

(No Model.)

D. C. HARRIS.  
Windmill.

No. 233,928.

Patented Nov. 2, 1880.

Fig. 1.

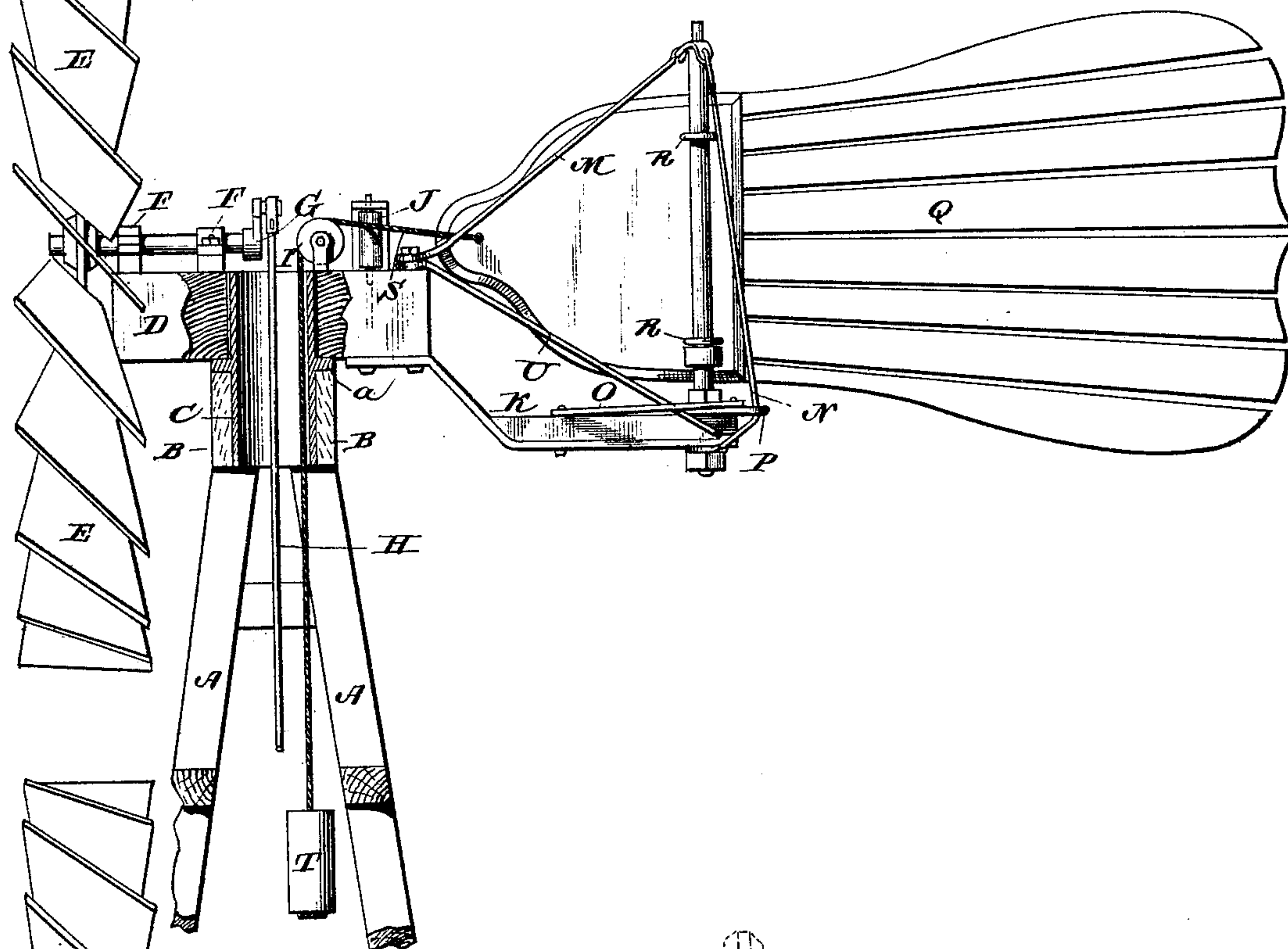
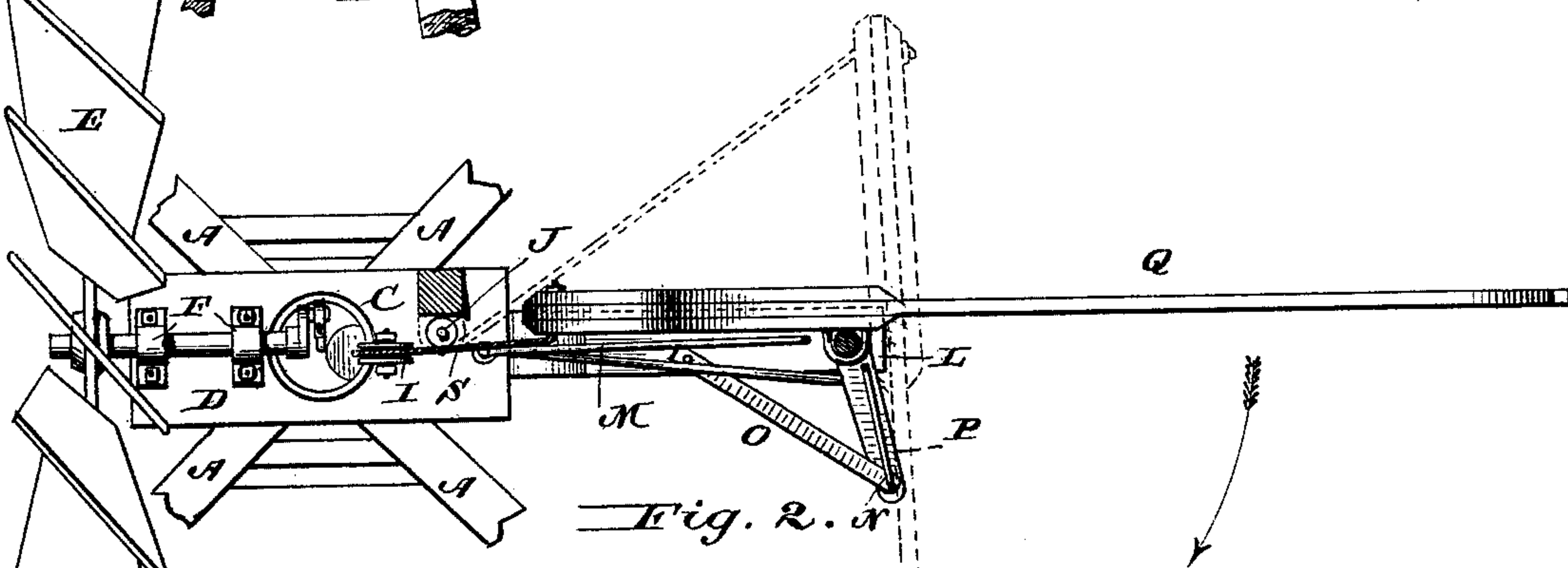


