No. 773,976. PATENTED NOV. 1, 1904.

E. PAVÓN Y MORALEDA.

WIND WHEEL.

APPLICATION FILED MAR. 9, 1904.

NO MODEL.

Fig. 1

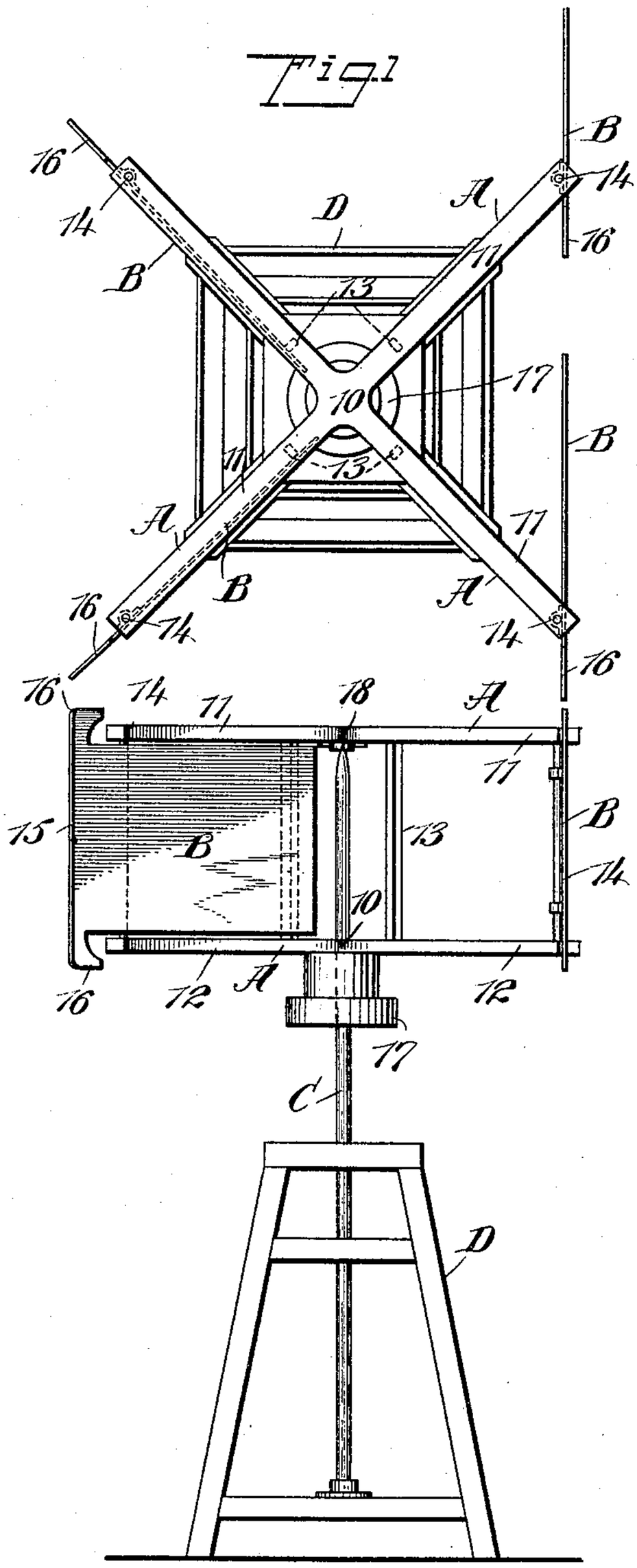

Fig. 2

WITNESSES:

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No. 773,976. Patented November 1, 1904.

UNITED STATES PATENT OFFICE.

ELENTERIO PAVÓN Y MORALEDA, OF MADRID, SPAIN.

WIND-WHEEL.

SPECIFICATION forming part of Letters Patent No. 773,976, dated November 1, 1904.

Application filed March 9, 1904. Serial No. 197,391. (No model.)

To all whom it may concern:

Be it known that I, ELENTERIO PAVÓN Y MORALEDA, a subject of the King of Spain, residing at Madrid, Spain, have invented a new and useful Improvement in Wind-Wheels, of which the following is a full, clear, and exact description.

