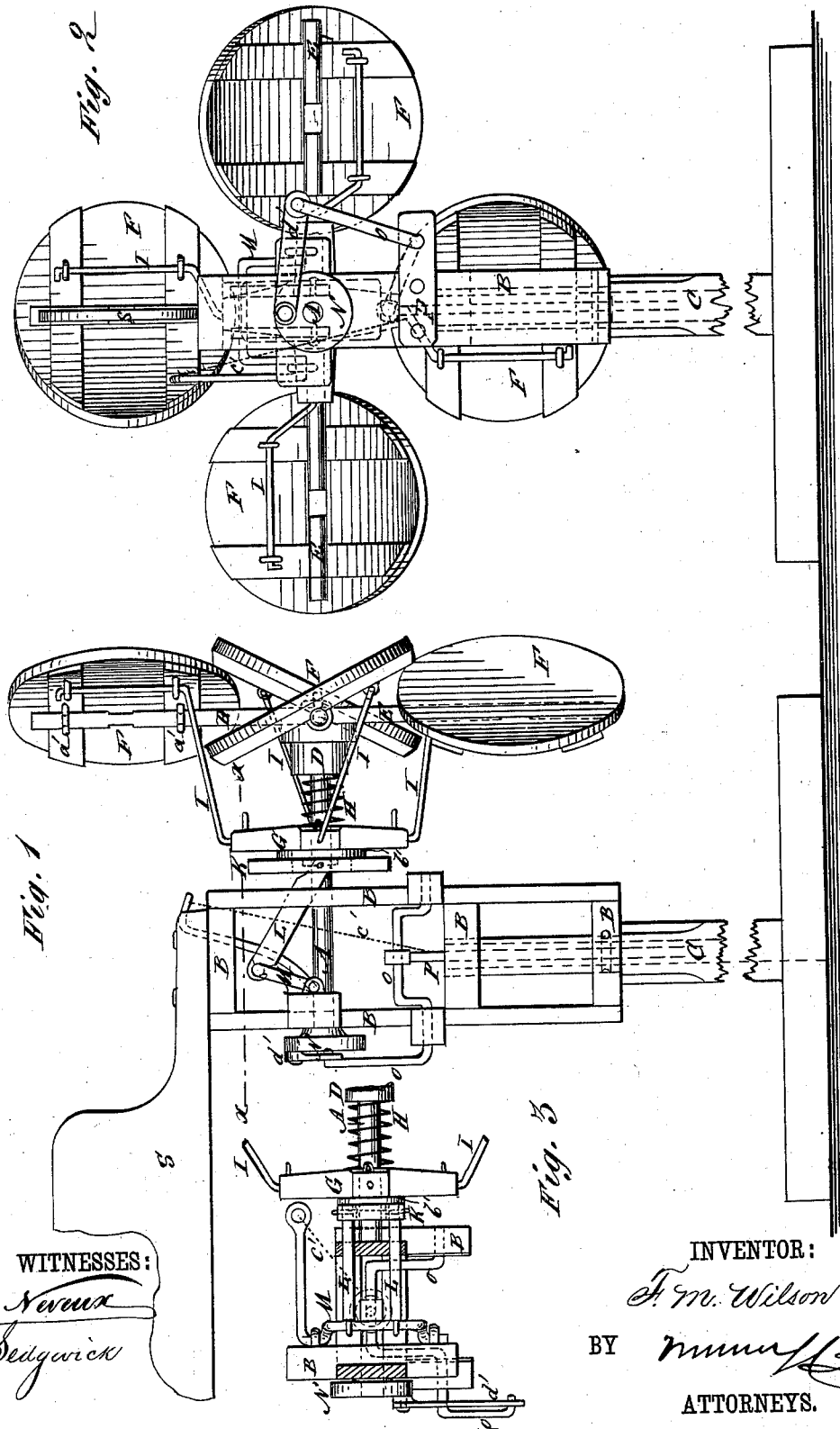


F. M. WILSON.
Windmill.

No. 216,481.

Patented June 10, 1879.



WITNESSES:
C. Nunn
C. Sedgwick

INVENTOR:
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UNITED STATES PATENT OFFICE.

FRANCIS M. WILSON, OF TEKAMAH, NEBRASKA, ASSIGNOR TO HIMSELF
AND JAMES FULLEN, OF SAME PLACE.

IMPROVEMENT IN WINDMILLS.

Specification forming part of Letters Patent No. **216,481**, dated June 10, 1879; application filed
April 8, 1879.

To all whom it may concern:

Be it known that I, FRANCIS MARION-WILSON, of Tekamah, in the county of Burt and State of Nebraska, have invented a new and Improved Windmill, of which the following is a specification.

Figure 1 is a side elevation of the windmill. Fig. 2 is a rear elevation of the same. Fig. 3 is a plan on line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

The object of this invention is to provide a windmill that shall excel others in simplicity of construction, durability, ease of adjustment, and economy of power.

The invention consists of the shaft A, journaled in the frame B, that is supported by and revolves on the hollow standard C. On the extreme outer end of this shaft is the hub D, provided with four radial spokes, E E, on each of which is pivoted, by staples *a' a'*, a circular wing, F. On the same shaft A is the cruciform sliding head G, and also the spiral spring H, whose function is to keep the wings fully spread, between the hub and the head. The rods I I connect each arm of the head with its respective wing in such a manner that an excess of wind-pressure upon the wings will cause them to feather against the opposing action of the spring.

K is a supplementary sliding head on the same shaft with pitmen L, extending rearward, and connecting with the bell-crank M, while between G and K is a washer, *b'*, to lessen the friction between them. This crank M is pivoted in staples driven into a cross-timber of the frame, and has an upwardly-projecting arm, to which the cord or wire *c'* is attached, and which is led down through the hollow standard. By pulling upon this rope the supplementary head K is made to slide forward upon the shaft A, so as to push the head G outward and cause the wings to feather to any desired angle, and thus the speed and power of the mill may be regulated at will.

To the end of the shaft A opposite from the wings is secured the eccentric N, connected by the pitman *d'* to an arm of the double-cranked shaft O, that is journaled on the frame B; and to this cranked shaft is secured the vertical shaft P, that passes down through the hollow standard, and by which power is transmitted to the machinery below. This arrangement of the eccentric with the double-crank shaft constitutes a lever capable of transmitting a much larger percentage of the power of the wings than any device heretofore employed on windmills, so that, to obtain the same effect with a given force of wind, I am able to use much smaller and lighter wings than can those who have not this device.

It will be seen that the apparatus is very simple and not liable to get out of order.

The vane S is rigidly secured to the top of the frame B.

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

1. The within-described windmill, consisting of shaft A, frame B, standard C, hub D, spokes E E, and circular wings F F, in combination with the sliding heads G and K, spiral spring H, rods I I, pitmen L L, crank M, washer *b'*, eccentric N, pitman *d'*, double-cranked shaft O, shaft P, and vane S, substantially as herein shown and described.

2. In the construction of a windmill, the eccentric N, pitman *d'*, and double-cranked shaft O, substantially as herein shown and described.

3. The combination of the shaft A, hub D, spokes E E, circular wings F F, sliding heads G and K, washer *b'*, pitmen L L, crank M, eccentric N, pitman *d'*, and double-cranked shaft O, substantially as herein shown and described.

FRANCIS MARION WILSON.

Witnesses:

C. W. CONKLING,
WM. H. WOMACK.