(No Model.) 2 Sheets—Sheet 1.

H. B. JOHNSON.

WIND WHEEL.

No. 383,467. Patented May 29, 1888.

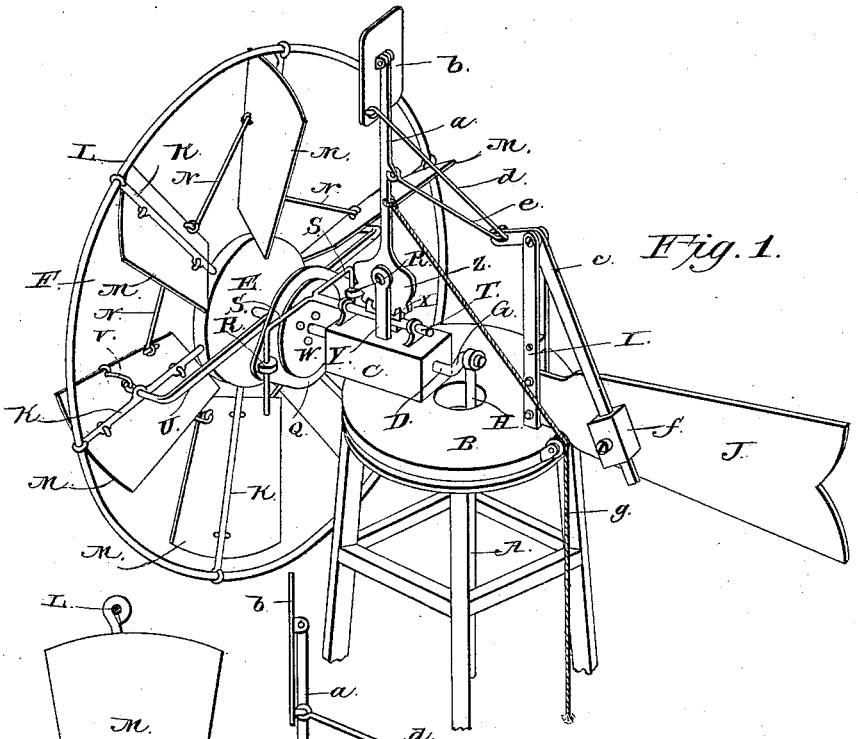

Fig. 1.