Fig. 2.



Attest:  
W. L. Permie.  
A. M. Long.

By.

Inventor.  
Dwight C. Harris  
by Wm. G. Henderson  
Atty



# UNITED STATES PATENT OFFICE.

DWIGHT C. HARRIS, OF BORDEN, CALIFORNIA.

## WINDMILL.

SPECIFICATION forming part of Letters Patent No. 233,928, dated November 2, 1880.

Application filed March 30, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, D. C. HARRIS, a citizen of the United States, residing at Borden, in the county of Fresno and State of California, have invented certain new and useful Improvements in Windmills; and I do hereby 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 letters or figures of reference marked thereon, which form a part of this specification, in which—

Figure 1 is a side elevation of the mill part in vertical section, and Fig. 2 a plan view.

My invention relates to windmills, and has particular reference to the support of the vane and its connection to the turn-table; and it consists in the construction hereinafter described for the attainment of that end.

In the accompanying drawings, the letter A indicates the derrick, through the top block, B, of which there is passed a tube, C, which tube is supported by a flange, *a*, formed thereon and bearing against the block B. Around the top of tube C the turn-table D is placed. This table supports the wheel E, the shaft of which passes through the boxes F, and to the end of the shaft the crank G is secured, and it connects with the elevating-rod H, which extends down through tube C, as shown. The table is further provided on top with a pulley, I, and friction-roller J, and to its under side there is bolted or otherwise secured a horizontally-projecting arm, K, which arm near its end supports an upright shaft, L.

A rod, M, extends from the turn-table to the top of the shaft, and it may be said to brace the shaft, but it acts principally to check the movement of the vane. A similar rod, N, extends from the top of the shaft, and its lower end is connected to the shaft L below the arm K, as illustrated in Fig. 1. This rod also acts principally as a check-rod, but it may be said at the same time to act as a brace to the shaft.

Two arms, O and P, extend outwardly from arm K, as illustrated in the drawings, and through the outer end of arm P the rod N is passed and by the arm braced, and is then se-

cured to rod L. These arms serve to strengthen rod N and brace it against the blows of vane Q, as the latter strikes against and is checked by the rod.

The rod U, which extends from the turn-table to the end of arm K, is intended to brace the arm.

The vane Q is hinged at or near its center to the upright shaft L, instead of being affixed to the turn-table. The object in hinging it at or near its center is to balance it in all positions even when out of the wind, and to prevent the mill from being thrown out of balance when out of the wind, as is the case when the vane is connected at its end to the turn-table.

In the drawings, the vane is represented as hinged back of its end and near its center to the upright shaft L by means of two collars or staples, R, passed around the shaft and into the vane.

A cord or chain, S, is connected to the end of the vane and passes over the pulley I, and bears against friction-roller J, and extends down through tube C, and to its lower end there is connected a weight, T. This weight is the governor of the mill and regulates its speed, the speed being determined or controlled by heavy or light weights, being employed at the will and pleasure of the attendant.

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

1. In a windmill, the combination of a wheel and turn-table, a vane hinged between its ends to a vertical shaft, a support for the shaft, a cord or chain and weight connected to one end of the vane, and rods M, N, and U, substantially as set forth.

2. In a windmill, the vane Q, hinged or pivoted between its ends, as shown and described, to the vertical shaft L, and combined with rods M and N, for the purposes set forth.

In testimony whereof I affix my signature in presence of two witnesses.

D. C. HARRIS.

Witnesses:

W. J. PICKETT,  
GEO. H. VAUGHAN.