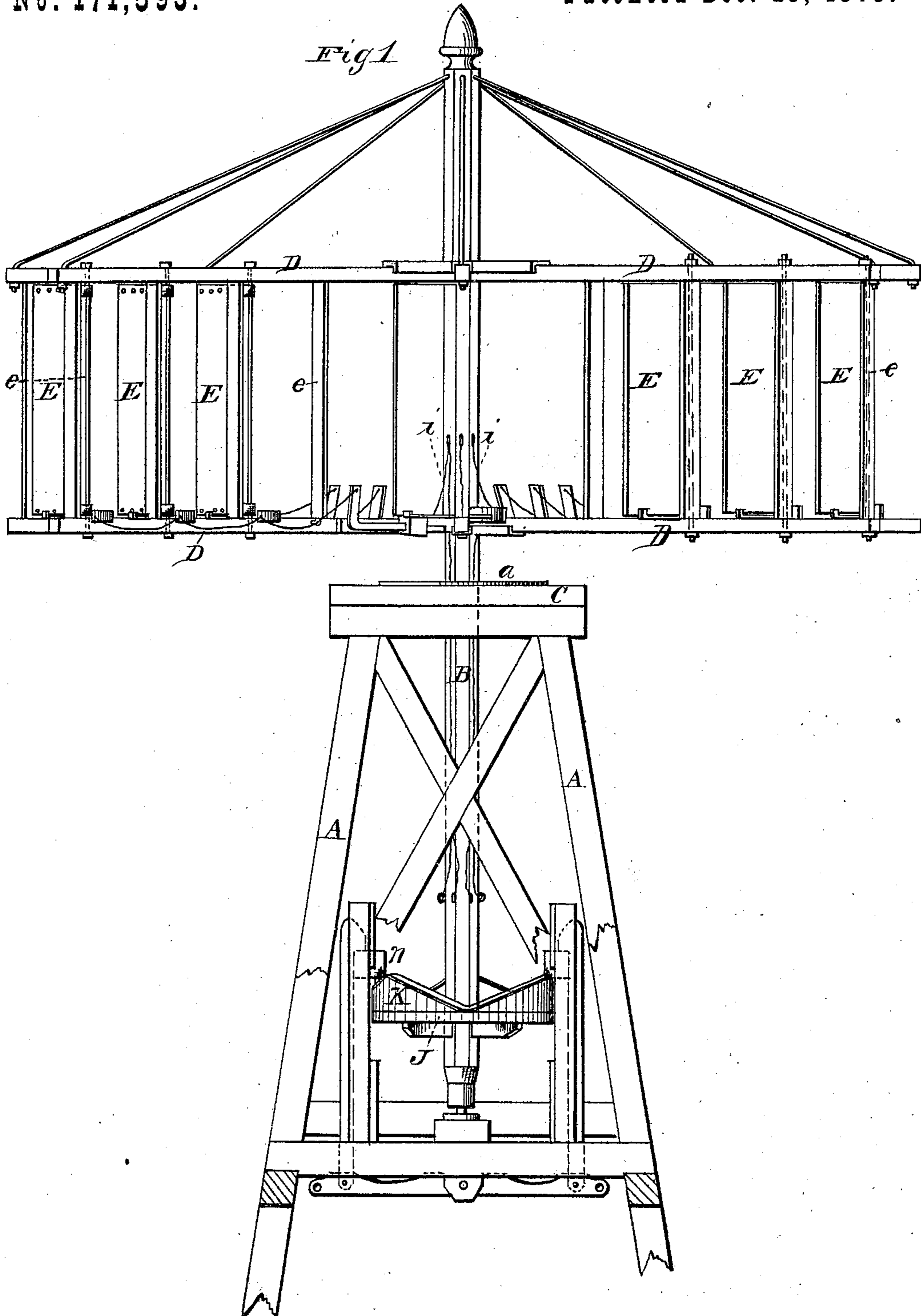


W. F. VEBER.
WIND-MILL.

No. 171,593.

Patented Dec. 28, 1875.



