

C. F. A. LENTZ.
WIND-MILL.

No. 175,249.

Patented March 28, 1876.

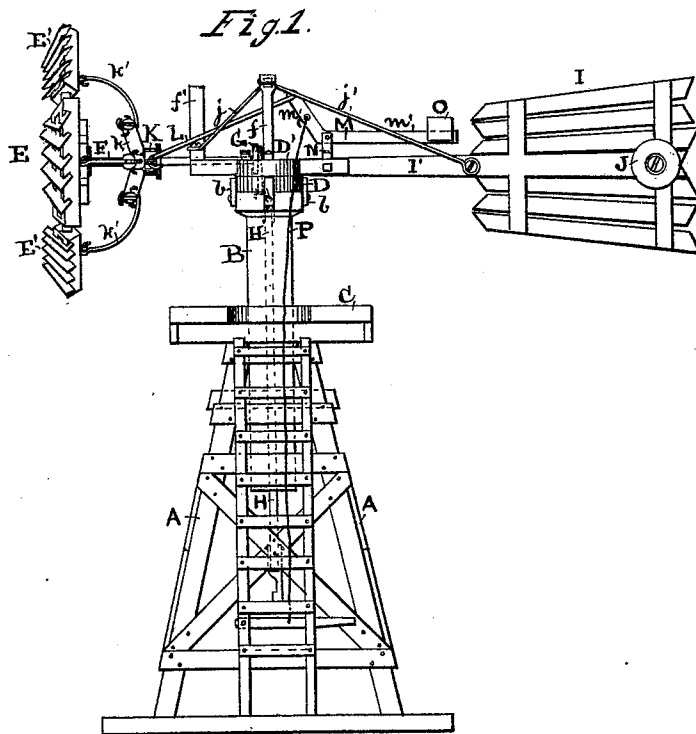


Fig. 2.

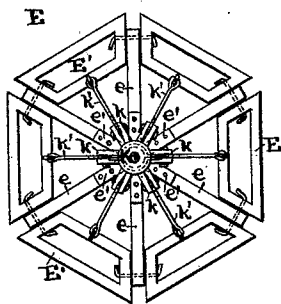
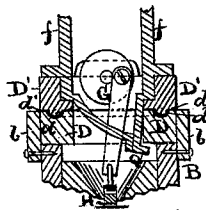


Fig. 3.



Witnesses.

D. G. Howard
L. Van Renswick.

Inventor:

Chas. G. A. Senter
(4) amuletum
over

UNITED STATES PATENT OFFICE.

CHARLES F. A. LENTZ, OF MAYVILLE, WISCONSIN.

IMPROVEMENT IN WINDMILLS.

Specification forming part of Letters Patent No. **175,249**, dated March 23, 1876; application filed January 25, 1876.

To all whom it may concern:

Be it known that I, CHARLES F. A. LENTZ, of Mayville, in the county of Dodge and State of Wisconsin, have invented certain new and useful Improvements in Windmills; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to windmills which are designed for use in pumping water and other like purposes; and the invention consists in certain improvements in the construction and arrangement of the parts, so as to adapt the mills for use in cold weather, and in parts of the country where the winter is so cold as to render the use of ordinary windmills inoperative through the freezing up of the turn-table, pump-rod, and its connections. It also consists in certain improvements in governing devices, whereby the speed of the wind-wheel is regulated automatically, and may be adjusted as required, all as hereinafter more fully set forth.

In the accompanying drawings, Figure 1 is a side elevation of my improved windmill. Fig. 2 is a view of the inner or rear side of the wind-wheel. Fig. 3 is a sectional view, showing the construction of the turn-table and its connections.

Referring to the parts by letters, A represents a supporting frame-work, which may be placed under ground or boxed in, so as to be protected from the weather and the action of frost during the winter months. B is a vertical tube or casing, inclosing and protecting the pump-rod. It extends down within the frame-work A and upward above it, as shown in the drawings. C is a platform, which may form the cover of the pit or opening in the ground, within which the frame-work A is placed. The upper end of the tube or casing B is enlarged, and forms a support for the lower or fixed portion of the turn-table D, cleats or removable fastenings *b* holding it securely in position. The upper portion of the turn-table D' has an annular flange or projecting ring, *d'*, on its under side, which fits a corresponding annular

groove, *d*, formed in the upper surface of the portion D. This annular projection and groove serve to hold the parts D D' of the turn-table in proper position, aided by a pendent foot, Q, the upper end of which is secured to the part D', and the foot travels beneath and in contact with the inner under surface of the portion D, all being arranged within the turn-table, and fully protected from the influence of the weather. I thus form a pivot for the wind-wheel and vane which is protected from rain and snow, and is, therefore, not liable to become inoperative through freezing up in cold weather. E represents the wind-wheel, formed of a series of slatted sections, E', which are pivoted to and between spokes or arms *e*, the inner ends of which are secured to metal hub-plates *e'*. F is the shaft, to the end of which the wind-wheel is keyed or otherwise securely fastened. It is journaled in suitable bearings in the turn-table D'. *f f'* are two uprights or standards, also secured to and forming part of the turn-table D'. G is a crank on the inner end of the shaft F, which operates the pump-rod H, the latter passing vertically down through the turn-table and protecting box or tube B. I is the tail or vane, constructed of slats, as shown, its stem I' being rigidly secured to the turn-table D', and provided with an adjustable balance-weight, J, at or near its outer end. *j j'* are brace-rods, secured at one end to the top of the standard *f*, their other ends being secured to the stem I' and upright *f'*, respectively. K is a sleeve on the shaft F, having a series of radial arms, *k*, the outer ends of which are shackled to or connected with the pivoted sections E' of the wind-wheel by bent rods K'. The inner end of the sleeve K is connected by a rod, L, with the short arm *m* of a lever, M, said lever being pivoted to an upright or standard, N, secured to the turn-table D'. The long arm *m'* of the lever carries an adjustable weight, O, which may be slid back and forth. P is a cord, wire, rope, or chain, the upper end of which is secured to the short arm *m* of lever M. Its other end may be passed down through the turn-table and box B, so as to be within convenient reach of the hand.

The operation is as follows: The wind-wheel and vane, being secured to the turn-table, as

described, will, of course, turn with it, the vane keeping the wheel in proper position to be operated by the wind. Should the relative position of the wheel and vane from any cause be disturbed, the balance can be restored by the adjusting balance-weight J on the vane. Should the wind blow too hard, the sections E' will turn on their pivots, thereby drawing the sleeve K toward the wheel, and, through the connecting-rod I, raising the weighted arm of the lever M, the weight O acting as a governor by preventing a too sudden motion of the wheel-sections, and bringing the latter back into position to be acted on by the wind when its force decreases. The position of the wind sails or slats may also be regulated by means of the cord or chain P, so as to make the wheel turn slow or cease to operate altogether, as desired. The pivot upon which the wheel and vane turn is arranged within the upper and lower parts D D' of the turn-

table, so as to be protected from rain or snow, and the pump-rod passes down through the turn-table and box B, so as to be protected also, so that the liability of the parts becoming inoperative through the action of frost is obviated.

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

The combination of the turn-table D D', constructed as described, with the foot Q, and tube or box B, and frame A, substantially as and for the purpose specified.

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

CHAS. F. A. LENTZ.

Witnesses:

M. V. FAMORAY,

HENRY F. DASENBROCK.