

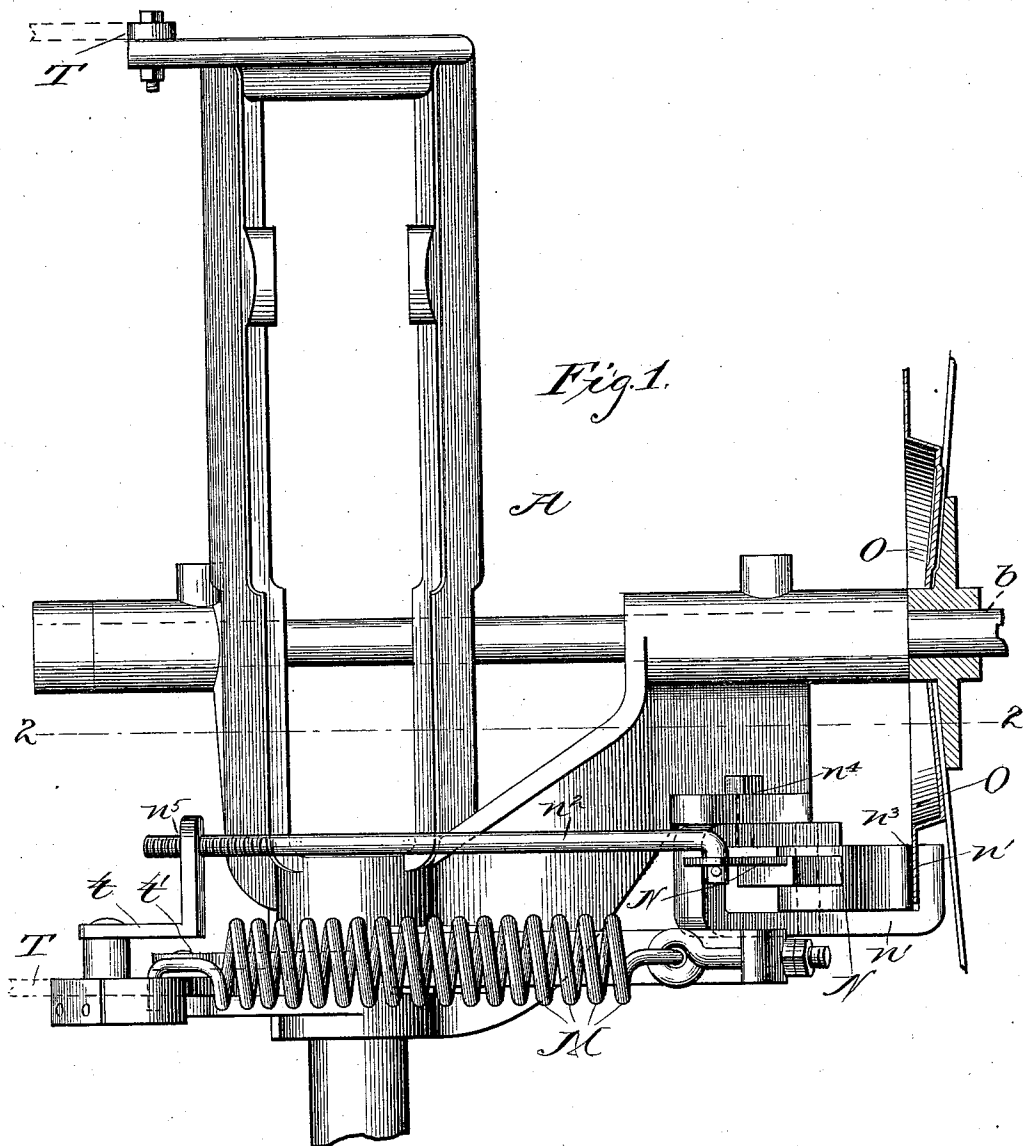
(No Model.)

2 Sheets—Sheet 1.

G. M. ALLEN.
WINDMILL GOVERNOR.

No. 466,482.

Patented Jan. 5, 1892.



Witnesses
W. C. Corlies
Martin H. Olsen,

By

Inventor
George M. Allen
Lyons & Co.
his Atty.

(No Model.)

