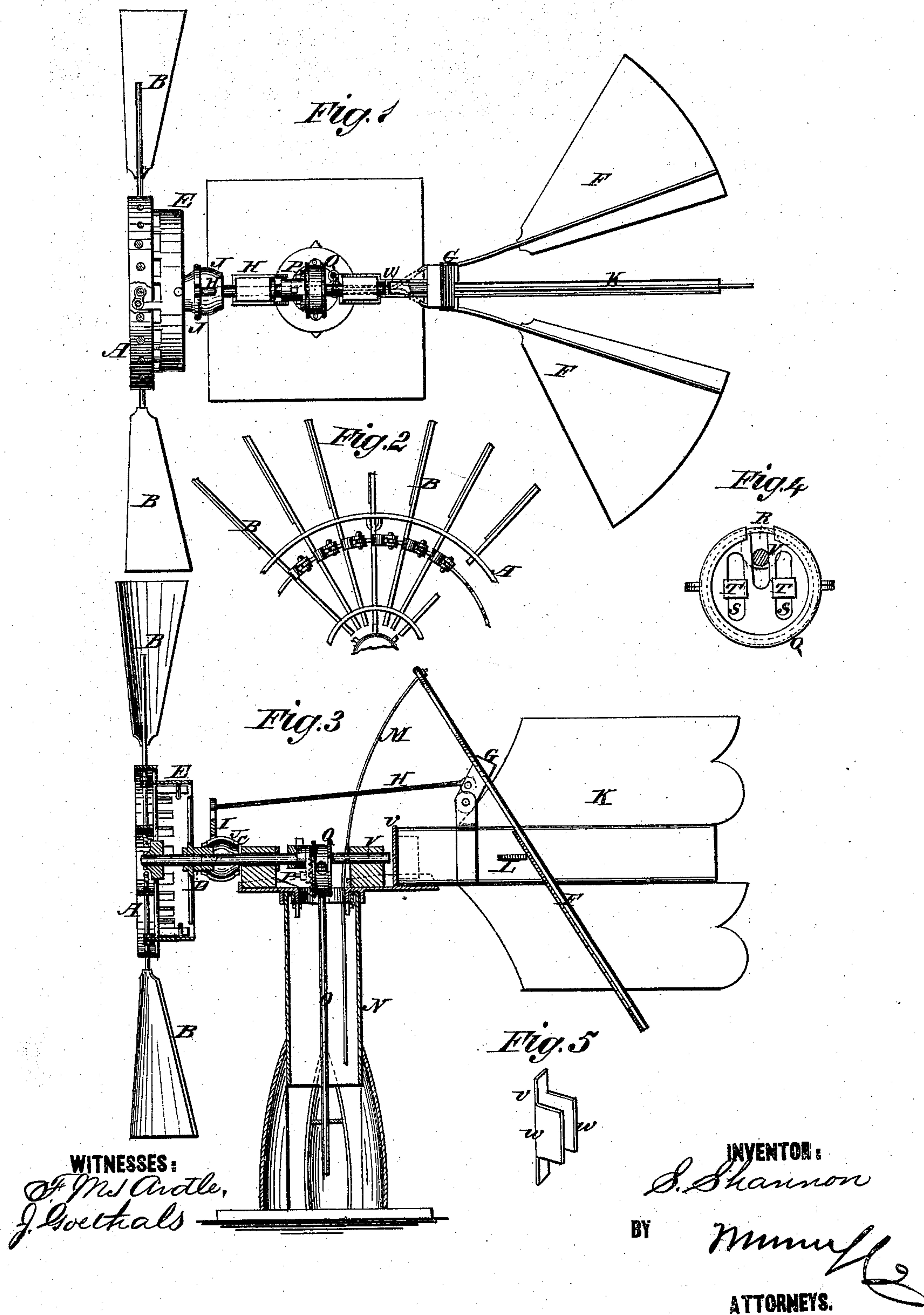


S. SHANNON.

WIND-MILL.

No. 173,867.

Patented Feb. 22, 1876.



UNITED STATES PATENT OFFICE.

SAMUEL SHANNON, OF SHELLSBURG, IOWA.

