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O. H. QUIE.
Wind-Mill.

No. 201,286. Patented March 12, 1878.

Fig. 1.

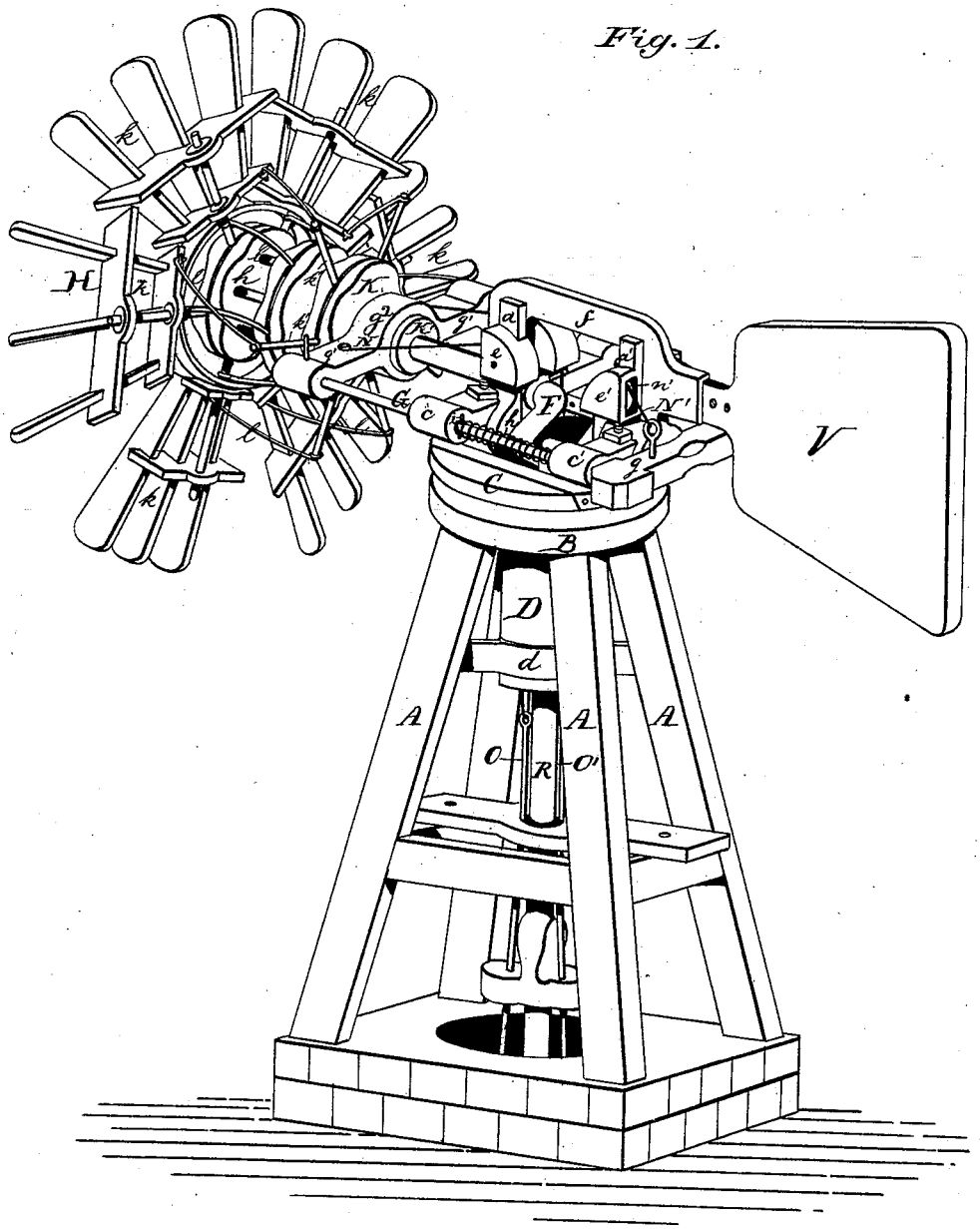

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Fig. 2.

