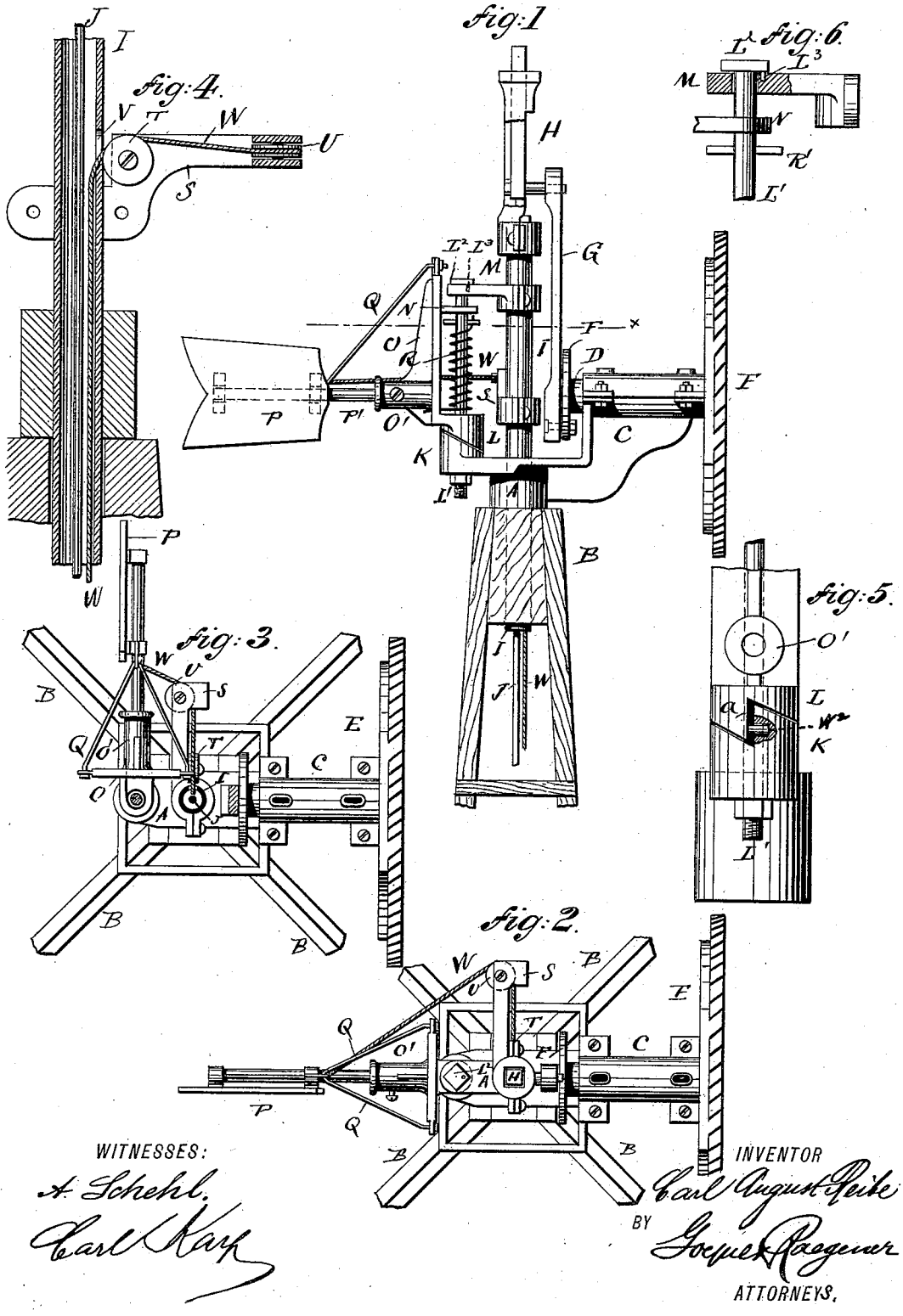
(No Model.)

C. A. REIBE.

WINDMILL.

No. 361,894. Patented Apr. 26, 1887.



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CARL AUGUST REIBE, OF DELAVAN, WISCONSIN.

WINDMILL.

SPECIFICATION forming part of Letters Patent No. 361,894, dated April 26, 1887.

Application filed February 24, 1887. Serial No. 228,655. (No model.)

To all whom it may concern:

Be it known that I, CARL AUGUST REIBE, of Delavan, in the county of Walworth and State of Wisconsin, have invented certain new and useful Improvements in Windmills, of which the following is a specification.

This invention relates to certain new and useful improvements in windmills; and the object of my invention is to provide a windmill which is so constructed that the wheel can be adjusted at any desired inclination to the direction of the wind, and which wheel can at all times maintain its position in relation to the direction of the wind for which it has been adjusted.

The invention consists in the combination, with a suitable rotative frame carrying the wheel and power-transmitting devices, of a vane pivoted on said frame, which vane has a cam-hub resting upon a cam-hub on the rotative frame, and a spring acting on said cam-hubs, all as will be fully described and set forth hereinafter, and finally pointed out in the claims.