WITNESSES

S. M. Pool
Geo. L. Wilman

By

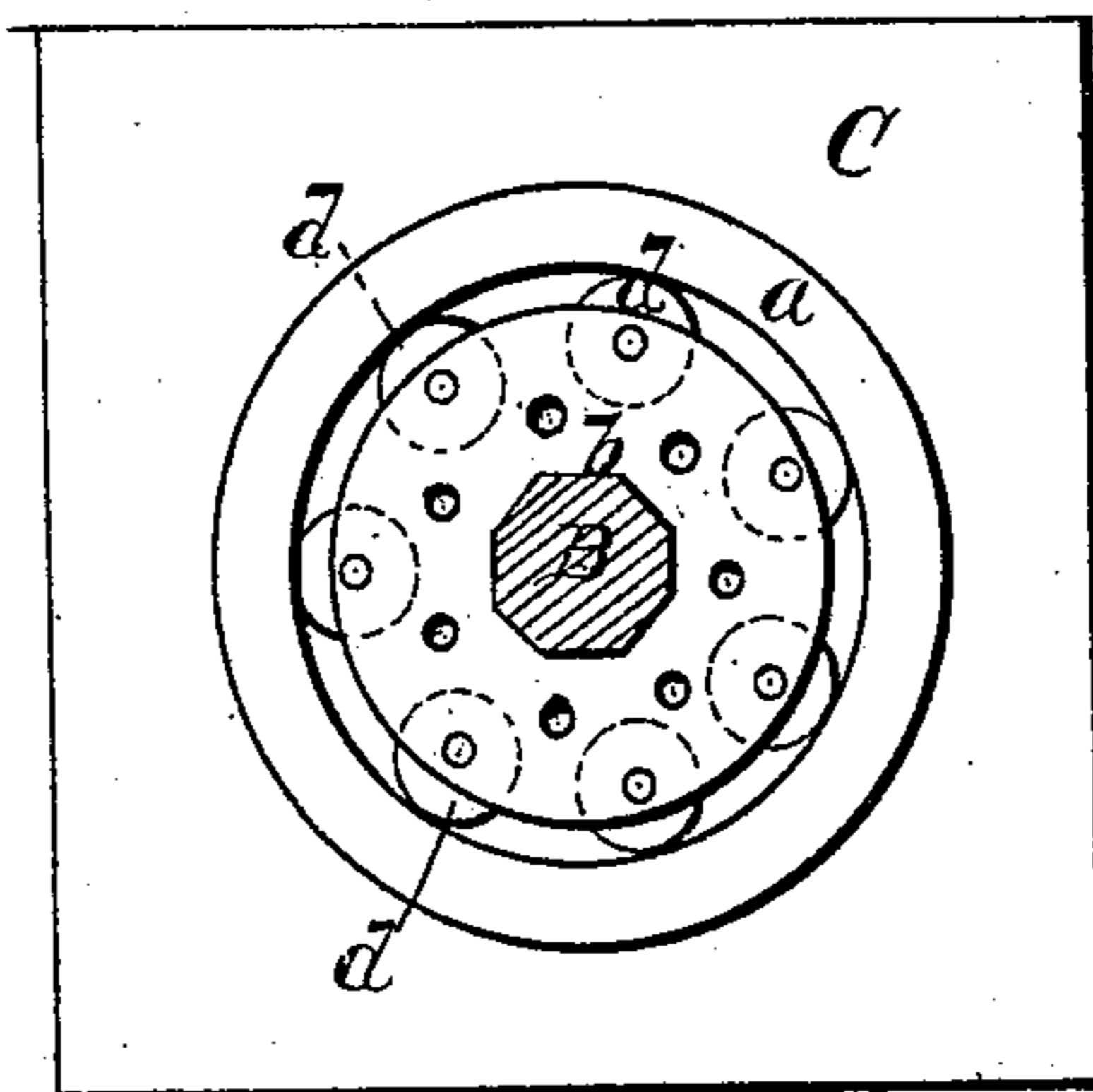
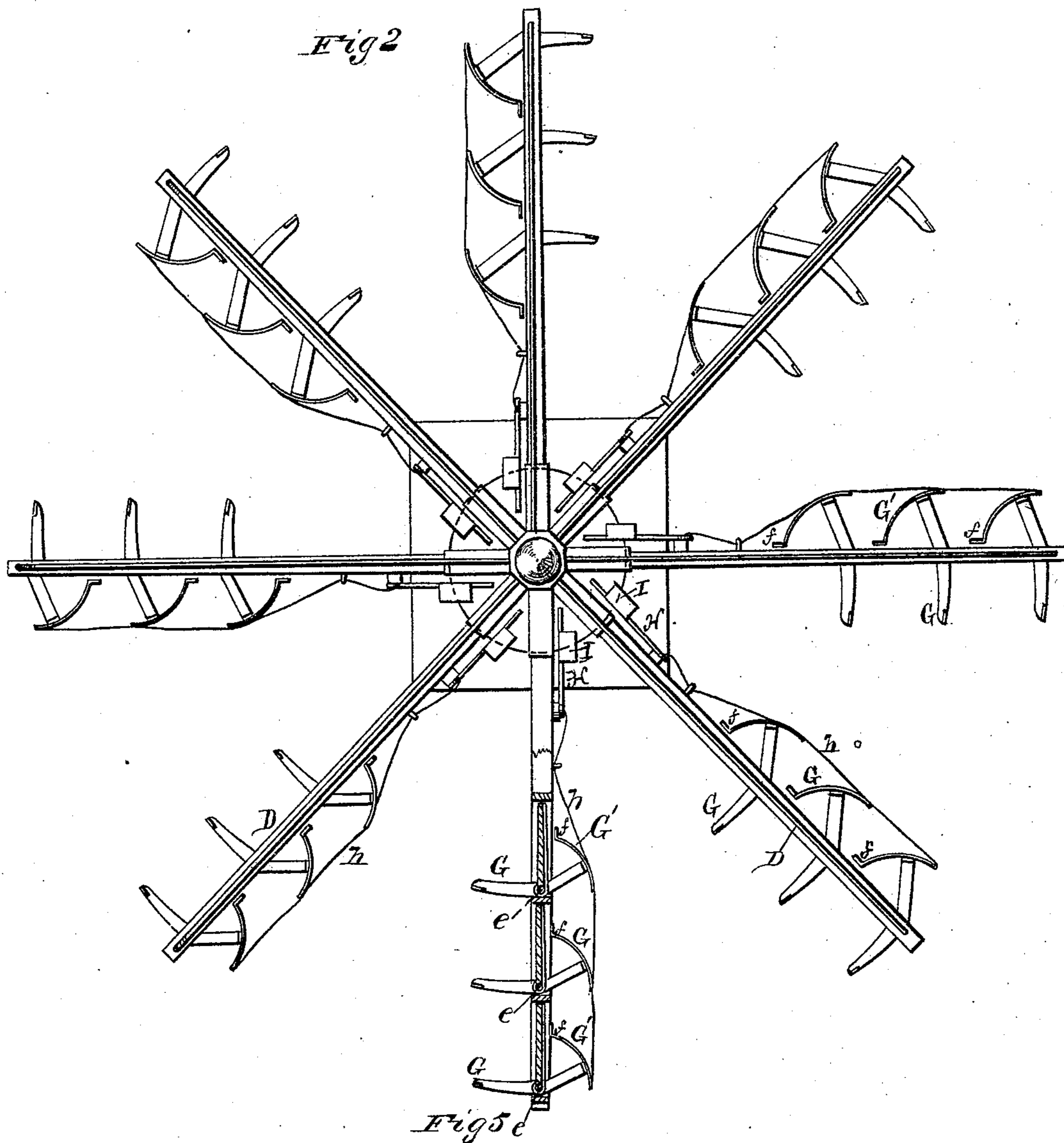
