

(No Model.)

J. F. GARATT.
Windmill.

No. 234,975.

Patented Nov. 30, 1880.

Fig. 1.

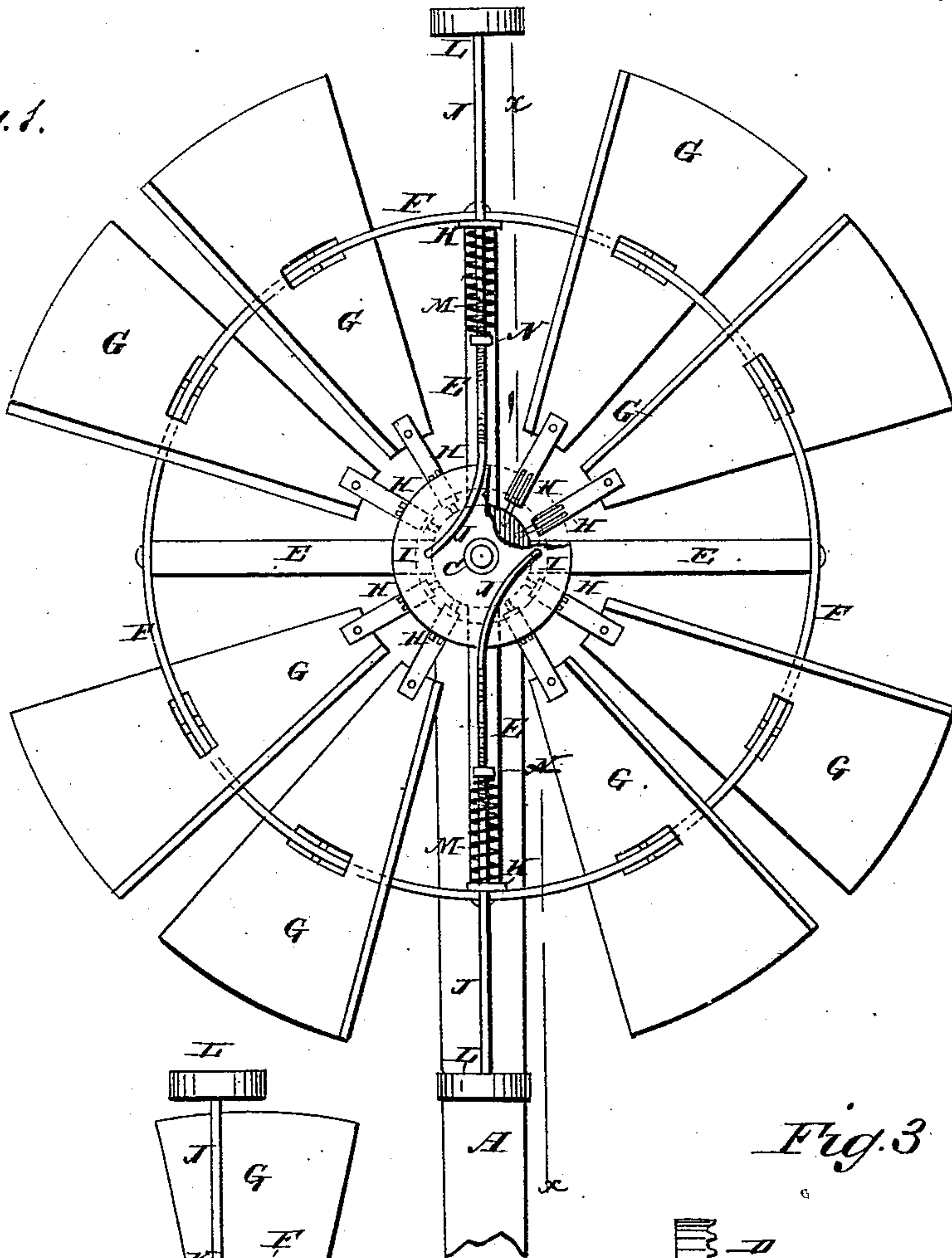


Fig. 3.

