

J. B. STINGLEY & H. NELSON.  
WINDMILLS.

No. 194,565.

Patented Aug. 28, 1877.

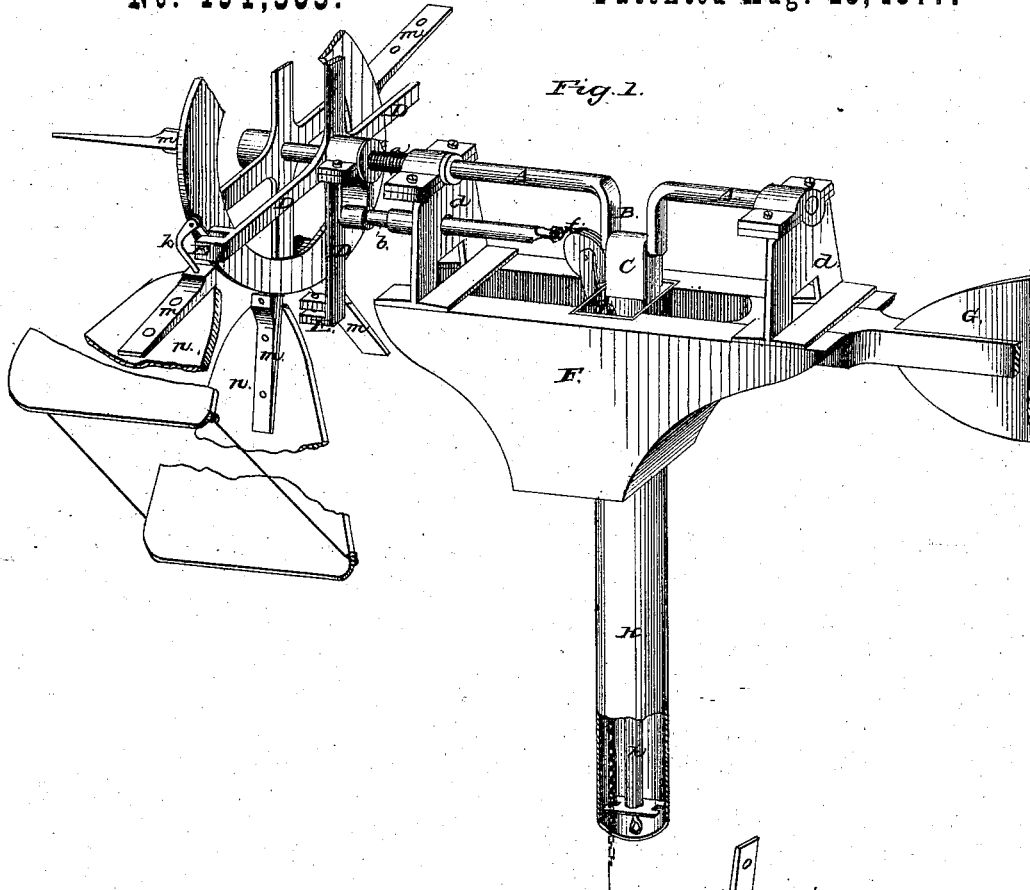


Fig. 1.

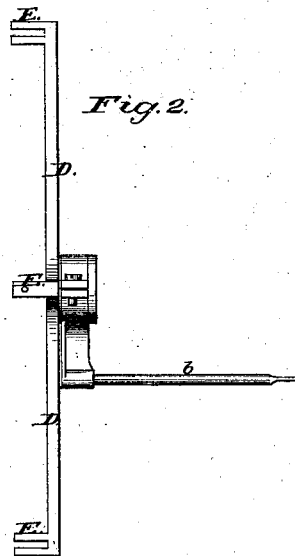


Fig. 2.

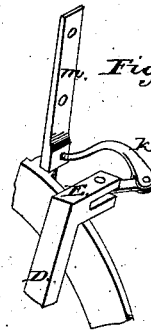


Fig. 3.

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# UNITED STATES PATENT OFFICE.

JOHN B. STINGLEY AND HENRY NELSON, OF MONTGOMERY COUNTY, IND.

## IMPROVEMENT IN WINDMILLS.

Specification forming part of Letters Patent No. **194,565**, dated August 28, 1877; application filed August 9, 1877.

*To all whom it may concern:*

Be it known that we, JOHN B. STINGLEY and HENRY NELSON, of the county of Montgomery and State of Indiana, have invented a new and useful Improvement in Windmills, which improvement is set out in the following specification and accompanying drawings, in which—

Figure 1 is a perspective view, showing a windmill with our governor attached. Fig. 2 is a view of the governor. Fig. 3 is a view representing the connection of the vanes and governor by a hinged link.

The object of our invention is to furnish a device to regulate the operation of a windmill in such manner as to allow the most direct application of the power to the plunger of a pump, the power to be derived from vanes or sails turning a wheel set upon a shaft.

In the drawings, A A represent the shaft; B, the crank, to which the plunger *h* is attached by the collar C. D D D D are the four arms of the governor, set movably on the shaft A behind the wheel of the vanes *n n n n*. E E E E are the locks of the governor, of which locks one is at the end of each arm, slotted, and in form, as shown in Figs. 2 and 3. F is the turning-frame of the mill supporting the iron rests *d d* of the shaft, the shaft being firmly boxed thereto, and carrying the rudder G.

*a a* are the springs, coiled round the shaft in front of the forward rest, by which the governor is pushed forward to unlock the vanes, as hereinafter described. *b* is the rod, of piston-like action, forming part of the governor, carried through the forward rest by a tube cast with the rest. The rod is provided at its end with a ring to allow attachment of a wire or rope to it, the object being to permit a person standing below to lock or unlock the vanes. *f* is a mortise in the turning-frame, in which a pulley is fixed to carry the wire or rope tied to the piston into and through the mortise *g*, by which the plunger *h* passes through the turning-frame. The mortise *g*, also, after passing through the turning-frame F, connects with a cylinder, H H, of iron or other suitable material, secured to the turning-frame, so as to serve, when carried through the intersection of the derricks, as the axis

of the turning-frame in its shifting with the wind. The plunger *h* and the wire or rope connected with the piston also pass through the cylinder, the wire to the ground, the plunger to its connection with the pump. The cylinder at its bottom is furnished with ways fixed to the sides opposite each other in the interior to control the movement of the plunger when in operation, for which purpose, further, the plunger is provided at its lower end with a cross-bar slotted to correspond with the ways. A knob on the plunger below the cross-bar is provided to attach a ring to make connection with the pump, as may be required. *m m m m* are the ribs of the vanes, which should be fixed movably in the vane-wheel, so as to yield readily to the motion of the governor. *k* is a hinged link connecting the locks and vanes.

The turning-frame, the rudder, and the vanes may be of any suitable material.

The mill is stopped, when desired, by pulling the wire down and fastening it, the effect of which is to lock the vanes—that is, pulling down the wire draws back the governor, which, in moving, turns the vanes parallel with the wind. On the other hand, when it is desired to give the vanes to the wind that the mill may be started, the wire is cast loose and the vanes unlocked—that is, upon loosening the wire the governor is pushed forward by the spring *a a* coiled round the shaft, and the vanes turned diagonally to the wind.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In combination with the pivotal vanes of the wind-wheel, the sliding head of the governor having a depending arm provided with the horizontal rod *b* for attachment to the operating cord or wire.

2. The arms D D D D of the governor having at right angles to their outer ends the slotted locks E, in combination with the hinged links *k* and vanes *n*, substantially as described, and for the purposes set forth.

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Witnesses:

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