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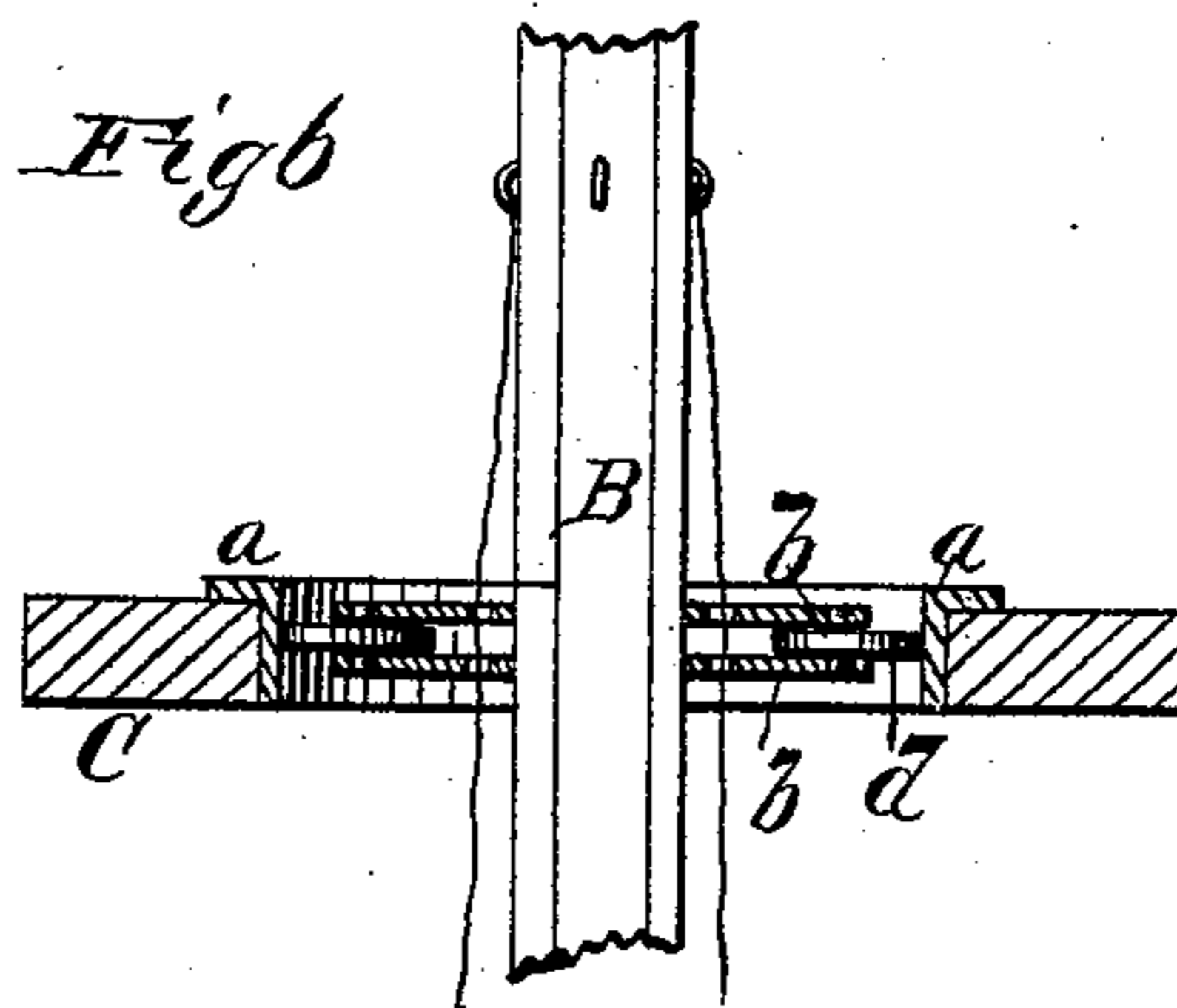
