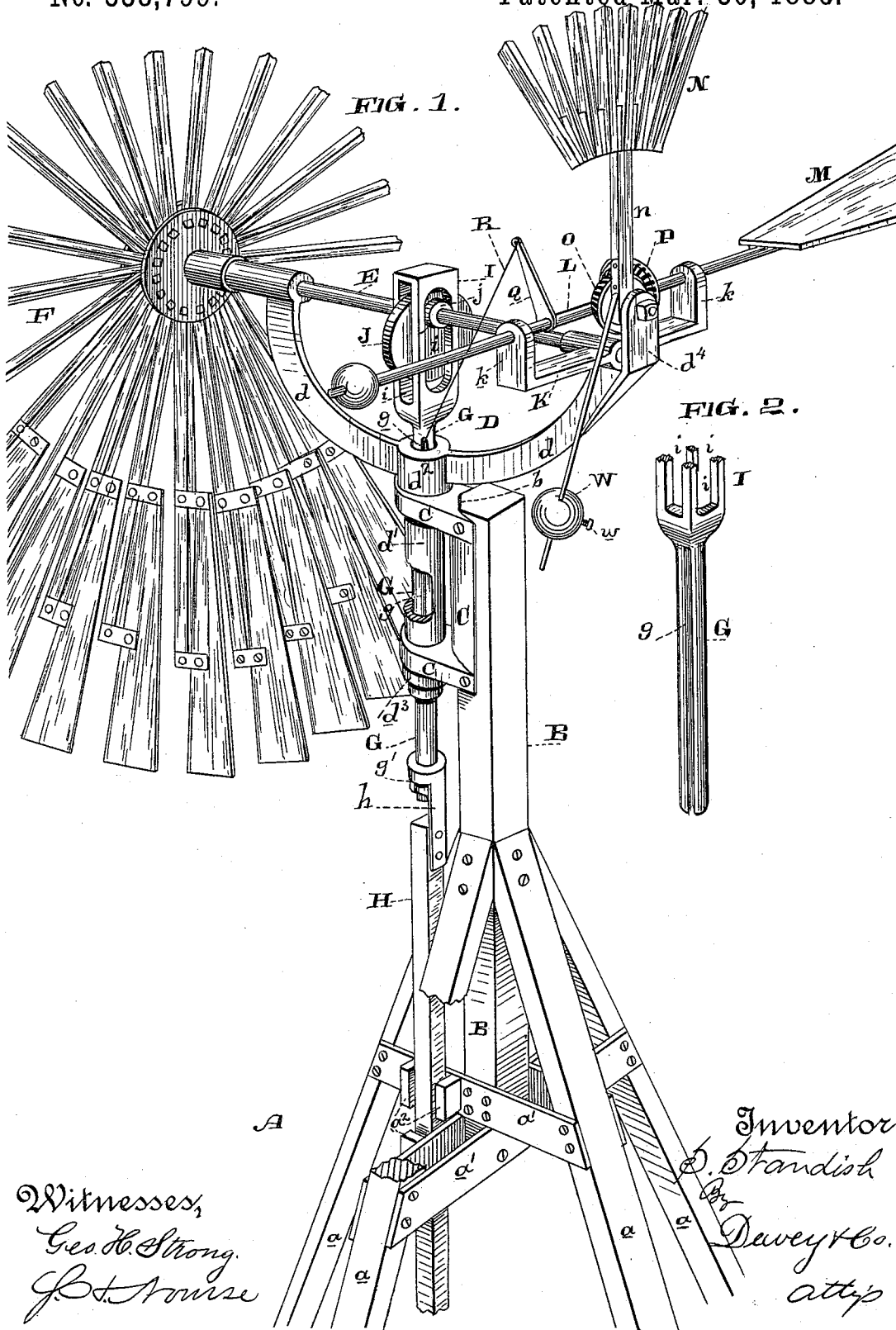


(No Model.)

S. STANDISH.  
WINDMILL.

No. 338,799.

Patented Mar. 30, 1886.



Witnesses,  
Geo. H. Strong  
J. H. House

Inventor,  
S. Standish  
By  
Dewey & Co.  
attys

# UNITED STATES PATENT OFFICE.

SYRANUS STANDISH, OF PACHECO, CALIFORNIA.

## WINDMILL.

SPECIFICATION forming part of Letters Patent No. 338,799, dated March 30, 1886.

Application filed November 23, 1885. Serial No. 183,775. (No model.)

*To all whom it may concern:*

Be it known that I, SYRANUS STANDISH, of Pacheco, county of Contra Costa, and State of California, have invented an Improvement in Windmills; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to that class of windmills in which two vanes are employed to effect the necessary regulating of the wheel, one of said vanes being arranged in a vertical position, parallel with the wheel, and the other vane being mounted on a horizontal shaft and adapted to be oscillated by power transmitted from the vertical vane from a horizontal plane, in which it lies inactive, to a vertical plane, in which it receives the force of the wind and throws the wheel out of action.

My invention consists in the novel arrangement of these two vanes and the power-transmitting devices between them.

It consists, further, in a novel turn-table, on which the wheel and vanes are arranged, in a novel and peculiarly-located bracket in which the turn-table is mounted and which is adapted to permit the most convenient arrangement of the pitman with respect to the tower employed, and in a novel slotted hollow stem, forming part of the reciprocating mechanism, said stem being the seat for the wire or cord which throws the mill out of action, and forming, also, a swivel-connection with the pitman of the pump, all of which, together with details of construction, I shall hereinafter fully explain.

The object of my invention is to provide a simple, effective, and economical windmill.

Referring to the accompanying drawings, Figure 1 is a perspective view of my windmill. Fig. 2 is a view of the slotted pipe G.