IMPROVEMENT IN WINDMILLS.

Specification forming part of Letters Patent No. **173,867**, dated February 22, 1876; application filed January 7, 1876.

To all whom it may concern:

Be it known that I, SAMUEL SHANNON, of Shellsburg, Benton county, Iowa, have invented new and useful Improvements in Windmills, of which the following is a specification:

My invention consists of a shield on the sliding hub that shifts the vanes to prevent the lodgment of snow and ice on the shaft, which obstructs the working of the hub; also, of a detachable and adjustable contrivance of the eccentric which works the pump-rod, to vary the length of the stroke; also, of a wearing-plate, to sustain and take up the wear of the wheel-shaft at the end; and also, of a contrivance of the coupling by which the vanes that regulate the opening and closing of the wheel-vanes are mounted on the machine and connected with the sliding hub which works the wheel-vanes.

Figure 1 is partly a horizontal section and partly a plan view. Fig. 2 is a front elevation. Fig. 3 is a sectional elevation. Fig. 4 is a detail of the eccentric, and Fig. 5 is a perspective view of the plate for taking the end wear of the wheel-shaft.

Similar letters of reference indicate corresponding parts.

The wheel A is similar in construction to other wheels, having vanes B, which turn on axes radial to the wheel for taking the wind, more or less, said vanes being turned by a sliding hub, D, to which they are suitably connected by the wheel E. The hub is moved back by the effect of the wind on the vanes when they are open, and it is moved forward by the crotched regulating-vane F, which is connected to it by the pivot-block G, rods H, and the crotched coupling-arm I.

To this hub I now propose to attach the hood or shield J, to protect that part of the shaft on which the hub slides from snow and ice, which, without the hood, sometimes freezes on the shaft, so as to prevent the working of the hub.

I make the hub in two parts, so that they can be applied and removed readily, and contrive them so as to be fastened together around the hub in any approved way, and so that the crotched coupling I may hold, or at least aid in holding, it in place.

The pivot-block G, to which the rod H is connected, has the regulating-vane F rigidly attached to it, so that it swings backward and forward with the vane as it vibrates, and thus communicates the motion to the hub. This vane F is crotched, so as to work on both sides of the tail-vane K, by which the action is uniform and easy on the pivot and on the wheel. Arms L project out from each side of the tail-vane beam, to receive the vane F and support it when the wind is not acting on it powerfully enough to raise it.

A rod, M, is suspended from the upper end of the staff of the adjusting-vane down through the tower or supporting-frame N, for pulling up the vane to stop the wheel and letting it down to start.

The block G may be made of wood or metal, as preferred.

The eccentric for working the pump-rod O consists of a hub-plate, P, for bolting or keying on the shaft, and a rim-plate, Q, for bolting to the hub-plate, both plates being grooved or serrated on the sides which clamp together, as indicated in Figs. 1 and 3, so that they will hold firmly together and not slip, and the rim-plate being slotted at R for sliding on the shaft, and also at S for shifting along the clamping-bolt, to vary the eccentricity, and thus lengthen and shorten the throw of the pump-rod, for gaging the work to the power.

U is the wearing-plate for the inner end of the shaft V, the object of which is to prevent wear of the collars of the shaft, which is very severe in machines of this kind, in consequence of raising the power on the side of the wheel.

The plate has flanges W, which fit against the sides of the beam of the tail-vane, so that it can be readily shifted forward by a wedge, to take up the slack motion of the shaft at any time, as may be required.

Having thus described my invention, I claim as new, and desire to secure by Letters Patent—

1. The combination of the hood J with the sliding hub D and the wheel-shaft, substantially as specified.

2. The adjustable and detachable eccentric, constructed of a hub-plate R and rim-plate Q, having grooved clamping-faces, and the

rim-plate being slotted at R and S and bolted to the hub-plate, substantially as specified.

3. The combination of the adjustable flanged wearing-plate U with the shaft V and the tail-vane beam, substantially as specified.

4. The combination of crotched regulating-vane F, pivot-block G, and the connecting

rod H with the sliding hub D, substantially as specified.

SAMUEL SHANNON.

Witnesses:

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