EDWARD HEATH.

Wind-Mills.

No. 126,955. Patented May 21, 1872.

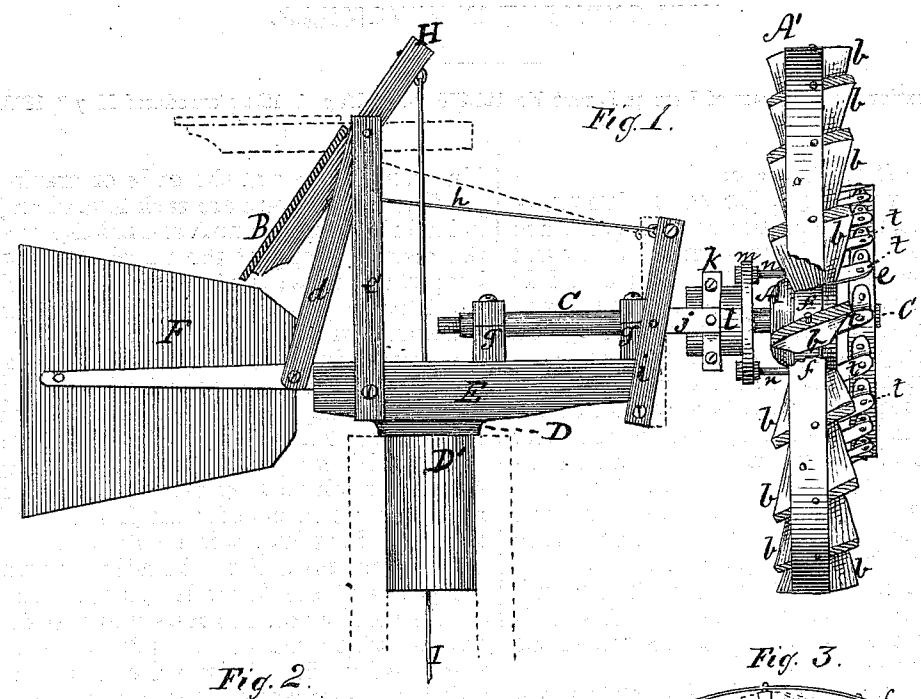

Fig. 1.

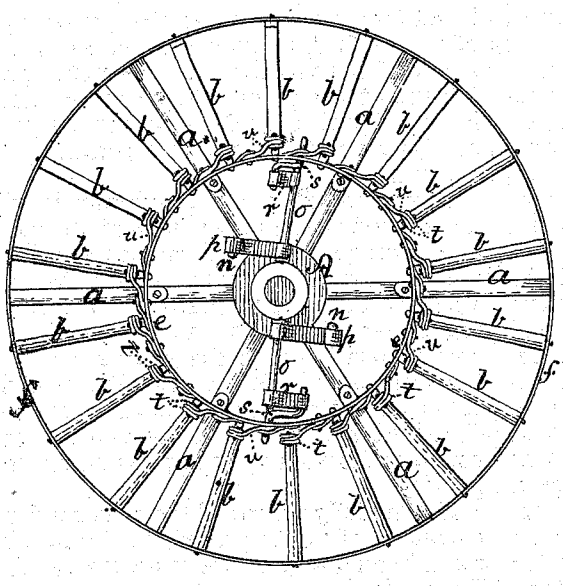

Fig. 2.

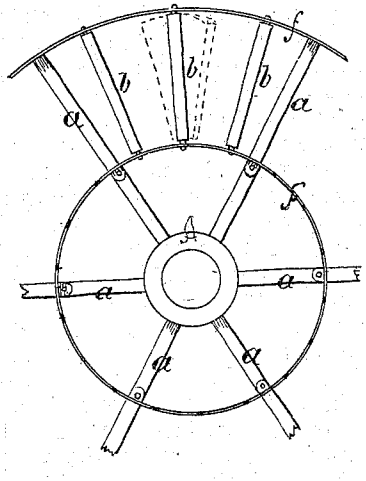

Fig. 3.

Witnesses
A. L. Parsons
A. E. Lyke

Edward Heath
H. P. K. Peck
his Atty.

UNITED STATES PATENT OFFICE.

EDWARD HEATH, OF FOWLERSVILLE, NEW YORK.

IMPROVEMENT IN WINDMILLS.

