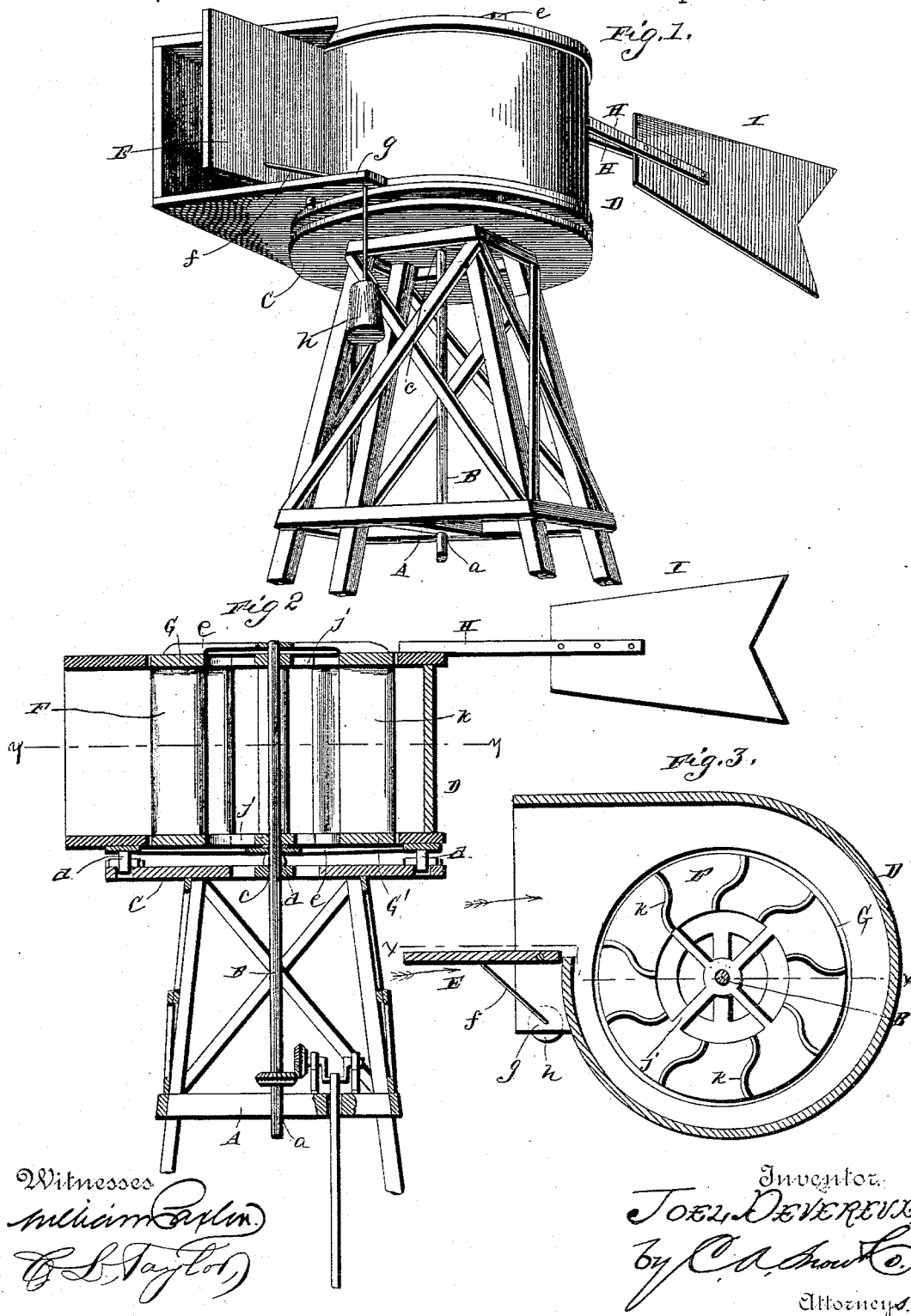


(No Model.)

J. DEVEREUX.  
WINDMILL.

No. 381,679.

Patented Apr. 24, 1888.



Witnesses  
William Taylor  
G. S. Taylor

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# UNITED STATES PATENT OFFICE.

JOEL DEVEREUX, OF CULBERTSON, NEBRASKA, ASSIGNOR TO GEORGE S. LORD, OF SAME PLACE.

## WINDMILL.

SPECIFICATION forming part of Letters Patent No. 381,679, dated April 24, 1888.

