

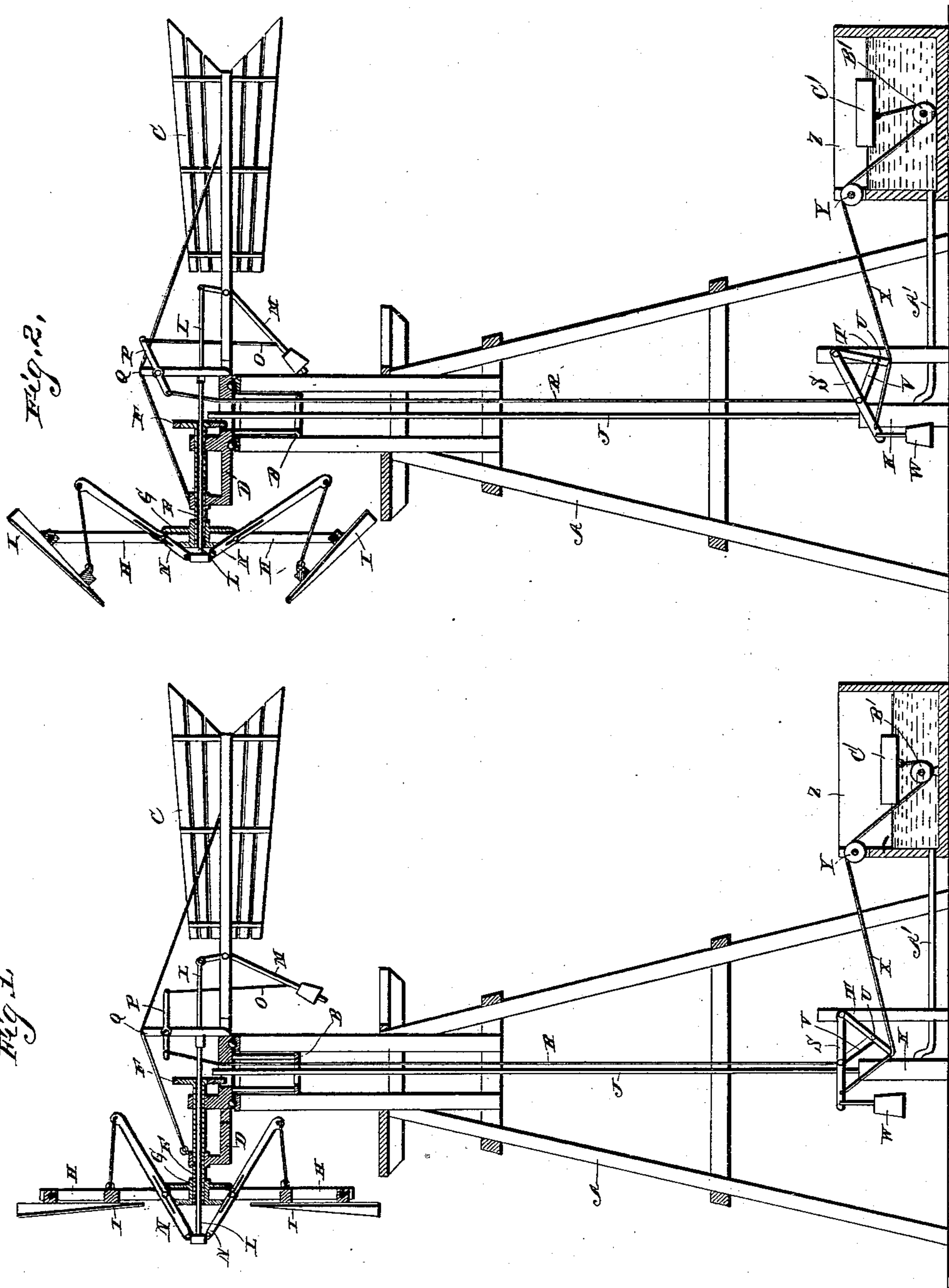
(No Model.)

J. F. SNETHEN.

AUTOMATIC REGULATOR FOR WIND WHEELS.

No. 375,462.

Patented Dec. 27, 1887.



Witnesses  
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# UNITED STATES PATENT OFFICE.

JACOB F. SNETHEN, OF HUMBOLDT, NEBRASKA.

## AUTOMATIC REGULATOR FOR WIND-WHEELS.

SPECIFICATION forming part of Letters Patent No. 375,462, dated December 27, 1887.

Application filed July 30, 1887. Serial No. 245,748. (No model.)

*To all whom it may concern:*

Be it known that I, JACOB F. SNETHEN, a citizen of the United States, residing at Humboldt, in the county of Richardson and State of Nebraska, have invented a new and useful Improvement in Wind-Wheels, of which the following is a specification.

My invention relates to improvements in wind-wheels, and has special reference to the mechanism whereby the wheel is thrown into and out of the wind.

The invention consists in certain novel features hereinafter described and claimed.

