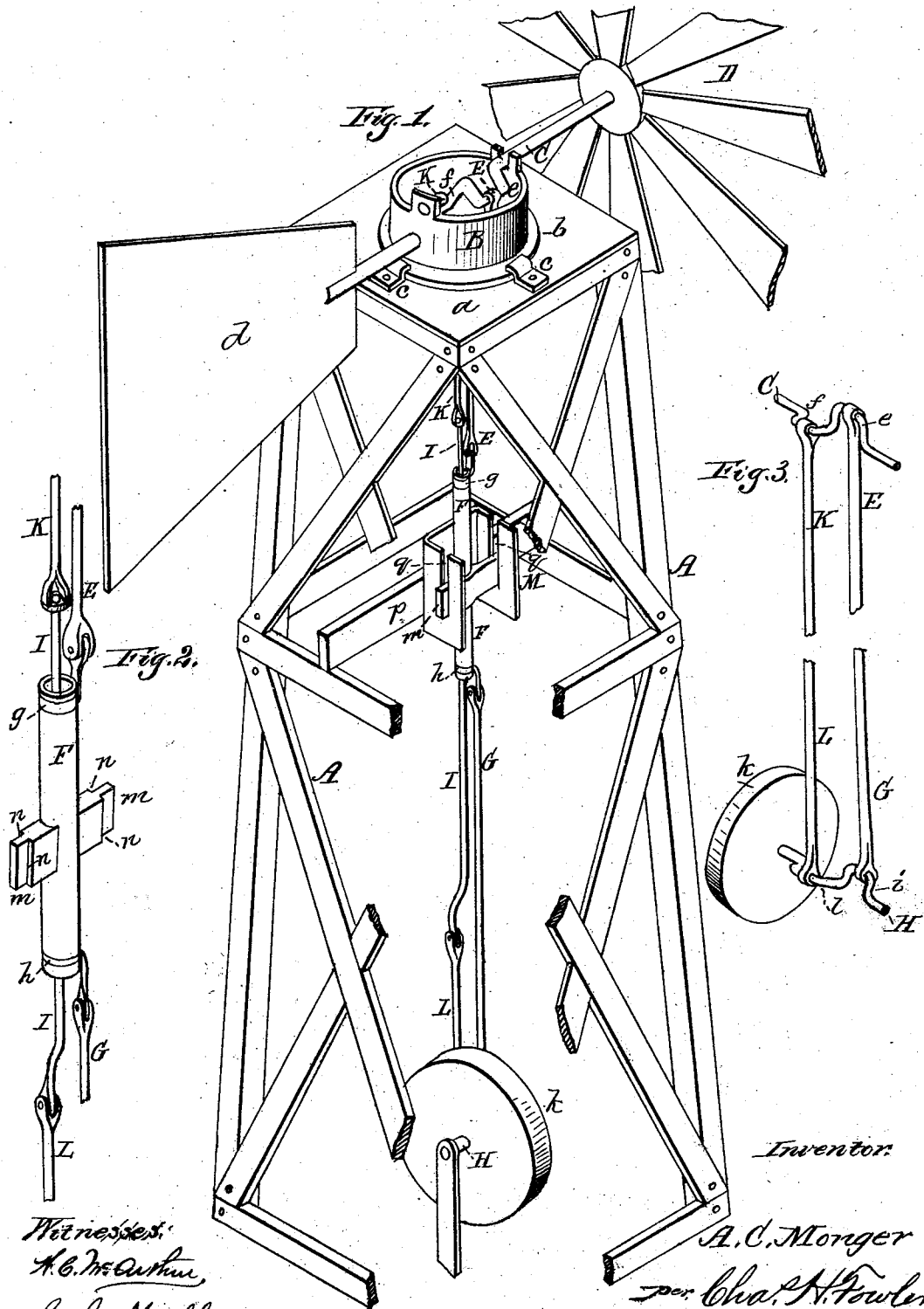


(Model.)

A. C. MONGER.
GEARING TO WINDMILLS.

No. 248,051.

Patented Oct. 11, 1881.



Witnesses:
A. C. McArthur,
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UNITED STATES PATENT OFFICE.

AUGUSTUS C. MONGER, OF AMBOY, ILLINOIS.

GEARING TO WINDMILLS.

