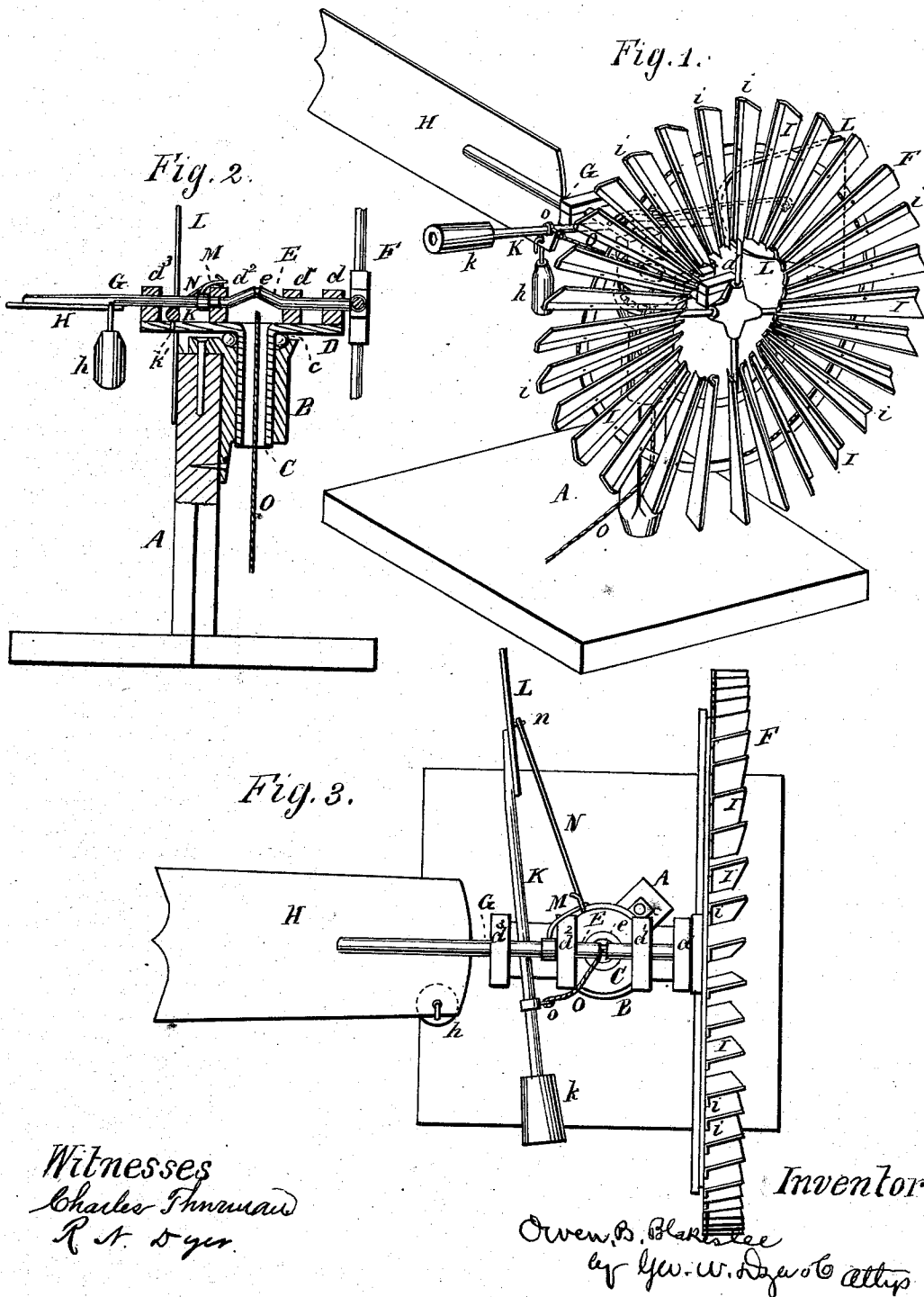


O. B. BLAKESLEE.
Wind-Mill.

No. 160,868.

Patented March 16, 1875.



UNITED STATES PATENT OFFICE.

OWEN B. BLAKESLEE, OF RANKIN, ILLINOIS.

IMPROVEMENT IN WINDMILLS.

Specification forming part of Letters Patent No. **160,868**, dated March 16, 1875; application filed February 2, 1875.

To all whom it may concern:

Be it known that I, OWEN B. BLAKESLEE, of Rankin, in the county of Vermillion and State of Illinois, have invented a new and useful Improvement in Windmills; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings and to the letters of reference marked thereon.

