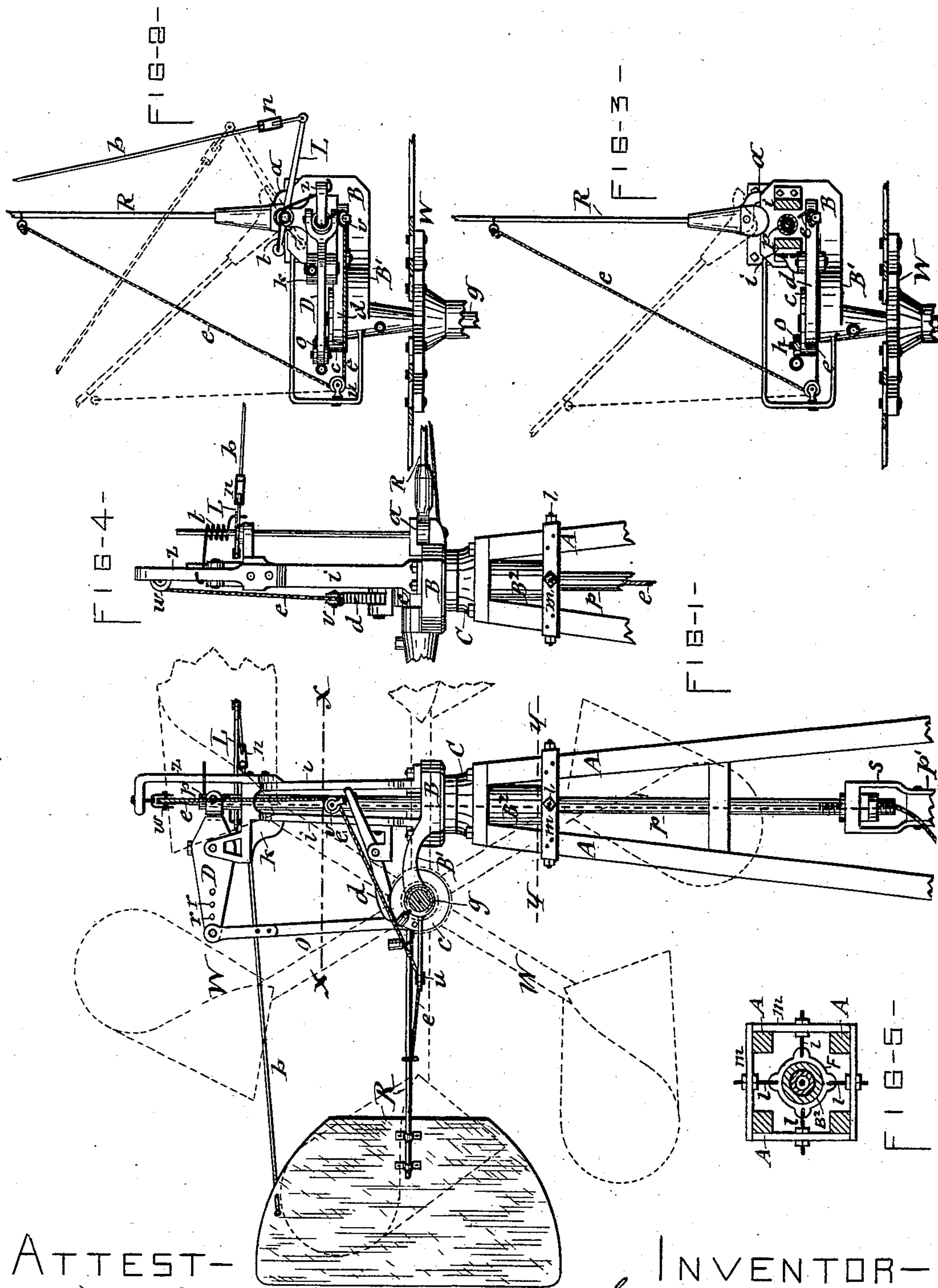


(No Model.)

E. F. LESTER.
WINDMILL.

No. 312,134.

Patented Feb. 10, 1885.



ATTEST-

Wm. C. Raymond
C. Beardslee

INVENTOR-

Elisha F. Lester
per H. L. Lanes & H. H. H.
Atty.

UNITED STATES PATENT OFFICE.

ELISHA F. LESTER, OF CHITTENANGO, NEW YORK.

WINDMILL.

SPECIFICATION forming part of Letters Patent No. 312,134, dated February 10, 1885.

Application filed May 12, 1884. (No model.)

To all whom it may concern:

Be it known that I, ELISHA F. LESTER, of Chittenango, in the county of Madison, in the State of New York, have invented new and useful Improvements in Windmills, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention consists in improved means for controlling the movement of the wind-wheel, as hereinafter more fully described, and specifically set forth in the claim.

