B. WEIRICH.

Wind-Mill.

No. 164,623. Patented June 15, 1875.

Fig. 1.

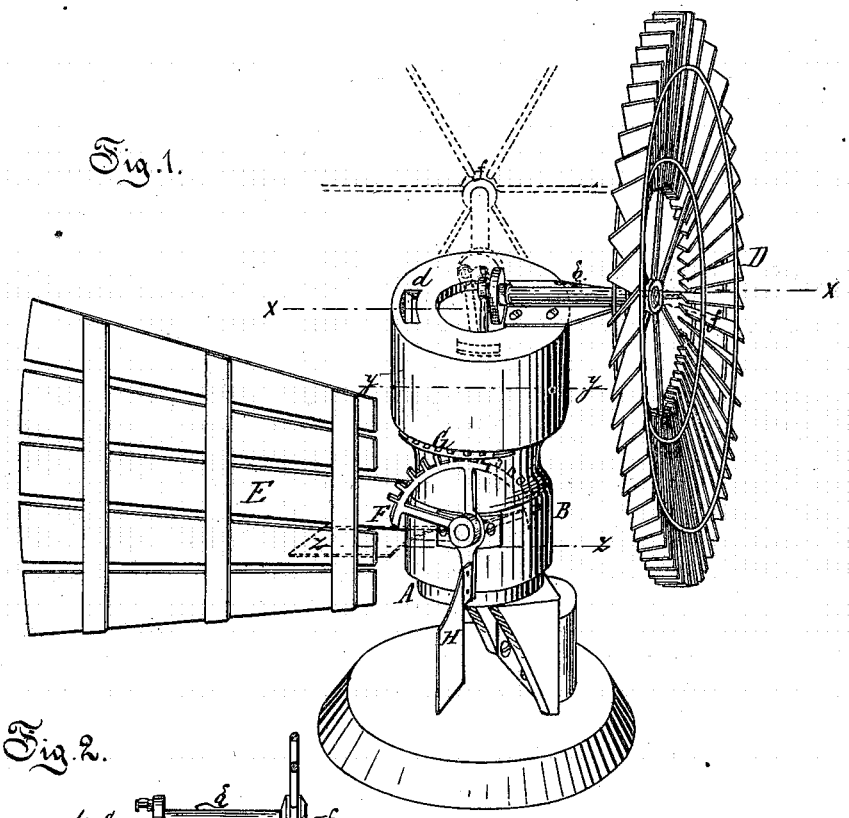


Fig. 2.

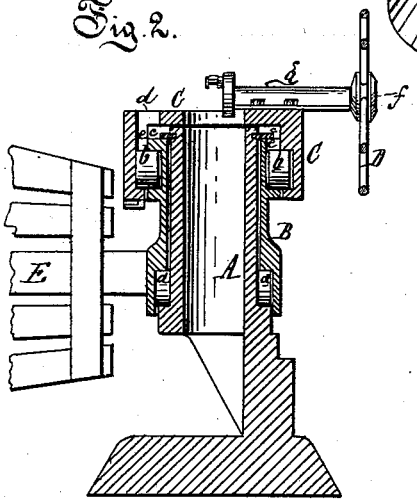


Fig. 3.

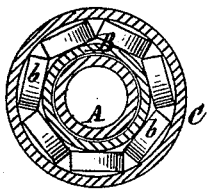
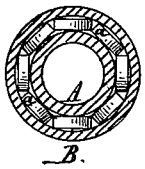


Fig. 4.



Witnesses:
Edward Barthel.
E. F. Hueber

Inventor:
B. Weirich
By Atty
Thos. S. Sprague

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

UNITED STATES PATENT OFFICE.

BENEDICT WEIRICH, OF MIDDLEBURY, INDIANA, ASSIGNOR TO HIMSELF AND JACOB J. HOCHSTETTER, OF SAME PLACE.

IMPROVEMENT IN WINDMILLS.

Specification forming part of Letters Patent No. **164,623**, dated June 15, 1875; application filed March 6, 1875.

To all whom it may concern:

Be it known that I, BENEDICT WEIRICH, of Middlebury, in the county of Elkhart and State of Indiana, have invented an Improvement in Windmills, of which the following is a specification:

The nature of this invention relates to an improvement in windmills of that class which are so constructed as to be turned partially or entirely out of the wind when the latter increases beyond a given force or velocity; and it consists, generally, in the combination of a governing-sail geared with the turn-table, and hung on the sleeve which rotates on the standard, the turn-table being so sleeved on the latter as to be susceptible of an axial rotation thereon, derived from or actuated by the governor, as more fully hereinafter set forth.

Figure 1 is a perspective view of my windmill, showing the wheel in the wind, and in dotted outline the turn-table turned partially out of the wind by the force of the latter exerted upon the governing-sail. Fig. 2 is a vertical section at *x x*. Fig. 3 is a horizontal section of the turn-table at *y y*. Fig. 4 is a similar section of the sleeve and standard through *z z*.

In the drawing, A represents a tubular cast-iron standard, secured to the top of the tower, its diameter being contracted a short distance above its base to form a shoulder. B is a sleeve which slips over the standard A, and has a shoulder in its lower part, between which and that of the standard a series of friction-rollers, *a*, are interposed, so that the sleeve and its load can rotate freely thereon.

The upper end of the sleeve has a wide groove formed in it, and is kept from rising off the standard by a ring, *c*, sprung into a groove in the top of the standard, which ring partially covers the top of the sleeve; or the latter may be secured by pins or otherwise. C is a turn-table cast with a pendent flange to inclose the groove in the sleeve, and on the plane of the latter a corresponding groove is turned in the flange. In the grooves a series of friction-wheels, *b*, are placed, being of such length that one-half of each roller lies in the sleeve-grooves, and its other half projecting into the turn-table groove. A slot, *d*, is made in the turn-table, and another, *e*, in the flange of the sleeve, through which to introduce the rollers *b*. D is an ordinary wind-wheel with stationary sails, mounted on a shaft, *f*, which is journaled through a long bearing, *g*, on the turn-table. The inner end of the shaft carries a face-plate and wrist-pin, to which latter the pitman is strapped. E is the tail or vane, which is secured to the sleeve. F is a geared quadrant, which is journaled on an arm projecting from the side of the sleeve, at a right angle with the vane, and meshes with a mortised segment, G, under the bottom edge of the turn-table flange. H is a governor sail or vane, pendent from the quadrant, with its face to the wind, remaining pendent in a vertical plane until the force of the wind exceeds a given limit, when said vane will be swung up partly into the plane of the direction of the wind, causing the turn-table to be so rotated as to bring the sail-wheel partially out of the wind, thereby reducing its velocity. When the pressure of the wind exceeds a certain further limit, beyond which the safety of the apparatus would be endangered, the vane swinging up a little farther, the wheel is turned a little more, when the wind takes it edgewise, and swings it around into the plane of the wind, when it ceases to rotate. When the force of the wind decreases, the governor-vane, acting as a lever, swings back the sail-wheel into the wind again.

It will then be seen that the vane H acts as a governor to regulate the speed of the wheel in certain limits, beyond which it stops the mill altogether.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of the tubular standard A, sleeve B, carrying a guide-vane, and the turn-table C, carrying the wind-wheel, with the geared quadrant F, segment G, and a governor-vane, H, substantially as and for the purpose set forth.

2. The combination of the standard A, having the ring *c*, with the sleeve B, having the slot E, turn-table C, having the slot *d*, and friction-rollers *a b*, substantially as described.

BENEDICT WEIRICH.

Witnesses:

H. F. EBERTS,

C. E. HUESTIS.