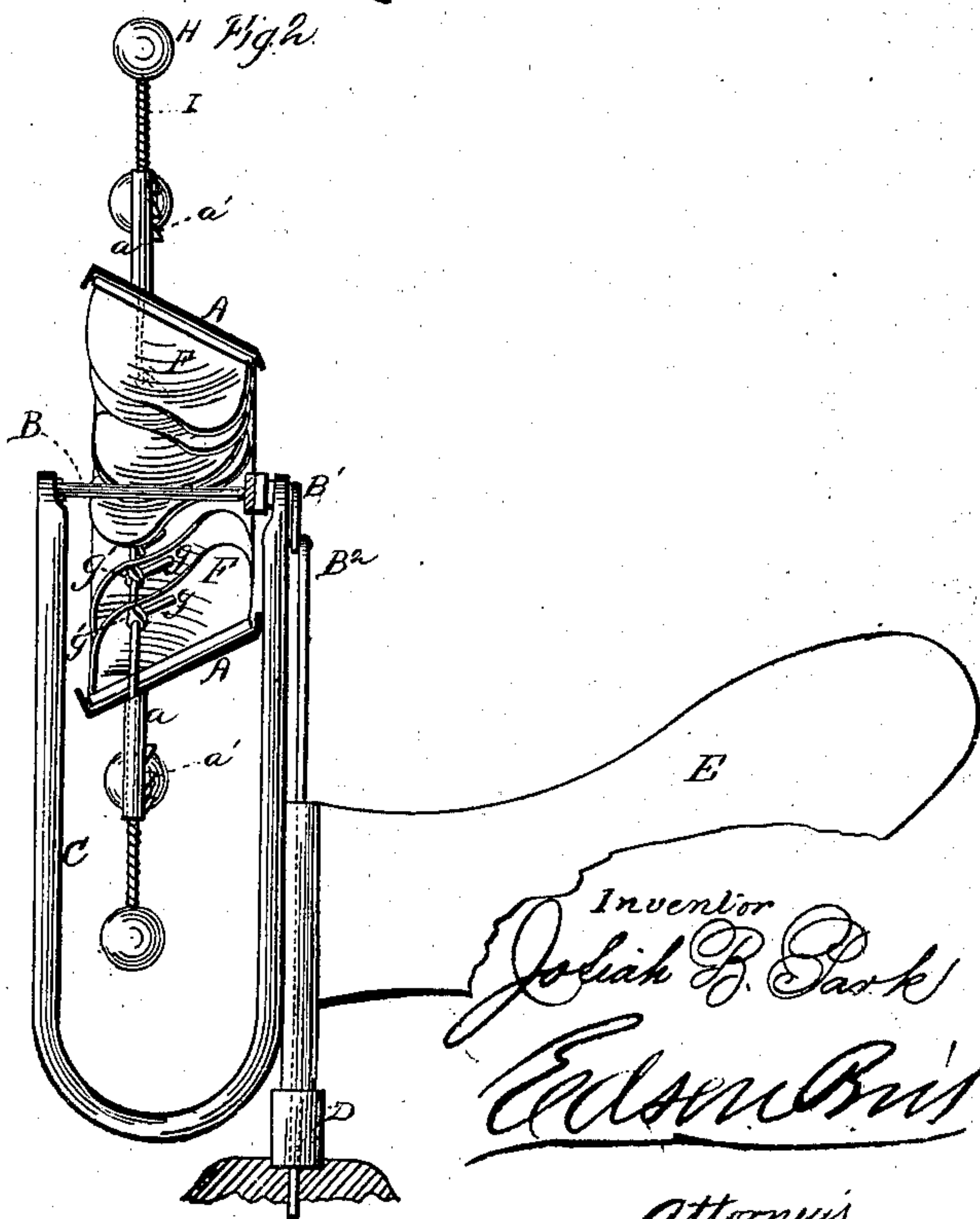
