

A. L. SHERRED.

WINDMILL.

No. 321,760.

Patented July 7, 1885.

Fig. 1.

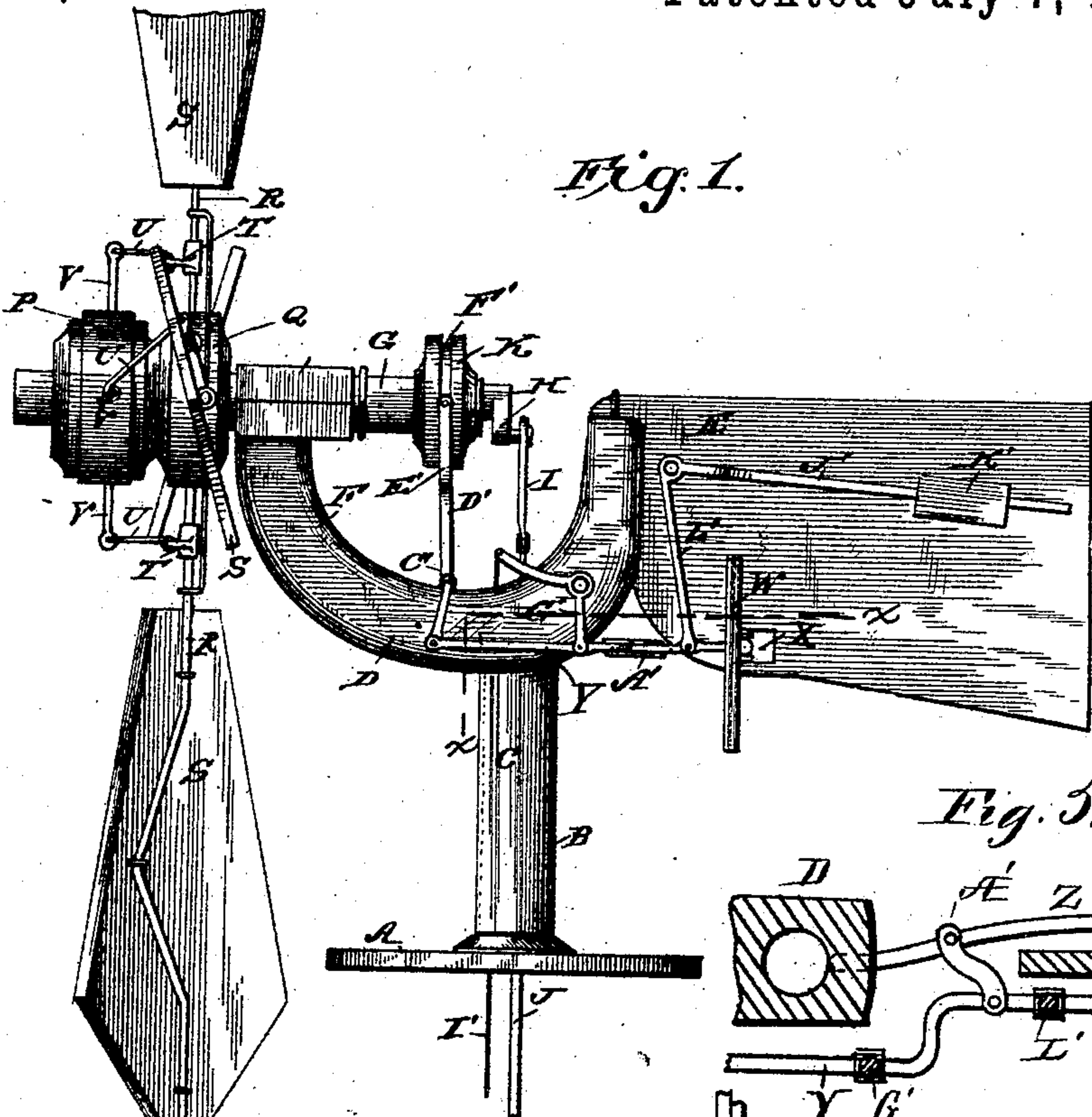


Fig. 5.

