

(No Model.)

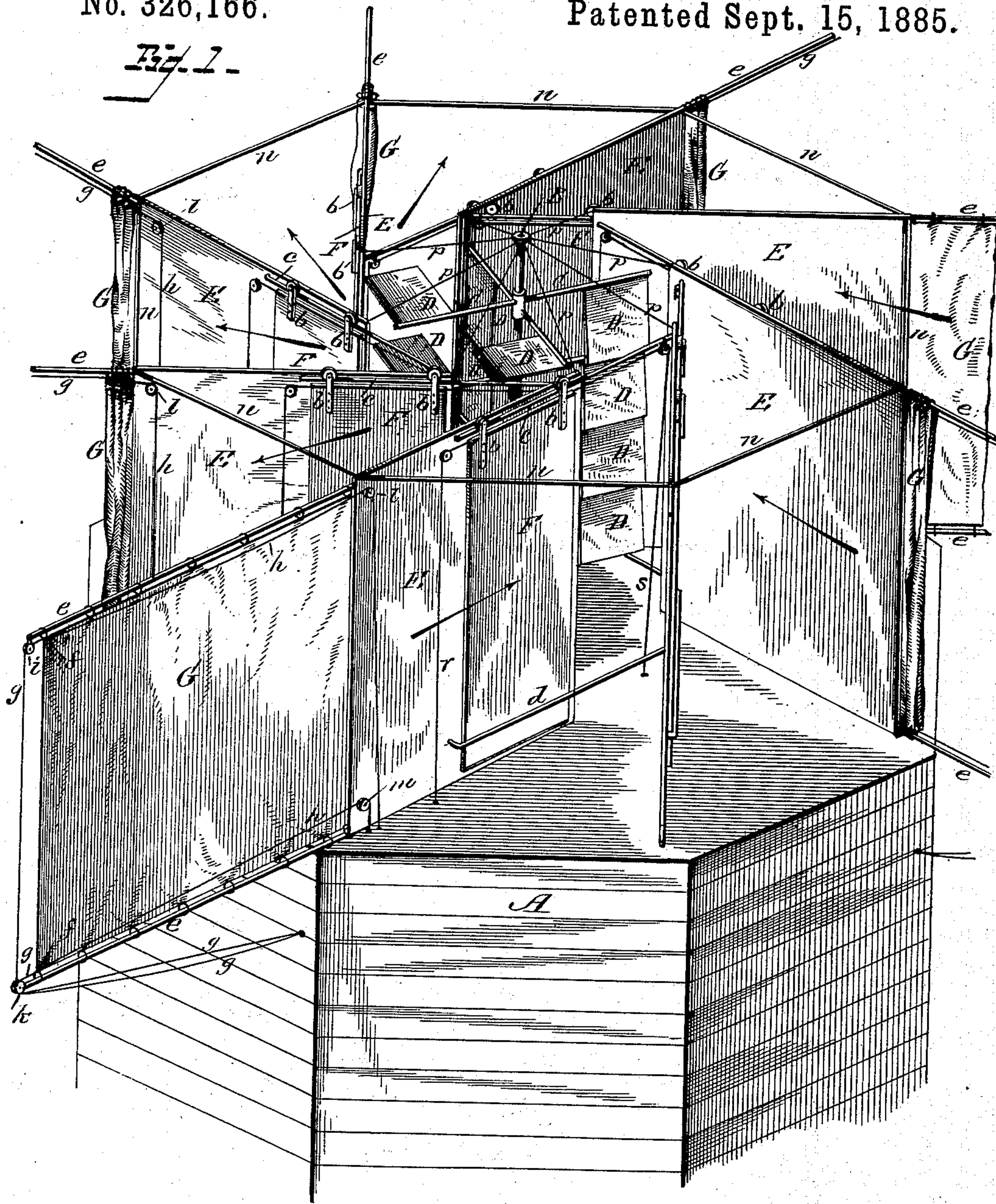
T. J. SIMPSON.

2 Sheets—Sheet 1.

WIND WHEEL.

No. 326,166.

Patented Sept. 15, 1885.



Witnesses  
*Wm. Spalden*  
*W. E. Harris*

Inventor  
Thomas J. Simpson  
By his Attorney *Chas. H. Fowler*



(No Model.)

