

F. H. BOLTE.
Wind Wheel.

No. 229,580.

Patented July 6, 1880.

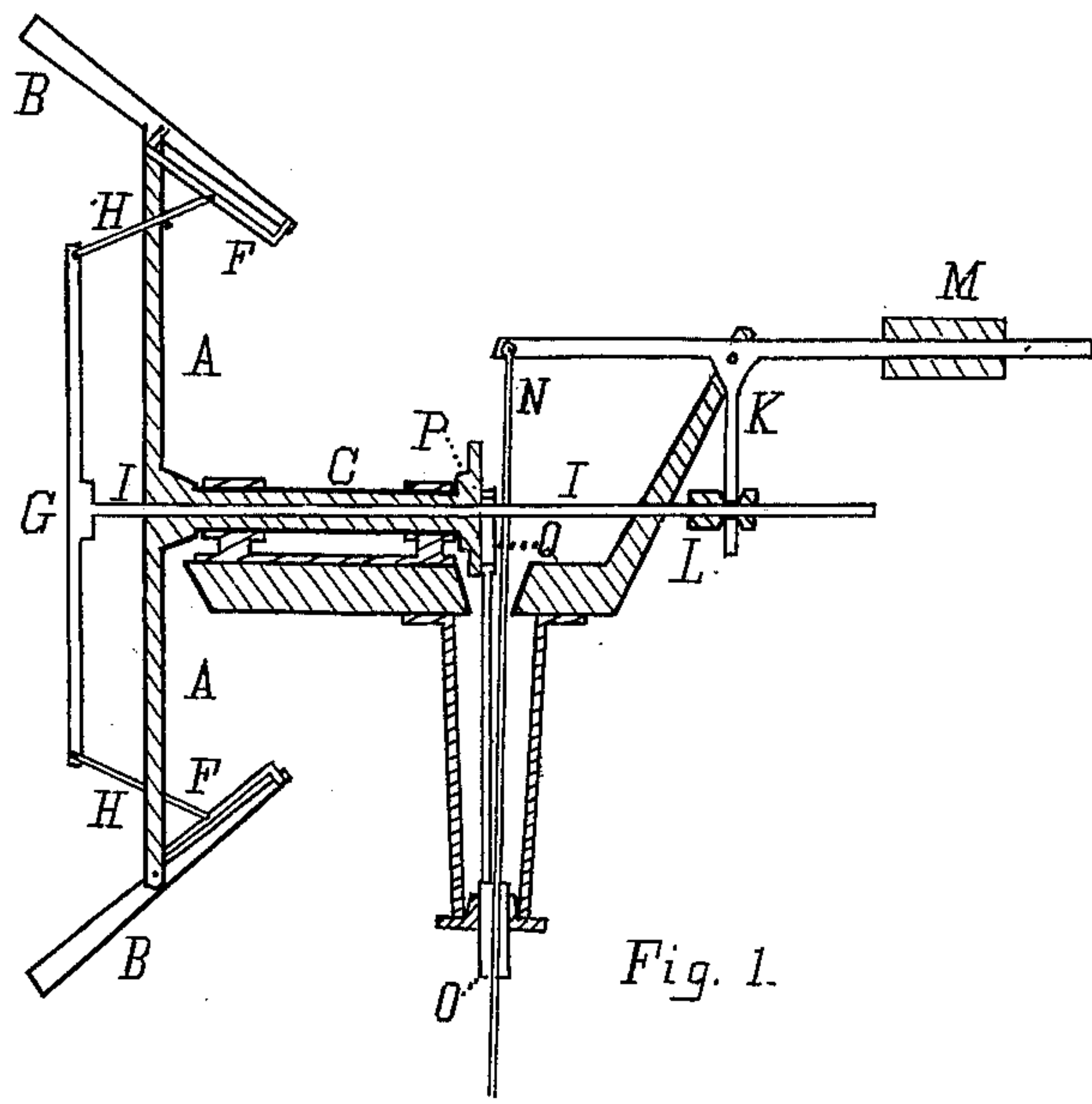


Fig. 1.