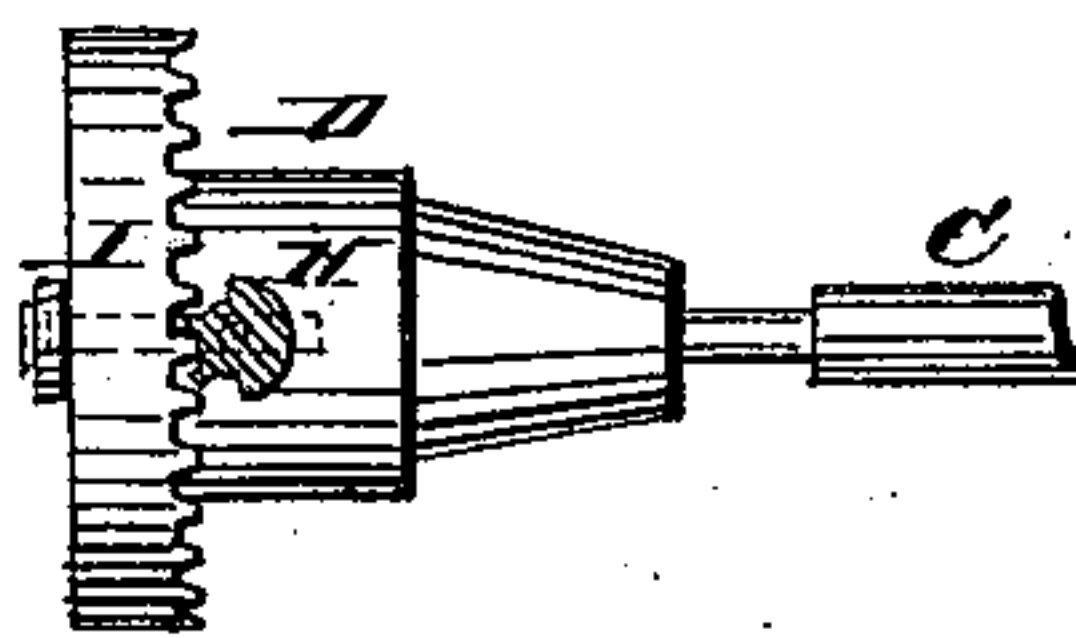
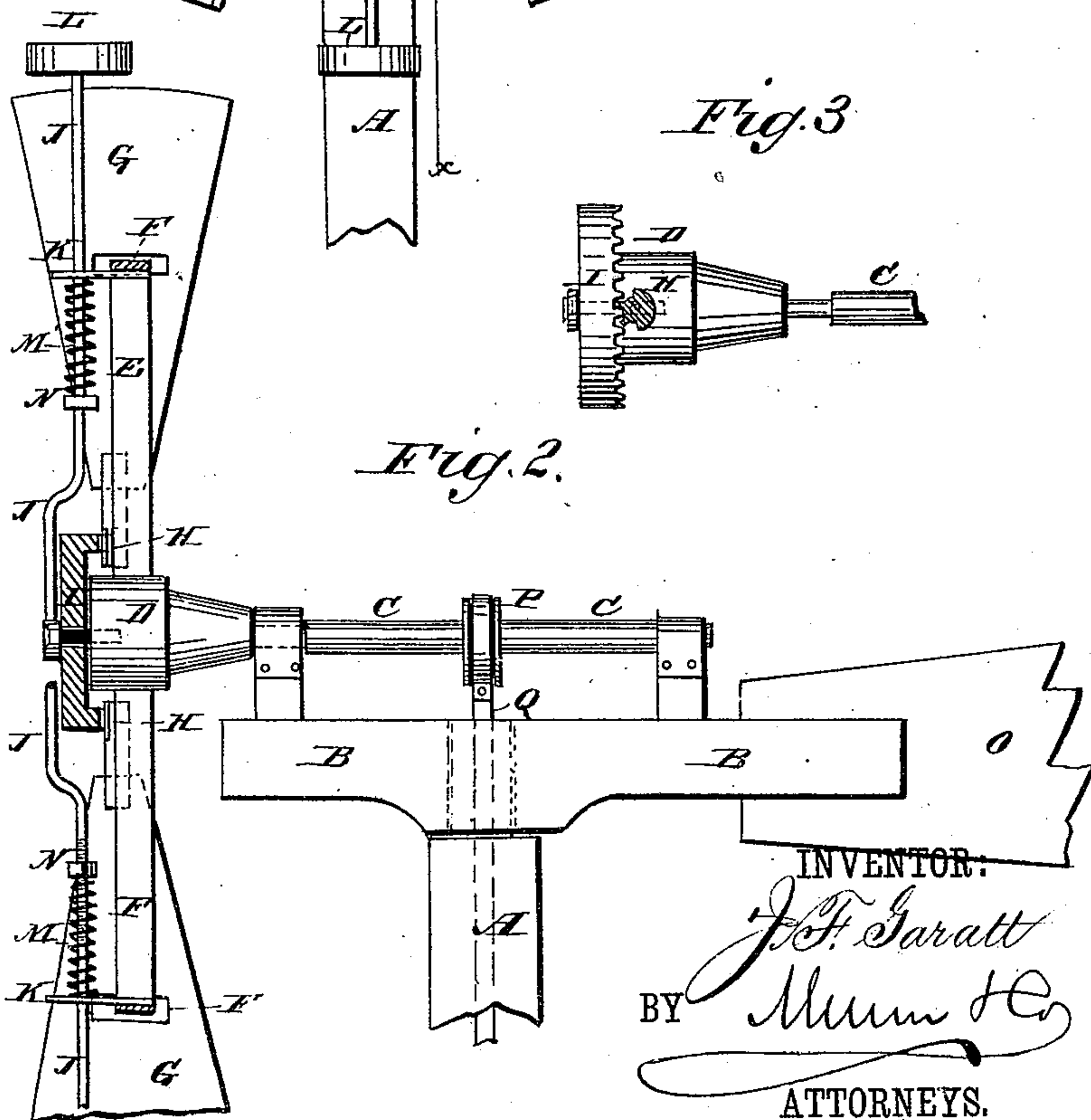


Fig. 2.