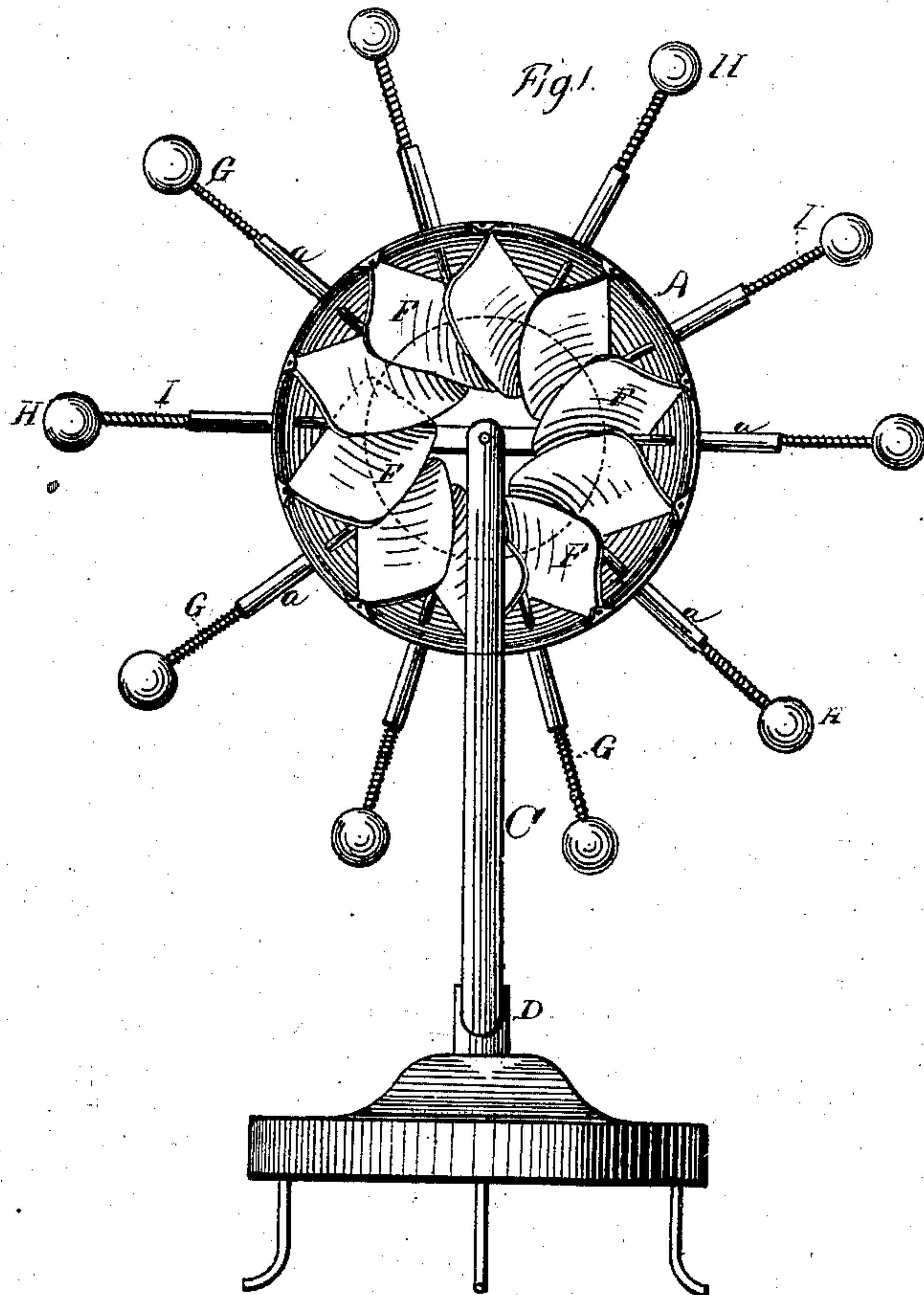


