(No Model.)

S. E. LIMPUS.

WINDMILL.

No. 271,643. Patented Feb. 6, 1883.

Fig. 1.

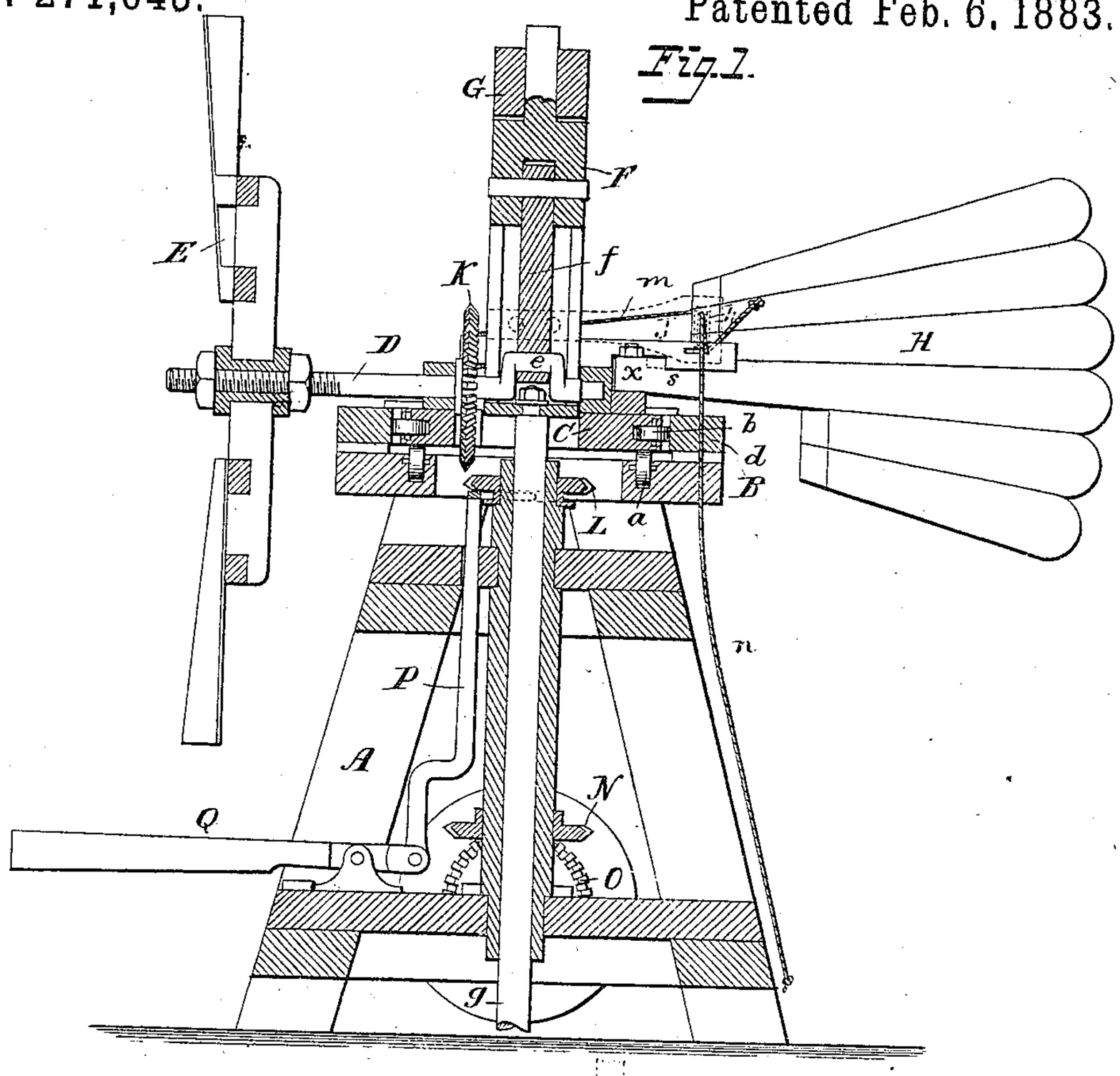
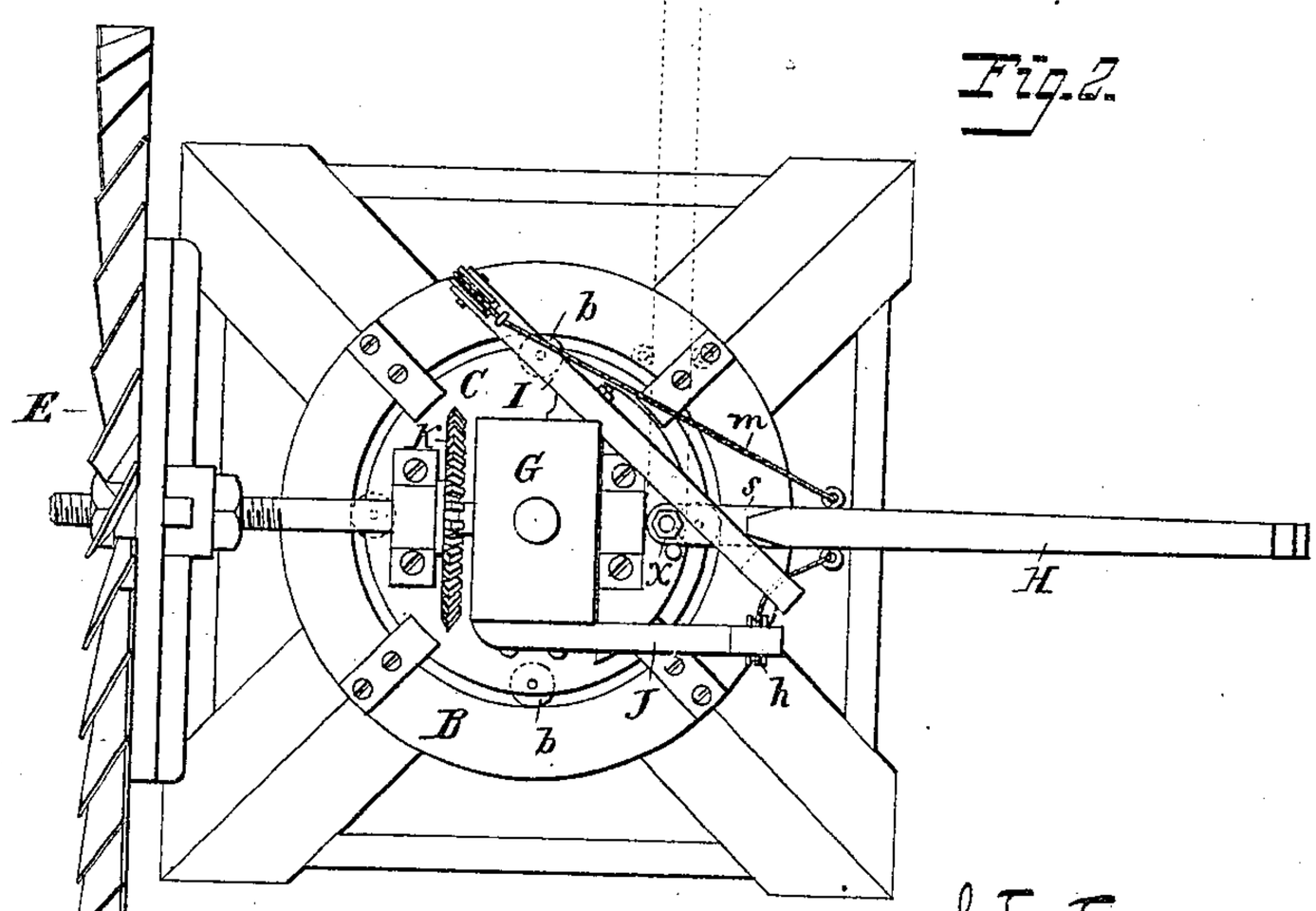