SPECIFICATION forming part of Letters Patent No. 248,051, dated October 11, 1881.

Application filed July 8, 1881. (Model.)

To all whom it may concern:

Be it known that I, AUGUSTUS C. MONGER, a citizen of the United States, residing at Amboy, in the county of Lee and State of Illinois, have invented certain new and useful Improvements in Gearing to Wind-Wheels; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a perspective view of my invention, and Figs. 2 and 3 detail views of the gearing.

The present invention has relation to certain new and useful improvements in power-gearing adapted to be connected to a wind-wheel or other suitable motive power.

The object of the invention is to provide a simple, cheap, and effective gearing, connected to a suitable shaft provided with a pulley, whereby power can be transferred to any suitable machinery for various purposes. These objects I attain by the construction substantially as shown and hereinafter described.

In the accompanying drawings, A represents a trestle-work or frame, to the upper end of which is connected a suitable platform, *a*, for supporting a turn-table, B, said table being cast with a circumferential rim, *b*, for holding it in place by plates *c*, bolted or otherwise connected to the platform *a*. This turn-table B, which is adapted to horizontally turn upon the platform, has secured to it a vane, *d*, of the construction usually employed in windmills, and the upper portion of the turn-table B forms bearings for a rotary shaft, C, provided at its outer end with a suitable wind-wheel, D. This shaft has a double crank, *e f*, the crank *e* having loosely connected to it the upper end of a rod, E, the lower end of said rod being pivoted to a band, *g*, passing loosely around the upper end of a guide-tube, F, so that it can adjust itself thereon for the purpose hereinafter set forth. To the lower end of the tube F is similarly connected a second band, *h*, and to this band is pivoted one end of a rod, G, the lower end of said rod being loosely connected to a crank, *i*, upon a shaft, H, said shaft having secured to it a pulley, *k*, for receiving a driving-belt.

Passing through the guide-tube F is a rod, I, the upper end of which has swiveled to it a rod, K, and to the lower end is pivoted a rod, L. The upper end of the rod K is loosely connected to the crank *f*, upon the shaft C, and the lower end of the rod L is similarly connected to the crank *i*.

The tube F is cast with guide-arms *m*, said arms having shoulders *n*, to prevent the tube from any lateral strain when the gearing is in motion.

A U-shaped plate, M, is connected to a cross-beam, *p*, said plate having elongated slots *q*, for the reception of the arms *m*.

When gearing is put in motion by the revolution of the wind-wheel D, the shaft C is caused to rotate, and the double cranks *e f*, with their connecting-rods, the tube, and lower connecting-rods, impart motion to the crank-shaft H.

To further illustrate the operation it will be noticed that when the connecting-rods K I L are elevated by the crank *f* the lower crank-shaft, H, is partially rotated, and at the same time the rod E is depressed, forcing with it the tube F and rod G, finishing the revolution of the crank-shaft H. This movement of the various connecting-rods and tube revolves the pulley *k* with the required speed, and by the belt-connections imparts motion to the machinery.

The double-crank shafts C H are considered of great value in overcoming the dead-centers and increasing the driving-power with comparatively little wear on the gearing. The tube F is also considered of equal importance, as the distance between the two shafts C H is so great that the rods would be liable to lateral strain or become twisted out of shape, which would affect the operation of the gearing. These objections, however, are overcome by the employment of the cast-metal tube F, which not only serves as a guide for the long connecting-rod I, but also prevents the danger of the twisting of the rods E G, to which they are connected.

The guide-arms *m*, in connection with the U-shaped plate M, also serve to render the several operating parts more rigid and firm, and less liable to become injured.

The swiveling of the lower end of the rod

K to the rod I is to enable said rod to adjust itself when the wind-wheel is to meet the wind at different points.

5 The bands *g h* on the ends of the guide-tube F is to allow the rods to adjust themselves as circumstances may require; also the pivoting of the rod G L E is to prevent any undue strain on them by varying changes in position of the shaft C.

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

The combination, with the U-shaped plate M, having guide-slots *q*, of the guide-tube F,

having arms *m* and shoulders *n* and bands *g h*, and the several connecting-rods and double-crank shafts, constructed and arranged to operate substantially as and for the purpose set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

AUGUSTUS C. MONGER.

Witnesses:

CHAS. E. IVES,
P. M. JAMES.