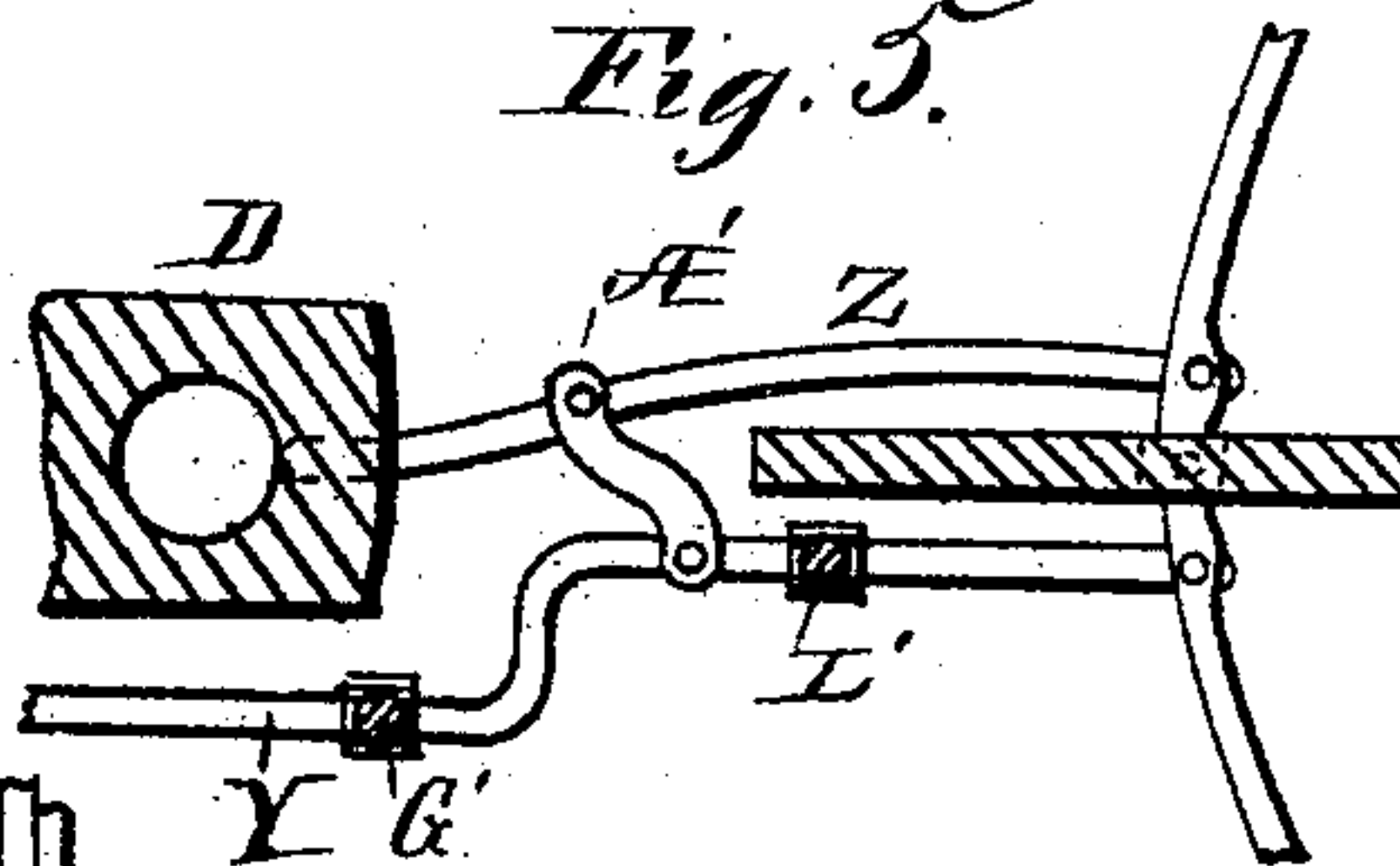
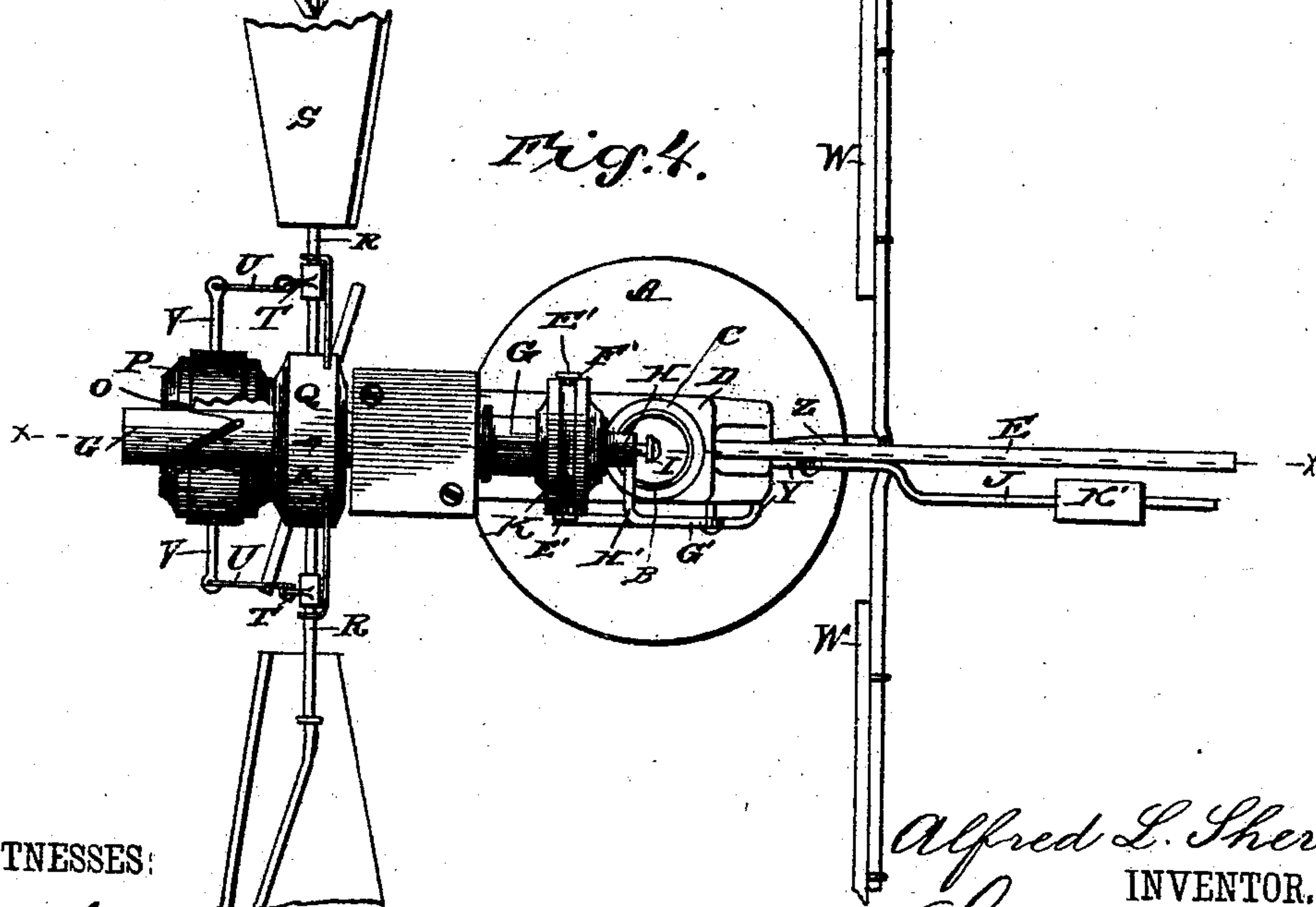


