

(No Model.)

2 Sheets—Sheet 1.

L. D. ABRAMS. WIND WHEEL.

No. 326,086.

Patented Sept. 15, 1885.

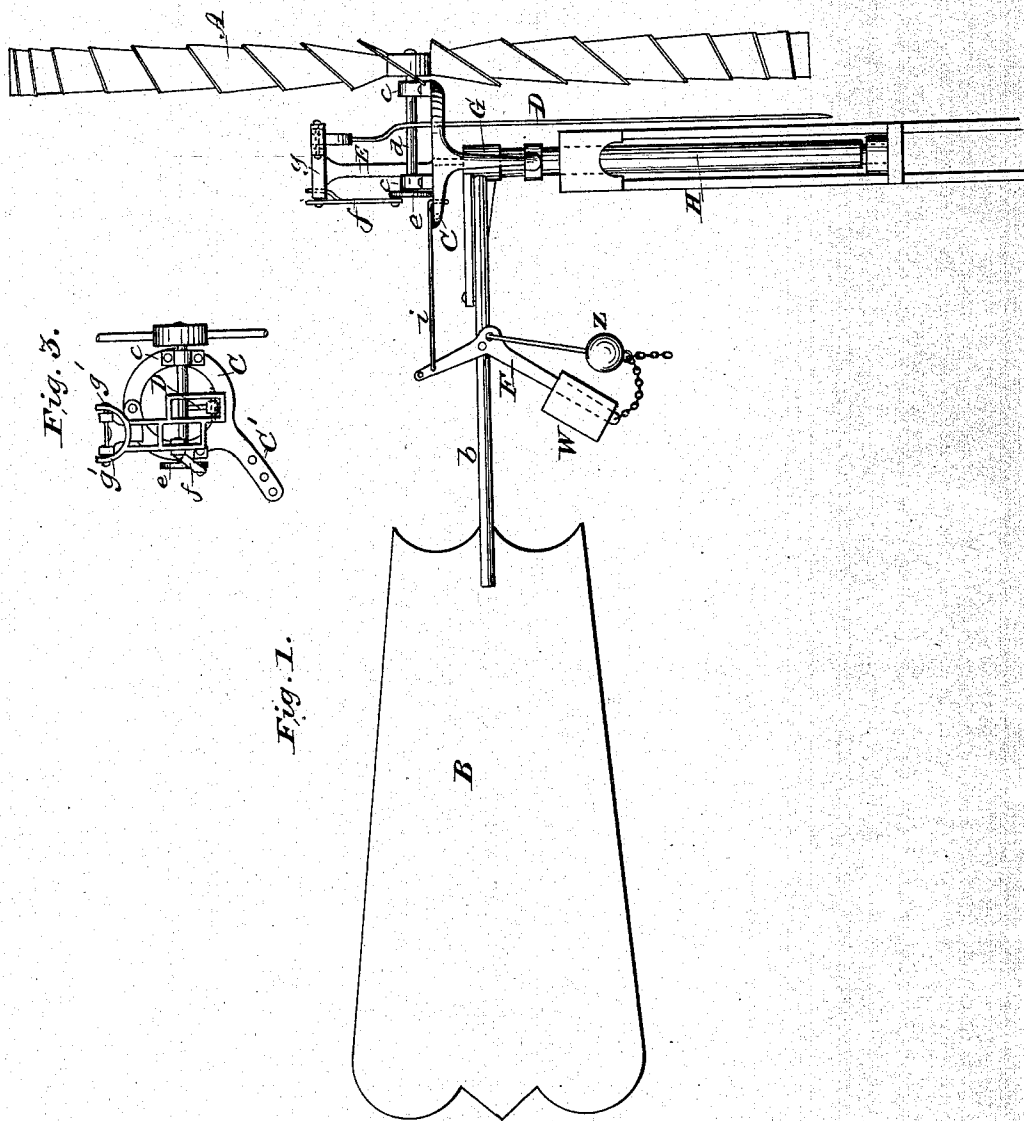


Fig. 2.

Fig. 1.

Witnesses:

J. C. Dreht
Otto J. Stein

Inventor:

Lorenzo D. Abrams,
By Allan Rutherford
Attorney.