WITNESSES:

F. M. Cottle
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INVENTOR:

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UNITED STATES PATENT OFFICE.

JOHN F. GARATT, OF SPENCER, NEW YORK.

WINDMILL.

SPECIFICATION forming part of Letters Patent No. 234,975, dated November 30, 1880.

Application filed September 17, 1880. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. GARATT, of Spencer, in the county of Tioga and State of New York, have invented a new and useful
5 Improvement in Windmills, of which the following is a specification.

Figure 1 is a front elevation of the improvement. Fig. 2 is a sectional side elevation taken through the line $x x$, Fig. 1. Fig. 3 is a plan
10 view of the hub and its gear-wheel.

The object of this invention is to furnish windmills so constructed as to adjust themselves to the force of the wind.

A represents the support for the wind-wheel, which is designed to be constructed in the ordinary manner. To the top of the support A
15 is pivoted a cross-bar or turn-table, B, to which are attached the bearings for the shaft C. To the forward end of the shaft C is attached the hub D, to which is attached the inner ends of the radial arms or spokes E. To the outer
20 ends of the spokes E is attached a rim, F, the hub D, spokes E, and rim F thus forming the frame or skeleton of the wind-wheel.

G are the wings, fans, or sails of the wind-wheel, the inner ends of which are pivoted to the hub D. In the outer part of each of the wings G is formed a transverse slot, through
25 which the rim F passes.

To each wing G, upon the opposite sides of its slot, are attached the ends of a pivot, which passes through the rim F, and thus pivots the said wing to the said rim in such a manner that the said wing can turn upon its
30 pivots from a position oblique to the plane of the wheel D E F to a position at right angles with the said wheel, or parallel with the shaft C.

To the inner pivots of the wings G are attached segmental gear-wheels H, the teeth of which mesh into the teeth of the crown gear-wheel I, pivoted to the forward end of the shaft C or hub D. The gear-wheels H I may
35 be made in the form of beveled-gear wheels, if desired.

To the outer parts of the gear-wheel I are

pivoted the ends of one or more pairs of rods, J, which pass through keepers or guides K, attached to the rim F, and to their outer ends
40 are attached weights L.

The rods J and weights L are drawn inward by spiral or other shaped springs M, the outer ends of which rest against the keepers or guides K, and their inner ends rest against screw-collars N, or other stops attached to the said
45 rods J.

With this construction, by turning the gear-wheel I the wings G can be turned at an inclination with the plane of the wheel D E F to receive the wind, and at right angles with
50 the plane of the wheel D E F to throw the wings out of the wind, and at any desired point between these two extremes, as the force of the wind may require.

In using the windmill the gravity of the weights L and the tension of the springs M are
55 so adjusted with respect to each other that the tension of the springs M will hold the rods J and weights L drawn inward and the wings F in an oblique position when there is no wind and when the wind is blowing with ordinary
60 force; but should the wind increase in force the centrifugal force engendered by the more rapid revolution of the wind-wheel will throw the weights L outward, and thus throw the wings G out of the wind. As the force of the
65 wind decreases the springs M will overcome the centrifugal force of the weights L and throw the wings G into the wind, so that the wings will adjust themselves to the force of the wind, and thus keep the wind-wheel revolving at a uniform speed, however the force
70 of the wind may vary.

The wheel is held to the wind by a vane, O, attached to the rear end of the bar or turn-
75 table B.

Power is communicated to the pump or other machine to be driven by an eccentric, P, attached to the wheel-shaft C, and having a rod, Q, connected with it and passing down
80 through the support A.

I am aware that it is not new to make a

wheel with wings or sails and provide it with mechanism by which its speed may be regulated; but

What I do claim as new and of my invention is—

1. The combination, with the wheel D E F, of the wings G, pivoted at the inner end to hub D, and connected with the rim F by a pivot in a median transverse slot, as and for the purpose set forth.

2. In a windmill, the rods J, pivoted at the inner end to wheel I, passing through keepers on rim F, and provided with end weights, L, as and for the purpose specified.

JOHN F. GARATT.

Witnesses:

AMASA GARATT,
CORINTH C. GARATT.