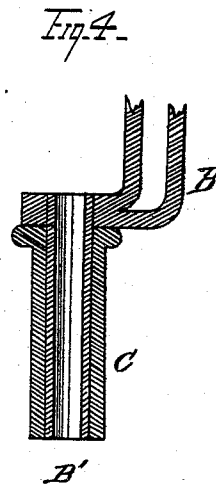
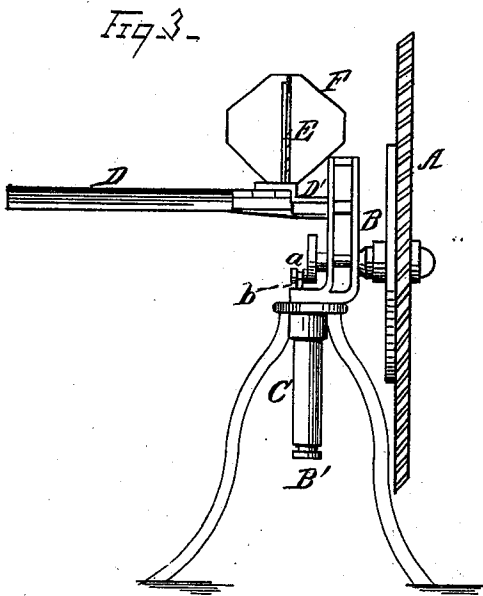
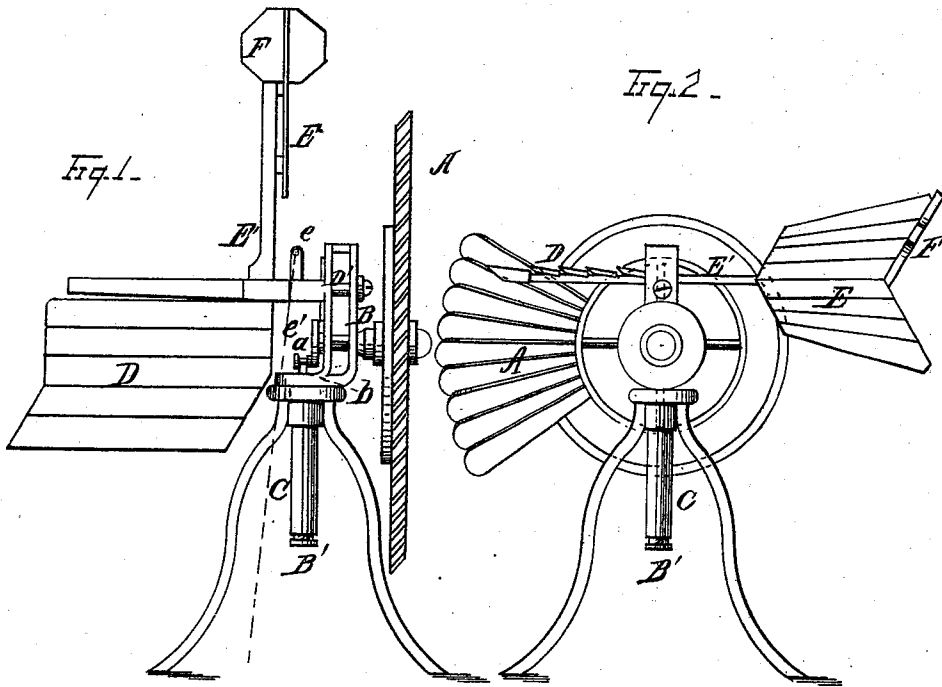


W. F. MANN.

WIND-MILL

No. 172,885.

Patented Feb. 1, 1876.



WITNESSES
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UNITED STATES PATENT OFFICE.

WILLIAM F. MANN, OF COLUMBUS, OHIO.

IMPROVEMENT IN WINDMILLS.

Specification forming part of Letters Patent No. 172,885, dated February 1, 1876; application filed December 21, 1875.

To all whom it may concern:

Be it known that I, WILLIAM F. MANN, of Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Windmills; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to certain improvements in windmills; and consists in a peculiar construction and arrangement of the parts, as hereinafter more fully set forth and shown, for automatically regulating the speed of the mill.

In the drawings, Figure 1 represents a side elevation of the mill complete, with its face to the wind in a moderate wind; Fig. 2, a front view of same in position in a strong wind, the edge of the wheel being to the wind; Fig. 3, an edge view of same; Fig. 4, a vertical-central section through the cylinder.

A is the wind-wheel, of the usual or any appropriate construction, mounted in a suitable frame, B, the lower end of which frame is formed into a cylinder, B', and revolves in a hollow or cylindrical bearing-support, C. D is the tail-vane, mounted by axis D' in top of frame B. E is the regulator or governor vane, secured by post E' to the top of tail-vane D and above wheel A. F is another regulator or governor, secured at the top of regulator-vane E and at right angles thereto. *a* is the crank, and *b* the pitman for communicating movement from the mill. *c* is an arm on tail-vane D, with cord *c'* for operating the mill-governor by hand.

The operation of the parts is as follows: In a moderate wind the parts stand in the position as shown in Fig. 1, with the face of the wheel, the edge of the tail, the face of the reg-

ulator E, and edge of regulator F to the wind. Should the force of the wind increase, it, coming against the regulator E, causes it to be driven down and, at the same time, around, carrying with it the wheel A, in the position shown in Fig. 2, and presenting the edge or an oblique face to the wind. As the wheel is brought around in this position the face of regulator F is brought to the wind, which offers an obstruction to it, and keeps the parts in position, as shown in Fig. 3, as long as the wind stays at such force. As the wind relaxes, the weight of tail-vane D brings the parts back to their normal position.

Thus, it will be observed, a simple and effective arrangement of parts is secured and an automatic regulation of windmills effected.

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

1. In a windmill, the combination, with the supporting-frame B, secured to a loose sleeve, of the independently-journaled axles B and D' of the wheel and vane, and the crank *a*, located over the bearing, and immediately beneath the arm of vane D, substantially as and for the purpose specified.

2. In combination with the tail-vane D of a windmill, the regulator or governor E and regulator or resistance F, the regulator F secured at the top of regulator E, and at right angles thereto, and the two upon the tail-vane above the wind-wheel, as and for the purposes described.

In testimony that I claim the foregoing I have hereunto set my hand this 13th day of December, 1875.

WM. F. MANN.

Witnesses:

N. B. WHARTON,
WM. CHAMBERS.