

(No Model.)

2 Sheets—Sheet 1.

W. H. GOFF.

WINDMILL.

No. 365,991.

Patented July 5, 1887.

Fig. 2.

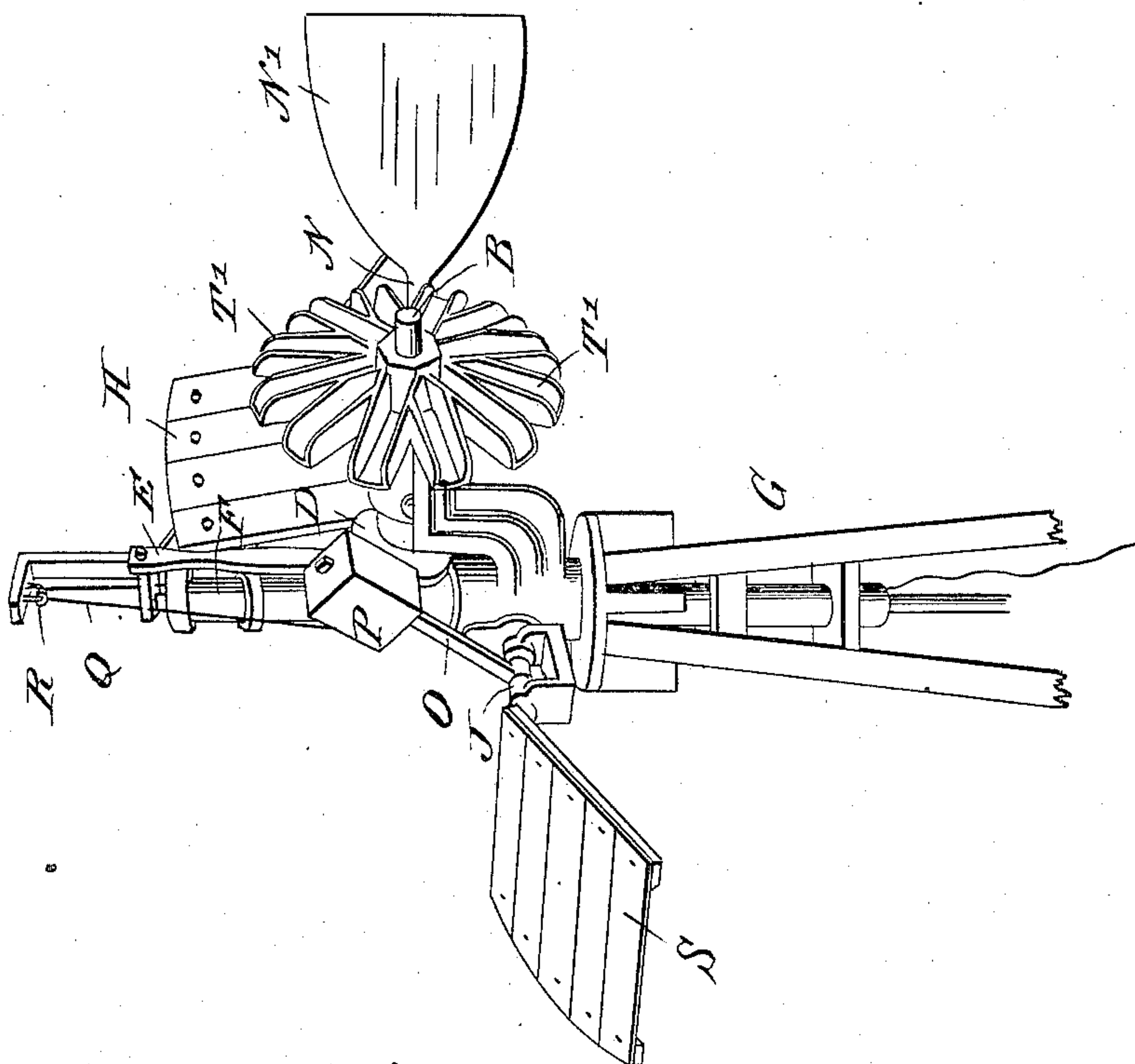
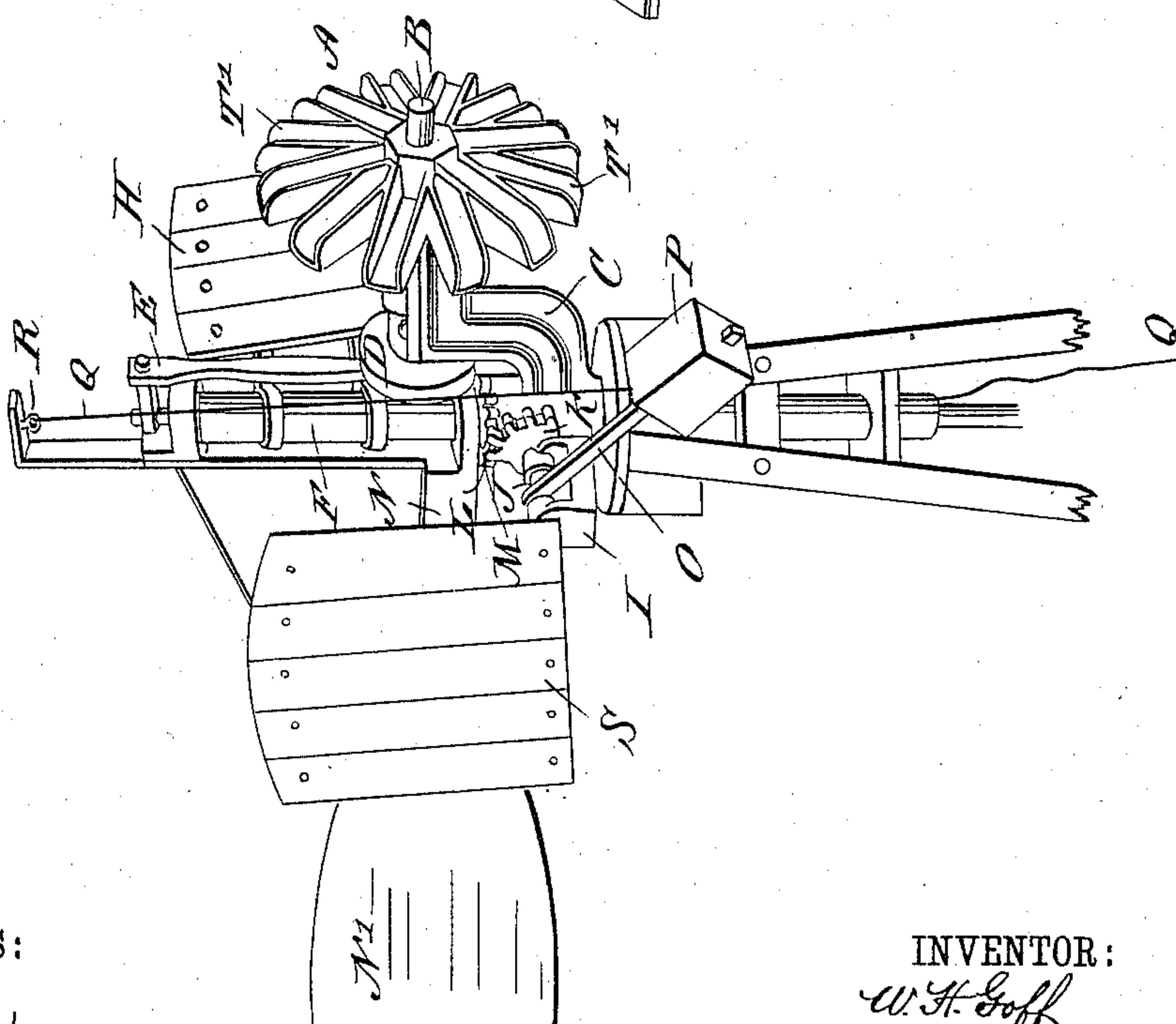