Fig. 2.



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UNITED STATES PATENT OFFICE.

SHERMAN E. LIMPUS, OF OLATHE, KANSAS.

WINDMILL.

SPECIFICATION forming part of Letters Patent No. 271,643, dated February 6, 1883.

Application filed October 24, 1882. (No model.)

To all whom it may concern:

Be it known that I, SHERMAN E. LIMPUS, of Olathe, Johnson county, Kansas, have invented certain Improvements in Windmills, of which the following is a specification.

My invention is a windmill constructed, as fully described hereinafter, so as to reduce friction, utilize to as great an extent as possible the full force of the wind, secure a ready application of the power for different purposes and in different ways, and facilitate the adjustment of the parts.

In the drawings, Figure 1 is a sectional elevation of a windmill with my improvements, and Fig. 2 is a plan view.

The frame A, of any suitable character, supports a platform, B, provided with friction-rollers *a*, on which rests and revolves a circular table, C, having peripheral friction-rollers *b*, which bear upon the inner side of a fixed ring-bearing, *d*, supported by the platform. The table C carries the bearings of the wind-wheel shaft D, which has the wind-wheel E at one end and a crank, *e*, directly central with the table, a pitman, *f*, connecting said crank with a link or slide, F, sliding in a guide-yoke, G, that is secured to the table. As the shaft D revolves the slide F moves up and down in its guide and carries with it the pump-rod *g*, which is secured to the lower end of the slide. By this means a very direct connection is made between the crank-shaft and pump-rod, and a transfer of motion attended with but little friction or jerking, while the parts are so protected as not to be liable to injury from storms or disabled by snow or ice. The table C receives the thrust from the action of the wind upon the wind-wheel; but the peripheral rollers *b* prevent any such friction between the latter and bearing as will interfere with the free turning of the structure to keep the wheel face to the wind.

The proper presentation of the wheel to the wind is secured by the tail-blade H, secured fixedly or adjustably to the table. As shown, the tail has an arm, *s*, pivoted at *x* to the table and held in either of the positions shown in full and dotted lines, Fig. 2, by a latch-lever, I, pivoted at *y* to the yoke G. The lever I has notches which receive and hold the arm *s* when the tail is in either position. When the tail is in the working position shown in Fig. 2 it can be moved by drawing on a cord, *m*, which is attached to one side of the tail and passes over a pulley on the end of the lever I. The first draft upon the cord tilts the lever and raises it from the arm *s*. The tail is then drawn by a continued pull on the cord to the position shown in dotted lines, thus throwing the apparatus out of action. To bring the tail again to working position, a cord, *n*, is pulled down, this cord passing from its attachment at one side of the tail beneath the end of the lever I and up to an eye in an arm, J, secured to the yoke G, and downward. The first pull raises the lever and releases the arm *s*, and the continued draft draws round the tail to the position shown in full lines. I do not limit myself to this mode of adjustment, as other means may be adopted for effecting the same object.

It is sometimes necessary to transmit the rotary motion of the wind-wheel for different purposes; or both a reciprocating and a rotary motion are required. To secure this I mount a miter-pinion, K, upon the shaft D, and put a similar pinion, L, upon a sleeve, M, revolving on the pump-rod and resting in a slot on the frame. Bevel-gear N transmits motion from the sleeve M to a shaft carrying a band-pulley, O. As it is sometimes necessary to throw the sleeve M out of gear with the shaft D, I make the pinion L movable by fitting it to slide on a square end of the shaft D. Different means of adjusting this pinion L may be adopted. Thus the forked end of a rod, P, may fit an annular groove in the pinion L, which rod is raised and lowered by a lever, Q, carrying the pinion with it.

I claim—

1. The combination, with the supporting-frame, of a stationary platform and friction-rolls *a*, supported thereby, a table resting on said rolls inside a bearing-ring, *d*, with peripheral rolls *b*, and carrying the crank-shaft of the wind-wheel, and a piston-rod connected by a pitman to said shaft, substantially as set forth.

2. The combination of the platform, revolving table, wind-wheel crank-shaft D, and yoke G, secured to the table, open slide F, receiving

the crank and sliding in and guided by said yoke and connected to the pump-rod, and pitman *f*, arranged inside the slide and connecting the slide and crank, substantially as set forth.

3. The combination, with the revolving table carrying the shaft and appliances operated thereby, of a tail-blade, H, having an arm pivoted to the table, and a notched catch-lever, I, cords *m n*, and arm J, substantially as set forth.

4. The combination of the revolving table, wind-wheel crank-shaft D, connected to the pump-rod, and sleeve M, geared at the lower end to a horizontal shaft, and provided with an adjustable miter-wheel adapted to be brought into and carried from gear with a miter-pinion on the shaft D, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

SHERMAN E. LIMPUS.

Witnesses:

A. S. McCULLOH,

N. S. BRAND.