

E. C. DANIELS.
Windmill-Regulator.

No. 213,631.

Patented Mar. 25, 1879.

Fig. 1.

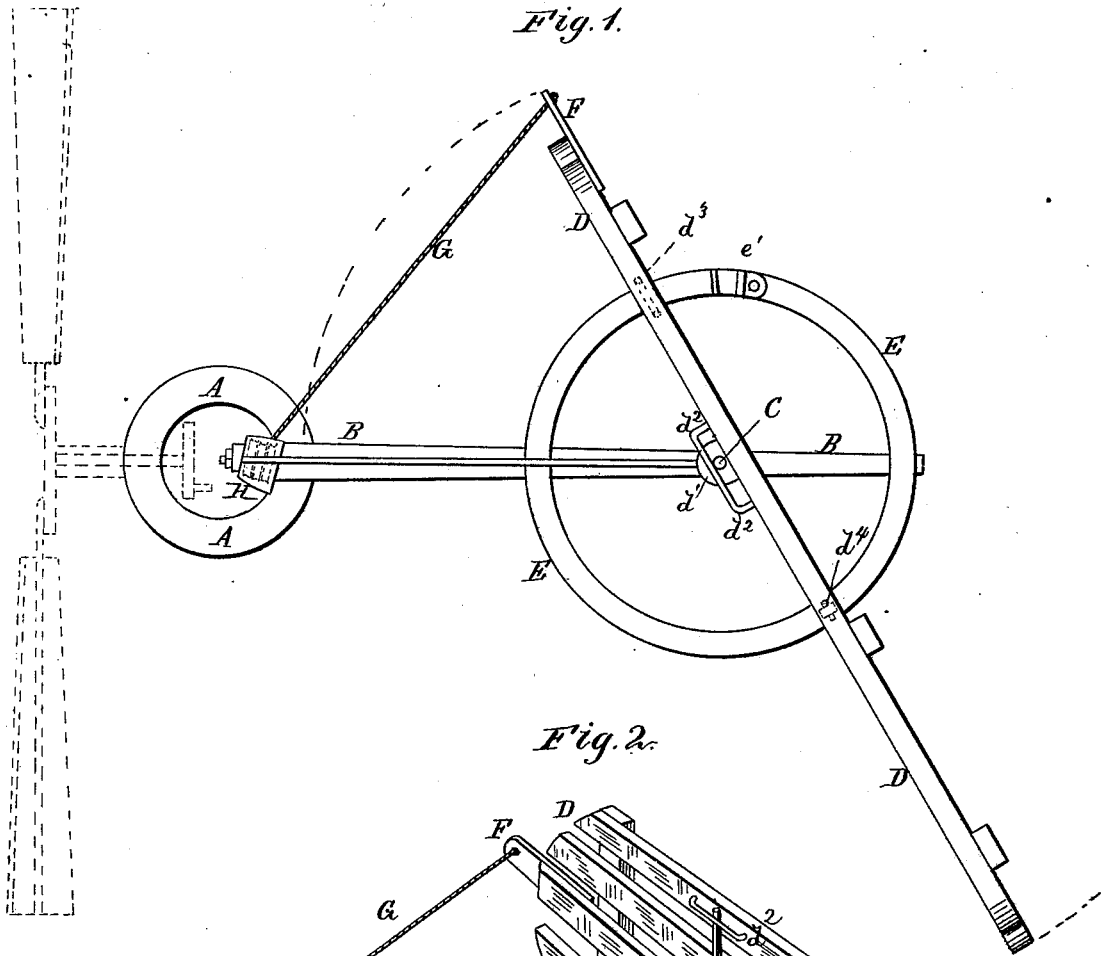
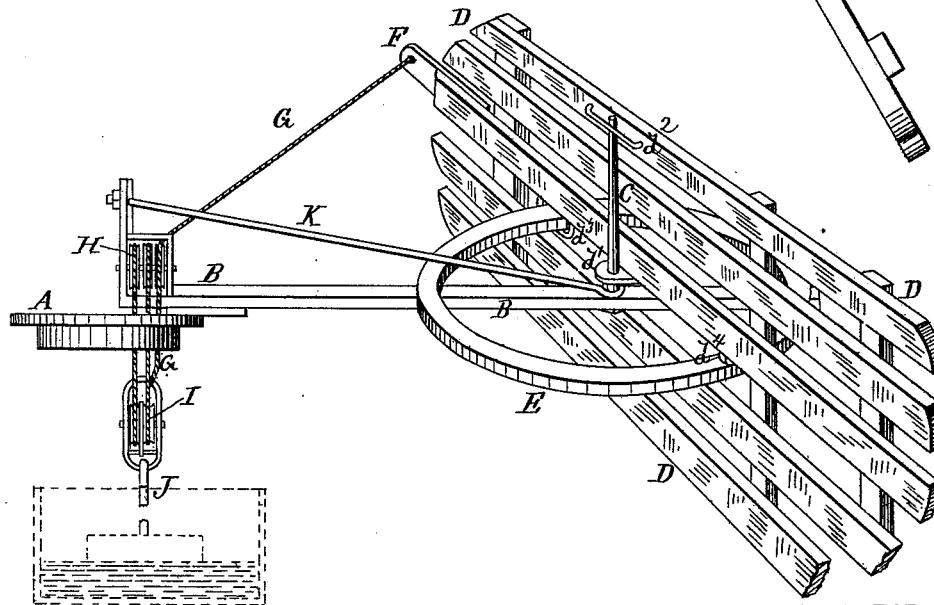


Fig. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ENOS C. DANIELS, OF LYONS, OHIO.

