A. ZWIEBEL.
Wind-Wheels.

No. 208,453. Patented Sept. 24, 1878.

Fig. 1.

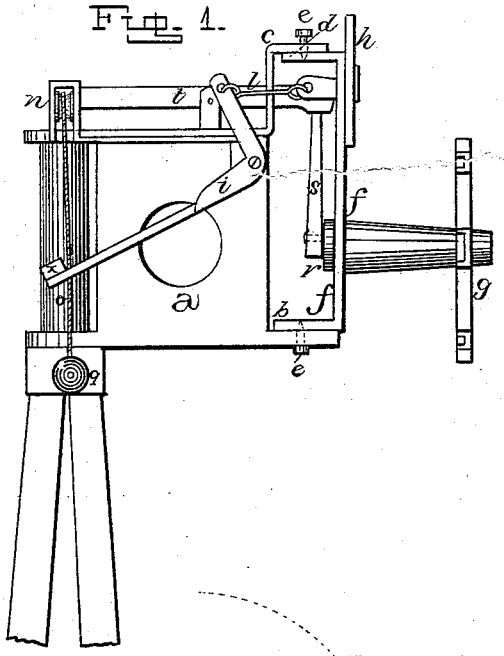


Fig. 2.

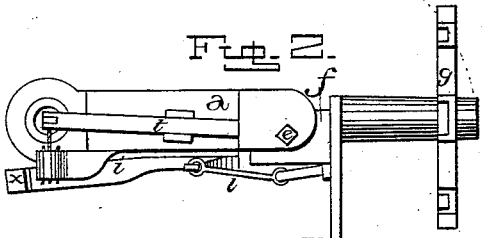


Fig. 3.

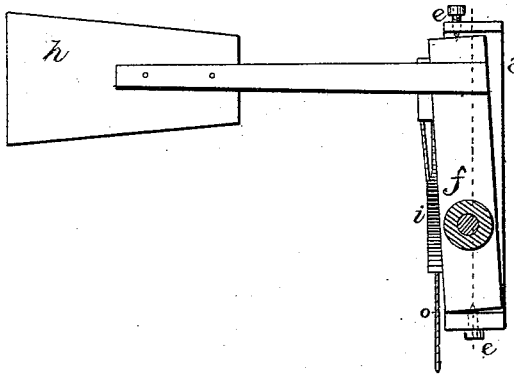
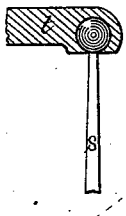
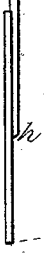


Fig. 4.





Witnesses:
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Inventor:
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per
F. A. Lehmann,
atty.

UNITED STATES PATENT OFFICE.

ANTON ZWIEBEL, OF BURLINGTON, WISCONSIN.

IMPROVEMENT IN WIND-WHEELS.

Specification forming part of Letters Patent No. **208,453**, dated September 24, 1878; application filed August 12, 1878.

To all whom it may concern:

Be it known that I, ANTON ZWIEBEL, of Burlington, in the county of Racine and State of Wisconsin, have invented certain new and useful Improvements in Wind-Wheels; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in windmills; and it consists in journaling the wind-wheel in a frame that is pivoted eccentrically to the rear edge of the revolving frame or turn-table, and connecting thereto a small vane that projects outward in a line with the wheel, whereby the wheel will swing back into the wind from its weight after having been blown around by the wind or pulled from below.

It further consists in the arrangement and combination of devices that will be more fully described hereinafter.

The accompanying drawings represent my invention.

Figure 1 is a side elevation of my invention. Fig. 2 is a plan view of the same, and Figs. 3 and 4 are details of the operating parts.

a represents the revolving frame or turn-table, made either of wood or metal, which is to always swing on the back side of the tower away from the wind. This frame may be made in a single piece when made from iron, so that the pivot, bearing, or plate *c* and the bearing for the pulley *n* will be cast with it. Projecting from the rear lower corner of this frame is a bearing, *b*, and secured to or forming a part of the upper edge of the frame is the bent plate or casting *c*, which forms a second bearing, *d*, a considerable distance above the upper corner of the frame. Passed through these two bearings are the two pivots *e*, which have sharp bearing-points to diminish the friction, and which can be screwed up to compensate for wear. These pivots are not in a line.

Pivoted between the two bearings *b d* is the frame *f*, which swings freely around through a quarter of a circle on the pivots *e*, and which has the wind-wheel *g* journaled upon it. Secured to the upper end of the frame *f* is the rigid vane *h*, which projects outward in a line with the wheel, and which serves to draw the wheel around out of the wind when it blows too hard, so that only the edge of the wheel will be presented to the wind.

The kind of wheel used may vary to suit the taste; but a solid rosette-wheel is preferred.

As the two pivots *e* are not in line with each other, and as the frame *f* is inclined slightly to one side, as soon as the force of the wind subsides the wheel will swing back into the wind from its own weight.

Pivoted to one side of the frame *a* is the L-shaped weighted lever *i*, which has its rear and shorter end connected by the rod *l* to the side of the frame *f*, so that as the frame swings around to move the wheel out of the wind the forward and longer end of the lever *i* is raised upward. Just above the front end of this lever *i* is secured the pulley *n* to the upper edge of the frame *a*, or to an arm or support projecting therefrom, and over which pulley passes the rope or chain *o*, having the weight *q* attached to its lower end, which weight serves to draw up the rope or chain when loosened below, so that it will drop down out of the way of the working parts of the mill.

The weight *x* on the longer end of the lever serves as a counter-balance to the vane, and keeps the vane from moving the wheel around too easily.

Fastened to the rear end of the wheel-shaft is the eccentric *r*, to which is attached the connecting-rod *s*. The upper end of this rod is formed into a ball, which is clamped or otherwise connected to the rear end of the lever *t*, which is pivoted upon the top of the frame *a* or plate *c* secured upon its top.

By eccentrically pivoting the frame *f* in its bearings, so that the wheel will swing back into the wind from its own weight as soon as released from below or the force of the wind has abated, the working parts of the mill are greatly reduced and simplified, and its effectiveness increased accordingly.

It is not necessary, however, that the two pivots should be out of line. When in line with each other the operation will be the same as above described; but there will then have

to be two weights used—one to pull the wheel around out of the wind, and a heavier one to pull it back again.

Having thus described my invention, I claim—

1. In a wind-wheel, the combination of the frame *a*, that swings on the rear of the mast, a frame, *f*, pivoted thereto between suitable bearings, and a rigid side vane secured to the frame *f*, so as to swing the frame carrying the wind-wheel *g* around to one side, substantially as shown.

2. In a windmill, the frame *f*, carrying the wind-wheel, having its ends pivoted out of line with each other, and having a rigid vane secured to it, substantially as described.

3. The combination of the frame *a*, having the frame *f* pivoted to it, wind-wheel vane, lever, and a weight, all arranged to operate substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 3d day of August, 1878.

ANTON ZWIEBEL.

Witnesses:
JOSEPH A. ZWIEBEL,
M. T. HAYES.