Specification forming part of Letters Patent No. 126,955, dated May 21, 1872; antedated May 7, 1872.

To all whom it may concern:

Be it known that I, EDWARD HEATH, of Fowlersville, in the county of Livingston and State of New York, have invented a new and useful Improvement in Windmills; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon.

Figure 1 represents a side elevation of my improved windmill, with a portion of the outer hoop of the wheel broken away to exhibit the inner hoop. Fig. 2 represents a face view of the wheel with the adjusting-ring and cranks. Fig. 3 represents a portion of the wheel without the adjusting-ring and cranks.

My invention relates to the combination and arrangement of the pivoted vanes of the wind-wheel with a self-regulating mechanism, as herein fully described.

The wheel-hub A is provided with six arms, *a*, to which two metal hoops, *f f*, are fastened. Between these hoops the wheel-vanes *b*, of the form shown in the drawing, are pivoted, so as to turn upon their longitudinal axes, when adjusted, by the action of the regulating-flap B. The wheel-shaft C is journaled in the two boxes *g g*, and extends out over the tubular seat D, and may be provided with a crank, to which the valve-rod of a pump may be connected. The central frame-piece E has a circular hole through it, into which the upper end of the tubular seat D is fastened, and its lower end D′ extends down into a hollow trunk, denoted in dotted lines in Fig. 1, in which it will revolve as the direction of the wind acting upon weather-vane F will require. Two braces, *d*, are employed to strengthen the uprights *e′*, in which the regulating-flap B is hinged. The hinged rod *h* connects flap B with the frame *i*, which is hinged at its lower end and is connected by two flat links, *j*, to the yoke *k*, which fits loosely in the neck of the collar *l*, which collar revolves with the shaft C. The circular flange *m* (for which a cross-bar could be substituted) is connected to the collar *l* and the hooked or bent rods *n* are fastened to the flange *m*, and they extend between the wheel-arms *a*, where their ends are bent at right angles and connect, respectively, with the double crank-levers *o* at the ends of crank-arms *p*. The crank-levers are each hinged or journaled in lugs on the hub A and in holes through the central hoop *f* of the wheel A′, in which hoop the inner ends of the vanes *b* are pivoted. This hoop is of nearly equal diameter and concentric with the adjusting ring or wheel *e*. The respective arms *r* of the cranks *o* are hinged to the small cranks *s*, which are journaled in the adjusting-ring *e*. The inner ends of the vanes *b* have straps of metal riveted to them, which straps are bent at their projecting ends *t*, where they extend outside of the ring *e* and form ears for the hinge, to which the short bent link *u* is pivoted. This link has one end pivoted to the adjusting ring or wheel *e*, and the latter is actuated through cranks *s* and *o* and the rods *r* and the other devices which connect the adjusting-wheel *e* with the flap B. The wheel or ring *e* is provided with four spokes and a hub, the latter being free to rotate upon the projecting end of the shaft C, to allow the necessary adjustments of the vanes *b*. To the upper projecting end of the pivoted flap-beam H a rod, I, is hinged and extends down for the purpose of adjusting the vanes *b* by a person upon the ground.

From the foregoing description it will be understood that the positions of the vanes *b*, and consequently the degree of speed of the wheel A′, will be regulated by the flap B, which will change its positions with the varying power of the wind acting upon it. The connections between the sliding collar *l* and the vanes *b* and between the flap B and the collar *l* are so arranged as to effect the above-described movements of the vanes *b* by the action of the wind upon flap B and by its own gravity.

Having fully described the construction and operation of my improved windmill, what I claim herein, and desire to secure by Letters Patent, is—

1. The combination of the adjusting-ring *e* with vanes *b* and sliding collar *l*, connected by the links, rods, levers, and cranks, substantially as and for the purpose specified.

2. The described mechanism connecting the collar *l* and vanes *b*, in combination with the

flap B and the devices by which it actuates the sliding collar *l*, substantially as and for the purpose specified.

3. The construction of the wheel A′ by the combination of the pivoted vanes *b*, hoops *f f*, hub A, and arms *a*, substantially as and for the purpose described.

In testimony hereof I have hereunto set my hand this 7th day of September, A. D. 1871.

EDWARD HEATH.

Witnesses:

H. P. K. PECK,

W. B. D. C. SMITH.