IMPROVEMENT IN WINDMILL-REGULATORS.

Specification forming part of Letters Patent No. **213,631**, dated March 25, 1879; application filed January 17, 1879.

To all whom it may concern:

Be it known that I, ENOS C. DANIELS, of Lyons, in the county of Fulton and State of Ohio, have invented a new and useful Improvement in Windmill-Regulators, of which the following is a specification:

Figure 1 is a top view of the vane of a wind-wheel to which my improvement has been applied. Fig. 2 is a perspective view of the same.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish vanes for wind-wheels which shall be so constructed as to take and hold the wind-wheel out of the wind, except when force may be applied to it, automatically or otherwise, to counteract the said movement and hold the wheel to the wind, and which shall be simple in construction and reliable in use.

The invention consists in the inclined ring-plate, in combination with the arm and spindle that carry the vane, and with the said vane; in the combination of the roller with the pivoted vane and the inclined ring-plate; in the combination of the stop with the ring-plate and the pivoted vane; in the combination of the rope, the pulleys pivoted to a stationary block, the pulleys pivoted to a movable block, and the rod or cord with the pivoted vane and the arm that supports it; and in the combination of the bearing and the keeper with the pivoted vane and the spindle to keep the said vane upright while moving upon the inclined ring-plate, as hereinafter fully described.

A represents the turn-table that carries the wind-wheel, and which works in bearings in a tower or frame-work, in the usual way.

To the side of the turn-table A, opposite the wind-wheel, is rigidly attached an arm, B, which projects at right angles with the plane of the said wind-wheel. The arm B is horizontal, and is attached to the turn-table with a lateral inclination.

To the arm B, at a suitable distance from its outer end, is rigidly attached a spindle, C, which passes through a bearing, d^1 , attached to the middle part of the vane D, between its center and forward end. The upper end of the spindle C passes through a keeper, d^2 , attached to the upper part of the said vane D.

With this arrangement the spindle C will keep the vane D upright or vertical, while allowing it to move freely upon the inclined ring-plate E.

To the arm B, about the spindle C as a center, is attached a ring-plate, E, which passes through a longitudinal slot or opening in the vane D. The forward part of the ring-plate E passes through a keeper, d^3 , attached to the vane D at the upper side of the slot or opening through it. Upon the rear part of the ring-plate E rests a roller, d^4 , attached to the vane D at the upper side of the slot or opening through it.

With this construction the weight of the vane D gives it a tendency to take a position at right angles with the arm B, and thus take the wind-wheel out of the wind.

To the ring-plate E is attached a stop, e^1 , for the vane D to strike against, and thus be prevented from going any farther. The stop e^1 should be placed in such a position as to stop the vane when parallel with the wind-wheel, or nearly so. I prefer to stop the vane before it becomes quite parallel with the wind-wheel, to prevent vibrations when the said wind-wheel is out of the wind.

To the middle part of the forward end of the vane D is attached an arm, F, to the outer end of which is attached the end of a rope, G. The rope G passes around one or more pulleys, H, pivoted to a stationary block attached to the inner end of the arm B, over the cavity of the turn-table A, and around one or more pulleys, I, pivoted to a movable block, having a rod or rope, J, attached to it.

The arm B that supports the vane is strengthened by the brace K, the outer end of which is attached to the lower part of the spindle C or to the said arm B, and its inner end is attached to the stationary pulley-block, or to an upright secured to the said pulley-block, or to the inner end of the said arm B.

When the wind-wheel is to be used for pumping water, the rod J is designed to be connected with a float placed in the water-tank. With this arrangement, as the water rises in the tank the upward movement of the float slackens the rope G and allows the vane D to turn upon its spindle and carry the wind wheel out of the wind. As the water in

the tank lowers, the weight of the float tightens the rope G and moves the vane, so as to cause it to carry the wind-wheel into the wind.

When the wind-wheel is to be used for other purposes, a weight or some other force must be applied to the rod or cord J to carry the wind-wheel into and hold it in the wind.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The inclined ring-plate E, in combination with the arm and spindle B C, that carry the vane D, and with the said vane D, substantially as herein shown and described.

2. The combination of the roller d^1 with the pivoted vane D and the inclined ring-plate E, substantially as herein shown and described.

3. The combination of the stop e' with the

ring-plate E and the pivoted vane D, substantially as herein shown and described.

4. The combination of the rope G, the pulleys H, pivoted to a stationary block, the pulleys I, pivoted to a movable block, and the rod or cord G with the pivoted vane D and the arm B, substantially as herein shown and described.

5. The combination of the bearing d^1 and the keeper d^2 with the pivoted vane D and the spindle C, to keep the said vane upright while moving upon the inclined ring-plate E, substantially as herein shown and described.

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Witnesses:

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