

(No Model.)

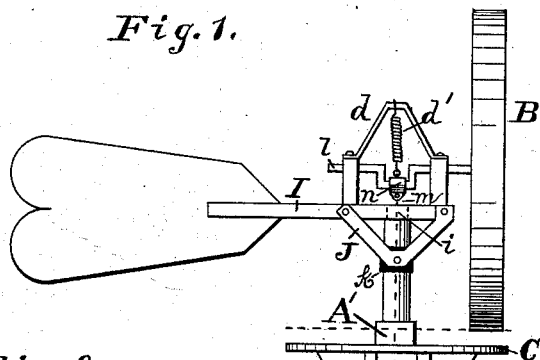
G. W. McKENZIE.

WINDMILL.

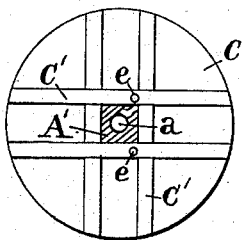
No. 263,714.

Patented Sept. 5, 1882.

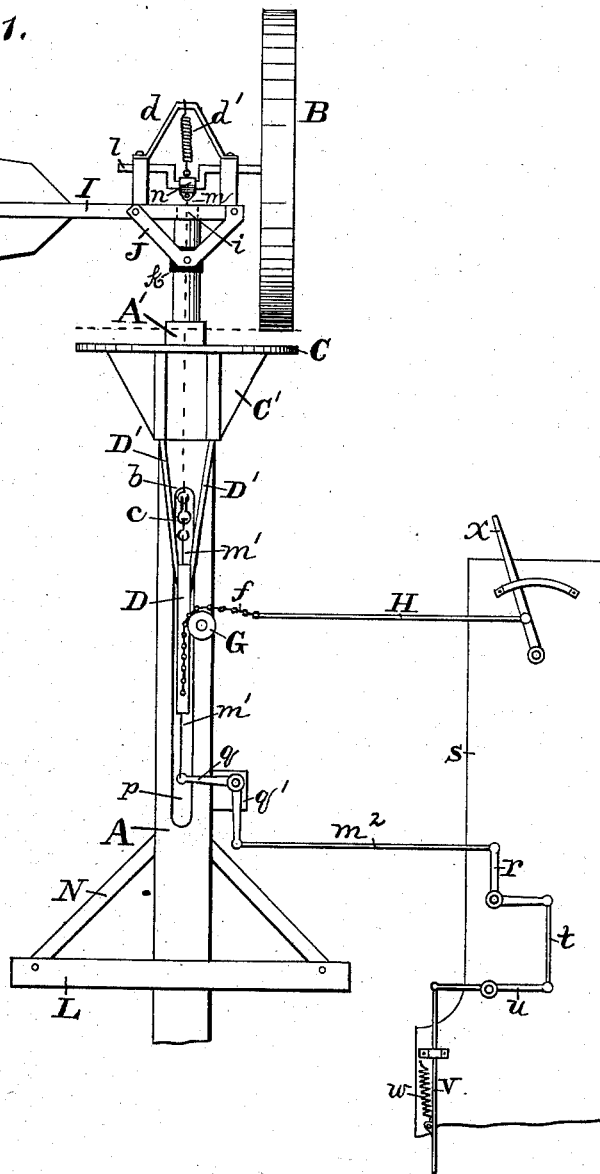
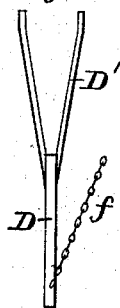
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



Witnesses:  
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# UNITED STATES PATENT OFFICE.

GEORGE W. McKENZIE, OF HARRINGTON, MAINE.

## WINDMILL.

SPECIFICATION forming part of Letters Patent No. 263,714, dated September 5, 1882.

Application filed July 21, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE W. McKENZIE, a citizen of the United States, residing at Harrington, in the county of Washington and State of Maine, have invented certain new and useful Improvements in Windmills, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to certain improvements in windmills designed for pumping, and will first be described, and then designated in the claims.

In the drawings hereto annexed, Figure 1 is an elevation of the windmill arranged to work a force-pump. Fig. 2 is an inverted plan view of the movable platform. Fig. 3 is a view of the pronged rod which raises the platform.

The letter A designates the pole or spar, which supports the windmill B and its connections; C, a movable platform, adapted to be raised and lowered a few inches. An iron rod, D, has two prongs, D', the upper ends of which enter holes *e* in the lower side of the trestle or frame pieces C'. The lower end of the iron rod has one end of a short chain, *f*, attached, which passes over a pulley, G. The other end of the chain is attached to a wire or rod, H, which leads off to any desired point—a dwelling-house, for instance—from which it may be desired to stop or start the wheel.