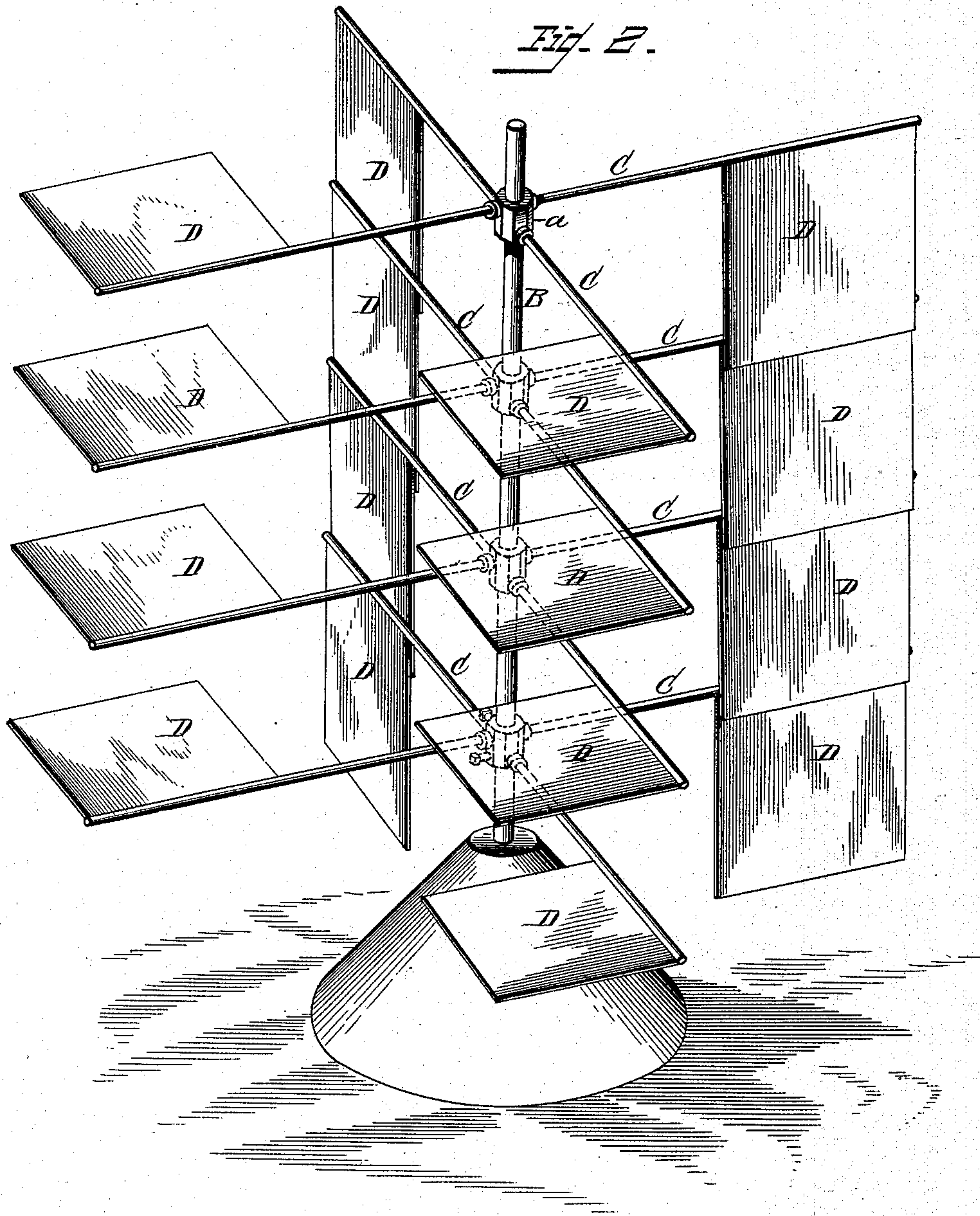
T. J. SIMPSON.

2 Sheets—Sheet 2.

WIND WHEEL.

No. 326,166.

Patented Sept. 15, 1885.



Witnesses  
*Wm. L. Spiden.*  
*W. E. Stearns*

Inventor  
*Thomas J. Simpson.*  
By *his* Attorney *Chas. H. Fowler*



# UNITED STATES PATENT OFFICE.

THOMAS J. SIMPSON, OF WORTHINGTON, MINNESOTA.

## WIND-WHEEL.

SPECIFICATION forming part of Letters Patent No. 326,166, dated September 15, 1885.

