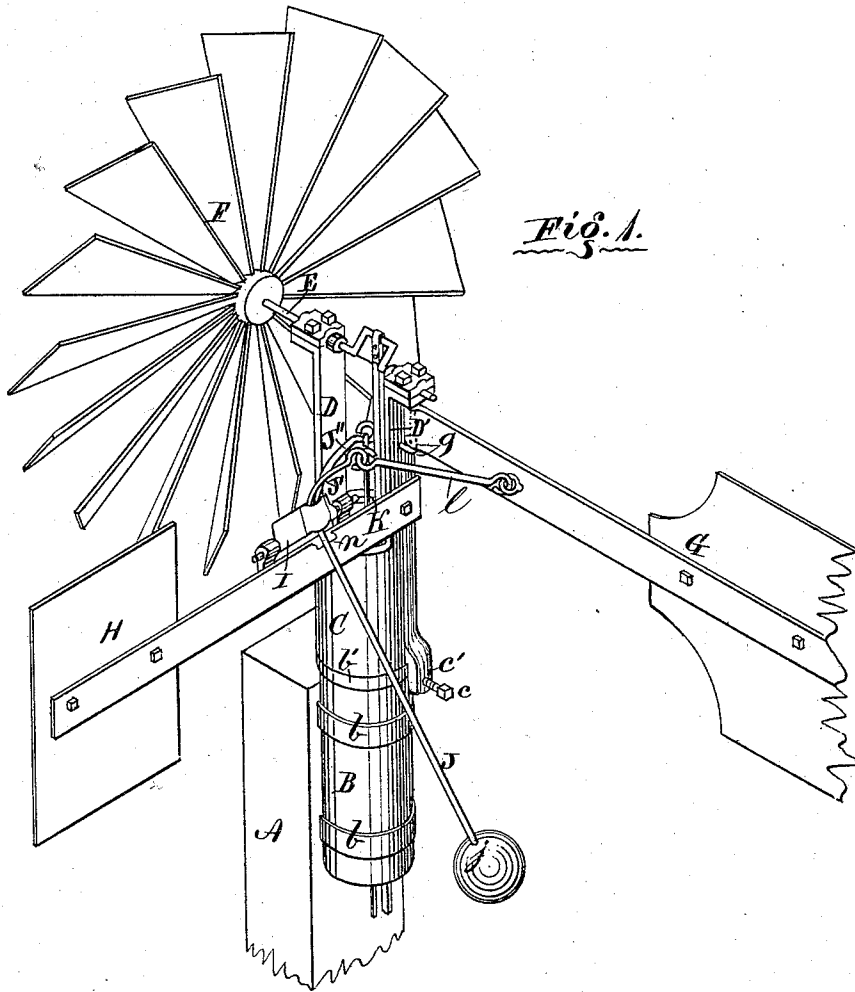


M. CARTER.
WIND-MILL.

No. 170,052.

Patented Nov. 16, 1875.



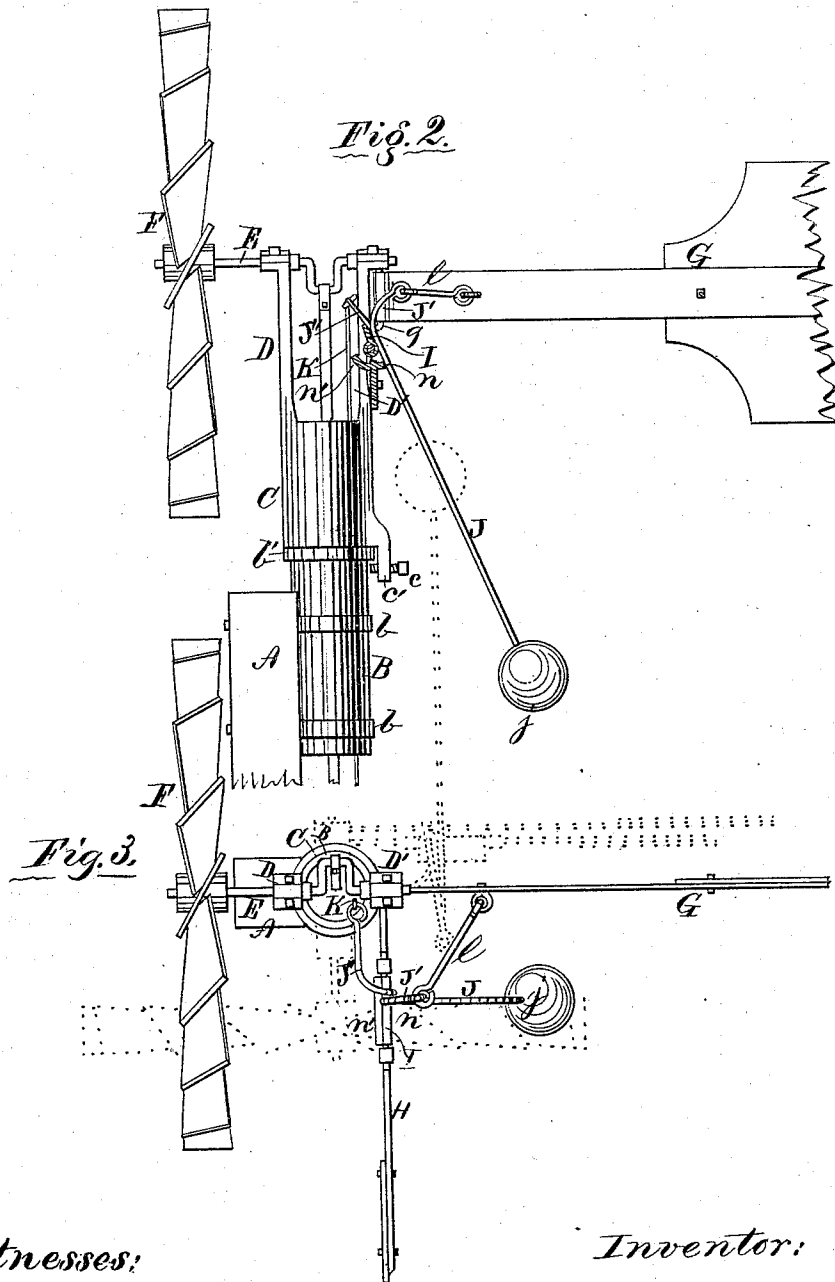
Witnesses:
James Johnson
W. D. Boone.