In the annexed drawings, Figure 1 is a front elevation of a windmill embodying my improvements, the wind-wheel being shown in dotted lines, to present more fully some of the salient features of the invention. Fig. 2 is a top plan view of the same. Fig. 3 is a longitudinal transverse section on line *x x*, Fig. 1. Fig. 4 is a side view of the top portion of the tower, the turn-table, and parts connected therewith; and Fig. 5 is a transverse section on line *y y*, Fig. 1.

Similar letters of reference indicate corresponding parts.

A represents the usual tower on which the windmill is mounted.

B denotes the turn-table, which is seated on the bed-plate C and adapted to rotate thereon. Said turn-table I provide with an additional lateral support by forming it with a downward extension, B², which is journaled at its lower end in a collar, F, sustained central and adjustable in the tower A by means of rods *l l*, extended radially from the collar through cross-bars *m*, attached to the tower, as best seen in Fig. 5 of the drawings, the outer ends of said rods being screw-threaded, and provided with nuts at opposite sides of the cross-bars *m*, by means of which nuts the collar F can be adjusted in its place to sustain the turn-table extension B² vertically and central in the tower.

From the turn-table B projects a rigid arm, B', on which is journaled the shaft *g* of the wind-wheel W, said shaft projecting at the rear of the arm B', and having secured to its protruding end a crank, *h*, which in this case is represented in the form of a wrist-pin on a wheel, *c*, fixed to the shaft *g*. From the turn-table rises a standard, *i*, having on its upper end a laterally-projecting arm, *k*, on which is

fulcrumed a walking-beam, D, one end of which is connected with a tubular plunger, *p*, which is extended down through an eye in the center of the turn-table B and is connected with the ordinary plunger, *p'*, by a swivel, *s*, which allows the mill to turn on its vertical axis without disturbing the lower plunger, *p'*.

o is a pitman connecting the crank *h* with the walking-beam D, which latter I provide with a series of eyes, *r r*, at various distances from the fulcrum of the walking-beam, for the attachment of the pitman. By shifting said attachment on the walking-beam I vary the length of the stroke of the plungers *p p'* as may be desired.

R represents the rudder or vane pivoted on the turn-table B, so as to swing at right angles to the plane of the wind-wheel W. Said rudder is provided at its aforesaid pivotal connection with a shoulder or stop, *a*, which, by its bearing on the turn-table limits, the movement of the rudder in one direction, so as to prevent its passing a line at right angles to the plane of the wind-wheel, as illustrated by full lines in Figs. 2 and 3 of the drawings, which position may be termed its "normal" position, and it is yieldingly held there by means of a spring-restrained lever, L, pivoted on a lateral projection on the standard *i*, and connected with the rudder or vane R by a rod, *b*. A suitable spring, *t*, bearing on the lever, causes the same to hold the rudder in its normal position.

d represents a brake-lever fulcrumed on a bracket attached to the standard *i*, and bearing with one of its ends on the periphery of the wheel *c*, hereinbefore mentioned, and having a sheave, *v*, connected to its opposite end. A rope or chain, *e*, is connected to the rudder R at the side opposite that to which the rod *b* is connected. Said rope or chain passes around a sheave, *u*, sustained in front of that end of the brake-lever *d* which bears on the brake-wheel *c*. From the sheave *u* the rope or chain *e* passes around the sheave *v* on the lever *d*, and thence over a sheave, *w*, hung on an arm, *z*, which projects upward from the top of the standard *i* and sustains the aforesaid sheave over the end of the tubular plunger *p*, through which the rope or chain *e* is extended to the foot of the tower A. By pulling on the

said rope or chain the rudder R is swung
around toward a position parallel with the
plane of the wind-wheel, and by the pressure
of the wind on the rudder the mill is turned
5 so as to cause the wind-wheel to be presented
edgewise toward the wind-current and thus
lose the effect thereof. Simultaneously with
the aforesaid action of the rudder the rope or
chain *e* causes the brake-lever *d* to press on the
10 wheel *c*, and by the friction thereof check the
movement of the wind-wheel.

Having described my invention, what I claim
as new is—

15 In combination with the turn-table B, stand-
ard *i*, tubular plunger *p*, wheel W, rudder R,
and the spring-restrained lever L, arranged to
hold the rudder in its normal position, as shown,
the brake-wheel *c*, rigidly attached to the axis
of the wheel W, the brake-lever *d*, bearing with

one end on the brake-wheel, the sheave *v*, con- 20
nected to the opposite end of the brake-lever,
the sheave *w*, hung above the plunger *p*, the
sheave *u*, sustained in front of the lever *d*, and
the rope or chain *e*, connected to the rudder
and extended around the sheaves *u*, *v*, and *w*, 25
and down through the plunger *p*, all combined
substantially in the manner specified and
shown.

In testimony whereof I have hereunto signed
my name and affixed my seal, in the presence 30
of two attesting witnesses, at Syracuse, in the
county of Onondaga, in the State of New York,
this 15th day of April, 1884.

ELISHA F. LESTER. [L. S.]

Witnesses:

FREDERICK H. GIBBS,
C. BENDIXON.