

(No Model.)

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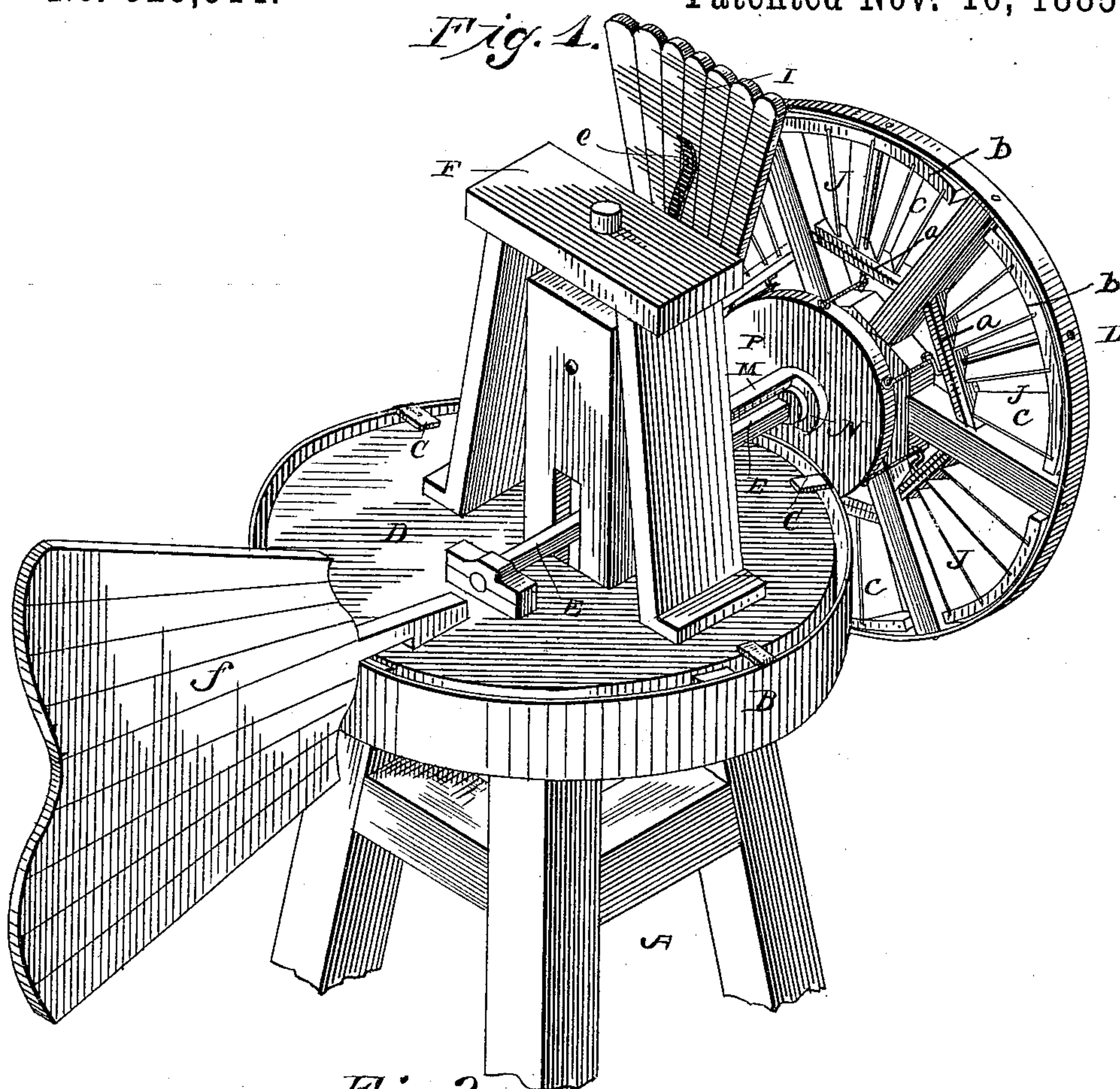
S. E. LIMPUS.

WIND ENGINE.