Application filed July 9, 1885. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS J. SIMPSON, a citizen of the United States, residing at Worthington, in the county of Nobles and State of Minnesota, have invented certain new and useful Improvements in Wind-Wheels; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a perspective view of my invention; Fig. 2, a perspective view, on an enlarged scale, of the wind-wheel.

The present invention has relation to horizontal wind-wheels, and the object thereof is to catch, condense, and govern the power of the same by throwing the currents upon one side of the wheel, and continue the pressure thereof as far around as desirable, and cast them off at will. These objects I attain by the construction substantially as shown in the drawings and hereinafter described and claimed.

In the accompanying drawings, A represents the building or structure through which extends the wind-wheel shaft B, provided with radial arms C, carrying the wind-sails D. By reference to Fig. 2 the arms C pass loosely through hubs *a*, to which the sections of shaft B are coupled, and the sails D are rigidly affixed to the arms at right angles to each other, as shown.

The construction above described I lay no claim to in the present case, as it has been fully claimed, and will form the subject of a separate patent. There is this difference, however, in the present form of wheel, in that the sails D are of such length as to overlap each other when in a vertical position, thereby forming one continuous sail on the side receiving the wind.

In order to provide means by which said wheel can be started, stopped, and its action governed, I construct a series of wind-guides, E, extending tangentially with the circumference of the wheel. These wind-guides E are rigidly affixed to the building or structure and form a part thereof, and each is provided with an adjustable wind-gate, F. These gates

are supported by suitable hangers, *b*, the rollers thereof bearing on guide rods or tracks *c*, and the lower ends of the gates are held in their proper upright position by stay-rods *d*. The ends of the rods *c d* are connected to wind-guides E, as shown, said guides having at their outer ends extension-sails G, which are supported by suitable rods, *e*.

To the end of the sails G, as at *f*, are connected the ends of cords or ropes *g h*, for the purpose of extending and contracting the sails, respectively. The cords or ropes *g* are two in number, which are connected to the ends of the sails at both top and bottom, the upper one of the cords or ropes passing over pulley *i* and double pulley *k*, while the lower one of said cords or ropes passes over the latter pulley. The cords or ropes *h*, which are also two to each sail, are connected at both top and bottom, and extend back to the wind-guide and over pulleys *l m*. These cords or ropes pass through the building or structure A, and are connected with a windlass or other suitable device by which the sails G can be conveniently extended or contracted.

The wind-guides E are braced by rods *n*, and the shaft B of the wind-wheel at its upper end is held in position by guy-rods *p*. The wind enters between the guides E, as indicated by the arrows, and is so condensed as to be made to pass through the gates F when open, and to bear on the wind-sails D, and to continue said pressure until after it passes the closed gate. The tangential arrangement of the guides E compresses or condenses the wind as it passes between them in a direction toward the wheel and causes it to bear thereon at its extremities. By closing and opening the gates F the motion or action of the wind-wheel is controlled and governed, the operation of the gates being effected by cords or ropes *r s*, one end thereof being connected to the gate passing over pulleys *t*, and extending down through the building or structure A.

The sails G are for the purpose of lengthening the wind-guides or extending them to contract a greater portion of the wind-current when necessary.

The wind-guides E may be arranged at any suitable angle found most desirable, and any



suitable number may be used; also, the sails G and gates F may be rendered adjustable by any means preferred, these changes coming within the scope of my invention, which I reserve the right to make; also, any desirable form of wind-wheel may be used in connection with the wind-guides.

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

1. The combination, with a wind-wheel, of a series of stationary, vertical, and tangential wind-guides, each provided at its inner end with an adjustable gate, for the purpose of admitting more or less wind to the wheel, substantially as set forth.

2. The combination, with a wind-wheel, of a series of stationary wind-guides, each provided with extensible sails at their outer ends, substantially as and for the purpose specified.

3. The combination, with a wind-wheel, of a

series of stationary, vertical, and tangential wind-guides provided at their inner ends with adjustable gates and at their outer ends with extensible sails, for lengthening the wind-guides and contracting the wind current, substantially as and for the purpose described.

4. A wind-wheel consisting of a vertical shaft provided with radial arms carrying sails, said sails, upon the extremity of each arm, being at right angles to each other and of such length as to overlap when the sails are in the same vertical plane, substantially as and for the purpose set forth.

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

THOMAS J. SIMPSON.

Witnesses:

W. E. STEARNS,  
M. P. CALLAN.