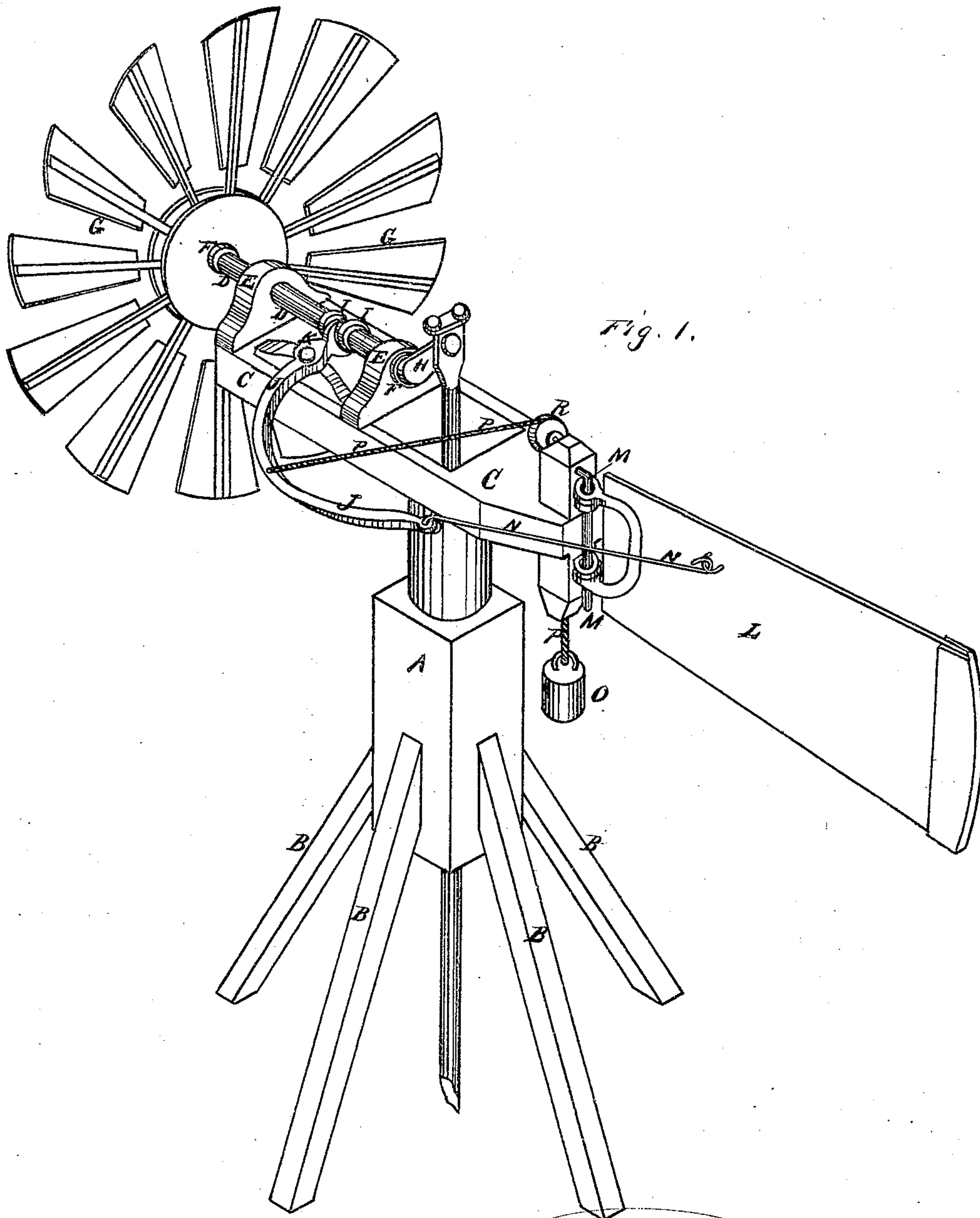


J. HOAG.
Wind-Mills.

No. 143,076.

Patented September 23, 1873.



Witnesses
John L. Dorne
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by Sewey &
Attys

UNITED STATES PATENT OFFICE.

JONATHAN HOAG, OF SAN RAMON VALLEY, CALIFORNIA.

IMPROVEMENT IN WINDMILLS.

Specification forming part of Letters Patent No. **143,076**, dated September 23, 1873; application filed August 2, 1873.

To all whom it may concern:

Be it known that I, JONATHAN HOAG, of San Ramon Valley, Contra Costa county, State of California, have invented a Windmill; and I do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention or improvement without further invention or experiment.

My invention relates to certain improvements in windmills, for the purpose of rendering them self-regulating and turning the wheel more or less out of the wind, according to its strength. This is effected by making the wheel-shaft movable longitudinally in its boxes. A grooved collar or clutch-ring is secured to the shaft, and operates when the shaft is moved upon a curved lever, which is so connected with the tail as to pull it around, and this has the effect to throw the wheel more or less out of the wind. A weight or spring is arranged to draw the tail back again if the wind becomes lighter.

Referring to the accompanying drawing for a more complete explanation of my invention—

Figure 1 is a perspective view of my mill.

A is a hollow vertical post through which the connecting-rod from the crank works to operate the pump. The post is supported in the usual manner upon the bracing-legs B, and at its top is placed the turn-table C. The horizontal shaft D is supported upon this turn-table in boxes E E, in such a manner that it is capable of some end motion, the two collars or flanges F F limiting this motion in each direction. The wind-wheel G is secured upon one end of this shaft, and the crank H for operating the pump is secured to the other end so as to stand above the opening in the post A. Upon the shaft D two collars or clutch-rings, I I, are secured at some point in its length, and a curved lever, J, has its fulcrum at the point K. One end of this lever fits into the space between the rings I I in the manner of a clutch-lever, and the other end is bent around toward the tail in a wide sweep.

The tail L is hinged to the turn-table at M, so as to have a motion about its hinge in a horizontal plane, and it is connected with the end of the lever J by an arm, N.

The operation of my windmill will be as follows: A weight, O, is attached to the cord P, and this cord, passing over the pulley R, is attached to the lever J, so that, in any ordinary wind, the tail will be held in a line with the shaft D, and thus keep the wheel in the wind or facing it. When the wind increases so that the wheel would turn faster than is desirable, its force will be sufficient to force the wheel and the shaft D back, the shaft sliding in its boxes. This causes the ring I to act upon the lever J and draw its outer end around, thus turning the tail, by means of the arm N, to an angle with the axis of the wheel and shaft. By this means the wind will act upon the tail and throw the wheel more or less out of the wind. Any lessening of its force will allow the weight O to again draw the tail back, and thus allow the wheel to be thrown more into the wind. By this means I am enabled to make my mill automatic or self-regulating, the weight O determining its speed.

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

1. The shaft D of a windmill moving longitudinally in its boxes, and provided with the clutch I, together with the lever J, connected with the hinged tail L, for the purpose of turning it to an angle with the axis of the shaft, substantially as herein described.

2. The weight O, with its cord P passing over the pulley R and connected with the lever J, in combination with the tail L and the connecting-arm N, for the purpose of returning the tail to its position in line with the shaft, as herein described.

In witness whereof I hereunto set my hand and seal.

JONATHAN HOAG. [L. S.]

Witnesses:

F. W. RALLEY,
D. W. RALLEY.