The nature of my invention consists in certain improvements in windmills, whereby the position of the driving-wheel can be automatically regulated with reference to the wind, so as to obtain any desired degree of velocity in its revolution, or to check its revolution entirely; and, further, the peculiar construction of the fans enables the maximum effort of the wind to be obtained, all as is more fully hereinafter explained.

In order to enable others skilled in the art to make and use my invention, I now proceed to describe the same in connection with the drawings, in which—

Figure 1 represents a perspective view of my machine. Fig. 2 represents a sectional and Fig. 3 a top view of the same.

Like letters denote similar parts in each figure.

In the drawings, A represents a standard, to which is rigidly fastened the supporter B, in this instance by means of the lugs *b* and *b'*, though no particular form of fastening is claimed. The supporter B is a hollow cylinder surmounted by a cup, the top of the cylinder serving as a ledge on the interior of the cup, upon which a number of balls, *c*, are placed. The balls *c* have such a diameter that the journal base-piece C, which rests upon them, shall be just clear of the rim of the cup of the supporter B. The journal-piece C consists of a cylinder whose exterior diameter is somewhat less than the interior diameter of the cylinder B, and is also hollow. This piece C has a flange, D, at its top, which extends laterally on either side for some distance, and transversely just sufficient to cover the cup on the supporter B. This flange D rests on the balls *c* before mentioned, which, being placed loosely on the ledge of the cup, are prevented from falling through by the cylinder of the piece C, and serve as rest for the said piece, and enable it to rotate

freely on a vertical axis. The lateral flange D serves as a base for the journals *d*, *d'*, *d''*, and *d'''*, in which the shaft E of the driving-wheel F and the shaft G of the guiding-vane H are journaled in the same right line. The wheel F is rigidly fixed to the shaft E, and may be made in any of the usual methods. The fans I of the wheel, however, are made of rectangular shape, and have one edge, *i*, bent in so as to catch and hold the wind, and thus obtain its greatest effect. The shaft E is bent to form a crank, *e*, where it passes over the cylinder in the piece C, and its end opposite to the wheel F is journaled in the journal-block *d''*. A piston or pitman may be connected with the crank *e* and the piston of a pump or other machinery it may be desired to run, the hollow cylinder C freely allowing its motion. The shaft G is journaled at one end in the block *d''*, rests in the bearing *d'''*, and has a vane, H, at its outer extremity. This vane H is rectangular in shape, though that is not material, and has a weight, *h*, attached to its inner lower corner, said weight being fastened in any suitable manner and being sufficiently heavy to keep the vane vertical in an ordinary wind. A shaft, K, extending across transversely the rear end of the flange D, is pivoted to the top of said flange just inside of the bearing *d'''* at *k'*. One end of the shaft K has a weight, *k*, and the other end is provided with a large fan, L, which always stands vertically, but which revolves through a certain arc by reason of the shaft K being pivoted at *k'*. An arm, M, is rigidly fixed to the inner end of the shaft G, just outside the journal *d''*, and extends over said journal. This arm is in the same plane as the vane H. A rod, N, extends from this arm to an eye, *n*, in the face of the fan L, to which it hooks. A rope, O, is made fast to a becket, *o*, on the shaft K, between the weight *k* and the pivot *k'*. This rope leads down through the cylinders of the pieces B and C, and when pulled tight will throw the fan L at about right angles with the vane H, and, by reason of the connecting-arm M and rod N, the vane H will be turned so as to lie horizontal. The cord can be fastened, and the driving-wheel, having no guide, will be blown out of the wind and its revolution stopped.

The fan L will be made of such a size that

when the wind attains a certain strength its pressure on the fan will overcome the influence of the weight on the vane and cause the latter to assume more or less a horizontal position.

The effort of the wind on the fan of the driving-wheel and on the fan L drives said wheel away from the wind, and consequently lessens the rapidity of its motion.

A decrease in the velocity of the wind will enable the weight to influence the position of the vane and bring the wheel again into proper position.

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 a weighted rotating tail-vane with a swinging transverse fan, which is pivoted so as to swing

through a certain arc independently of the frame of said mill, whereby the tail-vane is turned edge to the wind by the force of the wind upon said transverse fan, substantially as and for the purpose set forth.

2. In a windmill, the weighted rotating tail-vane H, in combination with the swinging transverse fan L, arm M, rod N, and rope O, whereby the wind-wheel may be thrown entirely out of the wind and held in that position, as and for the purpose set forth.

This specification signed and witnessed this 25th day of January, 1875.

OWEN B. BLAKESLEE.

Witnesses:

W. L. MENAGH,
R. W. ENGLISH.