Application filed August 20, 1887. Serial No. 247,462. (No model.)

*To all whom it may concern:*

Be it known that I, JOEL DEVEREUX, a citizen of the United States, residing at Culbertson, in the county of Hitchcock and State of Nebraska, have invented a new and useful Improvement in Windmills, of which the following is a specification.

My invention relates to an improvement in windmills; and it consists in the peculiar construction and combination of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a perspective view of a windmill embodying my improvements. Fig. 2 is a vertical sectional view on the line *x x* of Fig. 3. Fig. 3 is a horizontal section on the line *y y* of Fig. 2.

The tower or support of the machine may be of any suitable construction, but should be provided with a lower horizontal bar, *A*, which is centrally and vertically perforated to present a bearing, *a*, for the lower end of a vertical shaft, *B*, which extends up through and is guided in a second bearing, *c*, in the platform *C*, mounted on the tower. This said platform is provided adjacent to its margin with a series of anti-friction rollers *d*.

*D* refers to the cylindrical wheel-case, which is open both at its upper and lower sides, at which point said openings are spanned by cross-bar *e*, centrally perforated for the reception and bearing of the vertical shaft. The said case *D* is provided with an opening at one side, from which extends a rigid portion of the case so as to form a guard thereat and present one side of a mouth portion for said opening. A door, *E*, is pivotally secured at the other side of said opening, and has attached thereto one end of a short cord or cable, *f*, which is guided through an opening in a horizontal supporting-ledge, *g*, of said wheel-case and has suspended from its end a weight, *h*. Arranged eccentrically in the case *D* is the wheel *F*, which consists of an upper and lower ring-section, *G G'*, and each having a central opening spanned by cross-arms *j*. These arms are also perforated centrally for the passage of a vertical shaft.

The rings *G G'* are connected by the vertical blades *k*, which, as shown in Fig. 3, are

preferably of an ogee form, which enables them to present the depressed or concave portions at the outer part of the wheel to receive the impact of the wind in the most effective manner, while the convex inner portions assist in deflecting the wind in a vertical direction through the wheels and case after it has spent its force.

Any suitable arrangement of cords or cables may be connected to the swinging door to facilitate its operation from the ground and enable the attendant to vary the size of the opening in the side of the case, and thus regulate the force of the air-current.

Two horizontal bars, *H H*, are connected to the upper side of the case *D* at a point immediately opposite where the mouth is located, and the said bars converge toward each other at their outer portions, where they carry a vane or tail, *I*.

Suitable gear-wheels are arranged at the base of the vertical shaft *A* and serve to transmit power for any desired purpose.

It will be noted that the under side of the case rests upon the friction-rollers and is thus enabled to turn freely relative to the platform.

In operation the air or wind is admitted to the interior of the case through the mouth thereof and strikes against the curved portions of such blades as are adjacent to said mouth, thereby causing the wheel to rotate at a high degree of speed. It will be noticed that, the wheel being arranged eccentrically in the case, the space between the edges of the blades and the inner face of the case gradually diminishes from the mouth portion, and thereby the side of the case having the mouth opposes a somewhat greater area of surface to the wind than the opposite side of the case. The effect of this arrangement is to cause the wind to turn the case slightly, so that the door will be arranged at a slight angle to the wind instead of parallel therewith. Should the wind veer or change, the vane or tail will readily change the position of the case, so as to bring the mouth of the same in line with the direction of the wind without interfering or effecting the continuous rotation of the wheel.

It will be understood that the arrangement of the door with its cord is such that upon any increase in the force of the wind above

the normal degree required the door will tend to close the opening against the power of the weight, and thereby reduce the volume of wind-current admitted to the wheel. Upon the wind-current resuming its regular speed the weight will act to throw the door open.

I claim—

1. The combination of the horizontal revolvable case D, having the mouth on one side, and the vane with the wind-wheel F, arranged eccentrically in the case, the axis of the said wheel being in line with the axis on which the case turns, substantially as described.

2. The combination of the horizontal revolvable case D, having the vane, the mouth

on one side, the hinged door arranged on one side of the said mouth, the weight and connections to keep the same open against the force of the wind, and the wind-wheel F, arranged eccentrically in the said case, the axis of the said wheel being in line with the axis on which the case turns, substantially as described.

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

JOEL DEVEREUX.

Witnesses:

F. S. BOSTOCK,  
R. KNOWLES.