

G. SCHWEIZER.
Wind-Wheel.

No. 213,781.

Patented April 1, 1879.

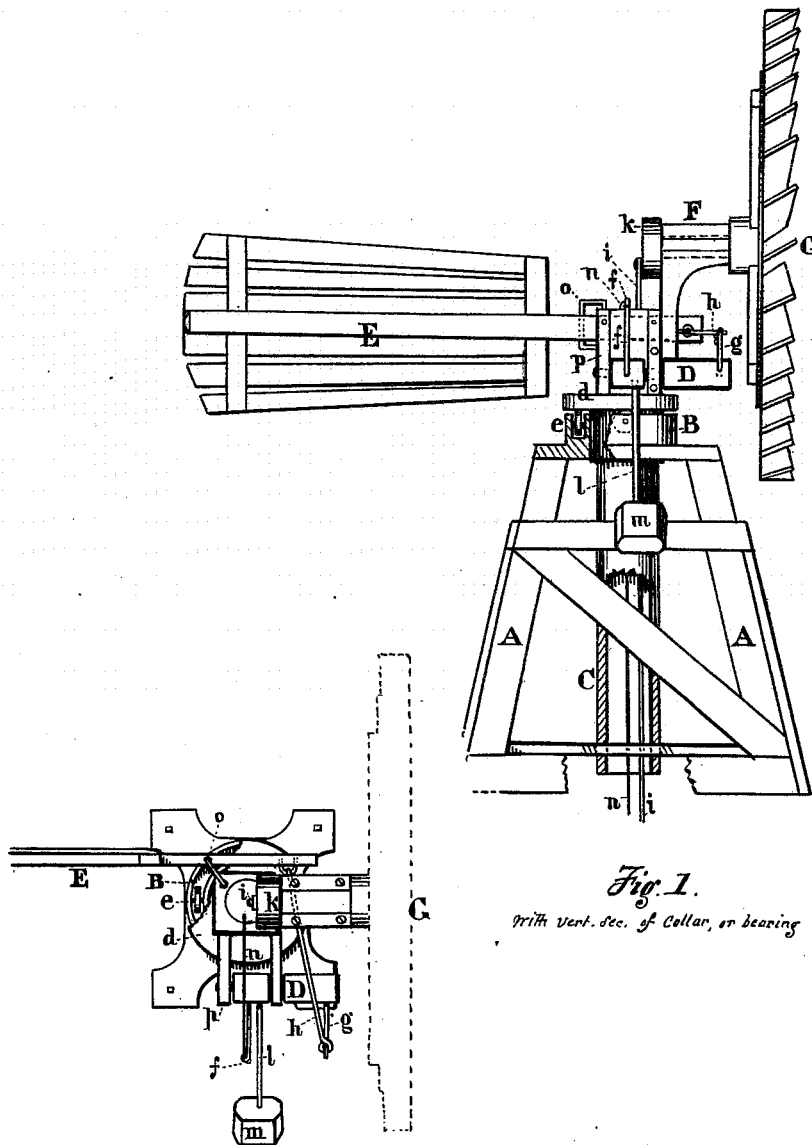


Fig. 1.

With Vert. Sec. of Collar, or bearing

Fig. 2.

Witnesses.
Lawrence Thurlow
Leith Thurlow.

Inventor:
Gustav Schweizer
by E. Thurlow his atty.
in fact

UNITED STATES PATENT OFFICE.

GUSTAV SCHWEIZER, OF SAN JOSÉ, ILLINOIS.

IMPROVEMENT IN WIND-WHEELS.

Specification forming part of Letters Patent No. **213,781**, dated April 1, 1879; application filed January 23, 1879.

To all whom it may concern:

Be it known that I, GUSTAV SCHWEIZER, of San José, in the county of Mason, in the State of Illinois, have invented an Improvement in Wind-Wheels; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawings, making a part of this specification, in which like letters of reference refer to like parts, and in which—

Figure 1 represents an elevation, with sectional view of collar; Fig. 2, a plan view.

The object of this invention is to supply governing devices for the vane, consisting of a counterpoise or weighted axle attached to the pivotal shaft of the mill.

