

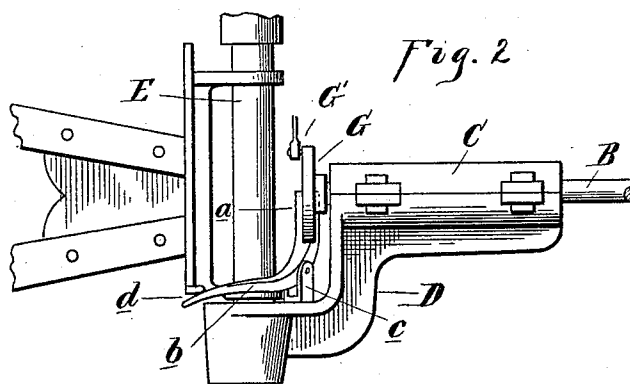
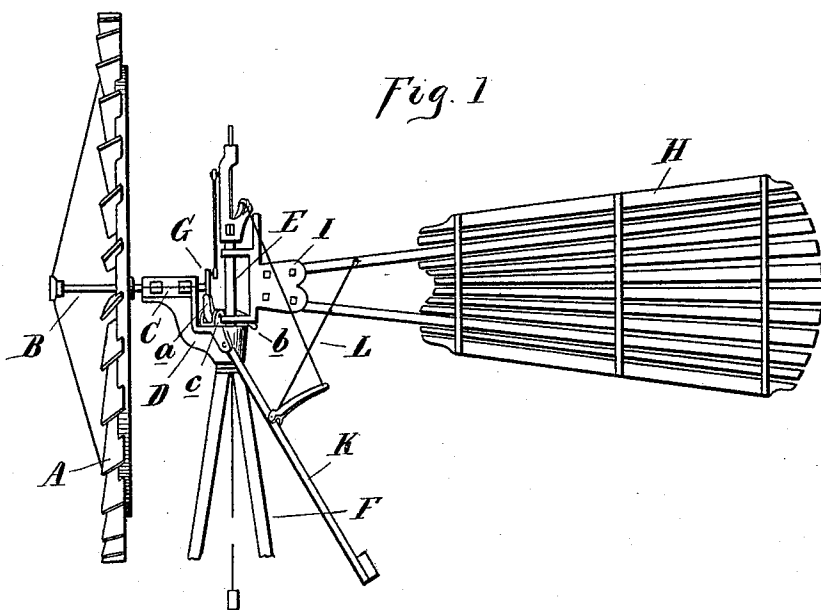
(No Model.)

2 Sheets—Sheet 1.

J. W. GUNNISON.
WIND MILL.

No. 459,962.

Patented Sept. 22, 1891.



Witnesses:

R. M. Hulbert
M. B. Gallagher

Inventor:

Joseph Warren Gunnison
By Thos. Sprague & Son
Atty.

UNITED STATES PATENT OFFICE.

JOSEPH WARREN GUNNISON, OF DE WITT, MICHIGAN.

WINDMILL.

SPECIFICATION forming part of Letters Patent No. 459,962, dated September 22, 1891.

Application filed May 1, 1891. Serial No. 391,267. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH WARREN GUNNISON, a citizen of the United States, residing at De Witt, in the county of Clinton and State of Michigan, have invented certain new and useful Improvements in Windmills, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to new and useful improvements in windmills; and the invention consists in the peculiar construction of a brake designed to be applied to the wheel when the same is turned out of the wind.

The invention further consists in the peculiar construction, arrangement, and combination of the various parts, all as more fully hereinafter described.

In the drawings, Figure 1 is a side elevation of my improved windmill. Fig. 2 is an enlarged elevation from the opposite side from that in Fig. 1 and illustrating the brake. Fig. 3 is a horizontal section showing the brake mechanism in combination with the brake applied. Fig. 4 is a rear elevation with the parts in the position shown in Fig. 3.

A is the wheel, which is secured to the shaft B, journaled in suitable boxes C upon the main frame D, which is pivoted upon the standard E, engaged in top of the tower F. This shaft B is provided at its rear end with a face-plate G and the crank-pins G'.

H is a tail-vane hinged to the standard by means of the head I.

J is a side vane secured to the main frame in front of its pivotal point and extending to one side of the wheel, so constructed that when the wind becomes too great the pressure upon the side vane will cause the wheel to turn with its edge to the wind and in parallelism with the tail-vane, a counterbalancing-weight K (which is connected by means of the connecting-rod L to the tail-vane) being used to return the mill into the wind again as soon as the pressure is reduced.

The parts thus described may be of any known and usual construction, and to a mill thus constructed I apply my brake, which is constructed as follows:

a is a brake-head having the actuating-lever b. This brake-head is pivoted upon the

bracket c, which is secured to the main casting D beneath the face-plate G. The brake-head is provided with a suitable curved face to engage with the rim of the face-plate when it is brought into use, and the lever is provided with an inclined bearing or cam face d. The actuating-lever is curved around the standard E a suitable distance and the parts so arranged that when the tail-vane approaches a position parallel with the wheel some portion of such vane—preferably the head I thereof—will engage upon the inclined bearing d and gradually apply the brake to the face-plate G, the power of such application increasing as the tail-vane approaches the wheel. As soon as the tail-vane is moved to its normal position at right angles to the wheel the brake-head will be released from engagement with the face-plate and the wheel will be again free to turn; but as long as the wheel is out of the wind the weight of the tail-vane bearing upon the actuating-lever of the brake will prevent the turning of the face-plate, which is secured to the pivotal shaft of the wheel, and thus preventing any possibility of its movement. The object of such a construction is to prevent the pumping of the mill in cold weather when the wheel is desired to be out of use, and thus preventing any danger of freezing up of the pump and connections below.

What I claim as my invention is—

In a wind-wheel, the combination, with the main frame, the wheel, the axle therefor journaled in the frame, and a hinged tail-vane, of a circular face-plate on the end of the axle, a brake-head engaging the plate and pivoted to the frame, a horizontally-curved actuating-lever for the brake-head, having its outer end curved downwardly to a point below the plane of the lower edge of the pivotal connection of the tail-vane and in the path of the same, whereby the curved end of the lever is engaged and forced down by the tail-vane as the latter is moved, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH WARREN GUNNISON.

Witnesses

M. B. O'DOGHERTY,
P. M. HULBERT.