The horizontal vane-support I is stayed by a curved brace, J, one of which is made fast on each side of the support. The support is swiveled at *i*, on the upper end of the pole, and a collar, *k*, fits loosely around the pole below, the curved braces being attached to the collar. By this means the vane and wind-wheel may turn freely in a horizontal plane. The wind-wheel is mounted on a crank-shaft, *l*, above the vane-support, and a wire, *m*, attached to the box *n* on the crank, passes down through the central bore, *a*, of the pole, which terminates at one side at *b*, from which point down the pole has in its side a groove, *p*, which is practically a continuation of the bore. At or near the point where the side groove commences is the lower end of the wire *m*, which is provided with a swivel-connection, *c*, to which the wire *m'* is attached, and connects with the bell-crank lever *q*, pivoted to a side bracket, *q'*, on the pole. The swivel *c* permits the wind-wheel to turn without twisting the lower part

of the wire. From the bell-crank lever *q* a wire or rod, *m*<sup>2</sup>, leads to another similar lever, *r*, on a support, *s*. A wire, *t*, at the other end of this lever, may connect with a horizontal lever, *u*, which is in direct connection with the piston-rod *v* of a force-pump; or said wire *t* may itself connect directly with the piston-rod of a suction-pump, in this latter case a lever being unnecessary. A spring, *w*, is connected with the piston-rod in the case of the force-pump, so as to pull up, and serves to raise the piston-rod when the crank on the shaft *l* is on the descending part of its revolution, and said spring also serves to keep the wires *m*<sup>2</sup> and *t* strained. If a suction-pump be used, the spring *w* may be attached to the piston-rod in such a manner as to depress the piston. This mode of transmitting power from the wheel to the pump horizontally has several advantages over the ordinary method—viz., the wires or rods may be carried underground, through the air, around corners, and to a long or short distance, while in the ordinary way it would not be practicable to carry the wires underground or around corners, and but short distances through air.

An arched support or standard, *d*, is above the crank-shaft, and a spring, *d'*, connects the box *n* on the crank-shaft with the support. This spring assists the wind-wheel when the crank is on the ascending part of the revolution, and hinders it as much when on the descending part, and thus equalizes in some degree the work of the wheel, whereby the wheel will revolve during a light wind, when otherwise it would stop on the upturn of the crank.

A lever, *x*, is employed to draw the wire or rod H when it is desired to stop the windmill.

The pole may be sustained in any desired manner. In the present instance sill-pieces L are placed at right angles on the ground, and four braces, N, are employed, one end of which bear on the sills and one against the pole. Wire stays may also be used to assist in supporting the pole. The trestle or four frame pieces, C', of the platform are so crossed at the center and secured as to form a square opening, (see Fig. 2,) which fits loosely over or around the upper end of the pole, which is squared, as at A', to adapt it to fit the square opening in the center of the platform. By this arrangement the platform may slide up and

down on the squared part of the pole, but is prevented thereby from turning.

The operation of the starting and stopping device is as follows: The wire H may be led to the house or any other convenient place, where it may be attached to the lever *x*, and by moving the lever in a direction to bring a strain on the wire H the chain *f*, to which the pronged rod is attached, is drawn over the pulley G, raising the pronged rod, and with it the movable platform C, which acts as a friction-brake by pressing against the rims of the wheel with such force as to stop it instantly in the heaviest wind. When it is desired to start the wheel at a time when the wind is blowing it is only necessary to release the lever *x*, and the platform falls of its own weight.

It will be seen that the wheel may be stopped in any position where it may happen to be, and will then obey the rudder or vane, rolling around on the platform C in any direction to face the wind.

The platform may be raised by means of levers, pulleys, weights, or in any way found most convenient.

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

1. In a windmill, the combination, with the

wind-wheel, of a supporting-pole having its upper end squared, a vertically-movable platform having at its center a square opening, and means to raise the platform, as set forth.

2. In a windmill, the combination, with the wind-wheel, of a support for the wheel, a vertically-movable platform around the support, adapted, when up, to press against the rim of the wind-wheel, a rod having two prongs whose upper ends are attached to the platform, a chain attached to the lower end of the said rod, and a pulley mounted above the lower end of the rod, and over which pulley the chain passes, as set forth.

3. In a pumping-windmill, the combination, with the crank-shaft and wire attached thereto, of the bell-crank levers *q* and *r*, the wire *m*<sup>2</sup>, connecting them, a horizontal lever, *u*, one end of which is connected by a wire, *t*, with the bell-crank lever *r*, and the other end with the piston-rod *v* of a force-pump, and a spring, *w*, attached to the said piston-rod and adapted to raise it, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE W. McKENZIE.

Witnesses:

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