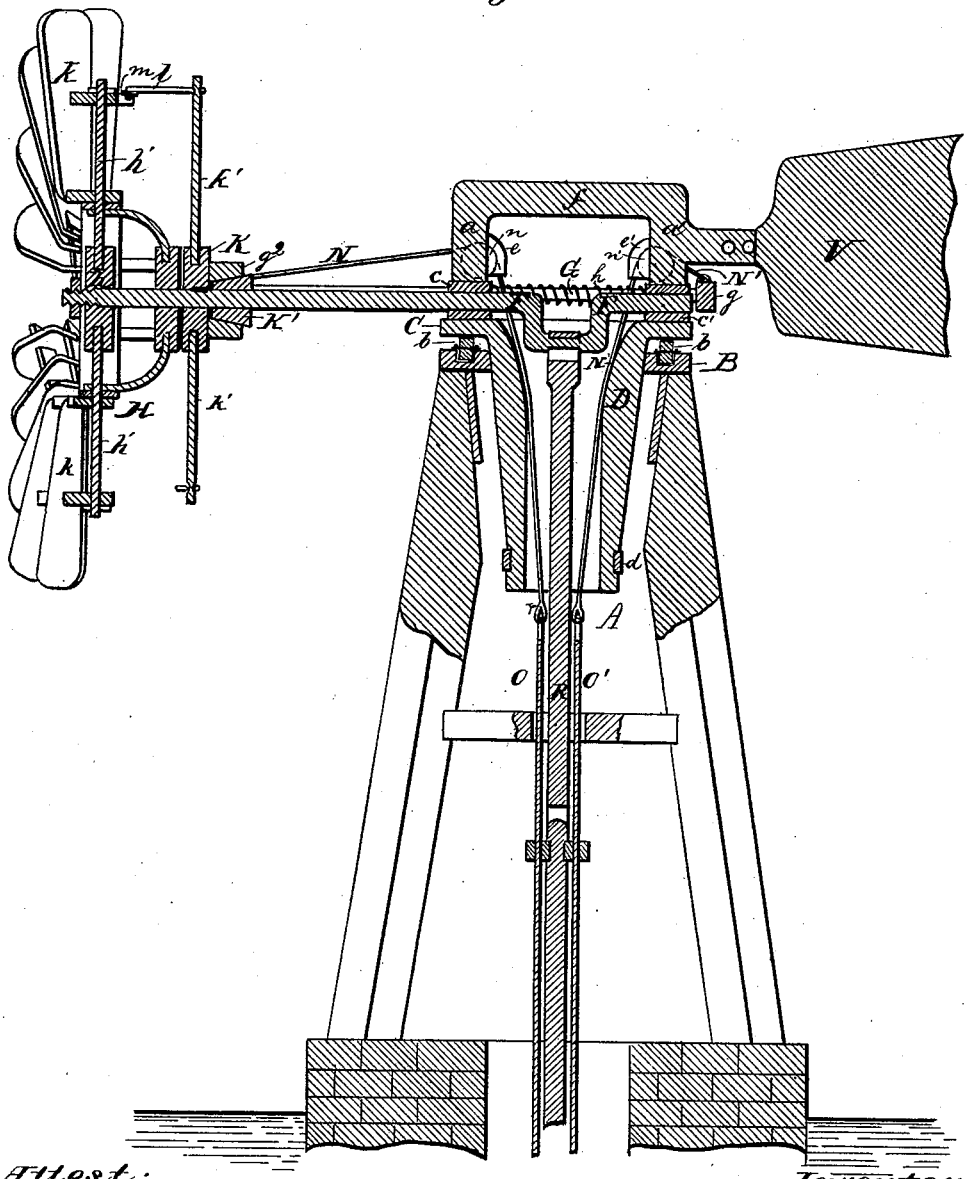

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Fig. 3.

