

(No Model.)

J. W. & F. E. WOOD.

WIND ENGINE.

No. 324,510.

Patented Aug. 18, 1885.

Fig. 2.

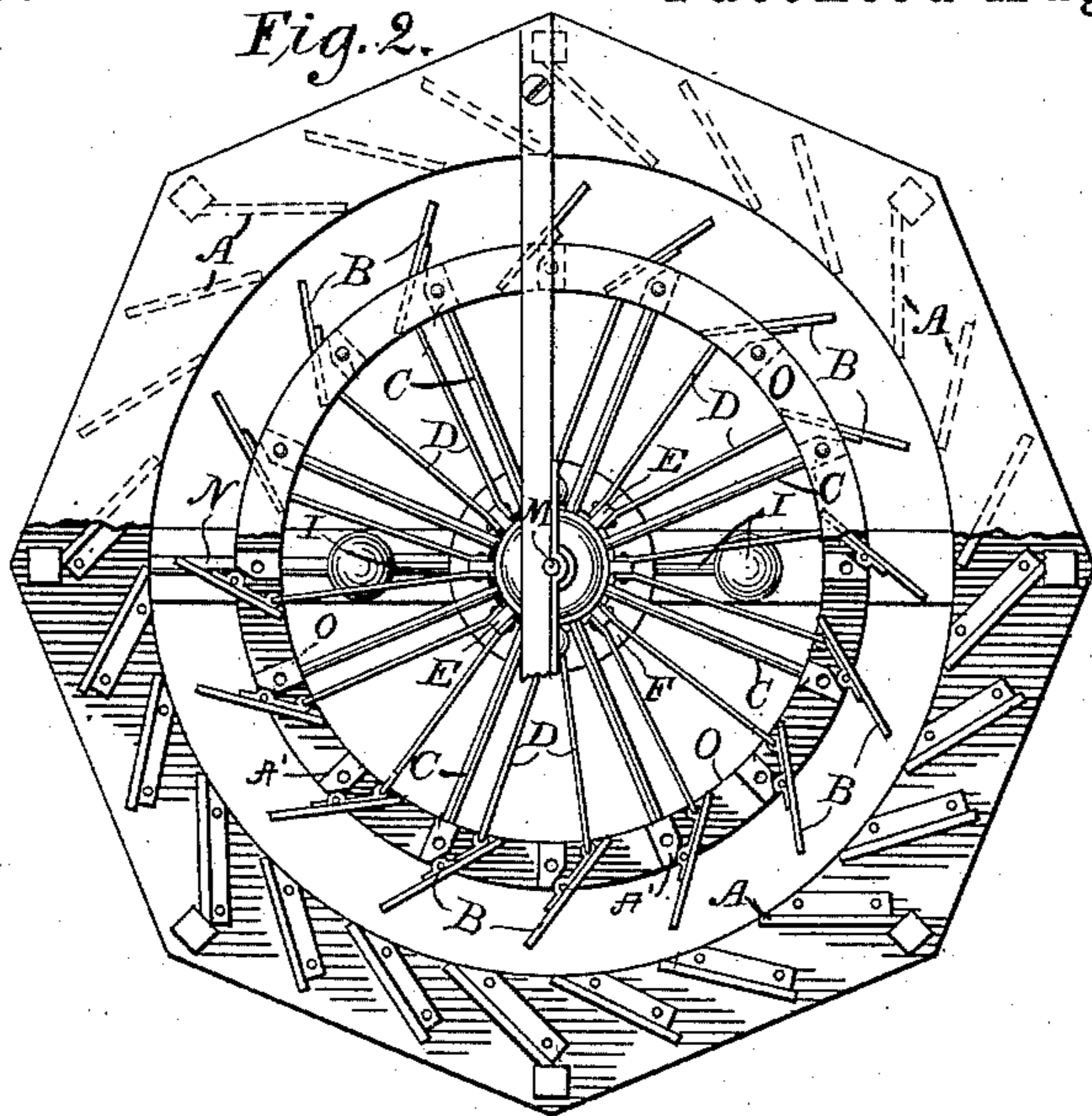
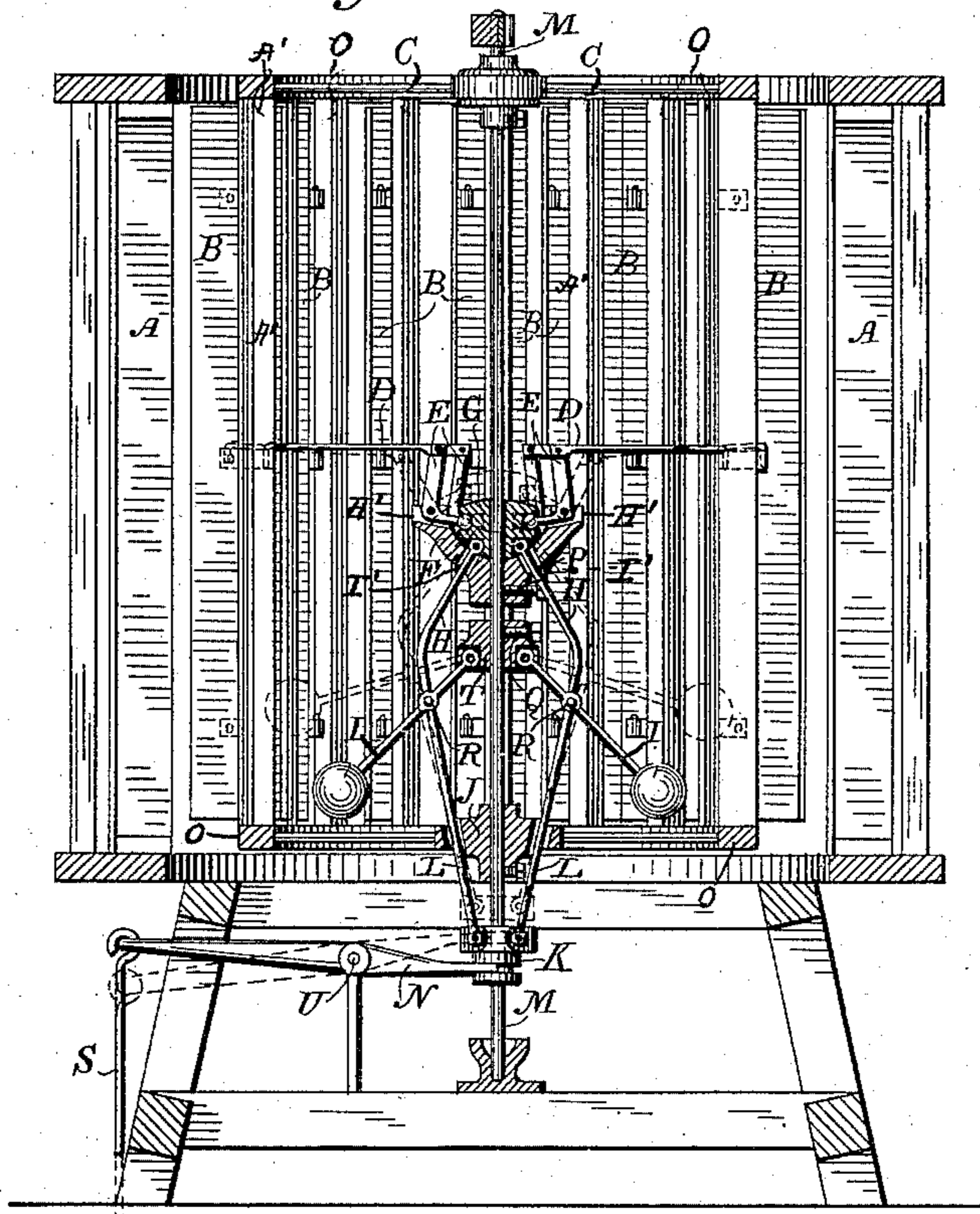


Fig. 1.



