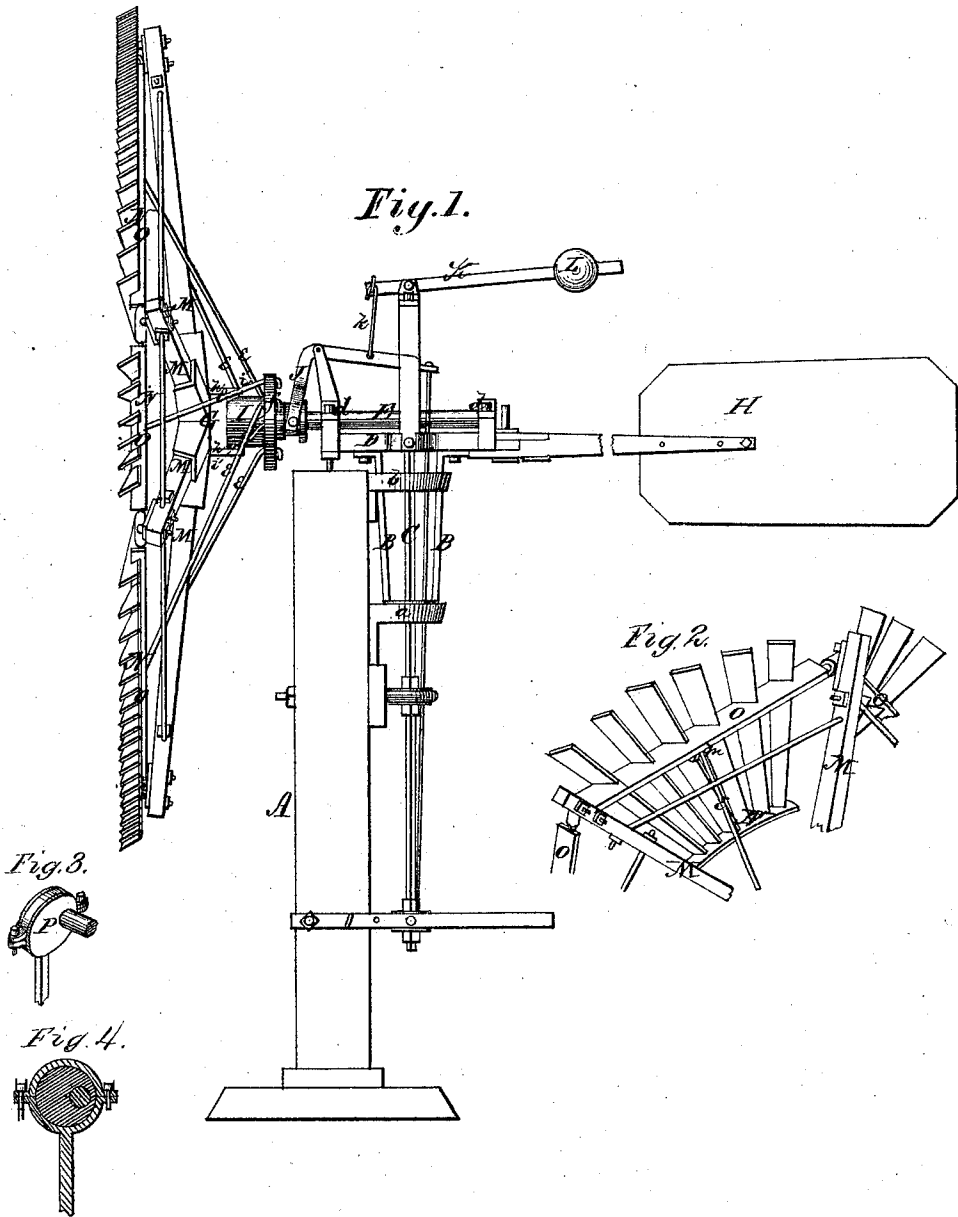


T. S. VAN DEVORT.

Wind-Mills.

No. 128,931

Patented July 9, 1872.



Witnesses
John A. Ellis
Wm. K. Ellis

Inventor
Thomas S. Van Devort
Per
J. H. Alexander
Atty.

UNITED STATES PATENT OFFICE.

THOMAS SPENCER VAN DEVORT, OF YPSILANTI, MICHIGAN.

IMPROVEMENT IN WINDMILLS.

Specification forming part of Letters Patent No. 128,931, dated July 9, 1872.

SPECIFICATION.

To all whom it may concern:

Be it known that I, T. S. VAN DEVORT, of Ypsilanti, in the county of Washtenaw and State of Michigan, have invented certain new and useful Improvements in Windmills; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon which form a part of this specification.

The nature of my invention consists in the construction and arrangement of a "windmill," as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 represents a side elevation. Fig. 2 is a perspective of one of the sail-ribs of my windmill. Fig. 3 is a perspective of the double eccentric; and Fig. 4 is a section of the same.

A represents the post to which the entire mechanism is connected. B B represent two arms connected at their lower ends by a ring and spreading at the top. These two arms are secured to the post by a step, *a*, at the bottom of the arms, and a collar, *b*, near the top of the post, and the said arms have sufficient room between them for the free vibration of a plunger, C, both in a lateral and a perpendicular direction. At the top of the arms B B the head-block D is securely bolted with its bearings *d d* for the main shaft E at both ends. The tail or vane H is fastened underneath the head-block D at one end, and at the other end, between the bearing *d* and the main hub G, upon the shaft E, is placed a revolving slide-head, I, provided near its center with a flange, *f*, to the outer edge or circumference of which are attached rods *e e* for connecting with and adjusting the sails. In front of the flange *f*, and opposite to each other, are two spiral or cam slots in the slide-head, in which friction-rollers *i i* work, said rollers being kept in their places by means of two projections, *h h*, cast on the main hub G. Back of the flange *f*, on the slide-head I, is a groove to receive a forked lever, J, hav-

ing its fulcrum over the front journal-box. This lever is connected to another lever, K, above, by a single link or bar, *k*, and the governing-ball L is placed at the opposite end. From the hub G extend a series of radiating arms, M M, between which the sails N N are placed. Each of said sails is composed of a number of wings attached in a sail-rib, O, which is pivoted in the arms M, the said pivots being placed at the back edge of the sail-rib, for the purpose of throwing the sail off its center, thereby making the sail a weight of itself to be acted upon by the centrifugal force of the wheel when in motion.

The outer ends of the connecting-rods *e e* are intended to be screwed into block *m m*, bolted to the sail-ribs, so that the length of the rods may be adjusted to give the sails a uniform pitch. The inner ends of said rods *e e* are bent at right angles and passed through holes in the slide-head flange *f*.

Upon the main shaft E is a compound eccentric, P, for operating the plunger-rod C, and by means of which the stroke of the same may be varied.

The sails are drawn open or endwise to the wind by their centrifugal force. This, by means of the connecting-rods *e e*, turns the slide-head I on the shaft E, and draws it forward, thereby depressing the outer end of the lower lever, and raising the ball on the outer end of the upper lever. As the motion decreases the weight draws the slide-head back and closes or partly closes the sails according to the force of the wind.

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

1. The combination of the spirally-slotted slide-head I and hub G, with arms *h h* and rollers *i i*, substantially as and for the purposes herein set forth.

2. The combination of the slide-head I with flange *f*, the compensating-rods *e e*, and sail-ribs O O with sails N N, substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

THOS. S. VAN DEVORT.

Witnesses:

S. C. HAMLIN,
R. W. VAN FOSSEN.