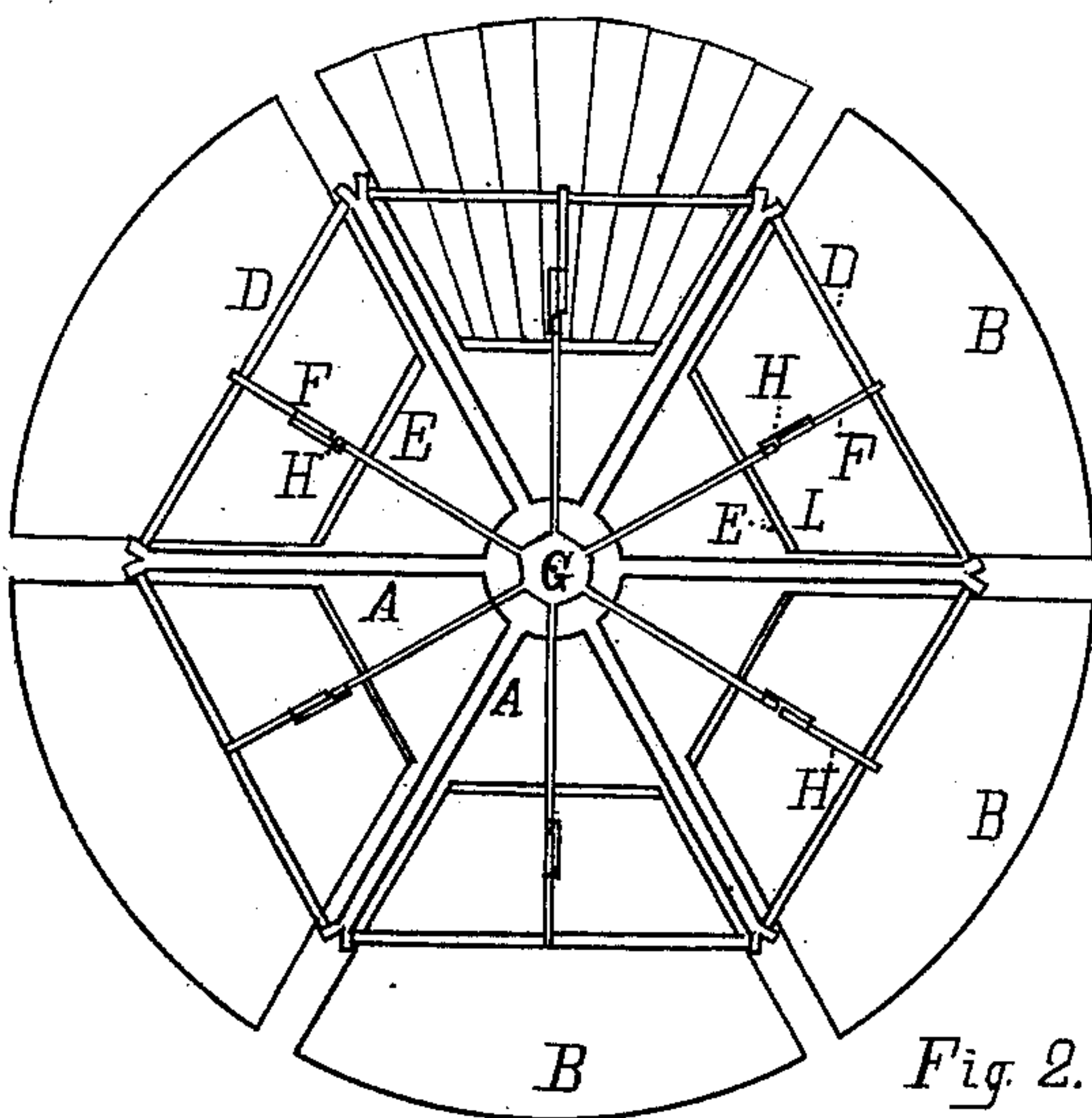


Fig. 2.