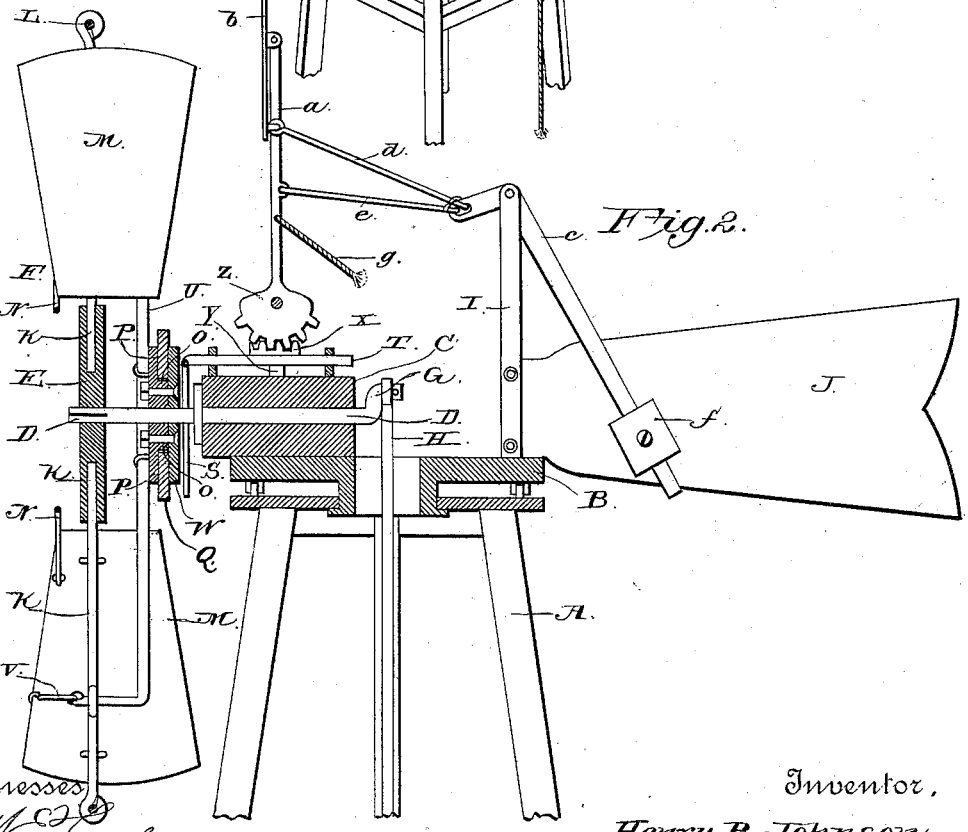

Fig. 2.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

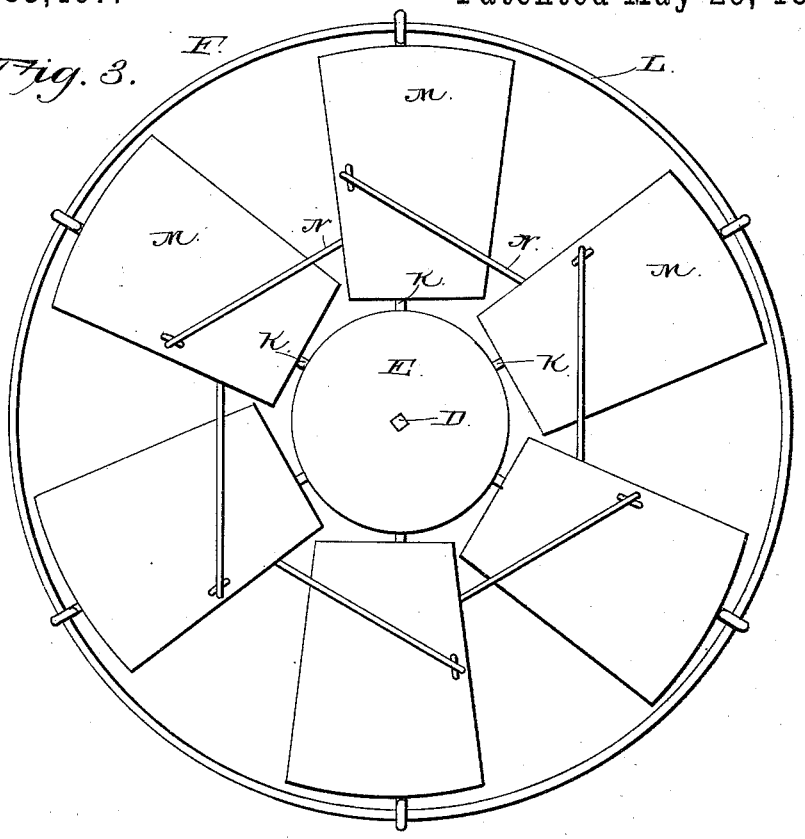
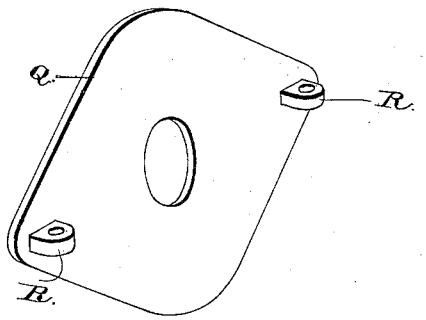


Fig. 4.



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Inventor,
Henry B. Johnson,
By his Attorneys,
C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

HENRY B. JOHNSON, OF CLAY CENTRE, KANSAS.

WIND-WHEEL.

SPECIFICATION forming part of Letters Patent No. 383,467, dated May 29, 1888.

Application filed November 10, 1887. Serial No. 254,832. (No model.)

To all whom it may concern:

Be it known that I, HENRY B. JOHNSON, a citizen of the United States, residing at Clay Centre, in the county of Clay and State of Kansas, have invented a new and useful Improvement in Wind-Wheels, of which the following is a specification.

My invention relates to improvements on wind-wheels; and it consists in certain novel features hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a perspective view of a wind-wheel embodying my improvements. Fig. 2 is a central vertical section. Fig. 3 is a front elevation of the wheel, and Fig. 4 is a detail perspective view.

Referring particularly to the drawings by letter, A designates a tower of the usual construction, having an ordinary turn-table, B, at its top or upper end. Secured radially upon the upper side of the turn-table is an elongated bearing, C, in which the wind-wheel crank-shaft D is journaled, as clearly shown. Upon the outer end of the shaft D the hub E of the wheel F is rigidly secured, and the inner end of the shaft is turned or bent so as to form the crank G, to which I secure the upper end of the driving-rod H, which extends down to near the ground and is connected by suitable gearing to the machinery to be driven.

