P. A. LOCKE.
Windmill.

2 Sheets—Sheet 1.

No. 219,744. Patented Sept. 16, 1879.

Fig. 1.

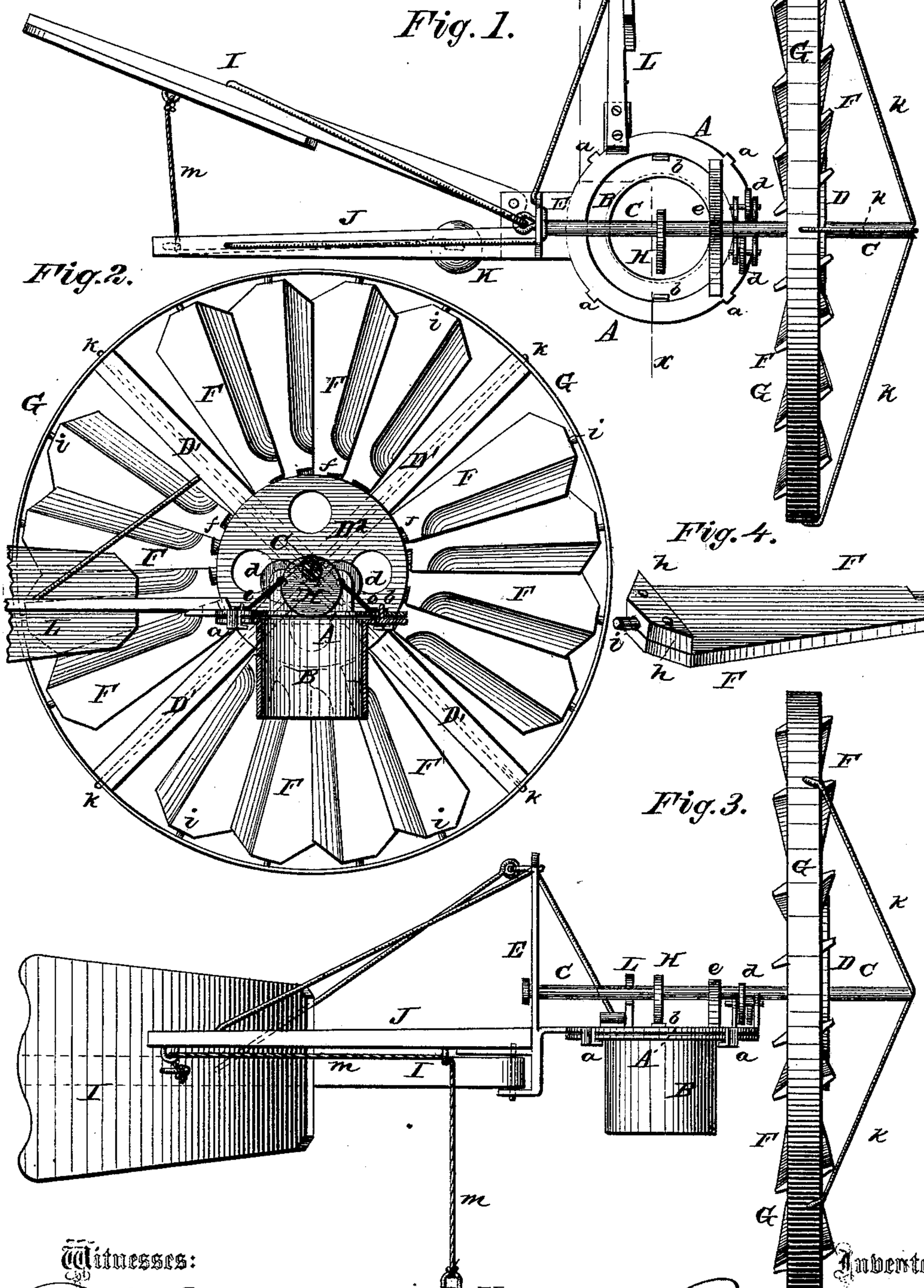

Fig. 2.

Fig. 4.

Fig. 3.

Witnesses:
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Jno. A. Stockman.

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2 Sheets—Sheet 2.

