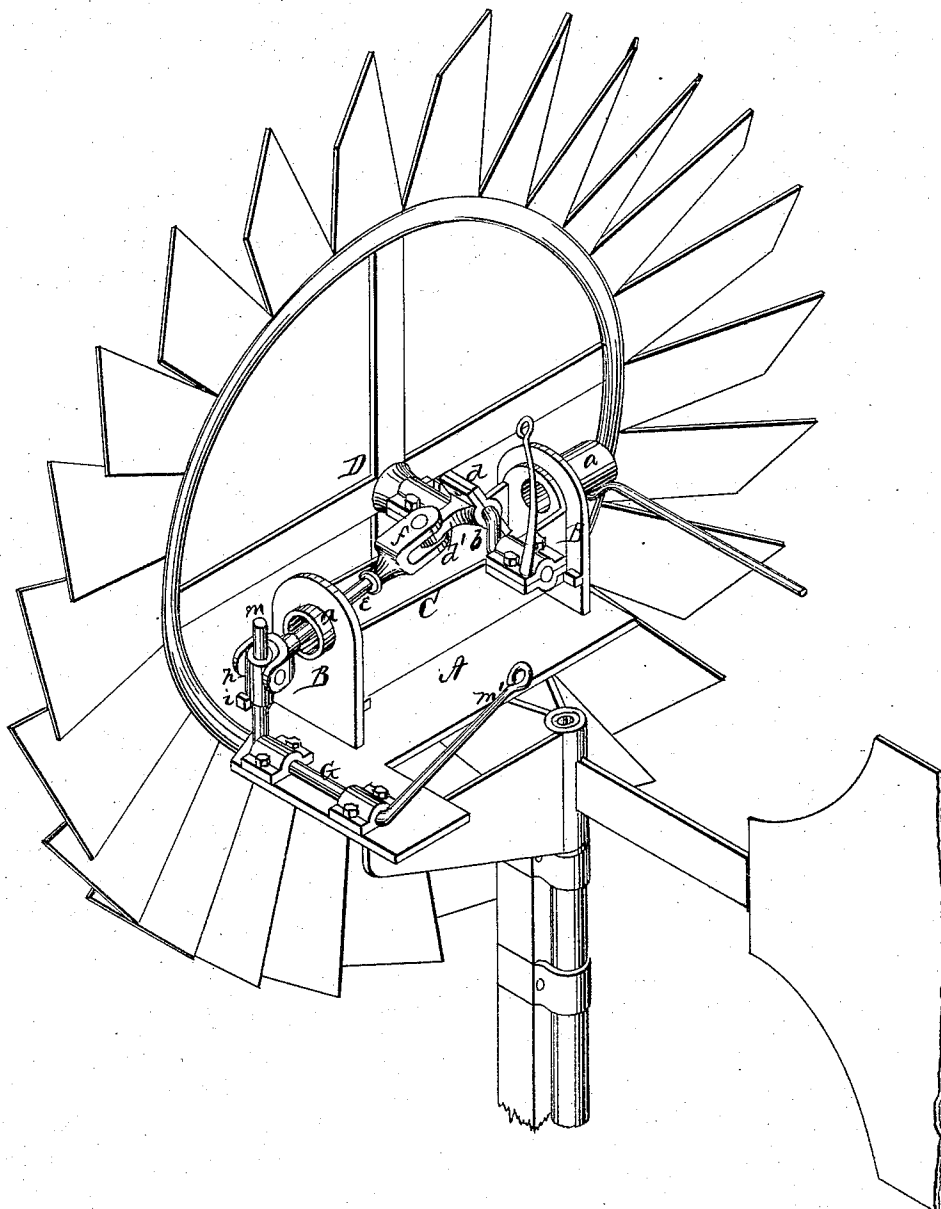


G. METCALF.

Mechanical Movements for Working Wind-Mills.

No. 157,855.

Patented Dec. 15, 1874.



WITNESSES

J. P. Th. Lang.
C. L. Everts.

INVENTOR

G. E. Metcalf.
Alexander Mason
Attorneys

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,
C. L. EVERT.