On the diametrically-opposite side of the turn-table in line with the elongated bearing C, I erect a rigid standard, I, from the base of which the vane J extends. The wheel F consists of the hub E, the spokes K, extending radially from the said hub to a brace-ring, L, arranged concentrically with the hub, to which their outer ends are permanently and rigidly secured, and the blades or sails M, pivotally secured upon the said spokes. The outer or front edges of the sails are connected by braces N, as shown, so that they can be simultaneously thrown into or out of the wind, as will be readily understood. A sleeve, O, having an annular laterally-projecting flange, P, at its front end, is mounted on the wind-wheel shaft between the hub of the wheel and the front end of the bearing and slides freely thereon.

Q designates a collar, which is fitted on the sleeve O in rear of the flange P, and has the perforated lugs or ears R at diametrically-opposite points, which are engaged by the downwardly-bent ends of the arms of the fork S on the front end of a sliding rod, T, mounted upon the elongated bearing C, as shown. A rod, U, is secured to the front face or end of the sleeve O, and extends from each side of the same diametrically across the rear of the wheel F, its ends being bent forward and passed through guides on two of the spokes, which are diametrically in line with each other, and V designates short links which connect the ends of the said rod U to the outer edges of two diametrically-opposite sails.

W designates a disk or plate secured to the rear end of the sleeve O to prevent the collar Q being drawn off the same. The rod T is provided on its upper side, about midway its ends, with a rack, X, and upon the bearing C, I erect the standard Y, between the upper ends of which I journal the segmental gear-wheel Z, which engages the rack X, as shown. A rod, *a*, is secured to the upper portion of this segment gear-wheel and extends therefrom up above the upper edge of the wheel, and on the upper end of the rod *a*, I secure a governor-vane, *b*, which is so arranged as to lie in a plane parallel to the plane of the wheel. In the upper end of the standard I an angle-lever, *c*, is hung, its shorter arm extending toward the vane *b* and rod *a*, to which it is connected by means of the links or connecting-rods *d e*. A weight, *f*, is adjustably secured upon the longer arm of the lever, *c*, as shown, and a rope or chain, *g*, is secured to the rod *a* and extends down through the tower to or near the ground, so that the wheel may be thrown into or out of the wind by the operator, as will be readily understood.

In operation the weight is adjusted upon the angle-lever *c*, so that the governor-vane will be enabled to resist the force of the wind until the same assumes an abnormal velocity and strength. When the strength of the wind becomes abnormal, the governor-vane will be forced backward and downward, as will be readily understood. The sliding rod T will be pushed forward by means of the segmental gear-wheel and the rack X, and through the medium of the sliding sleeve and the rod U will throw the sails of the wheel around so that their edges will be presented to the wind.

As the wind subsides, the weight *f* will gradually bring the angle-lever into its normal position, and thus present the governor-vane to the wind and cause the sails to present their faces to the same.

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

The combination of the turn-table, the elongated bearing C, secured radially thereon, the wheel having its shaft D journaled in said bearing, the sliding rod T, mounted on the bearing C and having an integral rack, X, on its upper side, and provided at its outer or front end with an integral fork, S, having downwardly-bent ends, the sleeve O, mounted on the shaft D and having the annular flange P at its front edge, the collar Q, mounted on the sleeve O in rear of the flange P and having the diametrically-opposite ears R, engaged by the downwardly-bent ends of the fork S, the disk W, secured to the rear face of the sleeve O to hold the collar Q thereon, the rod U, secured to the sleeve O and connected to the wheel, the standard Y, erected on the bearing C, the segmental gear Z, pivoted to the upper end of said standard and engaging the rack X, the rod *a*, extending upward from the said gear, the governor-vane *b*, pivoted on the upper end of said rod, the standard I, erected on the turn-table at a point diametrically-opposite the end of the bearing C, the angle-lever *c*, fulcrumed to the upper end of said standard and having an adjustable weight, *f*, on its longer arm, the links *d e*, connecting the shorter arm of said lever to the vane *b* and the rod *a*, respectively, and the rope *g*, secured to and extending downward from the rod *a*, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

HENRY B. JOHNSON.

Witnesses:
GEO. W. MARTIN,
THOS S. LACEY.