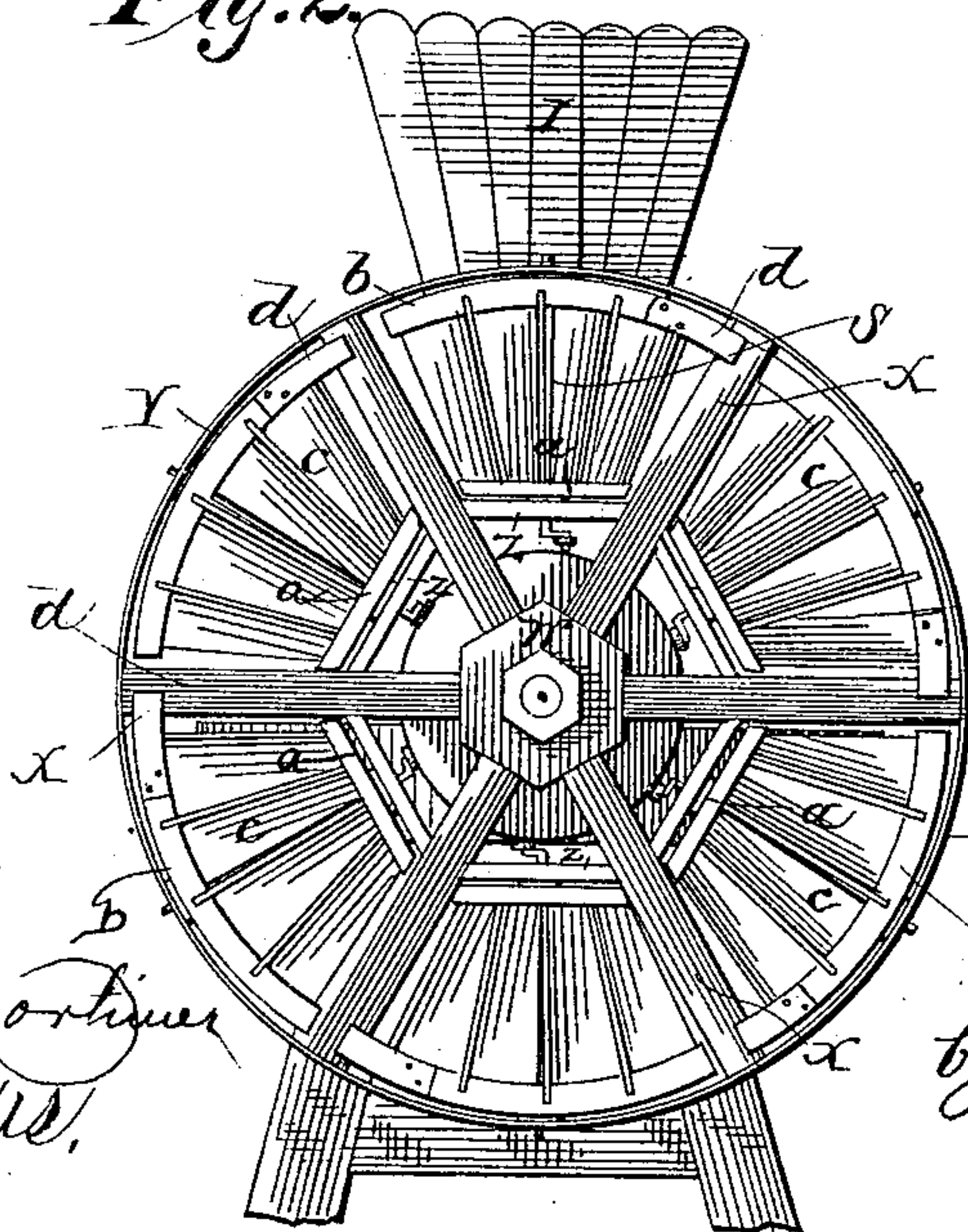
No. 329,914.

Patented Nov. 10, 1885.

*Fig. 1.*



*Fig. 2.*



WITNESSES  
*[Signature]*  
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(No Model.)

