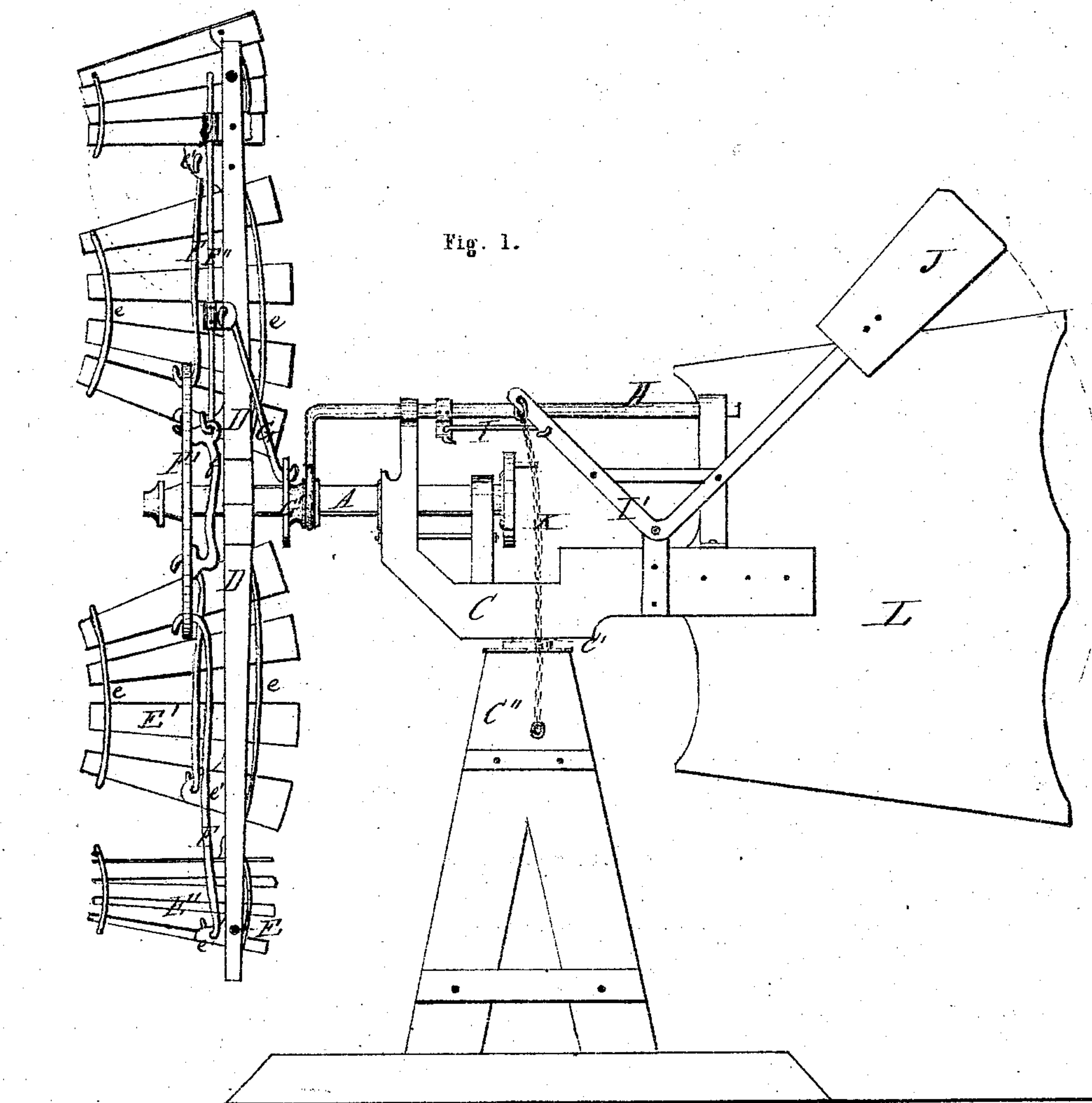


LEANDER LEACH.

117434

Wind Mill.

PATENTED JUL 25 1871



Witnesses.

R. M. Steele
E. H. Bates

Inventor.

