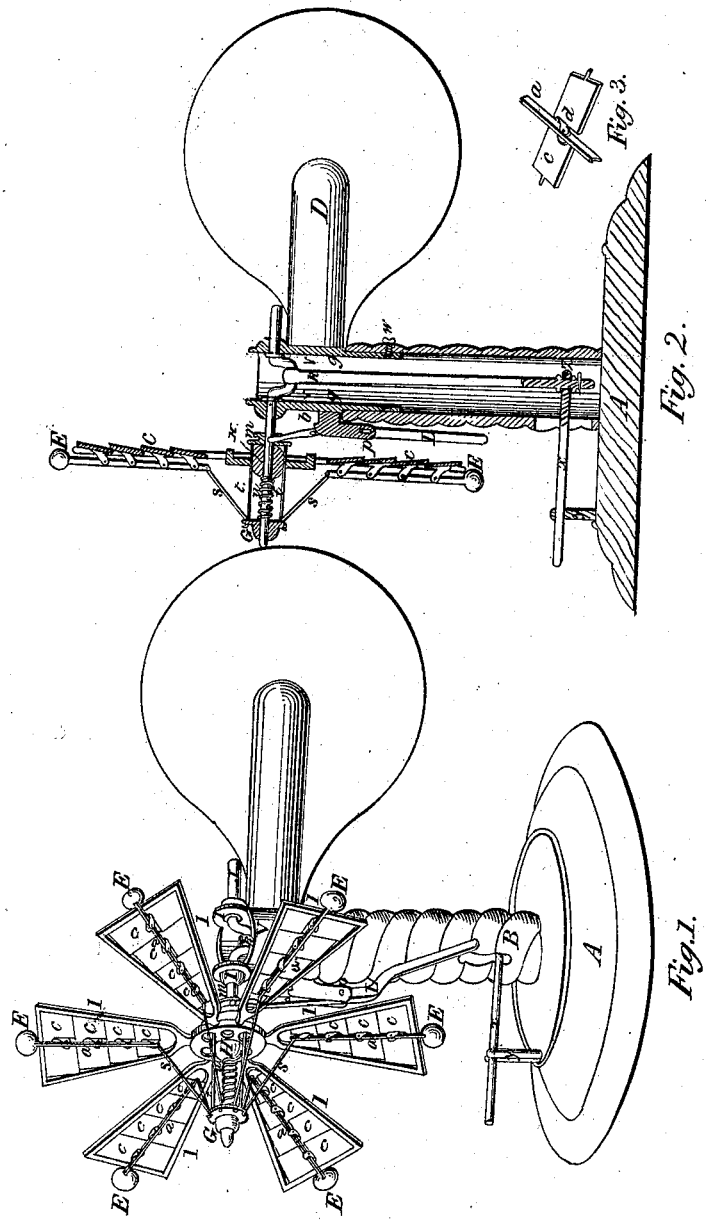
Burnett & Vandevort,

Wind Wheel.

No. 52,383. Patented Feb. 6, 1866.



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BENJN. F. BURNETT AND THOS. VANDEVORT, OF PHELPS, NEW YORK.

IMPROVEMENT IN WIND-WHEELS.

Specification forming part of Letters Patent No. **52,383**, dated February 6, 1866.

To all whom it may concern:

Be it known that we, BENJ. F. BURNETT and THOS. VANDEVORT, of Phelps, in the county of Ontario and State of New York, have invented a new and Improved Mode of Constructing Wind-Wheels; and we do hereby declare that the following is a full and exact description thereof, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a perspective view. Fig. 2 is a section with part of the mill removed, showing the interior. Fig. 3 is a perspective view of a section of a sail.

The nature of our invention consists in opening the sections of stationary sails of wind-wheels by centrifugal force and closing the same by a spiral spring, thereby making our mill self-regulating, and also making the frame or head with an opening through the center, so that the pitman can pass through it into the standard or post with an opening through the center and be directly attached to a lever or other machinery.

To enable others skilled in the art to make and use our invention, we will proceed to describe its construction and operation.

A is the platform which supports the post B. B is a post or standard, which has an opening through the center for the purpose of allowing the pitman K to pass through and be connected to the lever X.

V is a frame or head, which supports the shaft J and the vane D and revolves on the standard B by means of the lower portion being made round and passing into the standard B and resting on the projection at G. J is the crank-shaft, which passes through the frame at I I and through the pitman K and revolves freely.