In the accompanying drawings, which fully illustrate my invention, Figure 1 is a vertical sectional view of a wind-wheel provided with my improvements, the tank being shown as nearly empty and the wheel as thrown into the wind. Fig. 2 is a similar view showing the tank as filled and the wheel as thrown out of the wind.

Referring more particularly to the drawings, in which like letters of reference denote corresponding parts throughout, A designates the tower, of the usual construction, and B designates the turn-table, mounted upon the upper end of the same in the ordinary or any preferable manner.

C designates the vane or rudder, and D the arm or support for the wind-wheel shaft, extending radially from diametrically-opposite points on the turn-table.

E is the wind-wheel shaft, journaled in suitable bearings on the arm D, and having the cam F at its inner end and the wind-wheel hub G at its outer end. Extending radially from the hub G are the arms or spokes H, between the outer ends of which are pivoted the sails or blades I. The pump-rod J has its upper end provided with a band which encircles the cam F, whereby the rod is reciprocated by the rotation of the said disk and extends down through the center of the tower to the pump K.

The wind-wheel shaft E is tubular, and a rod, L, extending through the same, has one end connected pivotally to the upper end of a weighted lever, M, fulcrumed upon the vane or rudder C. The other end of the rod L projects from the hub G, and has connected to it the inner ends of a series of jointed levers, N,

the outer ends of which are connected to the blades I.

O designates a connecting-rod having one end connected to the weighted lever M, near the lower end of the same, and its upper end connected to one end of a lever, P, pivoted on a standard, Q, erected on the turn-table. The opposite end of the lever P is connected to the upper end of a rod, rope, or chain, R, which extends down through the tower to near the base of the same, where it is connected to an arm or lever, S, pivoted to a standard, T, erected on the ground within the base of the tower.

U designates an arm secured to the lever S at an angle to the same, and V designates a brace secured to and between the lever S and arm U to hold them in their proper relative positions.

W designates a weight hung on the free end of the lever S, and X is a wire cable having one end secured to said lever S, near the end of the same, and thence passing over the end of the arm U to and over a pulley, Y, journaled in the side of a tank, Z, the said tank being connected to the pump K by a pipe, A'. From the pulley Y the cable X passes under a pulley, B', at the bottom of the tank Z, and it then passes upward and is secured to a float, C', which rests on top of the water in the tank, the said water being fed to the tank by the pump K.

From the foregoing description, taken in connection with the accompanying drawings, it is thought the operation of my device will be readily understood.

Supposing the tank to be empty, or nearly so, when the wheel is turned to the wind, it will revolve, and thereby actuate the pump-rod J to pump water to the tank Z. As the tank fills and the water rises therein, the float C' will be carried upward and draw on the cable X, which will then pull on the lever S, causing it to draw the rod R downward. This action will, through the pivoted lever P and connecting-rod O, raise the lower end of the weighted lever M, thereby causing the upper end of the same to pull the rod L inwardly, extending the jointed levers N and throwing the blades around on their pivots out of the



wind, as shown in Fig. 2, thereby stopping the pump and consequent inflowing of water. As the water is used from the tank, the float will descend, and the wheel will be automatically  
5 thrown into the wind again.

It will thus be seen that my improved wheel is entirely automatic in its operation and that the tank will be constantly supplied with water. The wire cable will be of such a length  
10 that the wheel will be thrown out of the wind only when the tank is full, so that should the quantity of water in the tank diminish the tension on the cord will be released and the wheel at once thrown into the wind, and as  
15 soon as the supply of water is replenished the wheel will be thrown out of the wind. The weight W forms an important feature of my device, as ordinarily the tendency of the wheel to keep in the wind would be so strong as to  
20 require a very large float and rope to secure the strength requisite to overcome the same. By using the weight, however, I am enabled to use a comparatively small float and rope, as the weight exerts a constant pull on the  
25 wheel and its connections, thereby aiding the float and rope in their work. The arm U also aids in this work, as it changes the course of the rope so that it exerts a direct lateral pull on the lever S at all times.

30 Having thus described my invention, what I

claim, and desire to secure by Letters Patent, is—

The combination, with the wheel and the pump operated thereby, of the tank, the float in the tank, the standard T, erected upon the  
35 ground, the lever S, pivoted at one end to the standard T, the weight W, suspended from the free end of the lever, the arm U, secured at an angle to the lever near its pivoted end, the  
40 cable X, connected to the float and to the lever near the weight W and passing over the end of the arm U, the rod R, secured to the lever S between its pivot and the point of attachment of the cable X and extending upward therefrom, the lever P, pivoted to a  
45 standard erected on the turn-table of the mill and having one end pivoted to the upper end of the rod R, the weighted lever M, having its lower end connected to the lever P by a connecting-rod, O, and the rod L, and jointed le-  
50 vers N, connecting the upper end of the lever M with the wheel, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

JACOB F. SNETHEN.

Witnesses:

W. D. EASLEY,  
E. F. SHURTS.