L. G. FELLNER.

Turbine Wind Wheel.

Patented Sept. 21, 1875.

No. 168,009.

Fig. 1.

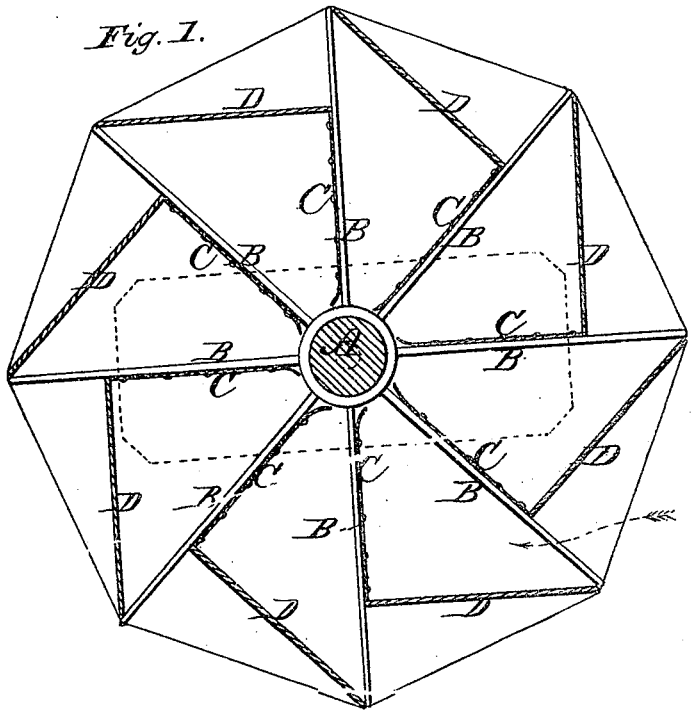
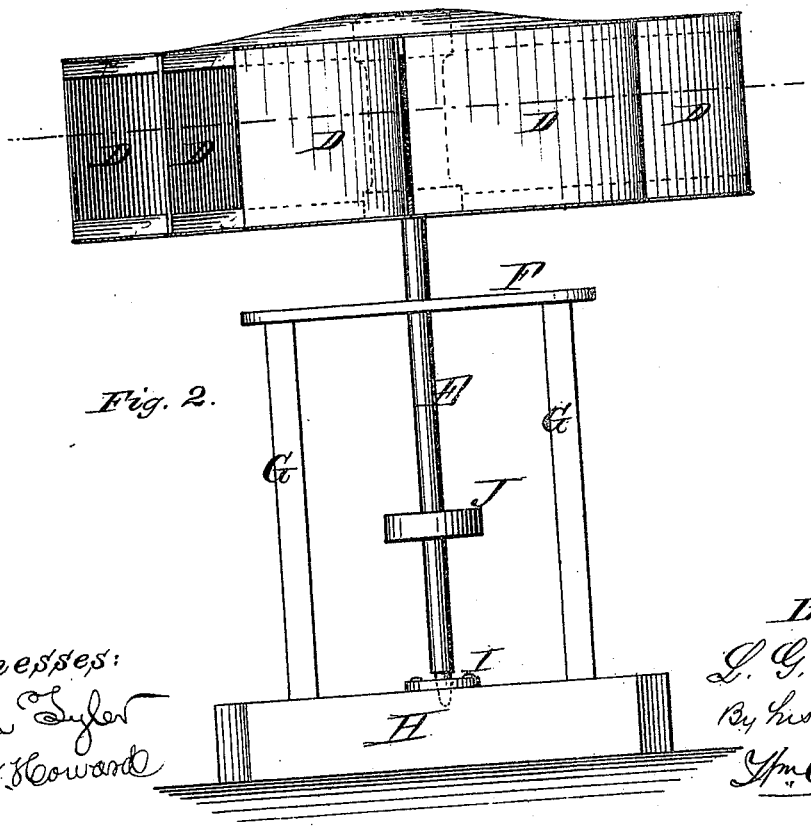


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE

LOUIS G. FELLNER, OF SANTA FÉ, NEW MEXICO TERRITORY.

IMPROVEMENT IN TURBINE WIND-WHEELS.

Specification forming part of Letters Patent No. **168,009**, dated September 21, 1875; application filed April 14, 1875.

To all whom it may concern:

Be it known that I, L. G. FELLNER, of Santa Fé, in the county of Santa Fé and Territory of New Mexico, have invented certain new and useful Improvements in Turbine Wind-Wheels; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings making a part of this application.

My invention relates to portable wind turbine wheels for obtaining power for working irrigation-pumps and for other purposes.

It consists of a turbine wind-wheel so constructed as that any current of wind shall be caught and directed within the wheel in such manner as to cause its rotation, so that, by means of a suitable crank or pulley upon the shaft of said wheel, suitable power may be obtained for various purposes.

To enable those skilled to more fully understand the construction and operation of my invention, I will proceed to describe the same, referring by letters to the accompanying drawings, in which—

Figure 1 is a horizontal section of a wheel embodying my invention, and Fig. 2 a side elevation of the same mounted upon a suitable frame.

Similar letters indicate like parts in both figures.

A is the hub of the wheel, from which radiate spokes B in pairs, the upper and lower spokes being distant apart according to the desired width of the sails. Secured between the parallel spokes B are the sails C, of canvas or other suitable material. These sails C extend from the hub out toward the periphery of the wheel to such a distance that a line drawn from the point where they terminate to the extreme end of the next pair of spokes will be at about right angles to the sail. From the terminus of each sail to the ends of the next succeeding pair of spokes are secured what I denominate receivers D, which form about a right angle with the sail. These receivers should be made of durable, stiff, water-proof material, such as thin board, sheet metal, or oiled canvas. They prevent the current of wind from entering but from one direction, so that the movement of the wheel must be continuous in one direction.

The wind, blowing from the direction indicated by the dotted arrow in Fig. 1, enters between the spokes B, between the point where the sails C terminate and the outer end of the next succeeding receiver D, which directs the current against the sail C, and thus causes a rotation of the wheel, which is covered over the top with a suitable light material which will turn the rain. This cover extends out to the extreme ends of the spokes B; and the bottom may be likewise covered entirely, or, preferably, only from the outer ends of the spokes to just beyond the point or angle where the sails C and receivers D meet, so that the ingoing current of air cannot escape downwardly until after it has been by the receivers directed against the sails, from which it then is deflected and allowed to escape downwardly between the spokes.

The hub of the wheel is secured to a shaft, E, which passes through a suitable bearing in a cross-piece, F, mounted upon two or more uprights, G, erected upon a suitable base block or frame, H, and its lower extremity rests in a step-bearing, I.

Anywhere between the upper and lower bearings the shaft may be provided with a keyed or fixed pulley, J; or the shaft may be formed with a crank. In the former case a band may pass from the pulley to another pulley wherever power is to be applied, or, in the latter case, a suitable pitman-rod may be employed.

Of course, I do not wish to confine myself to the exact number of wings that are used or the materials employed in the construction of my turbine-windmill, as all these may be varied, it being, however, always kept in mind that the receivers should extend from the terminus of one sail, and at about right angles thereto, to the radial plane of the next, as by this means only is the wheel prevented from the action of counter-currents.

What I claim as new, and desire to secure by Letters Patent, is—

A turbine wind-wheel adapted to field use, composed of a hub, A, and radial parallel spokes B, with sails C and receivers D, in combination with a suitable shaft and supporting-frame, substantially as and for the purposes hereinbefore set forth.

LOUIS GEORGE FELLNER. [L. S.]

Witnesses:
J. OTTO BACHMAN,
CHARLES PROBST.