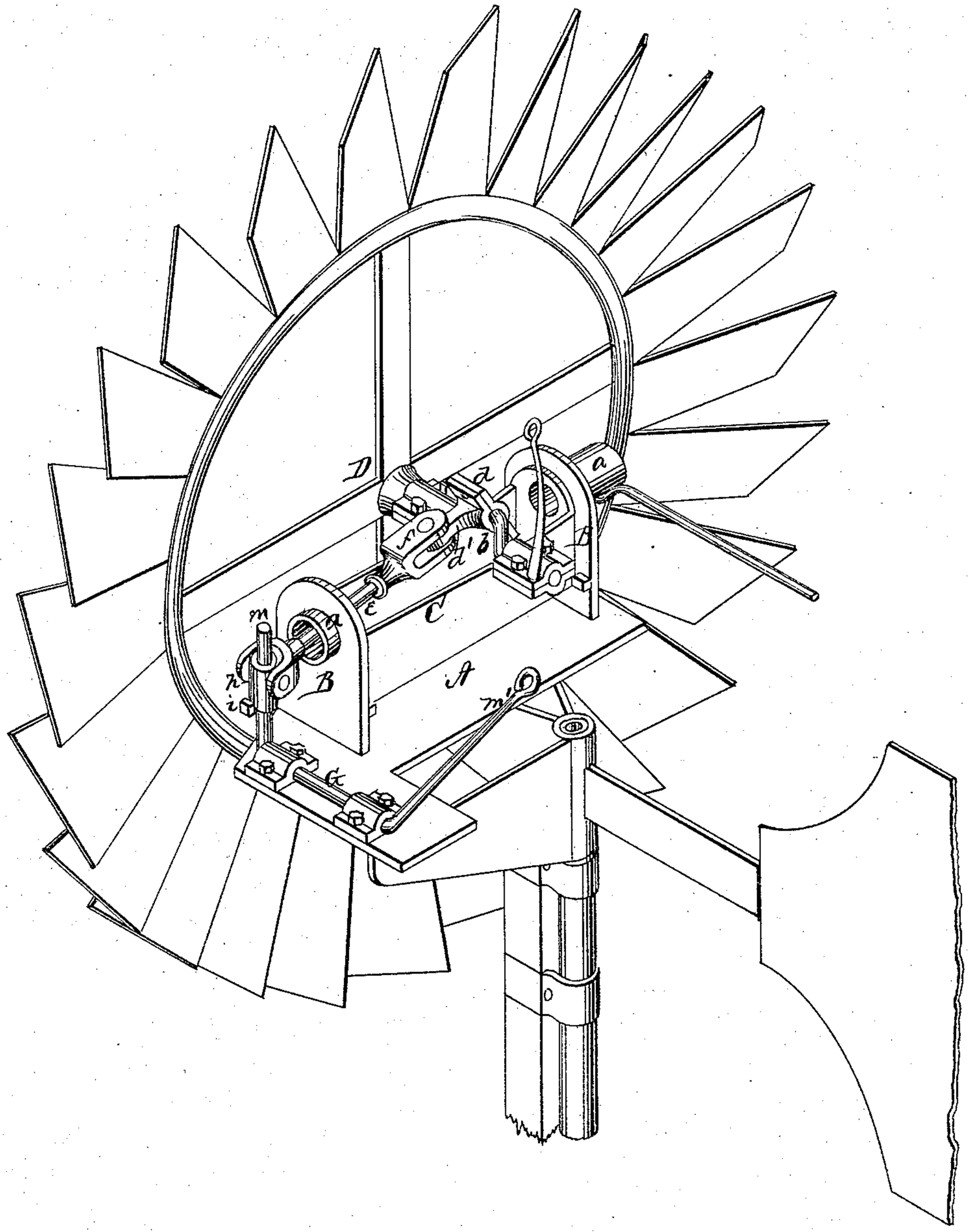
G. METCALF.

Mechanical Movements for Working Wind-Mills.

No. 157,855. Patented Dec. 15, 1874.



WITNESSES

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UNITED STATES PATENT OFFICE.

GEORGE METCALF, OF SOMONAUK, ILLINOIS.

IMPROVEMENT IN MECHANICAL MOVEMENTS FOR WORKING WINDMILLS.

Specification forming part of Letters Patent No. **157,855**, dated December 15, 1874; application filed June 18, 1874.

To all whom it may concern:

Be it known that I, GEORGE METCALF, of Somonauk, in the county of De Kalb and in the State of Illinois, have invented certain new and useful Improvements in Windmill; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

My invention relates to the class of windmills in which the crank-shaft, upon which the wheel is secured, works in a pivoted box; and the nature of my invention consists in the connection or method of transferring the motion from the crank to the point of connection of the pump-rod, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, which is a perspective view of a windmill embodying my invention.

A represents the turn-table of a windmill provided with two standards, B B, in which is hung a box, C, upon hollow pivots or bearings *a a*. D represents the wind-wheel, attached on the end of the crank-shaft *b*, which works in suitable bearings on the box C, the crank working inside of said box. Upon the crank of the shaft *b* is placed a box, *d*, having a projecting arm, *d'*, which is pivoted in a fork, *f*, and this fork is connected by a swivel-joint to a rod, *e*, passing out through one of the hollow journals of the box C. The outer end of the rod *e* is forked and pivoted to a sleeve or collar, *h*, which is fastened on an arm, *m*, projecting from a horizontal oscillating or rocking shaft, G, having its bearings in suitable boxes on the turn-table A. This shaft is provided with another arm, *m'*, which is connected at its outer end direct to the pump-rod.

By lengthening or shortening the oscillating or rocking shaft G, the wheel may be hung a greater or less distance from the vertical axis of the mill; and by adjusting the collar *h* on its arm *m* by means of the set-screw *i*, the stroke of the pump can be lengthened or shortened, as desired.

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

The combination of the crank-shaft *b*, box *d*, with arm *d'*, swivel-fork *f*, rod *e*, and adjustable sleeve or collar *h*, and the oscillating or rocking shaft G, having arms *m m'*, all substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 4th day of June, 1874.

GEO. METCALF.

Witnesses:

A. N. MARR,

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