2 Sheets—Sheet 2.

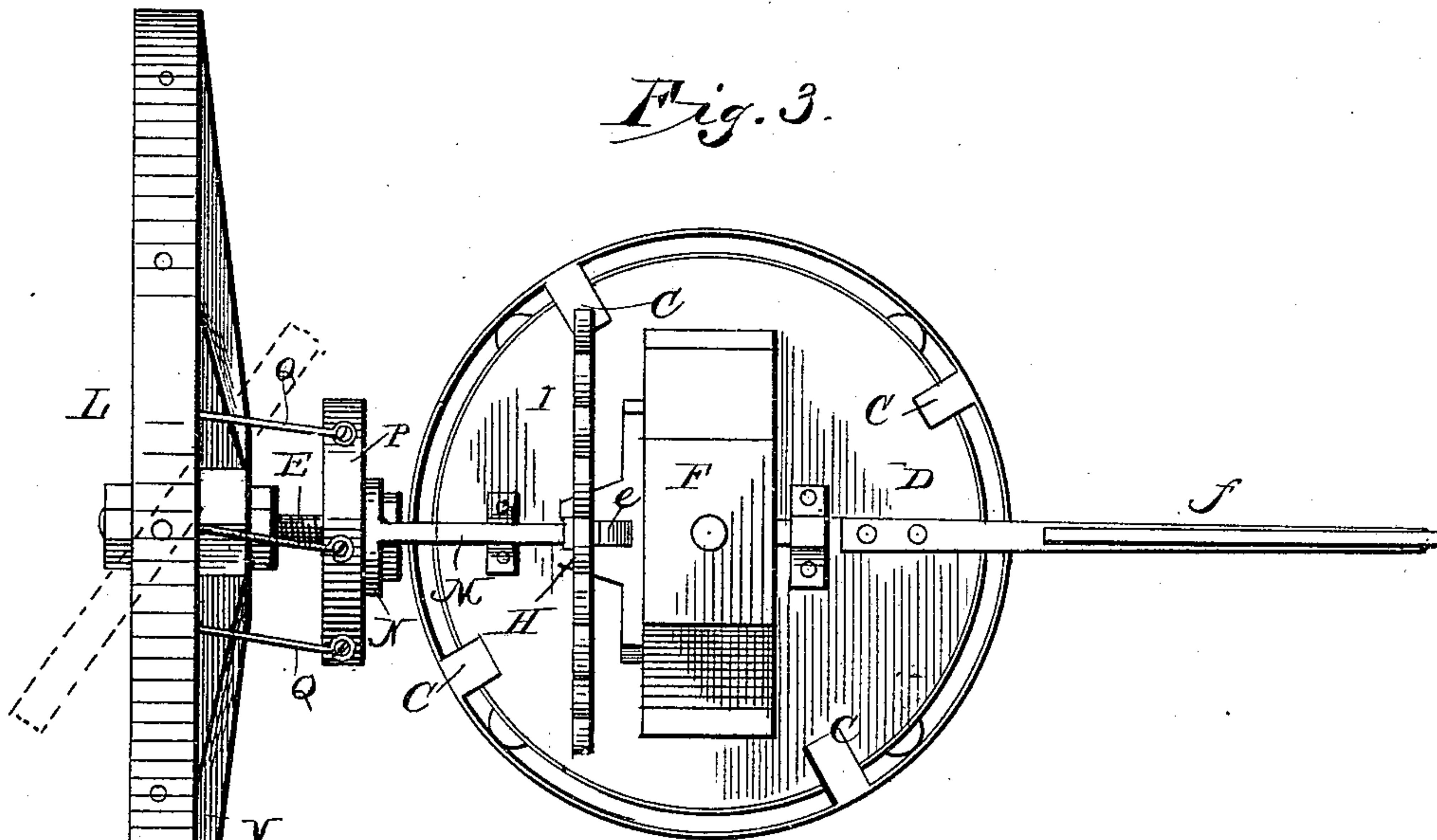
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