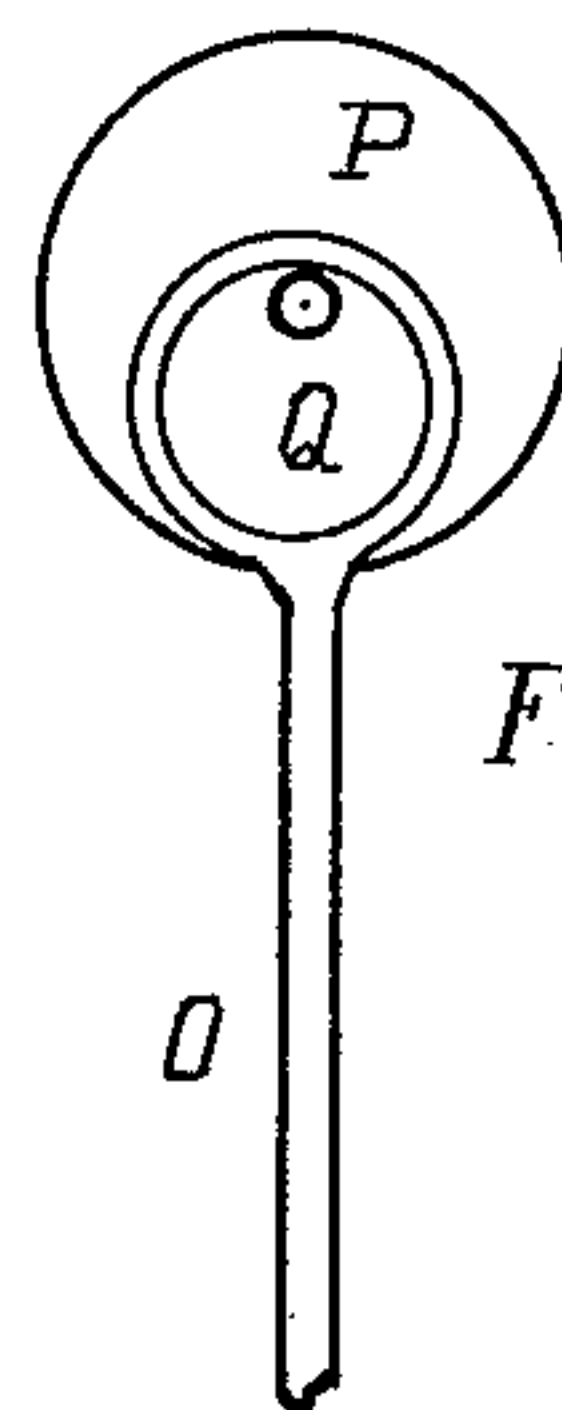


Fig. 3.

Witnesses:

J. N. Allen
H. D. James

Inventor:

Frank H. Bolte

UNITED STATES PATENT OFFICE.

FRANK H. BOLTE, OF COLUMBUS, WISCONSIN, ASSIGNOR OF ONE-HALF OF
HIS RIGHT TO JOSEPH BOLTE, OF SAME PLACE.

WIND-WHEEL.

SPECIFICATION forming part of Letters Patent No. 229,580, dated July 6, 1880.

Application filed October 28, 1879.

To all whom it may concern:

Be it known that I, FRANK H. BOLTE, of the town of Columbus, county of Columbia, and State of Wisconsin, have invented a new and useful Improvement in Wind-Wheels, of which the following is a specification.

The object of my invention is to furnish a vaneless wind-wheel having a simple automatic device for regulating.

In the drawings, Figure 1 is a vertical cross-section; Fig. 2, a plan of wheel, and Fig. 3 a front view of the face-plate, eccentric, and pitman.

The wheel has arms A A, to the extremities of which are pivoted the sails B B. This wheel is hung upon a tubular horizontal shaft, C, Fig. 1.

The sails consist of a bar, D, Fig. 2, pivoted in the arms of the wheel, a bar, E, Fig. 2, running across the wings and parallel with D, and a third bar, F, Figs. 1 and 2, connecting D and E. These sail-bars F are attached to the arms of a smaller arm-wheel, G, Figs. 1 and 2, by rods H H.

The arm-wheel is hung on a horizontal shaft passing through the tubular shaft C, having a rotary motion with the main wheel and a reciprocating motion through the tubular shaft C, Fig. 1.

From the windward end of the bed which supports the wheel arms extend upward. On the upper end is hung a lever having a vertical arm, K, Fig. 1, forked at its lower end to straddle the shaft I, Fig. 1. On said shaft are set nuts, collars, or other device, by which the shaft is allowed to revolve within the forks of the lever, but cannot slide horizontally without carrying the lever.

To the outer end of the lever is attached a sliding weight, M, and to the inner arm a rod, N, Fig. 1, running downward through a tubular pitman or pipe, at O, to the ground.

To the tubular shaft C is attached a face-plate, P, Figs. 1 and 3, on the face of which is an eccentric sufficiently large to give the re-

quired stroke to the pitman, and spanning the hole of the tubular shaft C and the sliding rod I.

It operates as follows: The wind strikes the sails from the direction of the weight M, Fig. 1. The greater surface of the wings presented to the wind being outside of the bar D, its tendency is to press the sails into a horizontal position. The centrifugal force generated by the revolving wheel operates in an opposite manner. To govern this motion of the sails, I attach them to the arms of the wheel G on the sliding shaft I, Fig. 1, by the bars F and rods H, the object being to govern the sails with but little motion to the sliding shaft I. The wind then, by its pressure on the sails, slides the shaft I, which, communicating with the lever K, raises and lowers the weight M. This weight may also be raised and the sails thrown out of the wind by pulling downward the rod N, attached to said lever.

I am aware that weighted levers and forked arms, also weighted bell-crank levers, used in connection with a sliding governing-rod for automatically throwing the sails in and out of the wind, are common in wind-wheels, and such I do not wish to be understood as claiming, broadly, as my invention; but

I claim as my invention—

In a vaneless wind-wheel, the combination, with the sliding governing-rod I and the sails B, connected therewith, substantially as described, of the weighted lever pivoted near its center in a support above the axis of said shaft and provided with a downwardly-fixed projecting arm, K, forked at its lower end to straddle the shaft I, and nuts or collars on said shaft, whereby the shaft is allowed to revolve within the forks of said lever, but cannot slide therein without carrying the lever, substantially as and for the purpose specified.

FRANK H. BOLTE.

Witnesses:

J. N. ALLEN,
H. D. JAMES.