Inventor:
Milton Carter,
By W. D. Richards,
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W. D. Pomeroy

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UNITED STATES PATENT OFFICE

MILTON CARTER, OF PRINCETON, ILLINOIS.

IMPROVEMENT IN WINDMILLS.

Specification forming part of Letters Patent No. **170,052**, dated November 16, 1875; application filed May 11, 1875.

To all whom it may concern :

Be it known that I, MILTON CARTER, of Princeton, county of Bureau and State of Illinois, have invented certain Improvements in Windmills, of which the following is a specification:

This invention relates to that class of wind-mills in which the vane and wheel are hinged or pivoted, relatively to each other, so as to approach and recede to or from each other automatically, and for the purpose of regulating the speed of the wheel in varying velocity of the wind; and the invention consists in a new and improved combination of devices, as hereinafter more fully set forth.

To enable others skilled in the art to make and use my invention I will now proceed to describe the same with reference to the accompanying drawings, in which—

Figure 1, Sheet 1, is a perspective view of a windmill embodying my invention. Fig. 2, Sheet 2, is a side elevation; and Fig. 3 is a top-plan view.

Referring to the parts by letters, letter A represents the upper end of the supporting-tower, which may be constructed as desired. B is a tubular cylindrical bar, secured to the upper end of the tower A by eyebolts *b*, or by any suitable means. C is a ring encircling the upper end of the tube B, its lower end resting on a collar, *b'*, and held from vertical displacement by a set-screw, *c*, which passes through a downward projection, *c'*, from the ring C, and strikes beneath the collar *b'*. D D' are standards extending upward from opposite sides of the ring C, and provided at their upper ends with suitable bearings for the shaft E, on the end of which the wind-wheel F is carried. G is the tail-vane, hinged or pivoted to a bracket, *g*, near to the upper end of the standard D'. H is the side vane, the stem end of which is attached to the standard D', and between the vertical axis on which the wind-wheel turns and the tail-vane. I is an oscillating plate hinged to the upper side of the stem of the side vane H. J is a lever, attached near its upper end to the plate I, its lower end provided with a weight, *j*, and its upper end extended in two parts, J' and J''—the part J' connected by a link, *l*, with the

tail-vane G, and its part J'' extending over the central part of the tube B, where it is connected with a rod, K, which extends downward through said tube to near the ground.

The operations of my invention are deemed obvious. The ring C rotates freely on the tube B, and forms the vertical axis upon which the wind-wheel turns, and the side vane H acts in the ordinary manner to deflect the wheel and turn it oblique to the direction with an increase of the velocity of the wind, while the weighted lever J acts to restore the parts to their normal positions as the velocity of the wind decreases. It will be readily seen that by means of the rod K the wheel may be turned into or out of the wind. The lever J, striking the stop *n* on the side-vane stem, will limit the motion of the wind-wheel in one direction, and the stop *n'*, striking the plate I, limits it in the other direction.

The advantages arising from locating the side vane in the position described are, that I am thereby enabled to use a much shorter wheel-shaft than if the side vane were next the wheel, or between the wheel and its axis, instead of between the tail-vane and the axis of the wheel, as in my machine. Having the side vane in this position also permits of the use of its stem as a support for the devices for regulating the position of the tail-vane, thereby obviating the necessity for additional support, and simplifying and lessening the cost of construction.

The advantages arising from the connection between the tail-vane and side vane, being direct, will be obvious.

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

In combination with the side vane H, located at a point between the vertical axis of the wind-wheel and the tail-vane, the levers J J', link *l*, rod K, and stops *nn'*, for regulating the position of the vane G, substantially as set forth.

MILTON CARTER.

Witnesses:

JACOB MILLER,
GEO. A. CARTER.