

(No Model.)

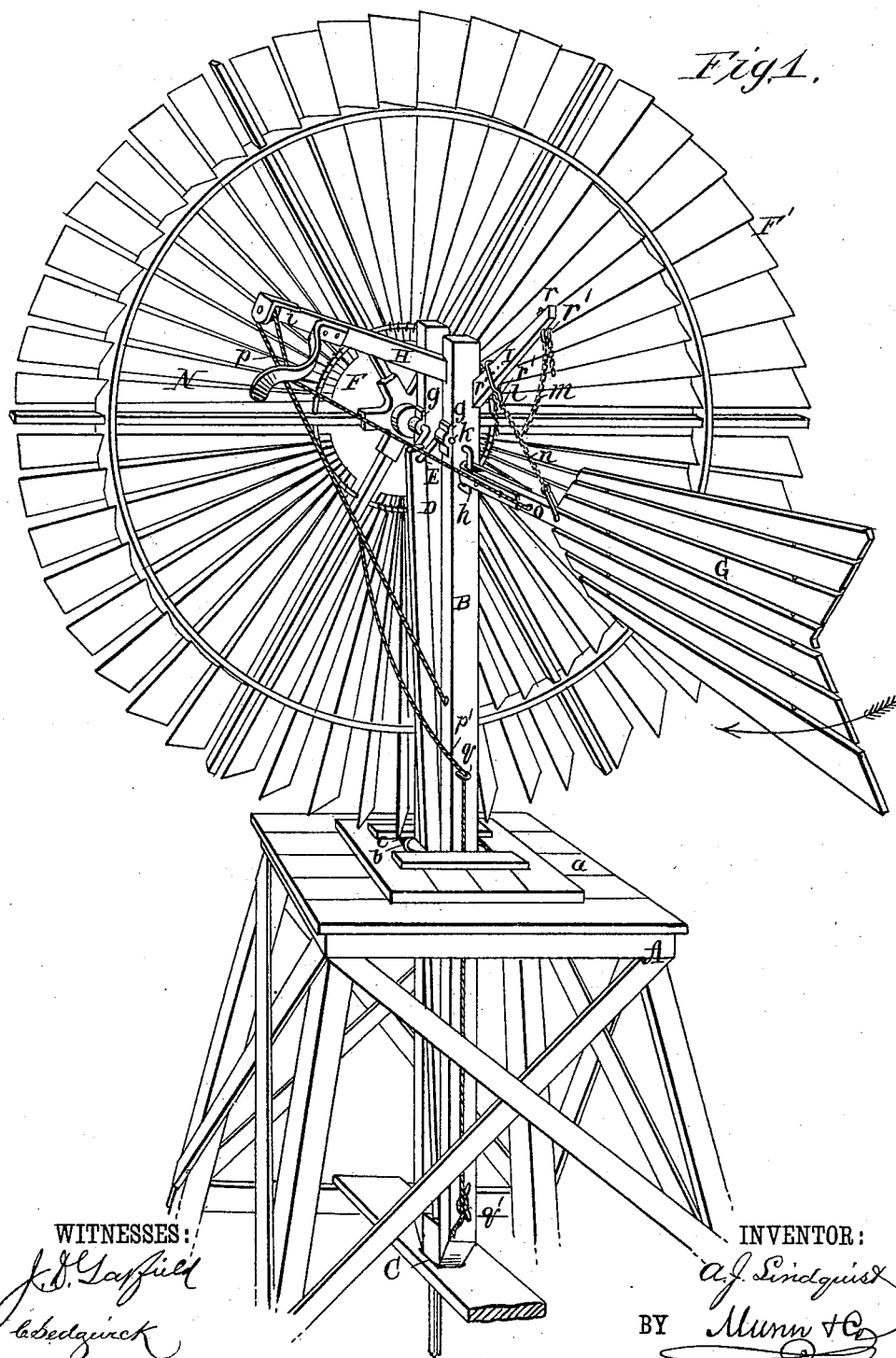
2 Sheets—Sheet 1.

A. J. LINDQUIST.

WINDMILL.

