

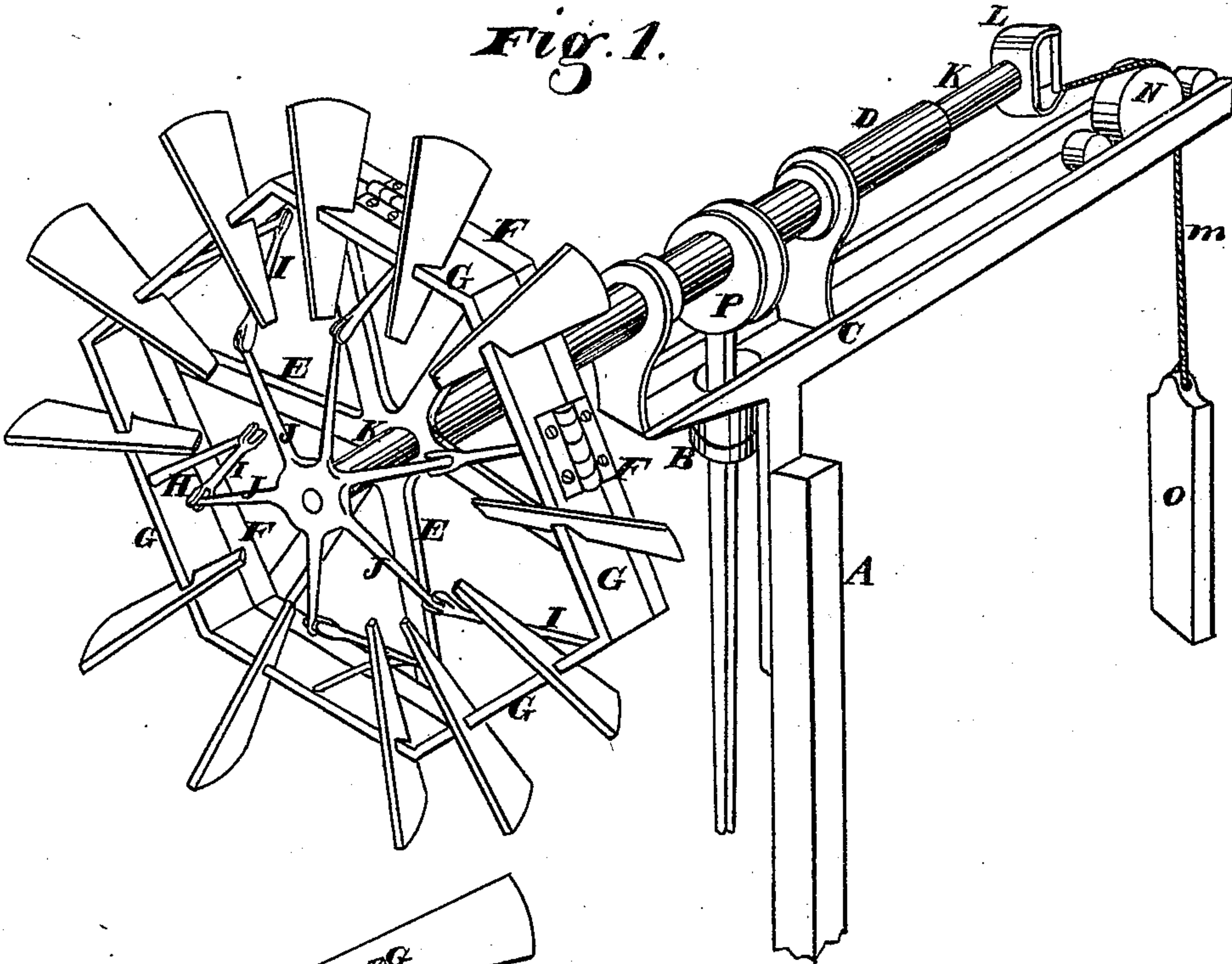
J. BROWER, P. D. & J. P. REED.

WIND-MILL.