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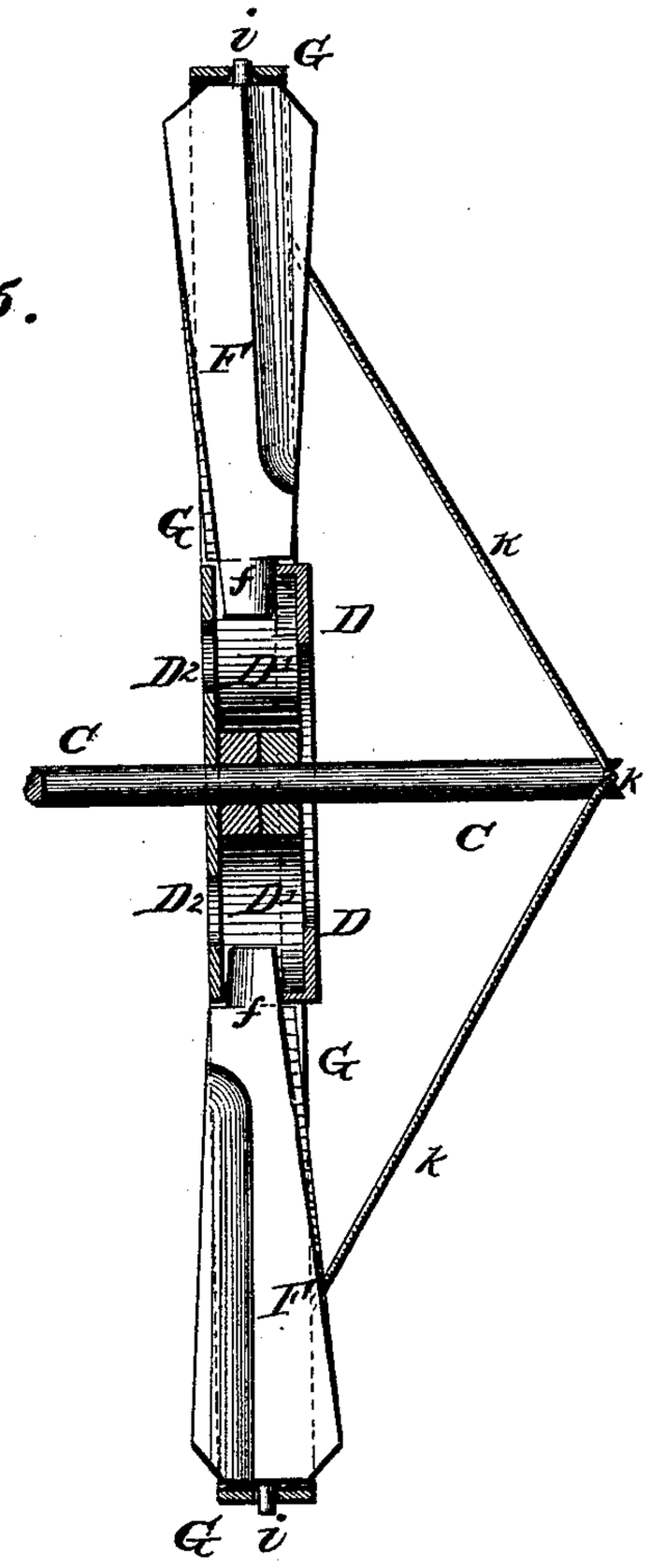
Fig. 5.



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UNITED STATES PATENT OFFICE.

PETER A. LOCKE, OF OQUAWKA, ILLINOIS.

IMPROVEMENT IN WINDMILLS.

Specification forming part of Letters Patent No. **219,744**, dated September 16, 1879; application filed July 3, 1879.

To all whom it may concern:

Be it known that I, PETER AKERS LOCKE, of Oquawka, in the county of Henderson and State of Illinois, 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, and to the letters of reference marked thereon, which form a 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 the annexed drawings, Figure 1 is a plan view of my improved windmill. Fig. 2 is a vertical section of the same on the line *x x*, Fig. 1. Fig. 3 is a side elevation thereof. Fig. 4 is a perspective view of one of the fans of the wheel. Fig. 5 is a detailed view of the wheel.

A represents the turn-table, made in annular or ring form, and resting upon a flange or collar, B, which is to be secured on the usual tower.

On the flange B are lugs *b*, at suitable distances apart, around which the turn-table is placed, and the turn-table is provided with lips *a*, which extend over and under the edge of the flange B, as shown, whereby the turn-table is held in proper position, and yet allowed to turn freely.

C is the wind-wheel shaft, having a bearing at the inner end in a standard, E, attached to the turn-table. On the opposite side of the turn-table from this standard the shaft C rests upon two friction-rollers, *d d*, for the purpose of reducing the friction, and the shaft is held down by means of a guard, *e*.

The wheel secured on the outer portion of the shaft C is composed of a hub, D, with four radial arms, D^1, and an annular ring, D^2, secured to said arms on the opposite side from the hub and coinciding therewith.

G is a metal tire or band extending around the outside of the wheel and secured to the ends of the arms.

F F are the fans or wings of the wheel, constructed substantially of the form shown in Fig. 4. The inner end of each fan is formed with a tenon, *f*, beveled on its edges to be inserted on an incline between the hub D and ring D^2, while on the outer end of the fan is a pin, *i*, projecting into a hole in the tire or band. Across the outer end of the fan is a brace, *h*, for strengthening the same, as shown.

k k are braces extending from the outer ends of the arms D^1 to the axle for bracing the wheel and rendering it more firm.

In practice I intend to provide the turn-table with anti-friction bearings similar to what are arranged for the wheel-shaft C.

H is an eccentric secured on the shaft C for operating the pump.

To the lower portion of the standard E is hinged the main vane I, which moves in a horizontal plane, and is held in line with the wheel-shaft against a projecting arm, J, by means of a weight, K, suspended from a cord, *m*, said cord being attached to the vane, and passing through staples or over pulleys attached to the arm J.

L is the stationary vane at right angles to the arm J. When the wind blows too strong the vane L turns the wheel more or less out of the wind, and the main vane I turns on its hinge correspondingly until the wind falls, when the weight K brings the main vane back to its position, and said vane then brings the wheel full into the wind again.

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

1. In a wind-wheel, the fan F, provided with a cross-brace, *h*, at the outer end, and its inner end formed with the beveled tenon *f*, substantially as and for the purposes herein set forth.

2. The combination of the hub D, arms D^1, ring D^2, metal rim G, braces *k*, and the fans F, provided with bevel-tenons *f* and pins *i*, substantially as and for the purposes herein set forth.

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

PETER A. LOCKE.

Witnesses:

WM. C. RICE,

G. F. WM. FROEHLICH.