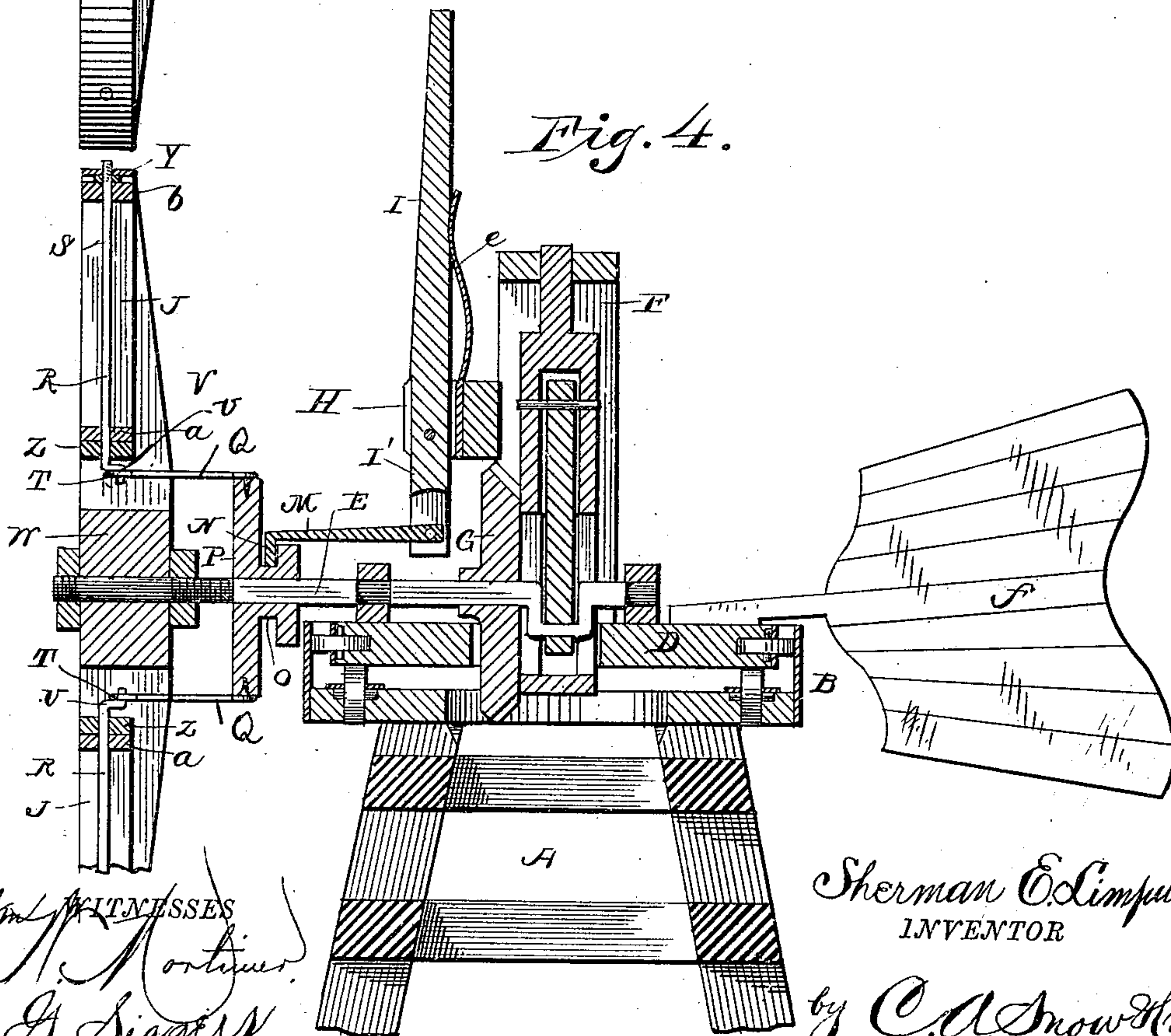
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*Fig. 3.*



