



# UNITED STATES PATENT OFFICE.

JAMES P. PRESTON, OF GOLD RUN, CALIFORNIA.

## IMPROVEMENT IN WIND-WHEELS.

Specification forming part of Letters Patent No. **192,933**, dated July 10, 1877; application filed April 30, 1877.

*To all whom it may concern :*

Be it known that I, JAMES P. PRESTON, of Gold Run, in the county of Placer and State of California, have invented a new and Improved Wind-Wheel, of which the following is a specification:

Figure 1 is a side elevation of my improved wind-wheel, with parts broken away to show the internal construction clearly. Fig. 2 is a plan view.

Similar letters of reference indicate corresponding parts.

My invention relates to that class of wind-wheels that rotate on a vertical axis; and it consists in the peculiar form of pivoted vanes and in an arrangement of levers and cords for regulating the same.

In the drawing, A is the frame of the machine, in which is placed the wheel B, whose shaft C is journaled in cross-timbers in the frame A. D D, &c., are curved vanes, which are pivoted at each end at *a*, in the heads E, that are secured to the shaft C. F F' are collars secured to the shaft C centrally between the heads E, and are each provided with as many pulleys on their peripheries as there are vanes in the wheel. G is a movable collar, placed between the collars F and connected, by rods *b*, with a grooved collar, H, placed on the shaft C, below the lower head E. I is a forked lever, that is pivoted at *c*, and is provided with rounded ends that are received by the groove of the collar H.

The movable collar G is connected, by cords *d e*, with the vanes D. The cords *d* pass upward and over the pulleys in the collar F, and are secured to the vanes D, outside of their axes, and the cords *e* pass downward under pulleys in the collar F', and are attached to the vanes inside their axes, so that by moving

the collar G up or down the vanes are opened or closed.

J J are deflectors that are placed at the corners of the frame for directing the wind against the vanes of the wheel. The wind blowing from any direction serves to rotate the wheel always in the same direction.

The angle of the vanes may be adjusted to the velocity of the wind by moving the lever I.

The advantages claimed for my improved wind-wheel are that it may be readily adjusted while running, it is acted upon by wind blowing from any direction, and as the vanes are curved so that their inner edges are nearly at right angles with the course of the wind; the action of the wind is positive, and the greatest amount of the power of the wind is realized; also that the wind has free and unobstructed discharge from the wheels.

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

1. In a windmill, the vanes D, made self-regulating by being pivoted near their outer edges and making the narrow inside part at an angle to the main outside part, as shown and described, to allow a light wind to act with full force, and a heavy one to close the vanes more or less.

2. The fixed collars F F', having pulleys, as specified, the movable collar G, cords *d e*, and vanes D, in combination, substantially as shown and described.

3. The deflectors J, arranged to shield the reverse side of wheel and direct the wind on the vanes, as set forth.

JAMES P. PRESTON.

Witnesses:

E. C. UREN,  
E. L. McCLURE.