The tower A consists of four divergent legs, *a*, which are bolted at their upper ends to a standard, B, and are braced by cross-bars *a'*, also bolted to the lower end of the standard B. The standard B is square in cross-section, but one of its corners or angles is beveled off at *b*, to receive the bracket-casting C, which is grooved to fit the beveled corner of the standard, and is bolted thereto.

D is the turn-table, consisting of two out-

spread arms, *d*, and a tubular shank, *d'*, which is mounted in the casting C, and is secured therein by a flange, *d<sup>2</sup>*, at the top and a collar, *d<sup>3</sup>*, at the bottom, whereby the turn-table may rotate, but can move neither up or down.

In the arms *d* of the turn-table is journaled the shaft E, which carries the wind-wheel F, of any suitable construction.

G is a tubular piece or pipe, having in its side a slot, *g*. This pipe passes down through the tubular stem or shank *d'* of the turn-table, and is connected with the pitman H of the pump, the connection being a swiveled one, and formed by means of the bracket *h*, through the arm of which the pipe G passes and is journaled, its lower end receiving a nut, *g'*, to hold it in place. The upper end of the pipe G may be connected with any suitable reciprocating power-transmitting devices on the wheel-shaft E. As the novelty of this portion of the mill lies in the slotted pipe G, forming a continuation of the pump-pitman, I am not so particular in describing the power-transmitting mechanism by which it is connected with the wheel-shaft; but the mechanism which I prefer consists of a yoke, I, preferably cast or formed with the pipe G, and provided with a double slot, *i*, at right angles.

Within one of the slots of the yoke I operate an eccentric, J, on the wheel-shaft, the hub of said eccentric being provided with small roller-studs *j*, which are seated in the side slots of the yoke, whereby said yoke is guided in a true perpendicular motion.

It will thus be seen, by reason of the swivel-connection between the pipe G and the pitman H, that the turn-table, with all the mechanism which it carries, may rotate freely without rotating the pitman, and at the same time the pipe G may raise and lower said pitman.

Now, by reason of mounting the bracket C, which sustains the turn-table, upon one corner of the standard B, as I have been particular to explain, it will be observed that the pitman H can pass down to the pump without interfering with the legs of the tower, and thus avoid the necessity of making a passage through one of the legs, as would be the case if the bracket were mounted on the side of the

standard B; and, again, the cross-pieces *a'* of the tower afford an opportunity for guiding the pitman, which effect is produced by means of small guide-blocks *a''*, secured on the side of the cross-pieces, and between which the pitman passes.

One arm, *d*, of the turn-table is provided with a long cap-plate, K, which carries journal-bearings *k*, in which is mounted the shaft L, which carries on its end the vane M. To the same arm of the turn-table is bolted an upright extension, *d'*, in which is pivoted the shank or stem *n* of the vertical vane N, the lower end of said shank being provided with a weight, W, which is adapted to slide up or down on its seat, and to be fixed wherever adjusted by means of the set-screw *w*. The stem *n* of the vane N at its center of pivotal action carries a beveled pinion, O, which meshes with a beveled pinion, P, on the shaft L of the vane M. Upon said shaft L is secured an arm, Q, to the outer end of which a wire or cord, R, is attached. This passes down and enters the pipe G through its slot *g*, and thence extends downwardly through said pipe to within reach of the operator. The vane N consists of a number of fans, which are mounted at the same angle and parallel with the fans of the wheel F.

The operation of my mill is as follows: When there is a light wind the weighted vane N remains in a vertical position and the vane M lies in a horizontal plane, so that it is not effected by the wind; but as the wind becomes stronger it forces the vane N over through an arc in a vertical plane, which movement of the vane, through the gearing described, oscillates the shaft L and turns the vane M into a vertical plane, so that the wind affects it and blows the vane around, turning the wheel out of the wind and stopping the mill, or regulating it according to the force of the wind. As soon as the wind dies down the weighted vane N, assuming again a perpendicular, oscillates the shaft L, which turns its vane M into a horizontal plane, in which position the wind has no effect upon it.

By moving the weight W up or down on its

seat it is obvious that the movement of the vane N is regulated to whatever intensity of wind it may be desired to accomplish the regulation of the mill. The cord or wire R, by turning the shaft L, is adapted to throw the vane M up into the wind, and thus throw the mill out of the wind.

The slotted pipe G forms a seat for the wire or cord and prevents it from twisting, the slot allowing said pipe to move up and down without interference from the cord.

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

1. In a windmill, a turn-table, a shaft mounted thereon, and a wheel on said shaft, in combination with the vane N, parallel with the wheel and having a stem, *n*, pivoted to the turn-table, its axis being parallel with the shaft of the wheel, whereby said vane is moved edgewise, the weight W on the lower end of the stem, the shaft L, mounted on the turn-table at right angles to the vane N, the vane M on said shaft, and the intermeshing gears O P on the stem of vane N and on the shaft L, respectively, substantially as herein described.

2. In a windmill, the turn-table D, having a hollow stem, *d'*, the shaft E, mounted in said turn-table, the wind-wheel F on said shaft, the shaft L, mounted on the turn-table at right angles to the shaft E, the regulating-vane M on said shaft, and the arm Q, in combination with the tubular piece or pipe G, connected at its upper end with the reciprocating devices of the wind-wheel shaft and swiveled at its lower end to the pump-pitman, said piece or pipe being pivoted in the tubular stem of the turn-table and having a slot, *g*, in its side, and the cord or wire R, connected with the arm Q of the shaft L, and entering the pipe G through its slot and passing through said pipe, substantially as described.

In witness whereof I have hereunto set my hand.

SYRANUS STANDISH.

Witnesses:

M. H. BAILHACHE,  
A. E. DUNKEL.