Fig. 4.



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by Louis Bagger & Co
ATTORNEYS.

(No Model.)

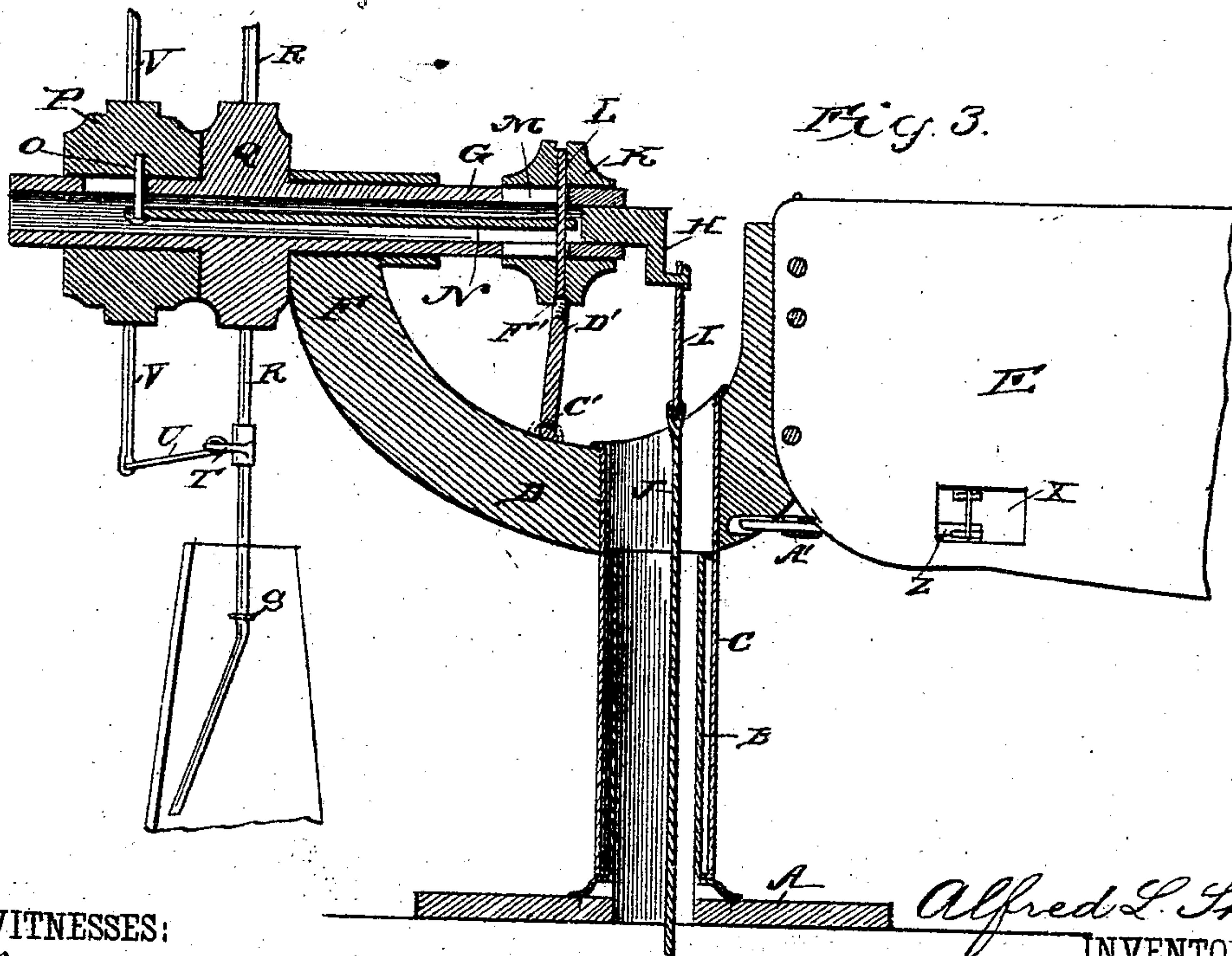
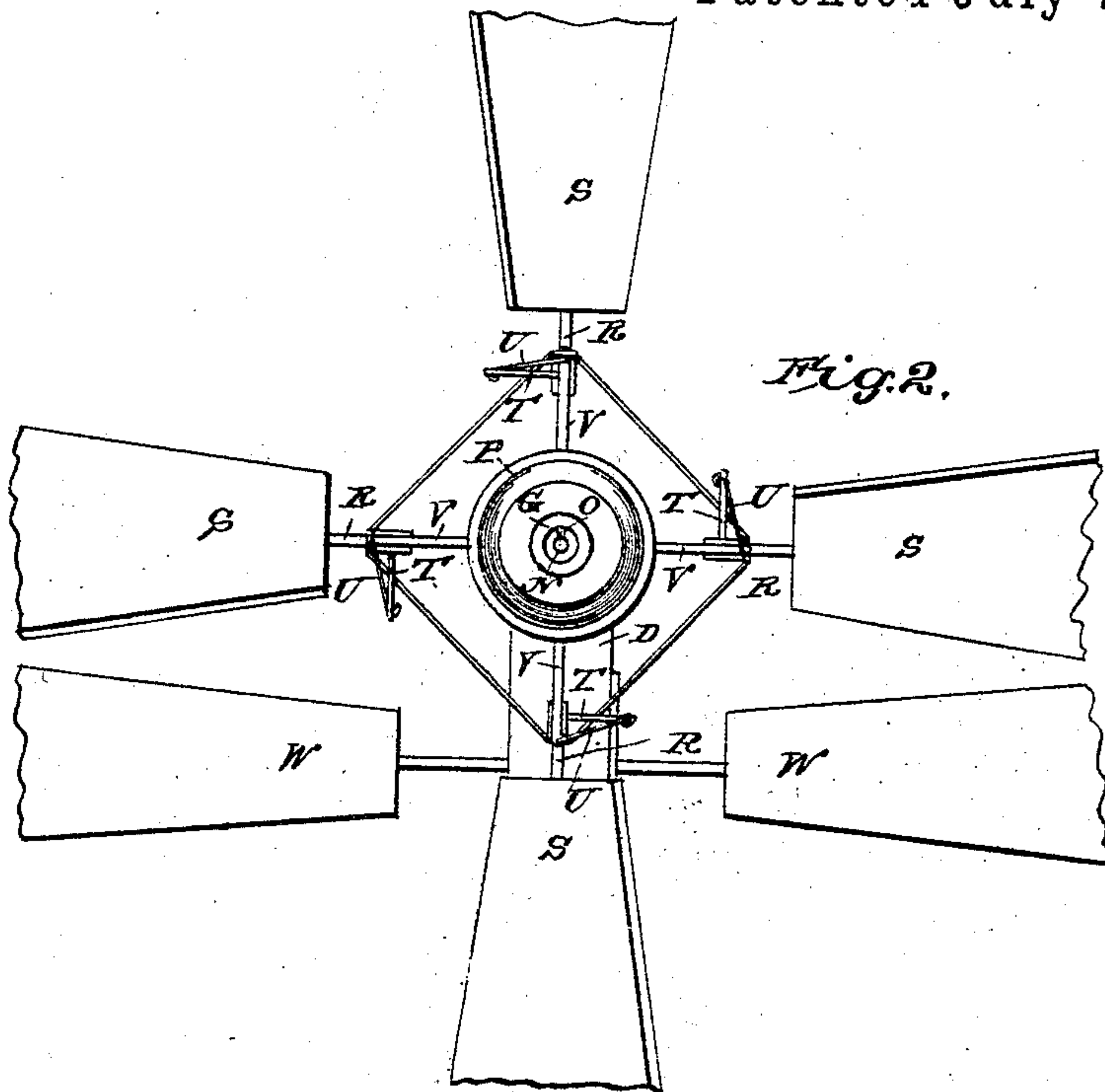
2 Sheets—Sheet 2.