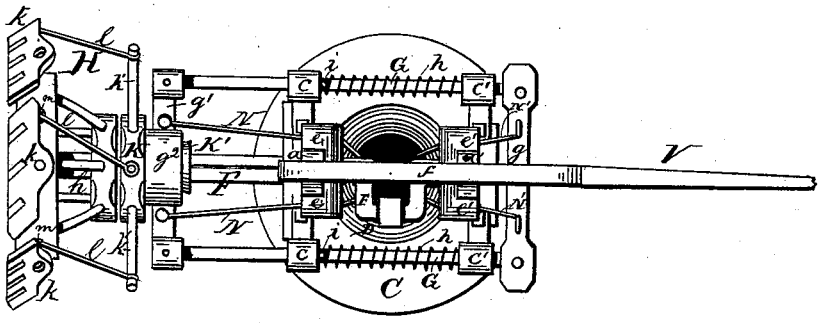
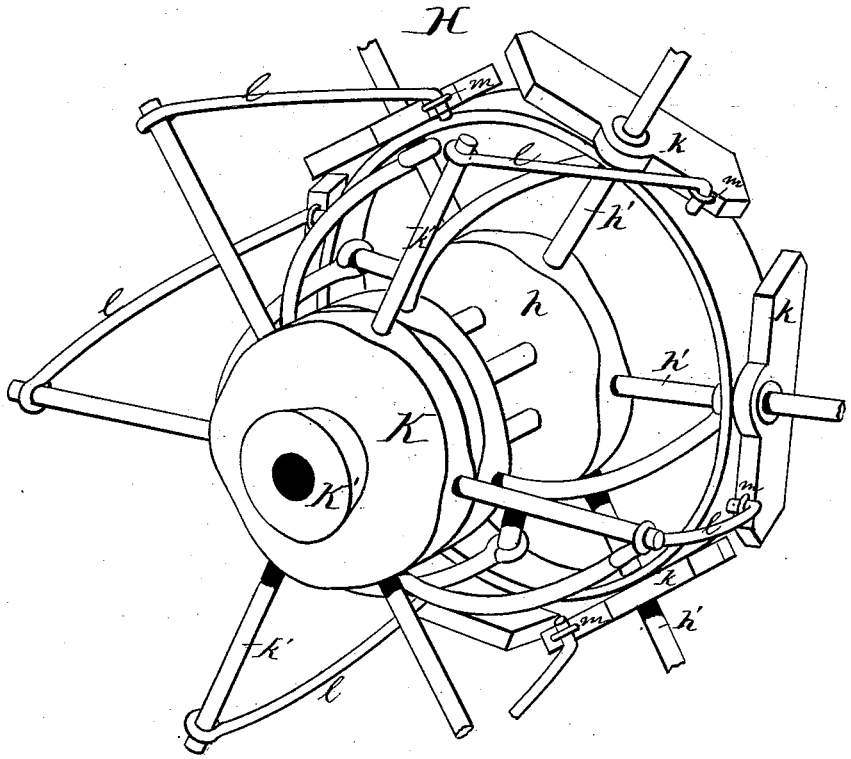


Fig. 4.



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UNITED STATES PATENT OFFICE.

OLE H. QUIE, OF HOLDEN, MINNESOTA.

IMPROVEMENT IN WINDMILLS.

Specification forming part of Letters Patent No. **201,286**, dated March 12, 1878; application filed December 31, 1877.

To all whom it may concern:

Be it known that I, OLE H. QUIE, of Holden, in the county of Goodhue and State of Minnesota, have invented certain new and useful Improvements in Wind-Wheels; and I do hereby declare that the following is a full, clear, and exact description thereof, 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 transverse section. Fig. 3 is a top view; and Fig. 4 is a perspective view, on an enlarged scale, of the wheel and the mechanism for regulating the same.

