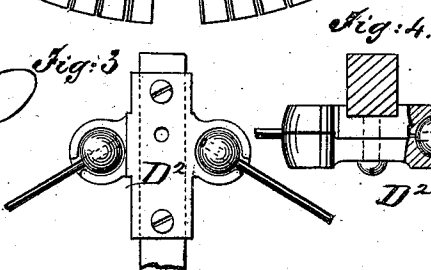
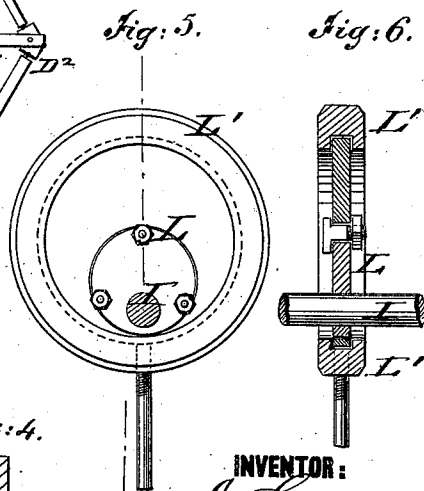
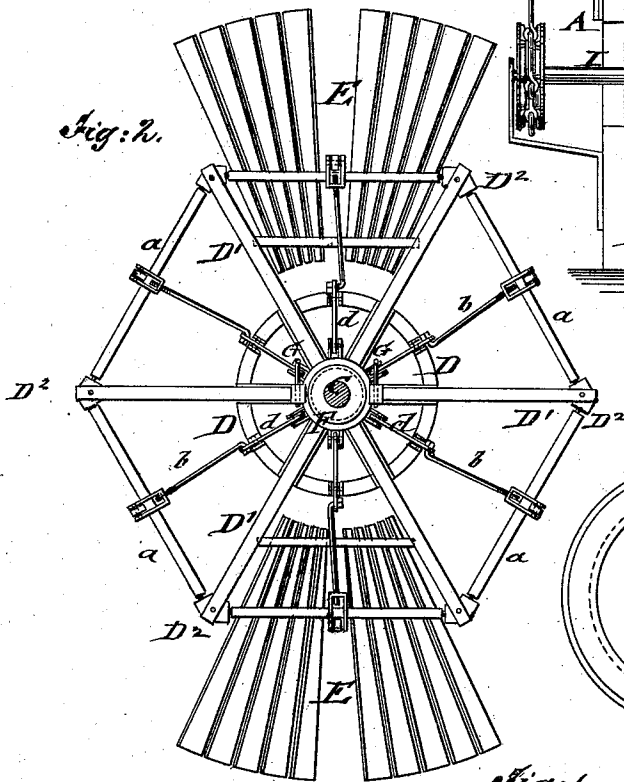
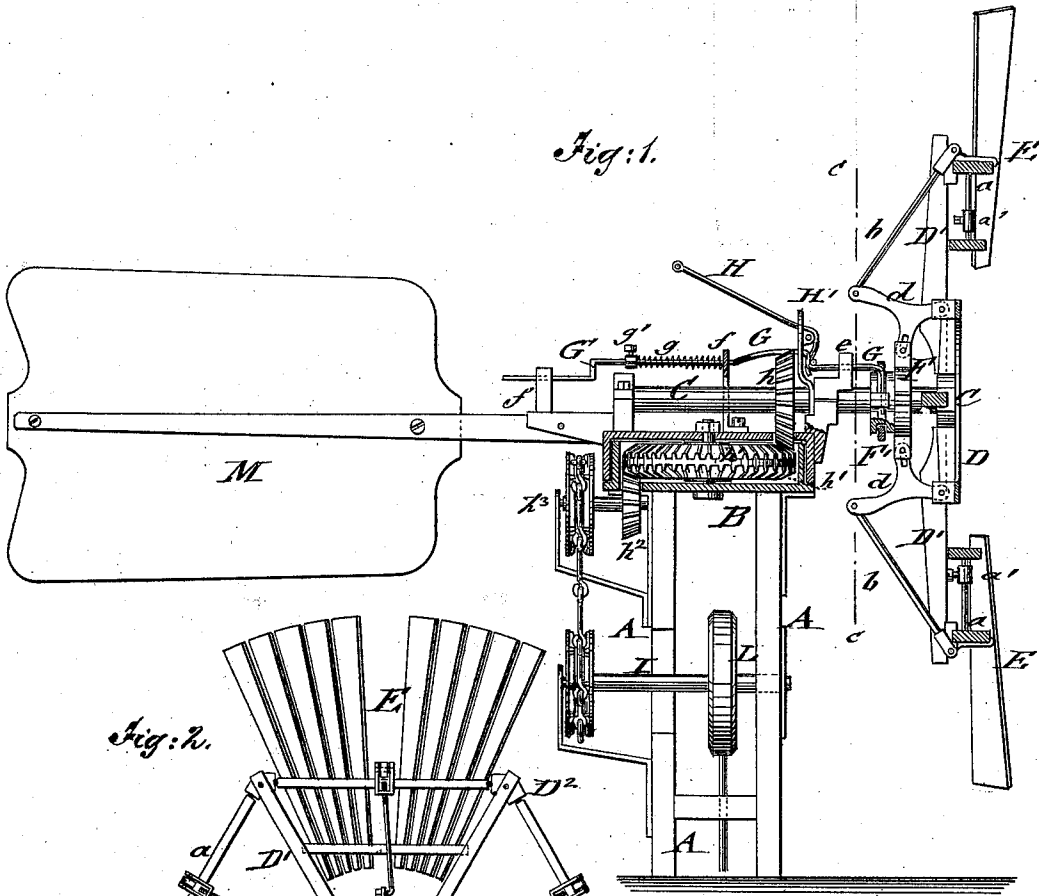