Fig. 1.



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INVENTOR:

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Fig. 3.

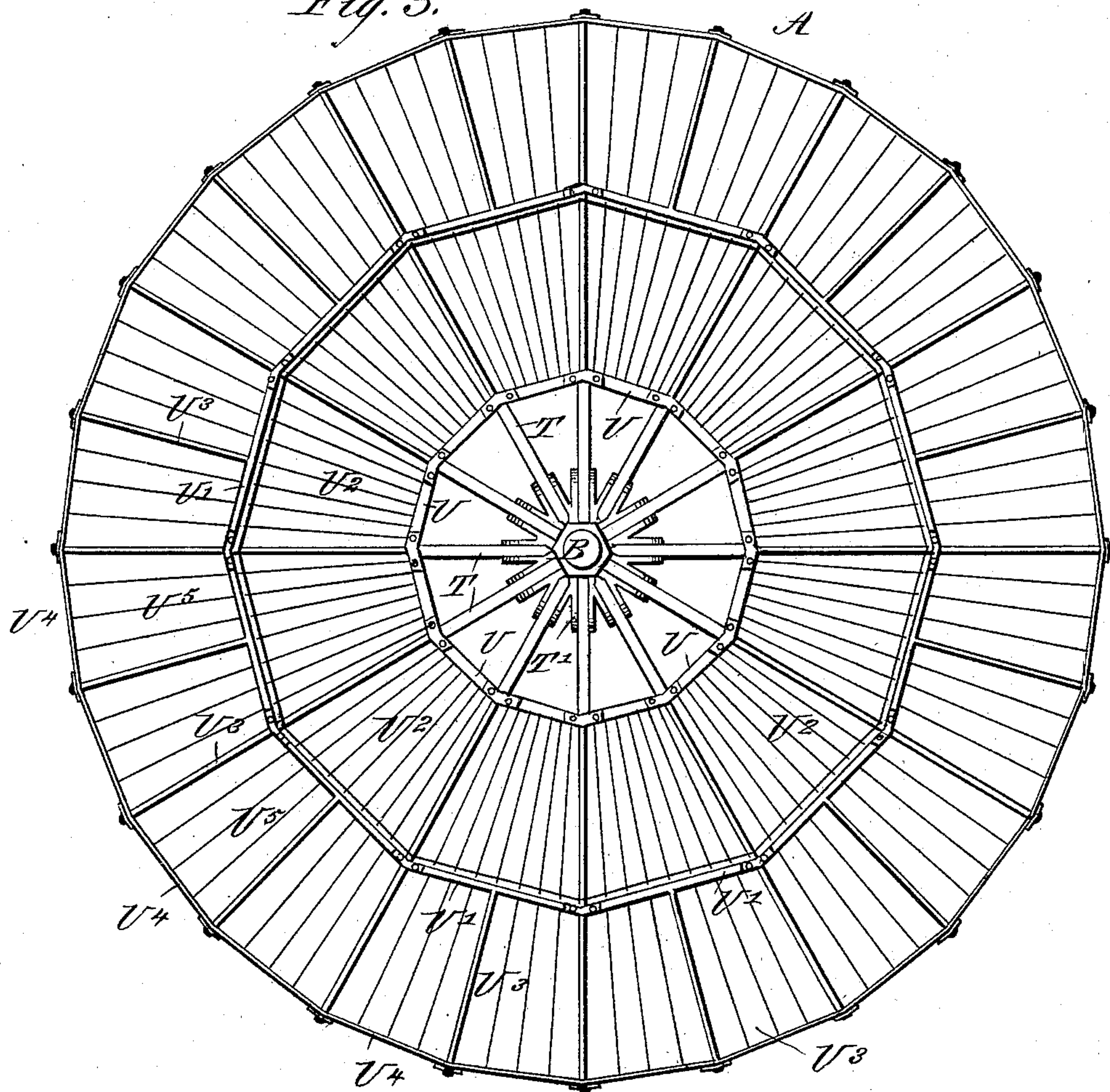


Fig. 4.

