J. LOWRY & D. HUNT.
Wind-Wheels.

No. 196,685. Patented Oct. 30, 1877.

Fig. 1

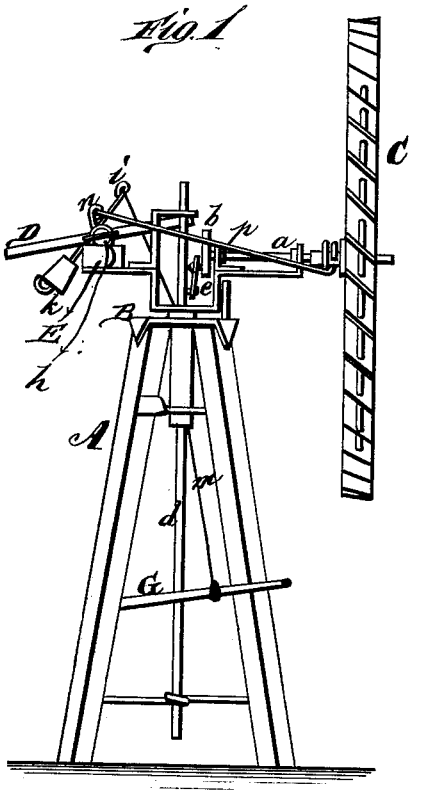
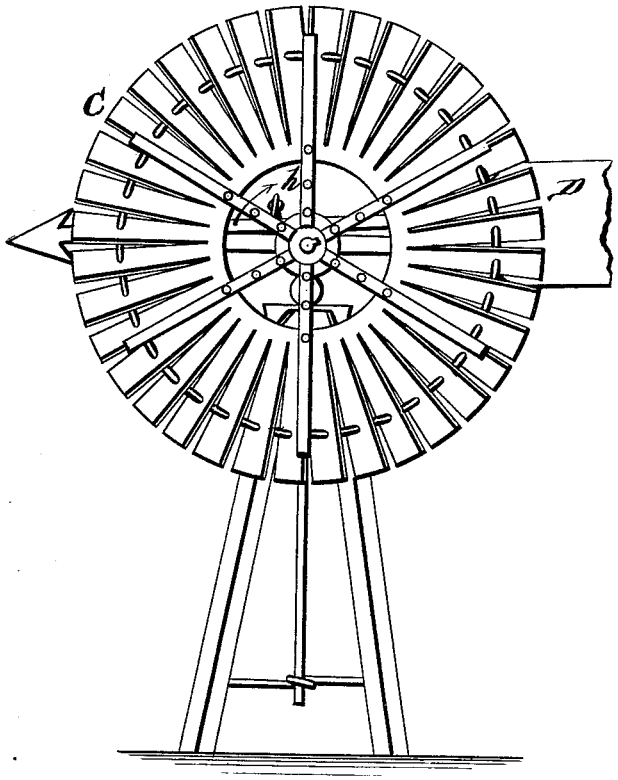


Fig. 2.



Witnesses:
Robt. Everett
James Sheehy

Inventors.
John Lowry.
Dwight Hunt.
Per Gilmore, Smith & Co.
Attorneys.

UNITED STATES PATENT OFFICE.

JOHN LOWRY AND DWIGHT HUNT, OF ANN ARBOR, MICHIGAN.

IMPROVEMENT IN WIND-WHEELS.

Specification forming part of Letters Patent No. **196,685**, dated October 30, 1877; application filed September 22, 1877.

To all whom it may concern:

Be it known that we, JOHN LOWRY and DWIGHT HUNT, of Ann Arbor, in the county of Washtenaw and State of Michigan, have invented a new and valuable Improvement in Wind-Wheels; and we 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 drawing, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of a side view of our wind-wheel, and Fig. 2 is a front view of the same.

The nature of our invention consists in the construction and arrangement of the governing power of a wind-wheel, as will be hereinafter more fully set forth.

The annexed drawing, to which reference is made, fully illustrates our invention.

A represents the tower of the windmill, and B is the turn-table on top thereof. In suitable bearings upon the turn-table is placed the wind-wheel shaft *a*, having upon its inner end a crank or crank-disk, *b*, connecting, by a pitman, *e*, with the rod *d*, moving vertically up and down in suitable guides.

On the outer end of the shaft *a* is placed the wind-wheel C, which is feathered on the shaft, so that said shaft will turn with the wheel, but the wheel still be movable out and in on the shaft.

On the opposite side of the turn-table from the wind-wheel is secured a cross-bar, E, on top of which are suitable bearings to receive a rod, *h*, and to one end of this rod is attached a vane, D, standing parallel with the wind-wheel. To the rod *h* is attached an arm, *i*, having a weight, *k*, attached to its lower end, and its upper end is, by a cord or chain, *m*, connected with a lever, G, at or near the foot of the tower A. The rod *h* has also another arm, *n*, connected, by a rod, *p*, with the circumferentially-grooved hub of the wheel C, this end of the rod *p* forming an eye, lying in said groove on the hub.

When the vane D has a horizontal position the wind has no effect on it, leaving the wheel free to turn into the wind, the wheel running at all times behind the mast or tower. The wheel being feathered on the shaft and connected with the vane-shaft in front, as described, when the wind bears with a certain force or pressure on the wheel it slides back on the shaft, and thereby turns the vane to a perpendicular position, which counteracts the force on the head, and turns both out of the wind. By means of the weight *k*, as soon as the wind falls, and thus the force is taken off the wheel, the vane falls back to the horizontal position. The vane being stationary, the mill is always in the same position—consequently in perfect balance.

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

1. In a windmill, a wind-wheel sliding laterally upon its shaft, and connected with a rocking vane located parallel with the wheel, substantially as and for the purposes set forth.

2. The combination, with the turn-table B and shafts *a*, of a laterally-movable wind-wheel, C, connecting-rod *p*, rocking shaft *h*, with vane D and arm *n*, and the weighted arm *i*, all substantially as and for the purposes set forth.

In testimony that we claim the above we have hereunto subscribed our names in the presence of two witnesses.

JOHN LOWRY.
DWIGHT HUNT.

Witnesses:
MYRON WEBB,
W. H. SHEPARD.