*Fig. 4.*



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# UNITED STATES PATENT OFFICE.

SHERMAN E. LIMPUS, OF OLATHE, KANSAS.

## WIND-ENGINE.

SPECIFICATION forming part of Letters Patent No. 329,914, dated November 10, 1885.

Application filed July 31, 1884. Serial No. 139,274. (No model.)

*To all whom it may concern:*

Be it known that I, SHERMAN E. LIMPUS, a citizen of the United States, residing at Olathe, in the county of Johnson and State of Kansas, have invented a new and useful Wind-Engine, of which the following is a specification, reference being had to the accompanying drawings.

This invention has relation to wind-engines designed for use in pumping water, and for other purposes; and it consists in the construction and novel arrangement of parts, as will be hereinafter fully described, and particularly pointed out in the claim.

Figure 1 is a view in perspective of a wind-engine embodying my improvements. Fig. 2 is a front elevation. Fig. 3 is a plan view, and Fig. 4 is a vertical longitudinal section on the line *x x* in Fig. 3.

Referring by letter to the accompanying drawings, A designates the derrick, provided with a circular platform on top, which is provided with friction-rollers, and a circular rim, B, having inwardly-projecting guide-arms C, which holds the turn-table D in place upon the platform. The periphery of the turn-table is also provided with friction-rollers, the object of the rollers in the platform and those in the periphery of the turn-table being to lessen the friction as much as possible. The turn-table is provided with the bearings for the wheel-shaft E and the frame F for the pitman-rod that engages the pump-rod. The wheel-shaft E is also provided with a bevel gear-wheel, G, which is adapted to engage a bevel-pinion to drive a rotary shaft when necessary. The frame F is provided with bearings H, in which the vane I, that regulates the pivoted sections J of the wind-wheel L, is pivoted. The lower end of the arm I' of the regulating-vane I is pivoted to a horizontal rod, M, immediately above the wheel-shaft E, and this rod M is provided at its forward end with a forked clutch, N, which engages a grooved spool, O, on the rear face of a disk, P, to the periphery of which the rods Q, that operate the crank-rods R of the wind-wheel sections S, are pivoted. The forward ends of these rods Q are provided with eyes T, which engage the cranks U of the crank-rods R.

The wheel V consists of a hub, W, provided with a series of radial spokes, X, connected

at their outer ends by a rim, Y, which converts the wheel into a balance-wheel. A short distance from the hub of the wheel wooden or iron braces Z are employed to strengthen the spokes.

The wheel-sections S vary in number according as the size of the wheel is increased or diminished in its manufacture. They consist of straight, shorter, lower, or inner rails, *a*, and curved longer outer rails, *b*, connected by slats *c*, placed diagonally across their parallel middle lines.

The curved outer rails of each of the wheel-sections S are provided at one end upon their outer faces with metal stops *d*, which prevent the sections from being turned on their pivots through the spaces between the spokes in the direction of the regulating-vane I, although they are turned edgewise in the opposite direction by the operation of the wind when it has a power or force greater than the spring *e*, secured to the frame F, and operating against the vane I to hold the wheel-sections normally in the wind or closed when the wind is not too high.

The tail-vane *f* is of any desired construction, and is secured to the turn-table in line with the wheel-shaft, and serves to keep the wheel in the wind. When the regulating-vane I is forced toward the tail-vane by the force of the wind, it slides the disk P outward on the wheel-shaft E, and the rods Q operate the crank-rods R and open the wheel-sections, thus slackening the speed of the wind-wheel. When the wind decreases, the spring *e* forces the vane forward, slides the disk back, and closes the wheel-sections.

This wind-engine is durable because the wheel-sections are pivoted centrally on the crank-rods and undue strain does not come upon the sides of the sections. It is simple because there is less machinery in it than in others in use, and for this reason it is cheaper. The rim of the wheel acts as a balance-wheel and makes the wheel stronger. The wheel is given a considerable dish, and this adds to its strength and gives it at least one-third more power than if it were not dished. The sliding disk and grooved spool are of iron.

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

The combination, with the derrick and platform, of the turn-table, the vertical frame F, mounted on the latter, the wheel-shaft E, carrying the wheel, which has a series of pivoted  
5 sections, S, working between the spokes and rim thereof, braces T at the lower or inner end of the wheel-sections, crank-rods R, passing through the latter and acting as a pivot for the same, the vane I, mounted in bearings H  
10 of the frame, a flat spring, e, fitted in the bear-

ings and pressing against the vane, and intermediate devices for connecting the vane with the cranked rods R, as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in 15 presence of two witnesses.

SHERMAN E. LIMPUS.

Witnesses:

J. B. MARSHALL,

W. F. LIMPUS.