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WITNESSES:

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UNITED STATES PATENT OFFICE.

ALFRED L. SHERRED, OF VENANGO, PENNSYLVANIA.

WINDMILL.

SPECIFICATION forming part of Letters Patent No. 321,760, dated July 7, 1885.

Application filed April 16, 1885. (No model.)

To all whom it may concern:

Be it known that I, ALFRED L. SHERRED, a citizen of the United States, and a resident of Venango, in the county of Crawford and State of Pennsylvania, have invented certain new and useful Improvements in Windmills; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a side view of my improved windmill. Fig. 2 is a front view of the same. Fig. 3 is a longitudinal vertical sectional view taken on the line *x x* in Fig. 4. Fig. 4 is a top view, part of the framing having been broken away for the purpose of showing the construction more clearly; and Fig. 5 is a top view taken on the line *x x* of Fig. 1, showing the pivoted bar.

The same letters refer to the same parts in all the figures.

This invention relates to windmills; and it has for its object to provide a device which shall possess superior advantages in point of simplicity, durability, and general efficiency. With these ends in view it consists in the improved construction, arrangement, and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, A designates a base or turn-table having a vertical tubular post, B, on which is journaled a tube or sleeve, C, the upper end of which carries a bracket, D, the rear end of which is provided with a vertically-disposed tail-vane, E, secured rigidly in the said bracket.