Similar letters of reference indicate corresponding parts in all the figures.

This invention relates especially to that class of windmills which are used for pumping water from wells; and it consists in the novel construction of the wheel and the means for regulating its speed, automatically or by hand, as hereinafter more fully described.

In the drawing, A is the frame-work or scaffolding of my improved windmill. At the top thereof is secured a ring, B, having recesses, in which are pivoted casters *b b*. C is another ring, placed on top of ring B, and having a cylinder, D, passing down through the latter, and secured in position by a ring or sleeve, *d*, attached to the frame-work A. Ring C, with cylinder D, revolves upon ring B.

The ring or turn-table C has two uprights, *a a'*, having bearings for the crank-shaft F, which projects beyond the former. The uprights *a a'*, which are connected by a cross-piece, *f*, also have laterally-projecting brackets *c c' e e'*, the former of which, *c c'*, form bearings for the sliding rods G G, which are connected, behind upright *a'*, by a cross-piece, *g*. Some distance in front of upright *a* they are united by another cross-piece, g^1, (of the construction hereinafter described,) thus forming a complete sliding frame, which is forced in a forward direction by springs *h h*, coiled around rods G G, and resting against brackets *c c'* and plugs *i i* in the forward end of rods G G.

Upon the projecting end of crank-shaft F is keyed the frame of the wind-wheel H. This consists of a solid or skeleton disk, *h*, having radial arms *h' h'*, upon which the sections *k k* of the wind-wheel are pivoted. Behind the disk *h* is another disk, K, keyed upon the shaft, upon which it slides, and having radial arms *k' k'*, to the ends of which are pivoted hooks *l l*, engaging with staples *m m* in the several sections of the wheel. The cross-piece g^1, which forms the front part of the sliding frame hereinbefore mentioned, forms a ring or collar, g^2, which encircles the butt or base K' of disk K, to which it is connected in such a manner that while the latter may revolve freely, it will slide back upon the shaft F when the frame is withdrawn.

The brackets *e e'* upon uprights *a a'* have grooved pulleys or casters *n n'*. N is a rope attached to cross-piece g^1 of the sliding frame, passed over one of the pulleys *n*, down under shaft F, up again on the other side, over the other pulley, *n'*, and finally secured to the other side of cross-piece g^1.

N' is another rope, similarly attached to cross-piece *g*, and passed over the pulleys *n n'*. The loops of ropes N N', which hang down inside cylinder D, are attached to the upper ends of two rods, O O', which slide along the sucker-rod R. This latter is provided with a swivel-joint, *r*, below which it is attached to the piston-rod of the pump.

V is the vane, which is attached to the rear upright *a'* on top of ring C.

The operation of my improved windmill is as follows: When the wind blows briskly and steadily the wheel is self-regulating, as the sections of which it is composed, when the wind blows with increased force, will turn on their pivots, so as to present a smaller surface, thus preventing the wheel from rotating too fast; but when it becomes necessary to regulate the wheel by hand, this can be easily done by means of the rods O O', (the lower ends of which are sufficiently close to the ground to be easily reached.) When the former of these is pulled the sliding frame is slid backward, thus turning the wheel-sections, through the intermediate mechanism described, to any desired extent; while to return the frame to its original position, (and with it the wheel-sections,) it is only necessary to release rod O and pull on rod O', this latter operation, which is against the wind, being aided by the coiled

springs *h h*. The ring C, as before described, serves as a turn-table, which, operated by vane V, turns the wheel and operating machinery to the wind.

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

The turn-table C, having uprights *a a'*, provided with lateral brackets *c c'*, sliding frame G G *g g'*, crank-shaft F, sliding disk K, having arms *k'* and pivoted hooks *l*, and wind-wheel H, composed of pivoted sections *h h*, all combined and operating substantially in the manner and for the purpose herein shown and specified.

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

OLE H. QUIE.

Witnesses:

O. F. PERKINS,

A. W. NORTON.