(Model.) 2 Sheets—Sheet 1.

L. C. HAMEL.

WINDMILL.

No. 250,806. Patented Dec. 13, 1881.

Fig. 1,

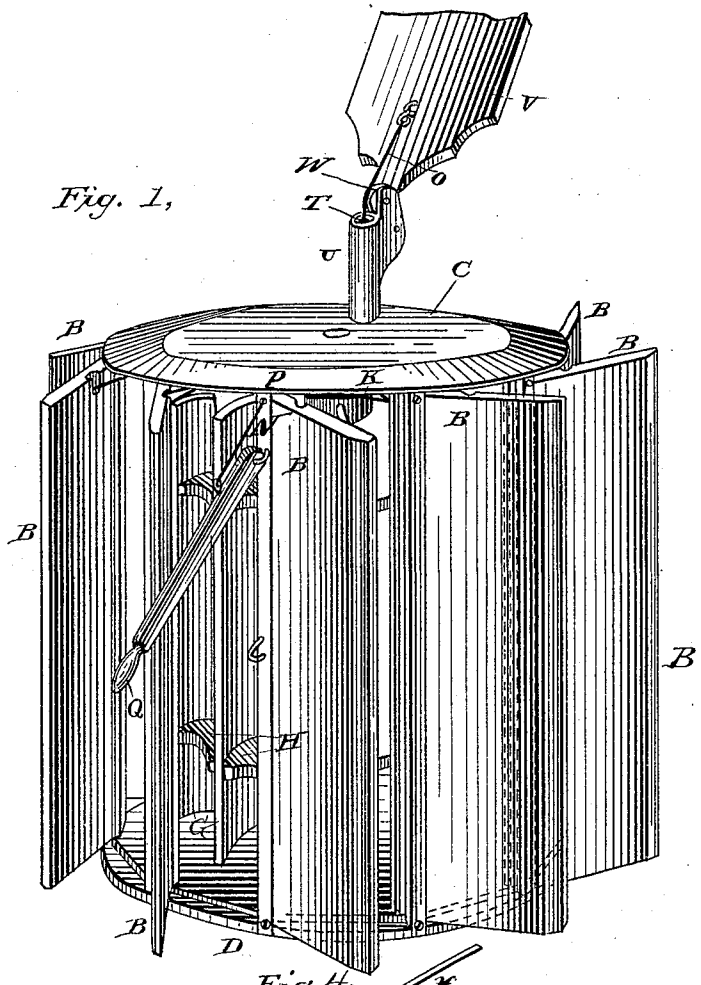
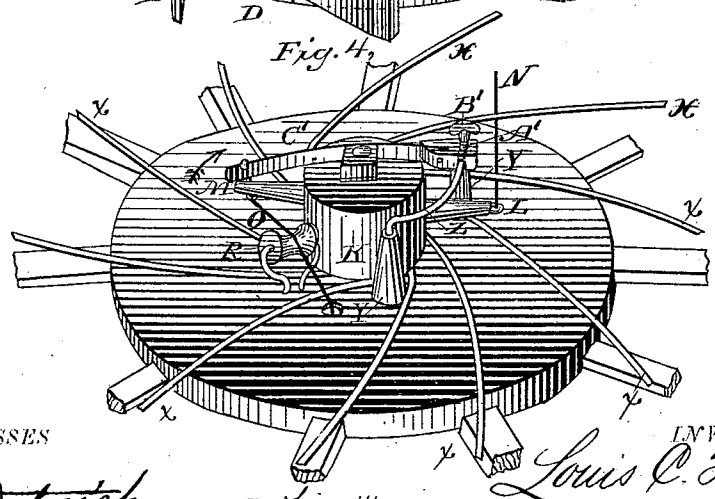


Fig. 4,



WITNESSES

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(Model.) 2 Sheets—Sheet 2.

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Fig. 2

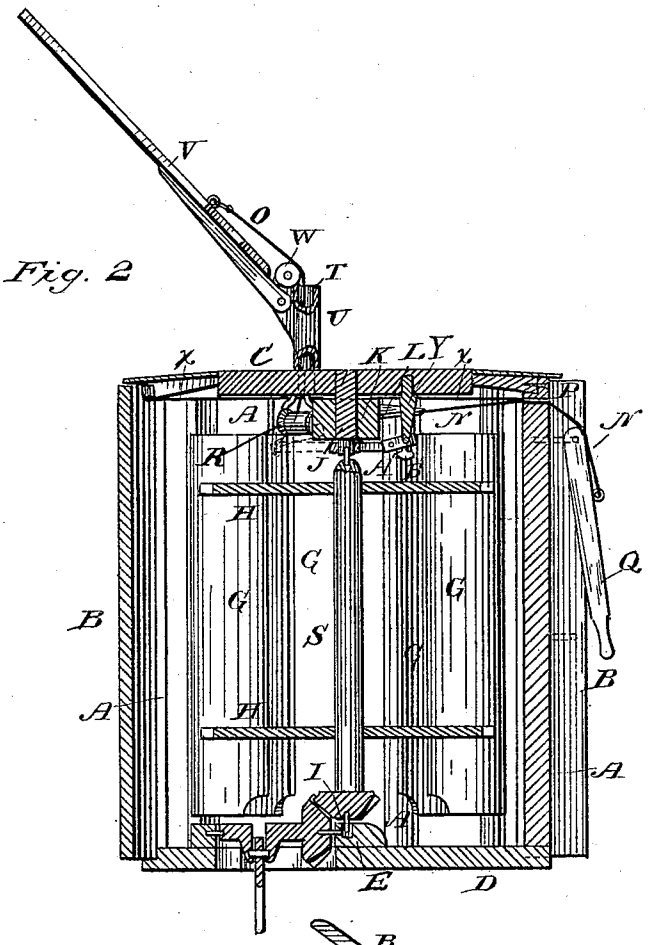
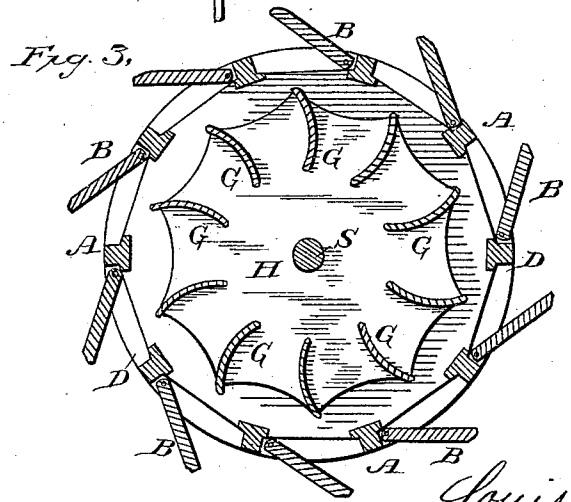


