J. STEINER.
Wind-Engine.

No. 221,370. Patented Nov. 4, 1879.

Fig. 1.

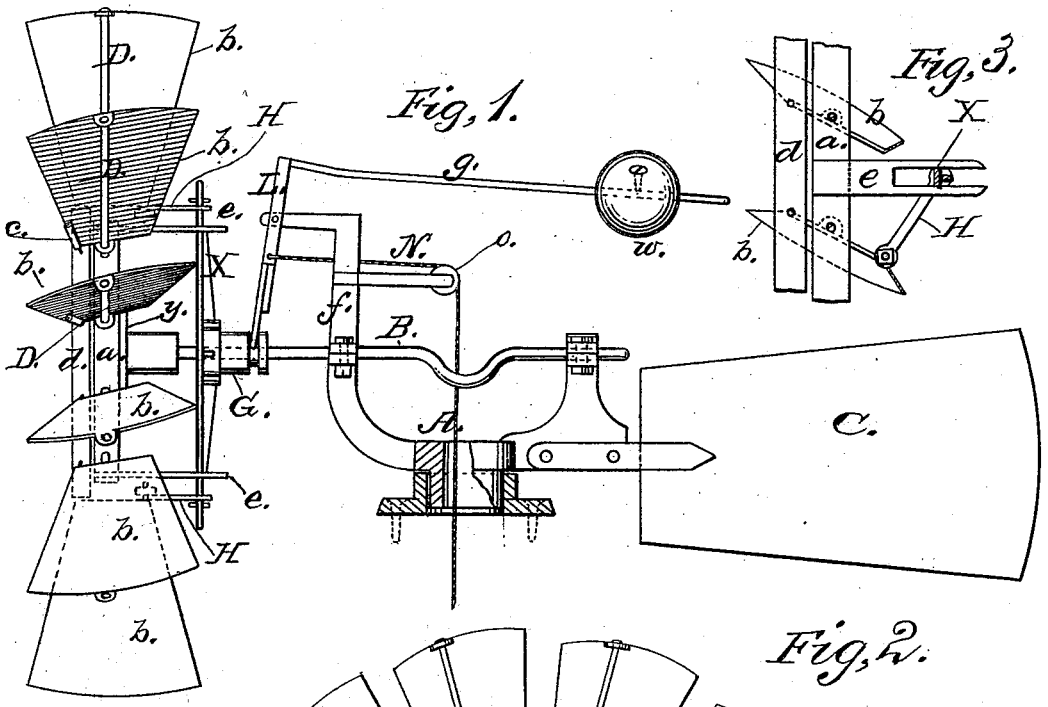
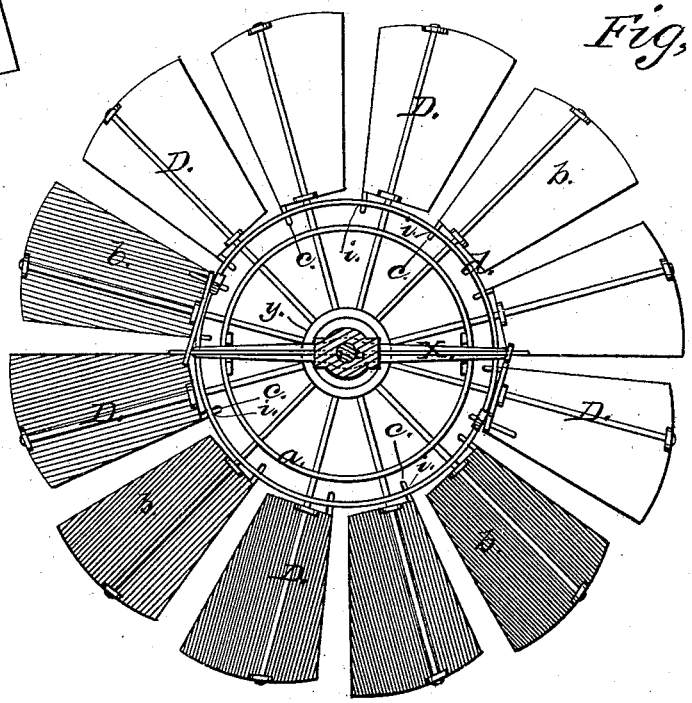


Fig. 3.