In the accompanying drawings, Figure 1 is a side view of my improved windmill, parts being broken out. Fig. 2 is a top view of the same, parts being broken out. Fig. 3 is a sectional plan view of the same on the line *x x*, Fig. 1. Fig. 4 is a detail cross-sectional view of parts. Fig. 5 is an enlarged detail view of the cam-hub, parts being broken out and others in section. Fig. 6 is a detail view of the shaft on which the vane arm turns, parts being in section.

Similar letters of reference indicate corresponding parts.

The frame A is mounted to rotate on the top of the standard or tower B, which may be of any well-known construction. The frame A has a bracket, C, in which the shaft D is journaled, on the outer end of which the wind-wheel E is mounted to rotate, said shaft D carrying a wheel, F, the connecting-rod G of which is pivoted at its upper end to a vertically-sliding rod, H, formed on the top of a tubular standard, I, of the frame A. The pump-rod J is secured on the lower end of said rod H and projects down through the standard I. The said standard I is secured in the frame A and rotates with the same.

The frame A is provided on the side opposite the one having the bracket C with a projection or fixed hub, K, having a cam-track formed on its top, and on said hub K a hub, L, rests, which has a cam-track formed on its bottom. A rod, L′, passes through the cam-hubs K and L and through a bracket or arm, M, on the tubular standard I, and said rod L′ has a head, L^2, on its upper end, from which head a pin, L^3, passes into the arm M, for the purpose of preventing the said rod L′ being rotated on its longitudinal axis. The rod L′ also passes through the lug N on an arm, O, projecting upward from the upper cam-hub, L, said arm being provided at or near its lower end with a socket for receiving the stem or shaft P′ of the vane P, which may be of any well-known construction.

The vane is braced by means of rods Q from the top of the arm N, as shown. A spiral spring, R, surrounds the rod L′, and has its upper end rested against a transverse pin, R′, in the rod L′, and has its lower end rested on the top of the cam-hub L and passed into an aperture in the arm O. An arm, S, is clamped or otherwise fastened on the tubular standard I and projects at right angles to the bracket C. A vertical pulley, T, is mounted on said arm at the inner end, and a horizontal pulley, U, at the outer end of the arm. A rope or chain, W, is fastened to the vane, passes over the pulleys U T, and through a slot, V, into the tubular standard I and down through the same, as shown.

The operation is as follows: The spring R exerts a downward pressure on the upper cam-hub, L, and as the two bevels of the hubs act on each other the upper hub, L, is turned on its vertical axis until their shoulders *a*, Fig. 5, rest against each other, when the vane will be in line with the bracket C. As shown in Fig. 5, a buffer or cushion, W^2, is provided on one or both of the offsets or shoulders of the cam-piece, for the purpose of preventing undue shocks. The face of the wheel is now at right angles to the direction of the wind, and is always maintained at right angles to the direction of the wind by the vane. If the wind changes very suddenly and forcibly, it cannot break the mill, as the vane-arm can give slightly and affords elastic resistance, but is at

all times brought back into its proper position by the action of the spring R.

When it is desired to adjust the wheel E so that it does not receive the full force of the wind—that is, when the wheel C is not to be at right angles to the direction of the wind—the rope W is pulled down more or less, whereby the vane-arm is swung into such a position that its longitudinal axis has a greater or less inclination to the axis of the bracket C in the horizontal plane, and the wind strikes the wheel at an angle. As soon as the rope W is released the spring R, which was compressed by swinging the vane laterally, acts on the cam-hub L and presses it on the hub K, whereby the vane is swung in line with the bracket.

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

1. In a windmill, the combination, with a rotative frame, A, having a bracket carrying the wind-wheel and shaft, of a cam-hub, K, on the frame A, the cam-hub L, resting on the cam-hub K, the rod L′, passed through said cam-hubs K and L, a spring on said cam-hub L, and a vane connected with the cam-hub L, substantially as shown and described.

2. In a windmill, the combination, with a rotative frame, A, having a bracket, C, carrying the wind-wheel and its shaft, and a tubular standard, I, of the arm M on said tubular standard, the cam-hub K on the frame A, the cam-hub L on the cam-hub K, the rod L′, passed through said cam-hubs and having its upper end held by the arm M, the arm O of the cam-hub L, the vane P, held on the arm O, and the spring R, surrounding the rod L′ and exerting a downward pressure on the cam-hub L, substantially as shown and described.

3. In a windmill, the combination of a rotative frame having an arm carrying the wind-wheel and its shaft, and the tubular standard I, of the arm M on said tubular standard, the cam-hub K on the frame A, the cam-hub L, resting on the cam-hub K, the rod L′, passing through the cam-hubs K and L, having its upper end held by an arm, M, on the tubular standard, the vane P, held in said arm, the spiral spring R, surrounding the rod L′ and exerting a downward pressure on the cam-hub L, the arm S on the tubular standard, the pulleys T U on the same, and the rope W, fastened to the vane, passed over the pulleys T and U and through the slot V into the tubular standard, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

CARL AUGUST REIBE.

Witnesses:

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