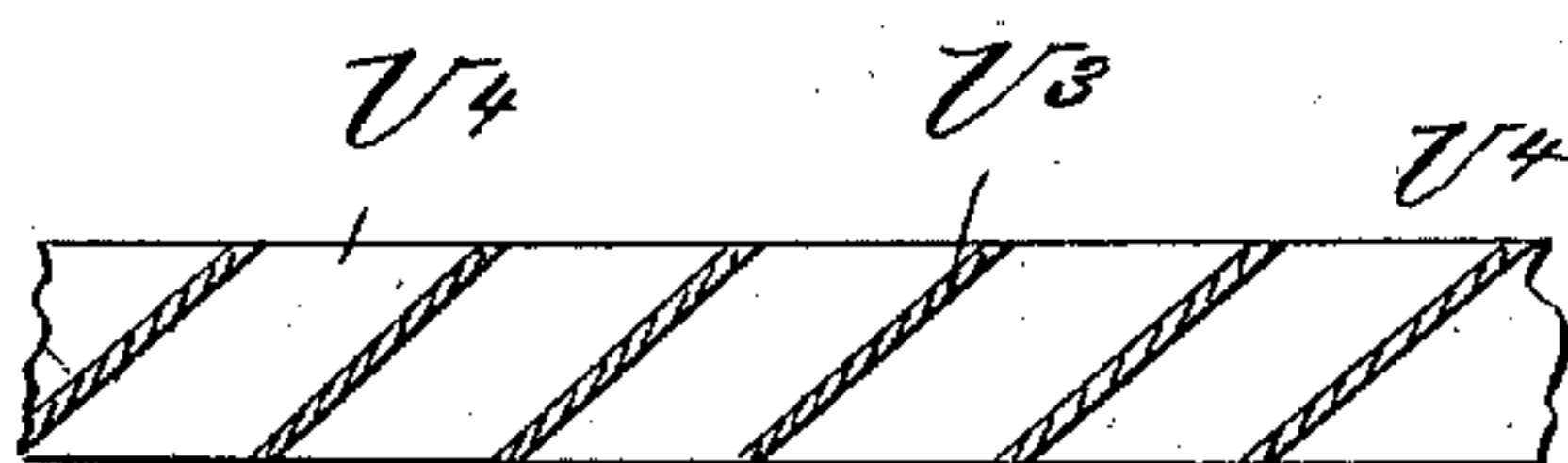
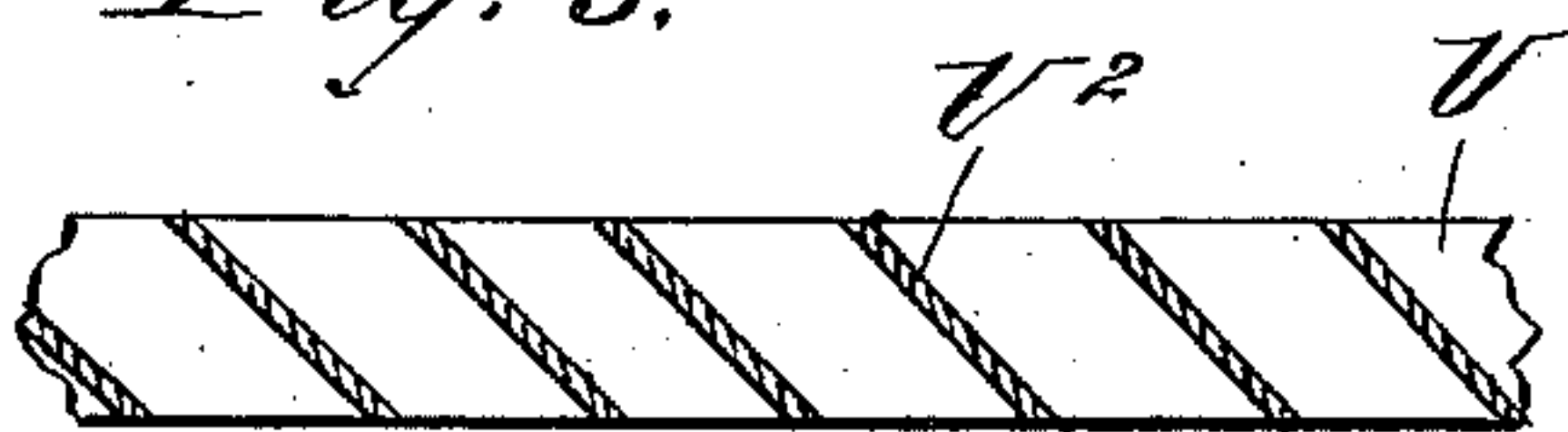


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM HENRY GOFF, OF COUNCIL BLUFFS, IOWA.

WINDMILL.

SPECIFICATION forming part of Letters Patent No. 365,991, dated July 5, 1887.