H is a hub, which is fast to the shaft J and supports the sails in their proper position to be acted upon by the wind.

C C C C C C are movable sections, which are connected to the frames of the sails I I I I I I by pivots, as shown in Fig. 3, which allows them to revolve so as to present their edges to the wind.

a a a a a a are rods, which are connected to the sections by pins or rivets passing through the ears *d*, as shown in Fig. 3, and then passing through the rods. The ears *d* are fast to the sections, which have a piece cut out at the center so as to allow them to open and not interfere with the rods *a a a a a a*.

G is a cone or thimble which slides on the shaft J, and is connected with the rods *a a a a a a* by the wires S S S S S S. The wires S S S S S S can be straight, as in drawings, or can be attached to an elbow or right-angle lever working on a pivot attached to the hub H. In the latter case another rod or wire will be attached to the other end of the right-angle lever and to the sliding cone G.

U is a spiral spring, which presses against the cone G and keeps the sections closed by means of the wires S S S S S S or the right-angle lever-rods and rods *a a a a a a*.

E E E E E E are balls which are fast to the rods *a a a a a a*, for the purpose hereinafter to be described.

t t t are wires which are connected to the cone G and pass through the hub H, and are also connected to the slide *m*.

L is a lever which has a slot through it at P. There is a pin passes through this slot, and also through the projection which is fast to the frame V. The lever L can move up and down a trifle, so as to allow the pin at O or the lever L to catch on the projection *b*. The lever is connected to the slide *m* by means of prongs, which pass partly around and into a groove in the slide *m*. By moving this lever the sections C C C C C C can be opened or closed, and thus the revolution of the wind-wheel entirely stopped or regulated by hand.

D is the vane which keeps the sails in their proper positions to be acted upon by the wind.

K is the pitman which operates the lever or pump. It is connected to the lever X by passing through a hole in the lever at Z. It has a flange above and below the lever X, which allows it to vibrate the lever and also revolve. There is a slot in the post B, so as to allow the lever X to pass through and be connected to a pump or other machinery.

The operation of the above-described machine is as follows: The wind pressing against the sails causes them to revolve, thereby rotating the shaft J, which operates a pump or other machinery by means of the pitman K and lever X when the wind presses too hard on the sails and causes them to revolve too fast. The balls or weights E E E E E E, by their centrifugal force, open the sections C C C by pulling on the rods *a a a a a a*. When the

sections are open they allow the wind to pass through between them, and consequently, the wind having less surface to act upon, the motion is retarded, so that the pressure of the spiral spring U is greater than the centrifugal force of the balls E E E E E E. It closes the sections C C C C C C by pressing against the cone G and pulling on the wires S S S S S S, which are connected to the cone G and rods *a a a a a a*, thereby closing the sails and giving the wind more surface to act upon, making the machine self-regulating.

It is evident that instead of the spiral spring U upon the shaft J each arm of the wind-wheel might be supplied with its own spring, acting independently of but simultaneously with the other springs. It is also evident that other means equivalent to spiral springs might be used for this purpose.

We do not claim making wind-wheels having stationary sails with movable or revolving sections, as those have been long used; nor do we claim the application of centrifugal force to the regulation of wind-wheels by having the same rotate or otherwise act upon movable sails; but

What we do claim as new, and desire to secure by Letters Patent, is—

1. The balls E E, or their equivalents, attached to the movable sections of the stationary sails, in combination with the spring *a*, or its equivalent, for the purpose of regulating the revolving motion of wind-wheels with stationary sails, the whole constructed and operating substantially in the manner and for the purpose above described.

2. In an apparatus for utilizing the power of the wind by means of wind-wheels, the pitman K, placed centrally in the post by which the wind-wheel is supported, in combination with the lever X, working through an aperture in the said post, substantially in the manner and for the purpose described.

3. In an apparatus for utilizing the power of the wind by the use of a wind-wheel, the above-described mode of connecting the pitman K with the lever X—that is to say, by passing the pitman through the lever, and then, by means of a flange above and below the lever, enabling the wind-wheel to revolve around on its vertical shaft, and carrying with it the pitman, without interfering with the harmonious action of the machinery, substantially as above described.

4. In an apparatus for utilizing the power of the wind by means of a wind-wheel, the combination of the lever L and the slide *m*, constructed and operating substantially in the manner and for the purpose above set forth.

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THOMAS VANDEVORT.

Witnesses:
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LYSANDER REDFIELD.