2 Sheets—Sheet 2.

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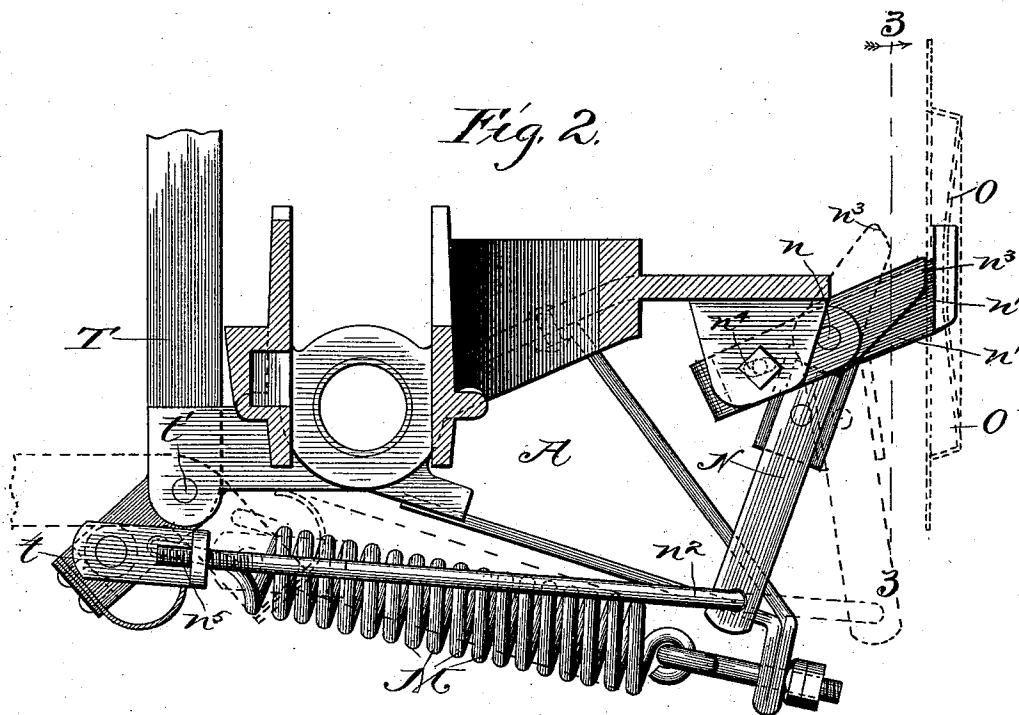
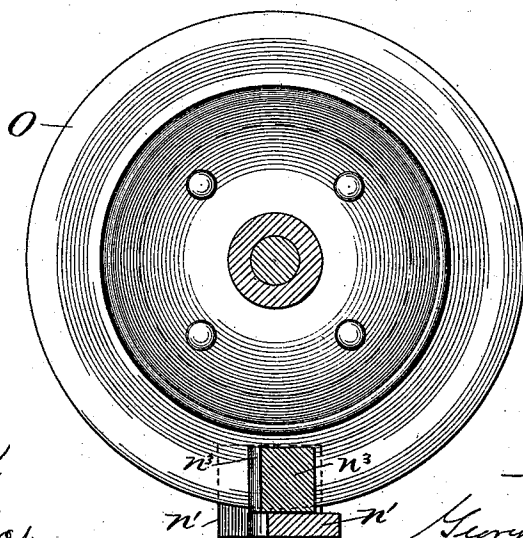


Fig. 3.



Witnesses:
W. C. Collins
Martin J. Olsen.

Inventor
George M. Allen
By, Lyman H. Allen
his Atty.

UNITED STATES PATENT OFFICE.

GEORGE M. ALLEN, OF BELOIT, WISCONSIN.

WINDMILL-GOVERNOR.

SPECIFICATION forming part of Letters Patent No. 466,482, dated January 5, 1892.

Application filed August 31, 1891. Serial No. 404,226. (No model.)

To all whom it may concern:

Be it known that I, GEORGE M. ALLEN, a citizen of the United States of America, residing at Beloit, in the county of Rock and State of Wisconsin, have invented certain new and useful Improvements in Windmill-Governors, of which the following is a specification.

Referring to the accompanying drawings, wherein like reference-letters indicate like parts, Figure 1 is a side elevation; Fig. 2, a horizontal plan section in line 2 2 of Fig. 1, showing jaws closed in full lines and open in dotted lines; and Fig. 3, a detail cross-section in line 3 3 of Fig. 2.

This invention is especially designed for that class of windmills in which, through the action of a pivoted tail-vane and a weight or spring of varying resistance, the wind-wheel, when the wind becomes too strong, is automatically swung bodily "out of the wind" to a greater or less extent, dependent upon the force of the gale, and is afterward returned to its normal position by the action of the weight or spring.

The object of the invention is to provide a governing-brake which, when the wind-wheel is swung wholly out of the wind, or, in other words, edge to the wind, will thereby automatically be caused to clamp a collar or disk attached to the wheel or its shaft, and thus prevent the wheel from rotating when in that position, but upon the restoration of the wind-wheel to its working position will release the wheel and allow it to resume its work.