WITNESSES

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JOSIAH W. WOOD AND FRANK E. WOOD, OF BEAVER CENTRE, PA.

WIND-ENGINE.

SPECIFICATION forming part of Letters Patent No. 324,510, dated August 18, 1885.

Application filed May 20, 1885. (No model.)

To all whom it may concern:

Be it known that we, JOSIAH W. WOOD and FRANK E. WOOD, citizens of the United States, residing at Beaver Centre, in the county of Crawford and State of Pennsylvania, have invented certain new and useful Improvements in Wind-Engines; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

Our invention relates to improvements in windmills, and is designed to produce an automatically-regulating wind-motor, readily started or stopped at will, and one that will utilize the full power of the wind.

The improvement consists, essentially, in the construction as hereinafter described, reference being had to the annexed drawings, in which—

Figure 1 represents a vertical section through the device, and Fig. 2 a top or plan view of the same.

A cupola is suitably framed and provided with guide-boards A, set at an angle. Within the cupola is journaled a shaft, M, vertical in position. By means of spokes C, near the top and bottom of the shaft, are secured the rims O, connected by strips A'. To these strips are hinged or pivoted wings B, which, when extended, are at about right angles to the guide-boards A. The wings B are preferably hinged centrally to the strips.

To the shaft, within the wheel composed of the rims and wings, is secured a casting, F, provided with slots H' and I'. The slots H' form recessed bearings for the elbow-levers E, which are pivotally fulcrumed to said casting, and have their upper ends connected to the wings B by rods D, two wings being secured to each lever. The rods D connect to one side of the wings, so as to move them on their hinges as the levers are operated. The lower ends of the levers engage in an annular groove or recess in a sliding sleeve, G, on the shaft. The sleeve G is connected to the governor-arms I by rods H, passing through the slots I', and is operated by the same to move in a vertical direction, carrying the levers with it, and thus causing the longer ends of said levers to move nearer to or farther

from the shaft, and opening or closing the spaces between the strips A' by the corresponding operation of the wings.

The governor-arms are pivoted at one end to a casting, T, secured to the shaft below the casting F, and at the other end have weights. The centrifugal force incident to the turning of the wheel will carry the weighted ends outward to a greater or less extent, varying with the speed of the said wheel, and thereby automatically operate the wings B, as above described, and regulate or govern the speed of the wheel, keeping it to all practical purposes steady and equable under the varying force of the wind.

At any convenient point on the lower portion of the shaft below the wheel is a sliding sleeve, K, provided with an exterior annular groove, and connected to the governor-arms by rods L. Within the groove rests the forked end of a lever, N, the other end of the lever being connected by rod or otherwise to any convenient point where it may be reached by an operator.

By this means the governor-arms may be raised independent of the motion of the wheel or motor, the wings or gates closed and the device stopped, the reverse being true in starting.

We are aware that it is not new to provide a wheel with a central vertical shaft, connect pivoted wings with a sleeve on the said shaft by means of pivoted arms, the sleeve being connected to a lower bar on the said shaft by means of a swivel-coupling, and governor-arms carrying segments engaging the said movable bar, and therefore do not claim such devices, broadly.

We claim—

A windmill or motor consisting of a cupola with guide boards set at an angle, a revolving wheel on a vertical shaft, said wheel being provided with hinged or pivoted wings or gates normally at right angles to the guides, and a governor secured to the shaft and connected to and automatically operating the said wings or gates, substantially as and for the purpose specified.

In testimony whereof we affix our signatures in presence of two witnesses.

JOSIAH W. WOOD.
FRANK E. WOOD.

Witnesses:

WILLIAM ELY,
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