No. 346,665.

Patented Aug. 3, 1886.



WITNESSES:

J. S. Gayfield
A. J. Lindquist

INVENTOR:

A. J. Lindquist
BY *Munn & Co*
ATTORNEYS.

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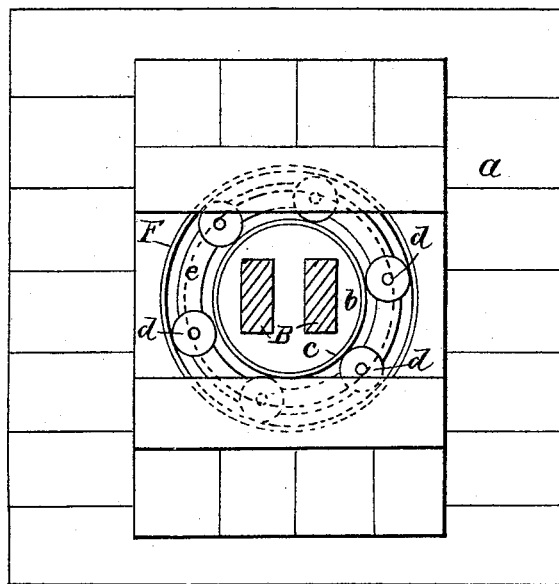
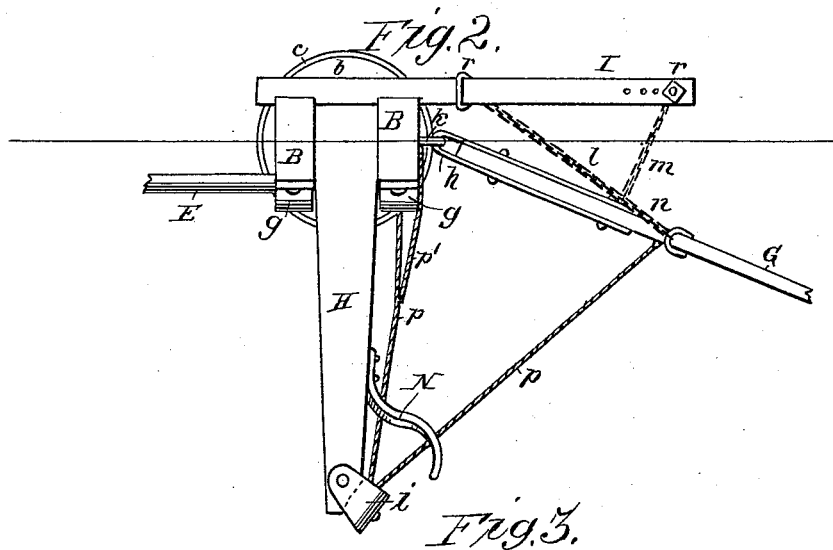
2 Sheets—Sheet 2.

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No. 346,665.

Patented Aug. 3, 1886.



WITNESSES:

J. D. Garfield
C. Sedgewick

INVENTOR:

BY *A. J. Lindquist*
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UNITED STATES PATENT OFFICE.

ANDREW J. LINDQUIST, OF BERTRAND, NEBRASKA.

WINDMILL.

SPECIFICATION forming part of Letters Patent No. 316,665, dated August 3, 1886.

Application filed April 6, 1886. Serial No. 197,955. (No model.)

To all whom it may concern:

Be it known that I, ANDREW J. LINDQUIST, of Bertrand, in the county of Phelps and State of Nebraska, have invented a new and Improved Windmill, of which the following is a full, clear, and exact description.

My invention relates to the construction of a windmill designed more especially for use in the pumping of water, but applicable to many other uses in the mechanic arts; and the invention consists of other details of construction and combinations of parts, to be hereinafter more fully described, and specifically pointed out in the claim.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of my improved windmill. Fig. 2 is a plan view of the revolving standard and connections, and Fig. 3 is a sectional plan view taken just above the platform.