Application filed September 14, 1886. Serial No. 213,498. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM HENRY GOFF, of Council Bluffs, in the county of Pottawattamie and State of Iowa, have invented a new and Improved Windmill, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved windmill in which the wheel is thrown automatically out of the wind if the wind attains a great velocity, and is returned automatically into action when the wind blows at a moderate rate.

The invention consists of various parts and details and combinations of the same, as will be described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figures 1 and 2 are perspective views of my improved windmill, the parts being shown in different positions. Fig. 3 is a face view of the windmill. Fig. 4 is a sectional view of the outside rim of the wind-wheel; and Fig. 5 is a similar view of the inside rim of the wheel.

The wind-wheel A is attached to the shaft B, mounted to revolve in a bracket, C, and provided on its inner end with the crank-disk D, which connects, by means of the pitman E, in any usual manner, with the pump mechanism. The bracket C is adapted to revolve with the central tubular standard, F, secured to the main frame G, and provided with the adjustable wing H, fastened by means of collars and set-screws to the said standard F. The bracket C has an arm, I, on which is journaled the shaft J, provided on its inner end with the segmental cog-wheel K, which meshes into cogs L, fixed on a sleeve, M, turning on the standard F. To the sleeve M is attached the vane-arm N, which carries the vane N', of any approved construction. The shaft J is provided with an arm, O, carrying a weight, P, to which is secured a chain or rope, Q, which passes over a pulley, R, and extends down through the central tubular standard, F, to the ground. A wing, S, is secured to the outer end of the shaft J.

The wind-wheel A is preferably constructed as shown in Figs. 3, 4, and 5, and is provided with the spokes T, which are secured to the

star frame or wheel T', attached to the shaft B. To the spokes T are secured the rim-arms U, which form the inner rim, and similar arms, U', are also secured to the spokes T, and between the arms U and U' are radially-attached blades U². For wheels of greater diameter I extend the spokes T and provide the arms U' with an arm, U³, extending at right angles from the center of each of the said arms U', and then connect the outer ends of the spokes T with the outer ends of the angular arms U³, and thereby form an outer rim. The blades U⁵ are radially inserted between the arms U⁴ and U', and are in line with the blades U². The wind-wheel thus formed is strong and durable, and can easily be increased or diminished in diameter, if desired.

The operation is as follows: When the wind is too powerful, it swings the wing S down, thereby turning the shaft J, which throws up the arm O and its weight P. The turning of the shaft J causes the vane-arm N and the vane N' to swing toward the wind-wheel A by means of the segmental cog-wheel K, meshing into the teeth L on the sleeve M, attached to the vane-arm N. At the same time that the wing S is swung downward by the force of the wind the latter acts on the upright wing H, which causes the wind-wheel A to swing toward the vane N'. It will thus be seen that the force of the wind acts simultaneously on both wings S and H, which causes the vane N' and the wheel A to swing toward each other. When the force of the wind decreases, the weight P swings down, and the shaft J returns the wing S to its normal position, and also brings the vane N' again into line with the wind-wheel shaft B, whereby the wind-wheel is again brought into action. The wind-wheel A may also be turned from the wind by pulling on the cord or chain Q, which moves the weight upward and turns the shaft J, whereby the vane N is thrown toward the wind-wheel A, as above described.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. In a windmill, the combination of a wind-wheel with a shaft and a wing attached to the said shaft for regulating the position of the vane, and a wing for regulating the position of the wind-wheel, which shaft is mounted independently of the wheel-shaft proper, and

which latter wing is secured to a tube which is adapted to revolve with the wheel-shaft-carrying bracket, substantially as shown and described.

- 5 2. In a windmill, the wind-wheel A, mounted on the revolving bracket C, carrying the shaft J, the wing S and the weighted arm O, attached to the said shaft J, and the segmental cog-wheel K on the shaft J, in combination
10 with the sleeve M, having the cogs L, the vane-

arm N, attached to the said sleeve M and carrying the vane N', and an additional vane, H, secured to the tubular shaft F, adapted to revolve with the wheel-shaft-carrying bracket C, substantially as shown and described.

WILLIAM HENRY GOFF.

Witnesses:

F. KENNEY,
C. D. DONAHEY.