To this end the invention consists, essentially, in combining with said collar or disk and with the mill-head and tail-vane a brake adapted when applied to clamp the collar or disk between two opposed surfaces and so constructed as to be automatically applied by the swinging of the wheel out of the wind and automatically released by the swinging of the wheel back into the wind.

The form and construction of the parts may be largely varied without departing from this principle. In the form of embodiment here illustrated A is the mill-head; T, the tail-vane, pivoted to the mill-head at t' , and provided with a projection t ; b , the wind-wheel shaft; O, the disk or collar rigidly secured to said shaft and revolving therewith, and M a

spring anchored at one end to the projection t and at the other end to a rigid arm extending from the mill-head and adapted to resist the deflection of the wind-wheel out of the wind and to restore said wheel to its normal position when the force of the wind abates. All said parts may be of any suitable form and construction, and a weight may be used instead of the spring, both constructions being already well known in the art. The edge of the disk O in its rotation passes between the two clamping members, both of which may be movable or the one movable and the other fixed, it being immaterial which, so long as they are adapted to clamp the edge of the disk between them when the wheel is edge to the wind. The drawings illustrate the form last mentioned.

In the illustrated form n' is a rigid arm or bar affixed to the mill-head by a slot and bolt, (shown at n^4), so as to be adjustable in position, and bent so that its outer extremity lies close to and parallel with the front side of the collar or disk O at or near the outer edge of the latter. This adjustable arm forms the fixed jaw of the clamping device. The movable jaw of said device acts against the opposite side of said disk and is shown at n^3 . In the form here shown it consists of a bent lever N, pivoted at n to the rigid bar n' , and having its inner end connected by an articulated rod n^2 to the projection t of the tail-vane, the parts being so arranged that when the rod n^2 draws to a sufficient extent upon the lever N the front end n^3 of said lever will be thereby caused to bear against the disk O and will clamp said disk between the jaws n' and n^3 and stop the disk and the wind-wheel from further rotation while the disk is so clamped. It is not intended that the disk shall be clamped by a slight deflection of the wind-wheel out of the wind, but only when it has been fully deflected or nearly so. Hence the jaw n^3 is preferably allowed to move a short distance without coming in contact with the disk, as shown in Fig. 1, by the space between n^3 and O. As the wheel becomes considerably deflected the jaw n^3 should bear against the disk without clamping it, thus forming for the time a friction-brake to retard the action of the wheel. As the wheel becomes fully deflected, however, the disk or collar, yield-

ing slightly to the pressure of the jaw n^3 , comes against the opposing rigid jaw n' and is firmly clamped between said two jaws, so that the wind-wheel ceases to rotate. When
5 the wind abates, the spring M or its equivalent turns the wheel back into the wind, and the jaws are thereby caused to open and release the disk or collar, allowing the wind-wheel to resume its work. By connecting the
10 rod n^2 to the projection t by a screw connection, as shown at n^5 , or by adjusting the bar n' by means of the slot and bolt n^4 the parts may be adjusted so that the movable jaw will act in the manner above described or so as
15 to produce the clamping effect more promptly, if preferred. The rigid jaw n' may be secured to the mill-head in any way that will lock them firmly together—for example, by rivets or bolts; but the adjustable connection
20 n^4 is preferred. When the wind-wheel is thrown out of the wind by hand by means of the usual cord provided for that purpose, the device herein described automatically clamps the disk or collar and prevents the wheel from
25 useless rotation.

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

1. In a windmill, the combination of the wind-wheel, the mill-head, the tail-vane piv- 30
oted to the mill-head, the disk or collar revolving with the wind-wheel, a clamping device supported by the mill-head and consisting of two opposing jaws adapted to clamp the disk between them, and a connection from 35
the clamping device to the tail-vane, adapted through the action of the tail-vane to operate the clamping device to clamp the disk when the wind-wheel is deflected substantially out 40
of the wind, substantially as described.

2. In a windmill, the combination of the wind-wheel, the mill-head, the tail-vane piv- 45
oted to the mill-head, the disk O, the jaws n' n^3 , the lever N, and the adjustable rod n^2 , substantially as described.

3. In a windmill, the combination of the wind-wheel, the mill-head, the tail-vane piv-
oted to the mill-head, the disk O, the movable jaw n^3 , and the adjustable jaw n' , substantially as described.

GEORGE M. ALLEN.

Witnesses:

A. R. MCLENEGAN,
ROBT. TODD.