In constructing the mill forming the subject-matter of this application, and illustrated in the drawings above referred to, I provide a main frame, A, which serves as a support for the central revolving standard or tower, B, said tower B being, as usual, mounted in a step, C, and passing up through an aperture formed in the center of the platform *a*, carried by the frame A. Just above the level of the platform *a* the standard or tower B is provided with a drum, *b*, that is faced with a metallic collar, *c*, that bears upon anti-friction wheels *d d*, carried by a ring, *e*, that is arranged about the drum *b*, the wheels *e* bearing upon a hoop, F, arranged as best shown in Fig. 2.

As usual, the standard or tower B is formed of two vertical posts that are firmly united at the top and bottom, and spaced so as to leave a recess within which the pitman D works. Upon one side of the vertical posts constituting the revolving standard or tower there are secured boxes *g g*, which serve as the bearings for a crank-shaft, E, upon which the wheel F' is mounted, and from this construction it will be seen that the axis of the wheel is at one side of the axis of the revolving standard or tower B. The inner end of the vane

G is provided with a metallic strap, *h*, through which there is passed a staple, *k*, that is firmly secured to one of the posts of the revolving standard, the construction being such that the vane is free to swing upon its connection with the standard. Above the pivotal connection of the vane the standard B is provided with two projecting arms, one of which, H, extends in a line parallel with the wheel, while the other, I, extends at right angles to the wheel or directly to the rear. To the arm I there are connected two chains, *l* and *m*, which branch from a single chain, *n*, that is secured to the beam *o* of the vane G, the adjustment of the vane being controlled by the position of the chains *l m* upon the arm I, said arm carrying links *r r*, formed with hooks *r'*, to which the chains are secured, or being provided with any other form of adjustable holding device that will suit the requirements of the case.

The arm H carries a sheave, *i*, over which there is passed a chain, *p*, one end of which is secured to the beam of the vane while the other is fixed to one of the vertical posts of the revolving standard or tower, the length of the chain being adjusted so that the vane cannot swing out beyond the position shown best in Fig. 2—that is, cannot swing so as to extend at right angles to the wheel. To the chain *p* there is secured a chain, *p'*, as shown in Fig. 1, said chain passing down through an eye, *q*, carried by the standard, to a cleat, *q'*, where it is secured, the arrangement being such that by pulling down on the chain *p'* the vane G will be drawn up against the spring-arm N, carried by the arm H, this drawing up of the vane being done when it is desired to throw the windmill out of action.

In practice I prefer to mount the wheel about three inches to the left of the axis of the revolving tower, so that when the wind becomes too strong the wheel will turn out of the wind. The chain *l* should be adjusted upon the arm I so that the vane will project out about as shown in Fig. 1—that is, if the wheel over-speeds before it turns out of the wind, the chain is moved down the arm I toward the tower B, and a link or two given out to increase the length of the chain. If it is desired to have the mill run fast, the chain *m* is shortened, and when it is desired that the mill

should run slower—that is, be more easily turned out of the wind—the chain *m* is lengthened and its supporting-link moved down toward the revolving tower D, and when it is
5 desired to throw the mill out of use the vane G is carried up against the spring-arm N.

From the construction described it will be seen that the mill is entirely automatic, and that having been properly set will thereafter
10 practically regulate itself.

For the purpose of easy transportation, the wheel might be made in sections.

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

The combination, with the rotating tower or shaft having the arms H I, projecting at right

angles to each other, the pulley *i* on the arm H, and the hooks *r r'* on the arm I, of the wheel, the crank-shaft on which the wheel is
20 mounted, the staple *k* on the tower below the arm I, the vane G, having a beam, *o*, provided with the strap *h*, engaging the said staple, the chain *n*, connected at its lower end to the vane,
the chains *l m*, engaging the hooks *r r'* and con- 25
nected to chain *n*, the rope *p*, secured to the vane, passed over the pulley *i*, and secured to the tower or shaft, and the operating-rope *p'*, secured to the rope *p*, substantially as set forth.

ANDREW J. LINDQUIST.

Witnesses:

JOHN O. HENDRICKS,

J. R. SHRECK.