Fig. 2.



WITNESSES

Villette Anderson.

Frank J. Masi.

INVENTOR

Jacob Steiner
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UNITED STATES PATENT OFFICE.

JACOB STEINER, OF BLUFFTON, OHIO.

IMPROVEMENT IN WIND-ENGINES.

Specification forming part of Letters Patent No. **221,370**, dated November 4, 1879; application filed August 30, 1879.

To all whom it may concern:

Be it known that I, JACOB STEINER, of Bluffton, in the county of Allen and State of Ohio, have invented a new and valuable Improvement in Wind-Wheels; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a side elevation of my improved wind-engine. Fig. 2 is a view of the wheel, looking from behind; and Fig. 3 is a detail.

This invention has for its object the improvement of wind-engines; and the nature of the invention consists in certain novel combinations of parts, as will be hereinafter more fully set forth.

In the annexed drawings, the letter A designates the turn-table, affording bearings on its upside to the main shaft B, and having secured thereto a vane, C, in line with the said shaft. This shaft has secured to its outer end a strong hub, *y*, from which project the metallic spokes D, braced by the ring *a*, through which they are carried. Upon these spokes are journaled the wind-blades *b*, having the greater part of their surface on one side of the spokes, as shown, and having each at its inner end a spur or stud, *c*, that engages a perforation, *i*, in a loose metallic ring, *d*.

It is evident that by turning this ring about its center the wind sails or blades will be thrown into or out of the wind, as the case may be.

Projecting outward toward the tower from the brace-ring are the slotted guide-arms *e*, through which extend the ends of a cross-head, X, rigidly secured to or forming a part of an annular slide, G, on the main shaft. The ends of the cross-head are connected pivotally to the wind-blades adjacent thereto by means of the connecting-rods H. By thrusting the slide toward the hub of the wind-wheel the blades are thrown into the wind, and by drawing the same back they are thrown edge to the wind.

The slide G has in its end an annular groove, in which is engaged the forked lower end of a vertically-vibrating lever, L, having its fulcrum in an upright, *f*, erected on the turn-table, and provided with a projecting bar, *g*, having an adjustable weight, *w*. The power exercised upon the lever L by this weight holds the sleeve or slide against the hub of the wheel and the blades of the latter flatwise to the wind under all ordinary circumstances; but should a heavy storm arise the weight is overbalanced by the pressure upon the blades and the latter turn edgewise to the wind, thus obviating all danger of the wheel being carried away, or running the driven machinery at a dangerous speed. The power required to throw the blade edgewise to the wind is proportionate to the weight of the governor *w*, and its position on the rod, since, when near the fulcrum of the lever, the leverage is less than when farther off therefrom.

To avoid undue wear of the parts of the engine and driven mechanism, the blades *b* may be thrown out of the wind at any time by drawing down forcibly upon a cord, N, reaching from the ground to a pulley, *o*, on upright *f*, and secured to lever L, as shown.

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

In a wind-engine, the combination with the wheel, having radial spokes D, the blades *b* rotating on the same, and having spurs *c* engaging perforations in ring *d*, and the brace-ring *a*, having projecting slotted guides *e*, of the slide G, cross-head X extending through said guides, and attached to the slide, the links H, connecting the ends of the cross-head with adjacent blades *b*, the lever L, engaging the slide, and having arm *g*, and an adjustable weight, *w*, on said arm, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JACOB STEINER.

Witnesses:

J. JACOB SCHAEUBLIN,

FREDERICK C. STEINGRUBER.