

UNITED STATES PATENT OFFICE.

JOHN J. KIMBALL, OF NAPERVILLE, ILLINOIS.

IMPROVEMENT IN WIND-WHEELS.

Specification forming part of Letters Patent No. 152,532, dated October 3, 1876; application filed March 25, 1876.

To all whom it may concern:

Be it known that I, JOHN J. KIMBALL, of Naperville, in the county of Du Page and State of Illinois, have invented a new and Improved Wind-Wheel, of which the following is a specification:

This improved wind-wheel has vertical fans or buckets pivoted at the ends in fixed horizontal arms of a vertical revolving shaft, so that, when not prevented, they will turn edgewise to the wind, and the wheel will stand at rest; and, for holding them so as to take the wind sidewise, there is a stop-bar extending along one side of each series from the outermost one to the center, where it is connected to a weighted cord hung along the shaft, which draws the bar, and stops the fans sidewise to the wind at one side of the wheel, while they are still free at the other side to turn edgewise, thus enabling the wind to take effect for revolving the wheel. A contrivance for lifting the weights, and thus freeing the fans to the wind on both sides of the wheel, is used for stopping it.

Figure 1 is a sectional elevation of my improved wind-wheel. Fig. 2 is a horizontal section, taken on line *x x*. Fig. 3 is a detail of the section on line *x x*, and Fig. 4 is a section on line *y y*.

Similar letters of reference indicate corresponding parts.

A represents strong fixed arms of the upright revolving shaft B; C, vertical fans or buckets pivoted between upper and lower arms, the pivots being near one edge so that they will turn edgewise to the wind when not prevented. D represents the stop-bars for holding the fans to the wind, said bars being jointed at E, and pivoted to the frame at the outer end F, so as to swing back, and leave the fans free to the action of the wind, or to be drawn up close to them to hold them sidewise thereto.

Each bar has a weighted cord, G, attached

to the inner end, and passing over pulleys H I down along the shaft and around the regulating-spools J to a point above the table K fixed on the shaft directly under the weights, and so as to slide up and down. Under this table is another one, L, having conical rollers M, and made to rise and fall, but not to revolve with the shaft, being fitted in the upright guides N, and having cords O attached both for raising and lowering it to start and stop the wheel by lifting the weights off the stop-bar and letting them on.

The conical rollers are employed for the table K to roll on when lifted by table L. In practice there will be four of the guide-standards N for the table L, and as many ropes O to operate it.

The fans are pivoted in bearing-plates P, which are detachably connected to the wheel-arms, so that they can be readily put in and taken out when required for removing the fans without disturbing the wheel-arms.

The wheel-arms are connected at the outer ends to strong upright metal bars Q, and these are connected at the top arm to the braces R, which extend up to the top of the shaft, where they are connected permanently to afford substantial support to the arms.

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

1. The jointed and pivoted stop-bars D and weighted cords G, combined with the fans C, pivoted between the wheel-arms, substantially as specified.

2. The revolving table K, vertically-sliding table L, and cords O, combined with the weighted cords G, and fans C, substantially as specified.

JOHN JULIUS KIMBALL.

Witnesses:

ADAM METZ,
HENRY EDWARDS.