The front end or arm, F, of the bracket D is provided with a suitable bearing for a horizontal longitudinal shaft, G, which is tubular, as shown, and the inner end of which is provided with a crank, H, connected by a pitman, I, with a vertically-reciprocating rod, J, which is suitably connected with the pump or other machinery to be operated.

K is a hub or collar arranged to slide longitudinally upon the inner end of the shaft G, and having a lug or stud, L, extending inwardly into the central tubular portion of the

said shaft G through a longitudinal slot, M, in the latter. The said lug L is connected by a rod, N, extending longitudinally through the shaft G, with a lug, O, extending inwardly from a hub or collar, P, arranged to slide upon the outer end of the latter, the said lug O extending through a diagonal slot in the said shaft, as shown. It will be seen by this arrangement that when the hub or collar P is caused to slide upon the shaft, it will at the same time have an oscillating motion upon the latter, the object of which will be presently more fully explained.

Q is a hub or collar mounted firmly upon the shaft G, and provided with a series of pivoted radiating arms, R R, carrying the vanes S S, and having hinged forwardly-extending arms T T. The ends of the said arms are connected by pivoted rods U U with rods V V, extending radially from the hub or collar P, as will be clearly seen in the drawings.

W W are a pair of regulating-vanes, the arms or shanks of which are pivoted in a vertical slot, X, in the tail-vane E, and provided with forwardly-extending pivoted rods Y and Z, which are connected by a pivoted bar, A', and the former of which, Y, is connected pivotally with the arm B' of a rock-shaft, C', mounted transversely upon the frame or bracket D. The said rock-shaft has an upwardly-extending arm, D', the upper end of which is forked at E' and engages an annular groove, F', in the hub or collar K. The said rod Y is also connected, pivotally, with one arm of a bell-crank lever, G', pivoted to the bracket D, and having an inwardly-extending arm, H', to which is connected an operating rod or cord, I', which extends downwardly through the tubes B C to some point from whence it may be conveniently manipulated.

J' is an arm or lever pivoted to the side of the tail-vane E, and carrying at one end an adjustable weight, K', its other end being connected by a pivoted rod, L', with the arm Y.

From the foregoing description, taken in connection with the drawings hereto annexed, the operation and advantages of this invention will be readily understood.

The tail-vane E will serve to keep the wheel to the wind. When the wind increases in strength or force, it will tend to force the wheel-vanes from their diagonal position, pre-

senting their edges to the wind, this being partially effected by the direct pressure of the wind upon the vanes, and partially by its forcing the regulating-vanes in a rearward direction, thus causing the intermediate mechanism, which has been herein fully described, to twist or turn the regulating-collar P upon the shaft G in such a manner as to turn the vanes. The speed may likewise be regulated by simply pulling the cord I', thus throwing the operating and regulating vanes out of the wind. The weight K', upon the end of the arm or lever J', serves to assist in restoring the vanes to their original or normal position.

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

1. In a windmill, the combination of the horizontally-revolving frame, the tubular shaft journaled in the same and having a straight and a diagonal slot, respectively, near its rear and its front ends, a sliding hub having a lug or stud extending through the straight slot, a sliding hub having a lug extending through the diagonal slot, a rod connecting the said lugs, a stationary collar having pivoted vanes, rods connecting the shanks of said vanes with

the front sliding collar, and mechanism connecting the rear sliding collar with the regulating-vanes, substantially as and for the purpose set forth.

2. In a windmill, the combination of the revolving frame or bracket, the tubular shaft, the stationary collar or hub having the pivoted vanes, the sliding adjusting-collars connected by a rod extending through the longitudinal tubular shaft, the stationary vertical tail-vane, the horizontal regulating-vanes hinged to the latter, forwardly-extending rods pivoted to the shanks of said regulating-vanes, a rock-shaft having arms connected with one of said rods and with an annular groove in the rear adjusting collar, an adjusting bell-crank connected with said rod, and a weighted lever connected by a pivoted arm with the said vane-rod, substantially as and for the purpose set forth.

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

ALFRED L. SHERRED.

Witnesses:

ASAPH E. PEIFFER,
WILLIS M. HYATT.