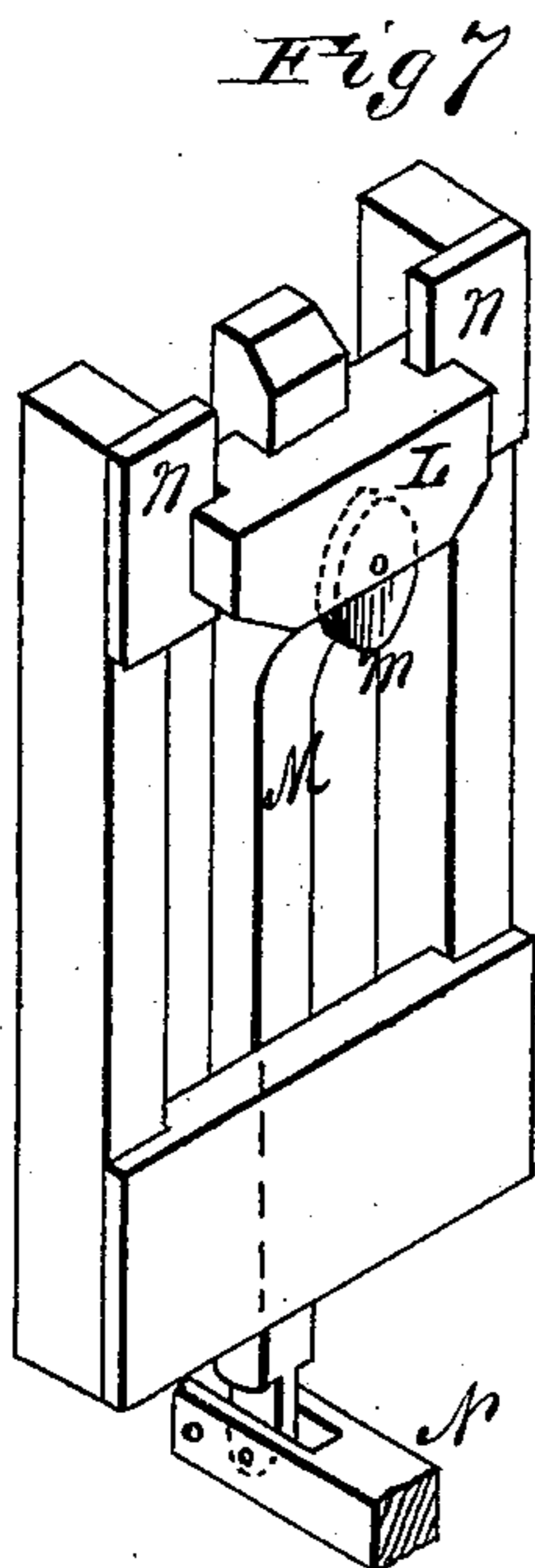
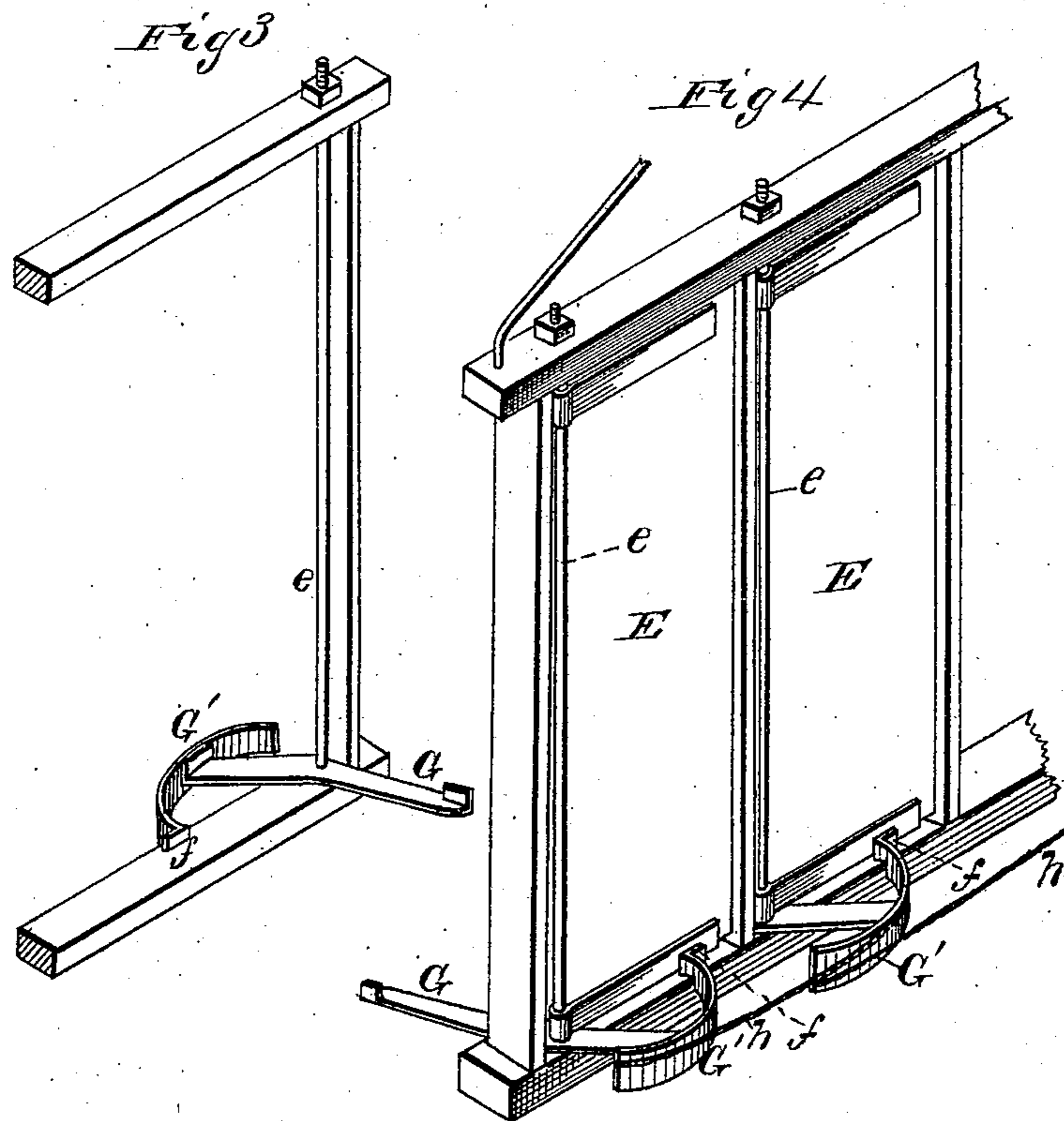
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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN WINDMILLS.