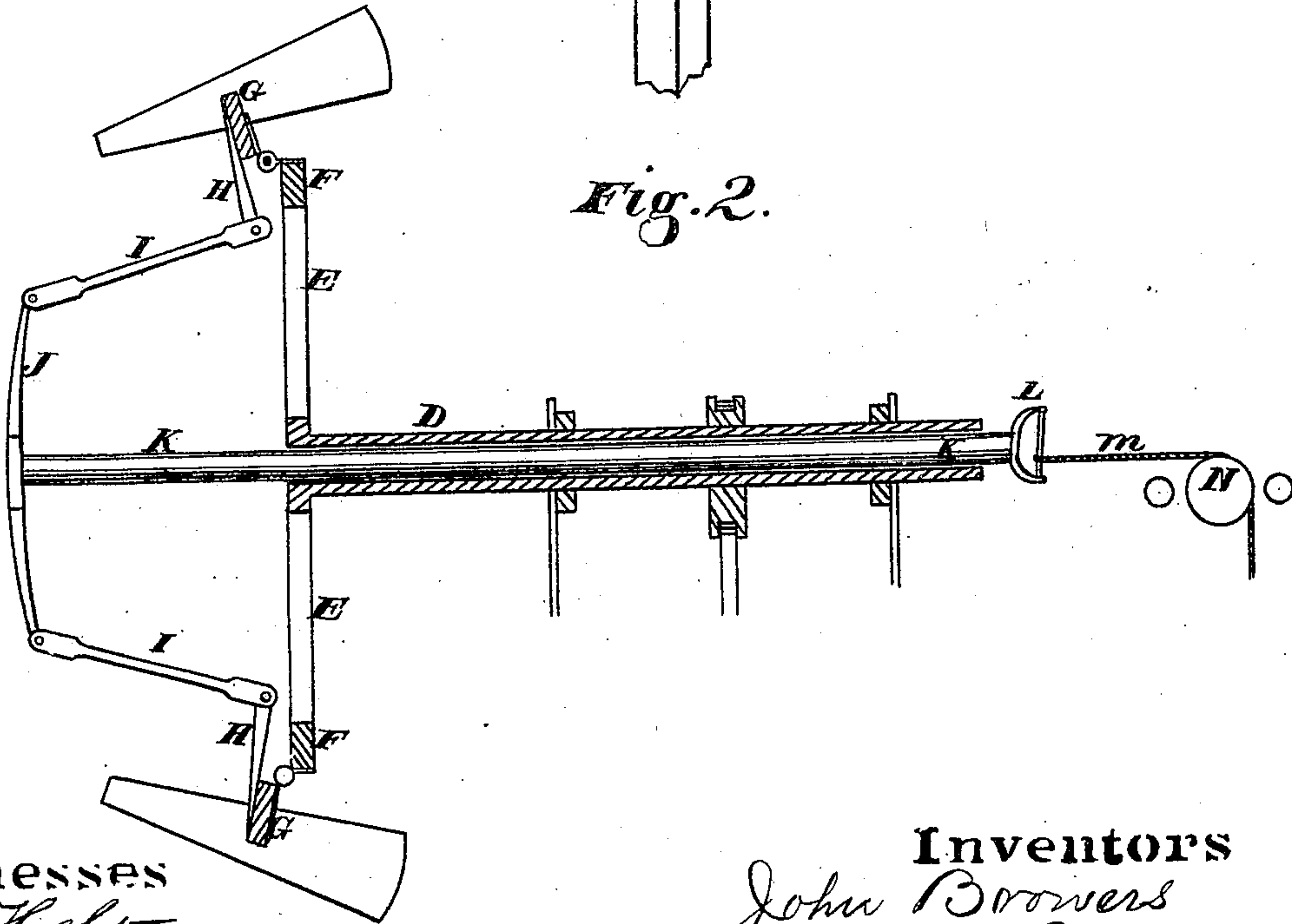
No. 174,774.

Patented March 14, 1876.

*Fig. 1.*



*Fig. 2.*



Witnesses

*Geo. H. Strong.*  
*Jas. L. Borhe*

Inventors

*John Brower*  
*Perry D. Reed*  
*Jasper P. Reed*  
*by Dewey & Co Attys*

# UNITED STATES PATENT OFFICE.

JOHN BROWER, PERRY D. REED, AND JASPER P. REED, OF COLUSA, CAL.

## IMPROVEMENT IN WINDMILLS.

Specification forming part of Letters Patent No. 174,774, dated March 14, 1876; application filed September 18, 1875.

*To all whom it may concern:*

Be it known that we, JOHN BROWER, PERRY D. REED, and JASPER P. REED, of Colusa city and county, State of California, have invented an Improved Windmill; and we do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use our said invention or improvement without further invention or experiment.

Our invention relates to certain improvements in that class of windmills which are made adjustable by means of vanes or sails which can be turned about an axis, so as to throw them more or less out of the wind; and it consists in a series of radial arms, which are connected with the vane-section by suitable rods. These radial arms are mounted upon the end of a shaft which passes through the main shaft, and has a motion longitudinally, so that it is drawn forward when the wind throws the vanes back, and a weight or spring draws it back as the force of the wind decreases.

Referring to the accompanying drawings for a more complete explanation of our invention, Figure 1 is a perspective view of our invention. Fig. 2 is a longitudinal section.

A is the post or frame upon which the turn-table B of the mill is supported and turns. C is a frame mounted upon the turn-table to support the shaft D and the tail or vane. (Not shown). Upon the front end of the shaft D are secured the arms E, with their rim F, and to this rim are hinged the movable vane-sections G. The proper number of vanes are secured to each section, and it will be seen that when the sections are turned back they will carry the vanes with them. The vanes are so mounted that the largest area is presented to the wind outside of the rim and its hinged sections, and thus it will be manifest that the wind will act to force these vanes more or less back from the perpendicular. In order to control these vanes an arm, H, is secured to each of the hinged sections, projecting a little back, and to the ends of each of these arms is at-

tached a connecting-rod, I, which extends to an arm or to a disk, J, which is keyed to a shaft, K. This shaft is smaller than the shaft D, and passes through its center, extending a short distance to the front of the wheel, so that, when the disk J is secured to it, the connecting-rods I will stand at an angle which will give a sufficient leverage to operate the sections. The shaft K, passing through the shaft D, extends back a short distance, and may have a swivel or other device, L, at its end, within which it turns freely. A cord or chain, M, extends back from this swivel, and passes over a pulley, N, having a weight, O, attached to it; or, if preferred, a spring might be substituted.

It will thus readily be seen that when the wind blows strongly the vanes will be thrown backward more or less, and the rotation of the wheel regulated.

When the force of the wind abates the weight or spring O will draw the shaft K back again, and through the levers the vanes will be returned to their position.

The driving-pulley or the eccentric P is secured at any desired point upon the shaft D.

If desired to control the wheel by hand, a lever might be used in place of the weight O; but the latter is better where it is necessary to have a regular speed.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

The central shaft K, moving longitudinally through the shaft D, and having the arms or disk J secured to its front end, and the arms H and connecting-rods I, in combination with the hinged sections G, carrying the vanes, the whole constructed and arranged to operate substantially as herein described.

In witness whereof we hereunto set our hands and seals.

JOHN BROWER. [L. S.]  
P. D. REED. [L. S.]  
J. P. REED. [L. S.]

Witnesses:

GEO. H. STRONG,  
JNO. L. BOONE.