Fig. 3.



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UNITED STATES PATENT OFFICE.

LOUIS C. HAMEL, OF NORTH LOUP, NEBRASKA.

WINDMILL.

SPECIFICATION forming part of Letters Patent No. 250,806, dated December 13, 1881.

Application filed April 27, 1881. (Model.)

To all whom it may concern:

Be it known that I, LOUIS C. HAMEL, of North Loup, in the county of Valley and State of Nebraska, have invented certain new and useful Improvements in Windmills; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a perspective view. Fig. 2 is a vertical sectional view. Fig. 3 is a horizontal cross-section; and Fig. 4 is an inverted detail view, in perspective, of the mechanism for operating and regulating the shutters.

Corresponding parts in the several figures are denoted by like letters of reference.

This invention relates to that class of wind-engines which consist of a wheel mounted upon a vertical shaft and rotating in a horizontal plane within a suitable casing; and it consists in certain improvements in the construction of the same, and essentially of the mechanism for operating and controlling the shutters of said casing, as will be hereinafter more fully described, and particularly pointed out in the claim.

In the drawings hereto annexed, A represents the casing, which is approximately cylindrical in shape, its sides being composed of a series of shutters or doors, B B, pivoted or hinged, as shown, between the top C and bottom D of the casing. Within the latter is mounted upon a vertical shaft, S, journaled in suitable boxes or bearings, E, the wind-wheel, which is constructed, in the usual manner, of a series of sails, G, secured slantingly between arms radiating from or disks H H secured upon the shaft S. Upon the lower end of the latter is secured a pinion, I, from which motion is communicated to the machinery which is to be operated by the engine.

The upper bearing of the shaft S is in a stud, J, projecting downward from the top C of the casing. Upon the said stud is mounted a disk or cylinder, K, having radiating arms L and M, to the ends of which cords or chains N O are secured. The chain N passes through an opening, P, in the side of the casing, and is attached to a lever, Q, pivoted upon the outside of the same. Chain O passes under a pulley, R, arranged upon the under side of the top of the casing, and up through a tube, T, projecting upward from the same. Upon said tube is mounted the turn-table U, carrying the vane V, to which the end of chain O is attached, after first passing over a guide-pulley, W, at the top of the turn-table.

To the upper side of disk K is pivoted a set of rods, X, the outer ends of which are pivoted or otherwise suitably connected to the shutters B, which thus, by turning the disk K, may be simultaneously opened or closed, as the case may be.

Affixed to the under side of the top C by means of and between two downwardly-projecting studs, Y Y, is a curved rod, Z, set to one side of the central cylinder, K, to which the rods X for operating the shutters are pivoted. Upon this rod Z slides a block, A′, in which is fastened a spring, C′, the outer end of which bears against a stud upon the arm M, which projects from cylinder K, and it follows that spring C′ operates to force arm M in the direction of the arrow shown in Fig. 4, thus rotating cylinder K in the same direction.

The block A′ is adjustable upon rod Z, and may be fixed in any given position by means of a set-screw, B′, thus regulating the tension or pressure of spring C′ upon the arm M. In other words, the spring C′ operates, by its combination with the arm M, cylinder K, and rods X, to keep the shutters B open with a force proportionate to the adjustment of the spring and its block A′ upon the rod Z; but when the wind, blowing against the vane V, overcomes this pressure, arm M will be drawn back by the cord or chain O, so as to close, or partially close, the shutters, and this may also be effected by depressing lever Q, the cord or chain N of which pulls upon arm L, so as to rotate cylinder K in a direction contrary to that in which it is impelled by the operation of spring C′ and arm M.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

The combination of the casing A, having shutters B, wind-wheel F, disk K, having arms L M, pivoted connecting-rods X, adjustable slide A′, having spring C′, chains N O, lever Q, turn-table U, and vane V, all arranged and operating substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

LOUIS C. HAMEL.

Witnesses:
OSCAR BABCOCK,
WILLIAM A. PAYNE.