Specification forming part of Letters Patent No. **171,593**, dated December 28, 1875; application filed November 23, 1875.

To all whom it may concern:

Be it known that I, WM. F. VEBER, of Perrysburg, in the county of Wood and State of Ohio, have invented certain new and useful Improvements in Windmills; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon, which form part of this specification:

The nature of my invention consists in the construction and arrangement of a windmill, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawings, in which—

Figure 1 is a side elevation of my windmill. Fig. 2 is a plan view of the same. Figs. 3 and 4 are perspective views, showing the construction of the wind-wheel. Fig. 5 is a plan view, and Fig. 6 a section, of the upper journal of the wind-wheel shaft. Fig. 7 is a perspective view of part of the mechanism operated by the cams on the wind-wheel shaft.

A represents the frame-work or tower, constructed in the usual manner for windmills, and in this tower is a step to receive the lower journal of the upright shaft B, which passes up through an enlarged circular hole in the top C of the tower. In this hole is placed a metal ring, *a*, as shown particularly in Fig. 6, and on the shaft B, within this ring, are secured two circular metal plates or disks, *b b*. Between these disks are journaled a series of rollers, *d d*, which project beyond the disks and bear against the inner surface of the ring *a*. By this means the shaft B has a true upper bearing, with the least possible amount of friction. From the shaft B, above the tower, project two series of radial arms, D D, which are arranged, as it were, in pairs, and are suitably connected and braced to the shaft. Between each pair of arms D are placed vertical wings E, each of which is hinged on a rod, *e*, passing through the arms, so that the wings can swing in either direction. On the lower end of each rod *e*, immediately below the wing, is pivoted an arm, G, having upon the end

back of the wing a cross-bar, G', with lip *f* on its forward end. The outer ends of each set of cross-bars G' are connected by a cord, *h*, which connects with one end of an L-shaped lever, H, pivoted to the arm D, the other arm of said lever having an adjustable weight, I, placed thereon. This lever and weight form a regulator, and operate in the following manner: The weighted lever H holds the levers G in such a position that the lips *f* on the cross-bars G' will form stops for the wings, and allow them to come in a plane with the arms D D when the wind is blowing on them, and is not strong enough to overbalance the weight I. If, however, the wind increases, the wings will force back the levers and open more or less backward, so as to allow the excess of wind to pass through between them, and, as the wind lulls, the regulator H I will throw the levers in position again, so that the full force of the wind will be exerted on the wings, thereby insuring a perfectly uniform motion of the wheel. By changing the weights I on the levers H the wheel may thus be set to any speed desired. It is of course understood that the wings E turn forward as soon as they pass out of the wind during the revolution of the wheel, and will pass edgewise into the wind again. The weighted ends of the levers H have cords *i* attached to them, which cords pass upward through eyes *x* on the shaft, and then downward to the ground, so that the operator can raise said weighted ends of the levers, and allow the wings to open entirely, and thus stop the wheel. On the shaft B, within the tower A, is secured a disk, J, on the upper side of which, around the edge, are formed or attached an uneven number of cams, K K—say, three, five, or seven. On opposite sides of the frame or tower is a cross-head, L, sliding upon guides *n n*, and provided on its under side with a roller, *m*, to bear on the cams K. To each cross-head L is secured a vertical bar, M, the lower end of which is pivoted to a walking-beam, N, and this beam is pivoted in the center, directly under the center of the axis of the shaft B. The machinery to be driven by the windmill is to be connected to this walking-beam.

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

1. In a windmill having radial arms with vertical wings pivoted between them, the combination, with the wings *E*, of the levers *G*, having cross-bars *G'* with lips *f*, the connecting-cord *h*, and the elbow-lever *H* with adjustable weight *I*, substantially as and for the purposes herein set forth.

2. The combination of the wind-wheel shaft

B, circular plates *b b*, with journaled rollers *d* between them, and the ring *a* in the tower-top *C*, substantially as and for the purposes herein set forth.

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

WM. F. VEBER.

Witnesses:

W. C. MCARTHUR,

C. L. EVERT.