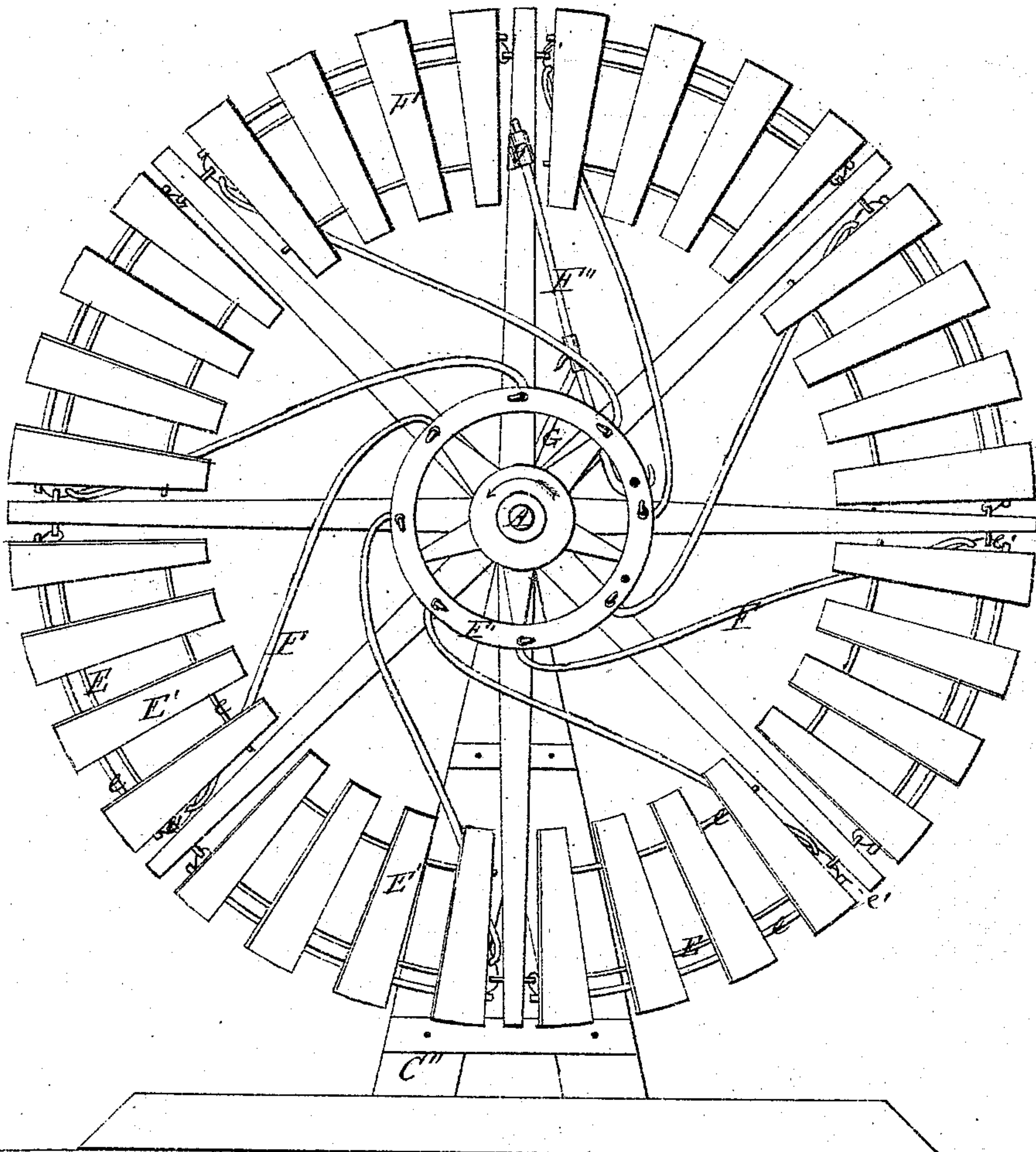
Leander Leach,
Chipman & Son
Attys

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Wind Mill.

Fig. 2.



Witnesses.

R. M. Heale
E. H. Bates

Inventor.

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Chipman & Son
Atty.

UNITED STATES PATENT OFFICE.

LEANDER LEACH, OF WILMINGTON, ILLINOIS.

IMPROVEMENT IN WINDMILLS.

Specification forming part of Letters Patent No. 117,434, dated July 25, 1871.

To all whom it may concern:

Be it known that I, LEANDER LEACH, of Wilmington, in the county of Will and State of Illinois, have invented a new and valuable Improvement in Windmills; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of a vertical section and side elevation of my invention. Fig. 2 is a front elevation of the same.

My invention has relation to windmills; and consists in a novel construction and arrangement of devices intended to serve as valuable improvements for utilizing wind as a motor for machinery. Said improvements are hereinafter particularly specified.

In the accompanying drawing illustrating this invention, A indicates a horizontal wheel-shaft journaled to bearings B on the turn-table C, and holding the wheel, of which D D are the radial arms. E is a large encompassing-ring, having hinged thereto numerous tapering wings E' attached in sections of several wings together to concentric-curved rods at the inner and outer ends, e, the outer rods holding hinges e', to one of which in each section is coupled a curved bar, F, connected at its inner end to a collar, F', on the wheel-shaft outside the wheel. F'' is a rod, the inner end of which is connected to a lug, f, projecting from the inner face of the collar F', while the outer end passes through a loop, g, attached to one of the arms D. G is a diagonal rod coupling the rod F'' to a sleeve, G', which slides along the wheel-shaft. H represents a bent bar with a loop which encircles the grooved portion of the sleeve G'. An arm, I, connects the bar H with an elbow-lever, I', pivoted to one

side of the turn-table C, and holding on its end a weight, J. This weight tends to keep the wings E back toward the face of the wheel, a position in which a greater surface is exposed to the force of the wind. The centrifugal form of the wheel when at high speed counterbalances the weight and throws the wings out from the wheel, lessening thereby the area of surface exposed to the force of the wind, and causing the wings to act as self-governors in regulating the speed of the wheel. As the wings expand the collar or wheel F' is turned by the rods which connect it with the wings, and, through the medium of the rods G F'', it draws the sleeve G' forward and raises the weight, which, of course, falls again when the wind abates. A cord or chain, K, is attached to the forward end of the weight-lever, which may be used to expand the wings without the action of the wind. The turn-table C is pivoted on a hollow vertical shaft, C', attached to the frame C'', and through this shaft the gearing-shaft, which conveys motion from the wheel, extends. L indicates the vane attached to the rear end of the turn-table, and the same as those ordinarily used on windmills.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The hinges e', in combination with the wings E', rods F, ring E, rods e, collar F', sleeve G', lever I, and weight J, substantially as described.
2. The combination and arrangement of the rods G F'', sleeve G', collar F', rods F, wings E', and hinges e', substantially as set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

LEANDER LEACH.

Witnesses:

RUFUS TYLER,
ADDISON I. LYON.