENT IN WINDMILLS.

Specification forming part of Letters Patent No. 193,728, dated July 31, 1877; application filed April 21, 1877.

To all whom it may concern:

Be it known that I, SAMUEL RITTENHOUSE, of Pioneer, in the county of Williams and State of Ohio, have invented certain new and useful Improvements in Windmills; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a perspective view, and Fig. 2 is a side elevation.

Similar letters of reference indicate corresponding parts in both the figures.

This invention relates to windmills, such as are used for pumping water; and it consists, first, in the arrangement of a supplementary vane, which shall be in operation in high wind only, and the effect of which shall be to regulate the position of the main vane, and that of the wheel, in such a manner that the motion of the wheel shall be no faster in spite of the increased force of the wind; and, secondly, in the arrangement in the water-tank of a board pivoted to a lever, the other end of which is connected by a chain to the supplementary vane, and the result of which is, when the tank is full of water, to throw the supplementary vane into and the main vane out of gear, to such a degree as to cause the wheel to be set at an angle to the wind, and thus slackening its speed until the water in the tank runs low, when the vanes and wheel are automatically reset in their former position.

In the drawing, A is the frame of my improved windmill. This has bearings *b b*, for the crank-shaft *a* of the wind-wheel. The frame A is pivoted upon a cylinder, C, secured on top of the main post or standard D. *c* is the sucker-rod, which passes through cylinder C. Its upper end is connected, as shown, to the crank of shaft *a*, by which it is operated.

F is the main vane, which is hinged in the usual manner to the side of frame A. To the front of frame A, upon the side farthest from vane F, is hinged another supplementary vane, G. The hinge of vane G is horizontal, so that the vane instead of moving sidewise is moved up and down, and the vane itself is set at an angle, so as to present but a very small surface to the wind.

The vane G is connected by a rod, *d*, with the vane F, the result of which is when vane G is thrown up by the wind to the position shown in dotted lines, Fig. 1, to carry the vane F with it, as also shown in dotted lines, thus placing it at a right angle, or nearly so, to the frame A, and causing the wheel to be placed in such a position as to expose but a small surface to the wind, thus slackening its speed. The vane F is provided with a shoulder, *e*, which, by resting against the frame A, prevents it from being thrown too far out of gear.

H is a lever, which is pivoted to the side of post D slightly above the water-tank *f*. To one end of this lever is hinged a board, *g*, covering about one-half of the tank, inside of which it slides, and to its other end is secured a chain or rope, *h*, which passes through cylinder C, up over a pulley, *i*, upon frame A, and down to the vane G, to which it is secured at *j*.

Whenever the tank is filling up with water, and is in danger of running over, the board *g* is raised by the pressure of the water, thus lowering the opposite end of lever H. This, being connected by chain *h* to vane G, raises this latter, thus throwing the vane F, and, consequently, the wind-wheel, out of gear. When the water-level in the tank is lowered, the vane G will gradually and automatically return to its former position, thus gradually increasing the speed of the wheel.

K is a bracket or rod, secured to the frame A under vane G, to serve as a rest for this latter, and prevent it from coming down too far.

The operation and advantages of my invention will be readily understood from the foregoing description. The vane G serves to automatically regulate the speed of the wheel. Owing to the method of hinging it—horizontally—to frame A, and to its construction, which exposes a slanting surface to the wind, it cannot be influenced except by a very strong wind, when it is raised up with the result already described. In an ordinary breeze it can only be operated by the lever H and chain

h in the manner described, its result thus being to prevent the water-tank from overflowing.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a windmill, the supplementary vane G, hinged horizontally, and set slantingly to the frame A, substantially as and for the purpose herein shown and specified.

2. In a windmill, the combination of the pivoted frame A, vane F, supplementary vane G, hinged horizontally, and set slantingly to frame A, and connecting-rod *d*, substantially as and for the purpose shown and specified.

3. In a windmill, having the supplementary horizontally-hinged vane G, the rod or bracket K, serving as a support for the vane G when at rest, substantially as and for the purpose set forth.

4. The combination of the post or standard D, lever H, board *g* sliding in the water-tank *f*, chain *h*, and vane G hinged horizontally to the frame A, all arranged to operate substantially in the manner and for the purpose herein shown and specified.

5. The improved windmill herein described, consisting essentially of the standard D, pivoted frame A having vanes F G, connected by rod *d*, tank *f*, lever H having hinged board *g*, chain *h*, and bracket K, all combined and arranged to operate substantially in the manner and for the purpose herein shown and specified.

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

SAMUEL RITTENHOUSE.

Witnesses:
THOMAS HODSON,
ARTHUR PUNCHES.