I attach the wheel and vane or "tail" to the tip of a hollow vertical shaft, as a revolving pivot for the same, in the center of the frame or support of the wind-wheel, fitting it with a collar round its upper part, to support the weight of the whole upon friction rollers or wheels set in a bearing or circular platform on the top of the frame. This shaft contains the crank-rod and the cord, chain, or wire which governs the stoppage of the wheel. To the top of the shaft, besides the wheel-axle and the hinged vane, is attached, parallel with the wheel-axle, a second axle, also horizontal carrying-arms, one terminating in a weight, which overbalances the vane sufficiently to keep it extended at right angles with the wheel in fair winds. This axle is connected by means of a second arm and a connecting-rod with the end of the vane next to the wheel and forward of its hinge. This axle and governing-weight may be controlled from below, to pull the vane back and throw the wheel out of the wind, by means of a cord passing up the center of the shaft to the top of same, and thence outward to an arm projecting from the said weight-axle. The weight readily "gives" or is lifted by means of the leverage of the shorter arm of the vane or tail (when struck by the wind) upon the rod and arm of said weight-axle, so placing said vane at a smaller angle with the wheel, and throwing the latter more or less out of the breeze.

In the drawings, which illustrate one of the forms in which I construct my wind-wheel, A represents the usual frame, having a trans-

verse piece below or at the lower end of the central shaft, C, to hold the same, but allow it to revolve. B is a platform or bed at the summit of the frame, on which rests and revolves the collar of the shaft C, provided with friction-wheels *e e e* in appropriate recesses or channel; C, the vertical hollow pivotal center shaft, having a supporting-collar, *d*, revolving upon the said friction-wheels *e* of the bed B, above which is the crank *k* of the wheel-axle, the rod *i* of which passes down the center of said shaft, as well as the controlling-cord *n*. On one side of the shaft is hinged the vane E, the forward end of which is connected by means of a rod, *h*, with the arm *g* of the weight-axle D. This axle is mounted upon bearings projecting from the upper end of said shaft C, and revolves horizontally, and is parallel with the axle of the wheel and with the vane when the latter is in its normal position. Said axle is provided with a weight, *m*, at the end of an arm, *l*, another arm, *g*, being connected by the rod *h* with the vane, as before said, while a third arm, *f*, is controlled by a cord passing down the shaft C.

The operation of this wind-wheel is as follows: The wheel, vane, and frame are similar to mills now in use. The revolving weighted axle D keeps the vane extended for fair winds, but allows baffling, variable, or whirling winds to partially or wholly turn the vane, so as to throw the wheel out of the wind. The weight, when such wind ceases, causes the vane to be again extended for favorable winds, while a cord, *n*, attached to an arm, *f*, of the weight-axle D controls the stoppage of the wheel from below, if desired.

The shaft or pivot C, being long, with bearings wide apart, affords a steady and reliable center of motion for the proper rotation of the wind-wheel and its working attachments, while its central hollow defends and holds the crank-rod and governing-cord *i n* from accidental blows.

The advantages of this wheel are as follows: compactness, effectiveness, and strength, being less complicated than common mills, and consequently more able to stand strong or whirling winds.

What I claim as my invention is—

1. A vertical centrally-pivoted wind-wheel

shaft having a horizontal axle carrying an arm and weight as a balance for the vane, and by which the latter is controlled, also an arm or crank attached to said axle, by which the weight is raised in stopping the wheel, substantially as and for the purposes described.

2. In a vertical wind-wheel, a horizontal axle, D, with arm and weight, connected with the hinged vane of the mill in such a mode as to keep the vane at right angles with the wheel, but to yield to whirling winds, and by partial closure throw the wheel out of the wind, substantially as described.

3. The combination, with a hollow pivotal shaft, C, of a weighted axle, D, connected with vane E by arm *g* and rod *h*, substantially as described.

In testimony that I claim the foregoing wind-wheel I have hereunto set my hand this 10th day of January, A. D. 1879.

GUSTAV SCHWEIZER.

Witnesses:

CLARENCE THURLOW,
LUTHER THURLOW.