J. B. PARK.
Wind-Mills.

No. 137,565.

Patented April 8, 1873.



Witnesses
Jas. C. Hutchingson
J. H. Hister

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Josiah B. Park
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UNITED STATES PATENT OFFICE.

JOSIAH B. PARK, OF NORTH PLATTE, NEBRASKA.

IMPROVEMENT IN WINDMILLS.

Specification forming part of Letters Patent No. **137,565**, dated April 8, 1873; application filed March 18, 1873.

To all whom it may concern:

Be it known that I, JOSIAH B. PARK, of North Platte, in the county of Lincoln and State of Nebraska, have invented certain Improvements on Windmills, of which the following is a specification:

This invention relates to that class of wind-wheels which are composed in the main of an annular series of oblique wind-wings, arranged within a converging rim, which concentrates the wind upon the wings, and rotates with them. My improvement consists in combining with such a wheel a series of centrifugal balls, corresponding in number to the number of wings employed, the balls being, by means of rods and springs, so connected to the rim and the wings as to hold the latter at a determined obliquity until the wheel attains its maximum speed, after which the balls will begin to act upon the wings, and adjust them so as to maintain uniform velocity of the wheel with a varying force of wind.

Figure 1 is a front elevation of my improved wind-wheel. Fig. 2 is a vertical transverse section thereof.

The same letters of reference are used in both figures in the designation of identical parts.

The converging rim A is at its smaller end provided with a spider, by means of which it is hung upon the horizontal shaft B, within the yoke C, which supports the shaft, and is in turn supported upon the vertical spindle D, so that it can turn thereon in obedience to the action of the vane E. The shaft B has a crank, B¹, to which a pump-rod, B², may be attached. The wind-wings F are arranged within the converging rim A, to which they are hinged along one of their sides. They are of curved form, as usual, and are disposed at an obliquity which will present their faces in the position most favorable for utilizing the force of the wind passing through the rim. They are held in this position by the rods G, having bent ends, g, passing through lugs, g' upon the back of the wings. The rods are supported in the elongated sockets a on the converging rim, through which they project outward some distance, and carry at their outer ends centrifugal balls H. Each rod is encircled by a spiral spring, I, at one end, fastened to it, and terminating at its other end in a loop,

by means of which it may be hooked upon one of a series of hooks, a', on the socket, a. The springs are of such stiffness that they will draw the rods inward until further inward movement is prevented by the lugs g' upon the backs of the wings coming in contact with the straight ends of the rods. The wings will then stand in their normal positions, and the springs being made of the proper stiffness, which may to some extent be regulated by adjustment upon the hooks a', will also prevent any outward movement of the balls until the wheel attains the highest velocity at which it is desired to run it; after that the springs will yield to the augmenting centrifugal force of the balls and the latter moving outward will swing the wind-wings upon their hinges, so that they will present less effective wind-catching surfaces.

I wish it to be understood that I do not wish to confine myself to the particular arrangement of the wind-wings and the mechanism for holding and adjusting them, as that may be varied in many ways without departing from the principle of my invention.

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

1. The combination, with the converging rim and wind-wings, of centrifugal balls and their rods and springs, arranged to hold the wings at a determined obliquity until the wheel attains its maximum speed, after which they will adjust them in the manner and for the purpose specified.

2. The combination of the converging rim A, wind-wings B hinged thereto, ball-rods G, centrifugal balls H, and springs I, arranged and operated substantially as set forth.

3. In combination with the elements enumerated in the second claim, the series of hooks a', substantially as and for the purpose specified.

4. A wind-wheel composed of a converging rim and wind-wings adjustably hinged within it, substantially as and for the purpose specified.

In testimony whereof I have hereunto signed my name this 17th day of March, 1873, in presence of two subscribing witnesses.

JOSIAH B. PARK.

Witnesses:

J. W. MISTER,

F. P. BERTHRONG.