My invention relates to an improvement in wind-wheels, and has for its object to provide a simple, economic, and durable construction of such wheels and a construction whereby the wheel will not be bound or locked at any time by the action of the wind, as when one blade is in position to receive the pressure of the wind the blade in front will be free to spill the wind, thus preventing the wheel from remaining stationary by reason of the wind blowing in an angular pocket having fixed walls.

Another purpose of the invention is to so weight the outer ends of the blades of the wheel that the blades will be normally in an open position relative to the frame in which they are mounted.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in both figures.

Figure 1 is a plan view of the improved wind-wheel, and Fig. 2 is a side elevation of the same.

The frame of the wheel consists of a series of wings A, which radiate from a common center or hub 10. Each wing consists of an upper arm 11 and a lower parallel arm 12, together with a connecting-bar 13, extending from one arm to the other, the connecting-bars 13 of the wings A being located adjacent to the hub portion of the wheel.

In each wing of the frame A of the wheel a blade B is pivoted, and the said blade is preferably made of light metal, although other material may be employed. The blades B are pivoted between their centers and outer ends at the outer end portions of the wings A by means of suitable pivot-pins 14. The said blades B are of such dimensions that they extend nearly practically from one arm of a wing to the other and in their closed positions bear at their inner or free ends against the connecting-bars 13, while the outer end portions 15 of the said wings or those portions which project beyond the pivots 14 and the outer ends of the wings A are more or less weighted, so that normally the free or inner ends of the wings will be out of engagement with the connecting-bars 13, which serve as stops, and thus the said weighted or outer ends of the wings serve to normally hold the said wings in more or less of an open position.

At the top and at the bottom of each blade B an extension-section 16 is formed, which when the blades are opened to their fullest extent engage with the arms 11 and 12 of the wings A, and thereby limit the outward or opening movement of the blades.

In the drawings a pulley 17 is shown secured to the bottom portion of the wheel at its hub from which pulley-power can be taken; but the said pulley may be otherwise disposed on the wheel. The said wheel is shown pivotally mounted on a vertical shaft C, secured to a suitable tower D or other support, which shaft passes loosely through the driving-pulley and the lower hub-section of the wheel, the upper end of the shaft being journaled in a suitable bearing 18 at the upper inner portion of the hub-section of the wheel, as is illustrated in Fig. 1; but, if desired, the wheel may be mounted in any other suitable manner upon the shaft.

In the operation of the wheel when the wind strikes a blade B it closes the blade flatly in the wing to which it is pivoted, causing the inner end of the blade to strike or bear against the stop or connecting bar 13 of that wing, while at the same time the blade in front will be more or less opened, thus permitting the surplus air to escape and preventing the wind from being confined in a corner, as it were, and stopping the rotation of the wheel. This operation of the blades takes place constantly and automatically.

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

1. In a wind-wheel, a skeleton frame, comprising a series of wings radiating from a

common center, stop-bars located in the wings near the center of the wheel, and blades pivoted at their outer portions in the outer end portions of the wings, which blades have free movement within the frame of the wings and are limited in their closing action by engagement at their free ends with the said stop-bars, each wing being provided with an outwardly-extending weighted portion of greater transverse width than the body of the blades, whereby the blades are limited in their outward or opening movement by the extensions from the blades engaging with the frame of the wings, as described.

2. In a wind-wheel, a support, a wheel mounted to turn on the support, the wheel consisting of a skeleton frame comprising a series of wings extending from a common hub, each wing comprising an upper and a lower arm, and a connecting-bar extending from one arm to the other adjacent to the hub, a driving-pulley secured to the hub-section of the wheel, and blades pivoted at the outer end portions of the wings between the arms thereof, the inner ends of which blades are adapted, when the blades are closed, to engage with the connecting-bars, the outer end portions of the blades extending beyond the outer ends of the wings, the said outer ends of the wings being provided with extensions, adapted when the blades are in full open position to engage with the arms of the wings and limit the outward or opening movement of the said blades, for the purpose specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ELENTERIO PAVÓN Y MORALEDA.

Witnesses:

CARLOS RODRIGUES GLORIENO,

ENRIQUE GONZALES Y GONZALES.