A. LOWRY.
WIND-MILL.

No. 173,552.

Patented Feb. 15, 1876.



WITNESSES:

Chas. Nide
A. F. Perry

INVENTOR:

A. Lowry
Munn & Co
ATTORNEYS.

UNITED STATES PATENT OFFICE.

ALBERT LOWRY, OF MARSEILLES, ILLINOIS.

IMPROVEMENT IN WINDMILLS.

Specification forming part of Letters Patent No. **173,552**, dated February 15, 1876; application filed June 12, 1875.

To all whom it may concern:

Be it known that I, ALBERT LOWRY, of Marseilles, in the county of La Salle and State of Illinois, have invented a new and Improved Windmill, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a sectional side elevation of my improved windmill; Fig. 2, a rear view of the wheel, with shaft in section, on line *c c*, Fig. 1; Figs. 3 and 4, detail view and section of modification of swivel-connection of wheel-sections and arms; and Figs. 5 and 6, front view and section of the pump-rod eccentric.

Similar letters of reference indicate corresponding parts.

The invention will first be described in connection with drawing, and then pointed out in the claims.

In the drawing, A represents the supporting frame or standards of my improved windmill, which carry the turn-table B. The wheel-shaft C revolves in bearings of the top part of the turn-table, and carries at the front end the metallic spider-frame D, having radial extension-arms D¹, to the ends of which are swiveled, by blocks and balls D², as shown in Figs. 3 and 4, the swinging wheel-sections E. The lateral swivel-arms *a* of the wheel-sections E are connected by pivoted rods and bell-crank levers *d*, fulcrumed to the circumference of the spider-frame D, with the slide-head F, that is guided in rectilinear direction on the wheel-shaft, but revolved at the same time with the shaft. A brake-collar, F', is fitted to an annular groove of slide-head F, and attached to the ends of the brake-stirrup G, that slides in guides *e* of the front shaft-bearing, and is operated upon by a governing-lever, H, fulcrumed to a standard, H', for adjusting the exact position of the wheel-sections to the speed desired, and throwing the wheel entirely out of the wind, as desired. The brake-stirrup G slides, by its rear extension-rod G', in guide-standards *f*, and is acted upon by a spiral spring, *g*, the tension of which is regulated by an adjustable collar, *g'*, so that thereby the uniform speed of the wheel, at varying velocities of the wind, is obtained.

The power is transmitted from the wheel-

shaft by a bevel-wheel, *h*, to a double bevel-wheel, *h*¹, placed inside of the housed turn-table, and gearing with a bevel-wheel, *h*², of an intermediate shaft, *h*³, from which, by pulleys and chain or belt, the horizontal driving-shaft I is set in motion.

Shaft I works by an adjustable eccentric, I, with circumferentially-fitted slide-ring L', the pump-rod, or any other machinery that may be connected thereto.

The stroke of the pump-rod may be regulated by adjusting the eccentric to greater or less eccentricity on the shaft, as shown in detail in Figs. 5 and 6.

The governing-vane M, attached to the rear end of the wheel-shaft, holds the wheel, in connection with the turn-table, against the wind, while adjustable governing-weights *a'* of the swiveled wheel-sections adjust the motion of the same in the wind, producing a windmill of regular and reliable working capacity.

I am aware of the patents granted to Mabie and Little, dated, respectively, May 2, 1871, and April 2, 1872, and I therefore fully disclaim the same, and confine my invention to the particular construction shown and described.

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

1. The combination of the wheel-sections E, swivel-arms *a*, rods *b*, bell-cranks *d*, slide-head F, having annular groove, brake-collar F', stirrup G, guides *e f*, support H', lever H, spring *g*, and stop *g'*, substantially as described, and for the purpose specified.

2. The combination of the wheel-shaft, carrying bevel-wheel *h*, with the double bevel-wheel *h*¹, contained in the housed turn-table, the wheel *h*², and the chain-gear, as and for the purpose described.

3. The combination of the radial wheel-arms, having swivel-sockets D², with the arm *a*, having pivots fitting therein, and the wheel-sections E, having adjustable weights *a'*, substantially as and for the purpose described.

ALBERT LOWRY.

Witnesses:

JOHN NEFF,
GENOA S. BRUNDAGE.