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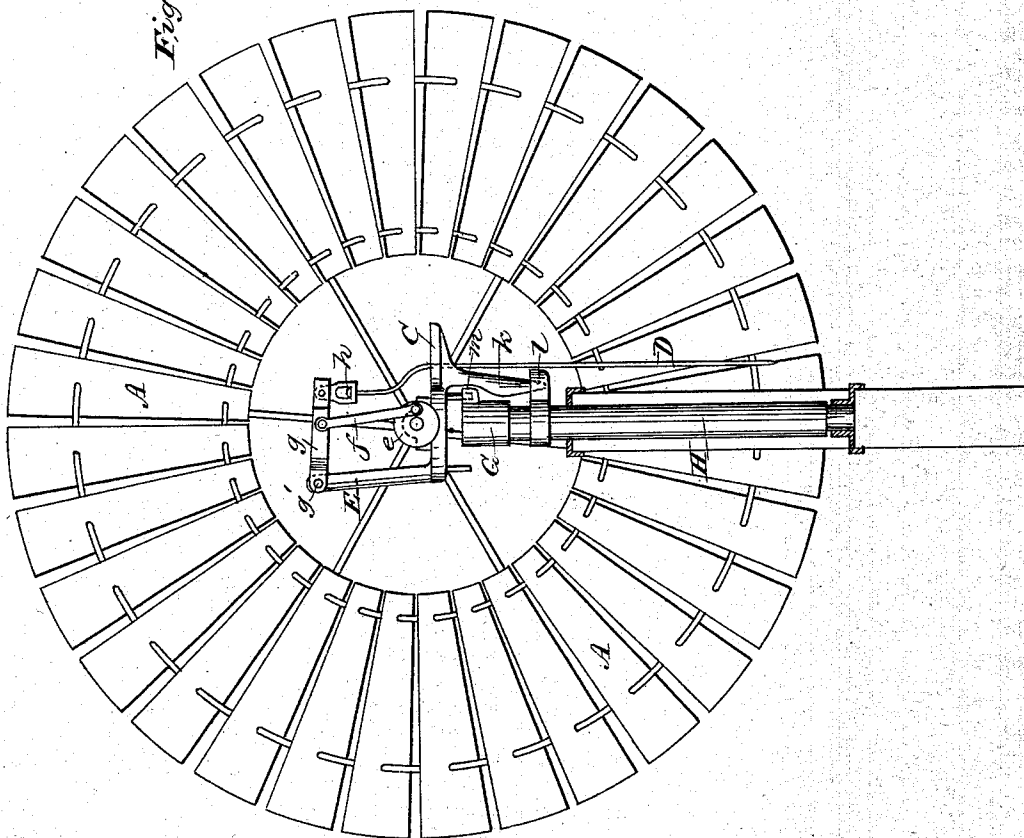
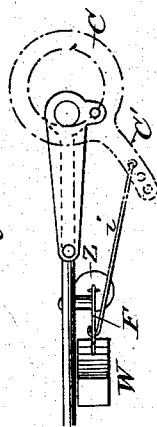


Fig. 4.



Witnesses:

T. C. Brecht
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Inventor:

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UNITED STATES PATENT OFFICE.

LORENZO D. ABRAMS, OF TUSCOLA, ILLINOIS.

WIND-WHEEL.

SPECIFICATION forming part of Letters Patent No. 326,086, dated September 15, 1885.

Application filed November 22, 1884. (No model.)

To all whom it may concern:

Be it known that I, LORENZO D. ABRAMS, a citizen of the United States, residing in the town of Tuscola, in the county of Douglas, in the State of Illinois, have invented certain new, useful, and important improvements upon Windmills, of which the following specification is a full, clear, and exact description.

The object of this invention is to insure the safety of windmills during heavy gales, or when struck by sudden gusts of wind; also, to prevent jerking motions of the wheel back and forth by the action of the pump-rod, and to increase the effectiveness of the governor.

I journal the wheel-shaft centrally upon the turn-table, and pivot the turn-table eccentrically upon the revolving tube. I provide that the governor may be adjusted so that the vane will hold the wheel squarely to the wind with certain predetermined force. I provide that to the extent of that predetermined limit the wheel will receive the full force of the wind. In case the wind, either in gusts or in a gale, reaches a force beyond that limit, I provide that the wind force shall oscillate the turn-table upon its eccentric-pivot to turn the wheel edge to the wind.

In the drawings, Figure 1 is a side elevation, and Fig. 2 a front elevation, of the invention. Fig. 3 is a detail view of the turn-table, and Fig. 4 a detail view of the turn-table, vane-shaft, and governor connected.

A designates the wind-wheel, B the vane, *b* the vane-shaft, C the turn-table, and *d* the axle of the wind-wheel journaled in bearings *c c*, arranged centrally thereon.

e is a crank-arm upon the shaft *d*, and *f* the pitman, which connects said crank with a lifting-bar, *g*. The lifting-bar *g* is hinged at *g'* upon the bracket E, which is rigid with the turn-table.

D represents the long pitman of the pump-rod, (not shown,) attached by a swivel connection, *h*, to the lifting-bar, in a line directly above the pintle *k*, which supports the turn-table.

G shows the casting to which the vane-shaft is rigidly attached. The casting is rigidly secured to the revolving tube H, within which reciprocates the pump-rod, and has steps *l m*,

to support the pintle and to secure the table to the casting in a firm upright condition.

F represents an elbow-lever for the governor, hinged to the vane-shaft. The upper arm is connected by the rod *i* to the arm C' of the turn-table, and both arms are perforated to admit of adjustment. On the lower arm is an adjustable sliding weight, W. Attached to the lever F, near its pivot, hangs a rod, upon which is another sliding weight, Z. This auxiliary weight is attached by a chain to the lower arm of the lever, and is not called into action except when there is a very high wind or a sudden gust of wind.

It will be seen that this mill is thrown out of gear during a heavy gale by the wheel being turned around until its edge is to the wind; but when the wind goes down to a velocity which makes it safe for the machinery to work, then the governor will bring the wheel back to face the wind. The leverage gained by mounting the turn-table eccentrically on its pivotal support is not sufficient to turn the wheel when it is headed to a moderate gale; but as soon as the wind becomes dangerously high it turns the wheel and gives safety, as it ceases to revolve when its edge is to the wind. The same is the case when a heavy blast of wind strikes it, as then the wheel will not revolve before it is safely turned, in which position its sharp edge is firmly held by the governor until the danger is over, and here the combination of the adjustable weights is believed to be an improvement of great value.

I claim as new and desire to secure by Letters Patent—

The combination, with the eccentrically-mounted turn-table C, of the vane B, the connecting-rod *b*, the lever F, and rod *i*, and the adjustable weights W and Z, connected by a chain, as described, the whole adapted to operate substantially in the manner and for the purposes set forth.

In witness whereof I hereunto set my hand, in presence of two attesting witnesses, this 17th day of November, A. D. 1884.

LORENZO D. ABRAMS.

Witnesses:

CHAS. G. ECKHART,
A. W. WALLACE.