M. J. COVELL.

WIND-MILL.

No. 182,271. Patented Sept. 19, 1876.

FIG. II

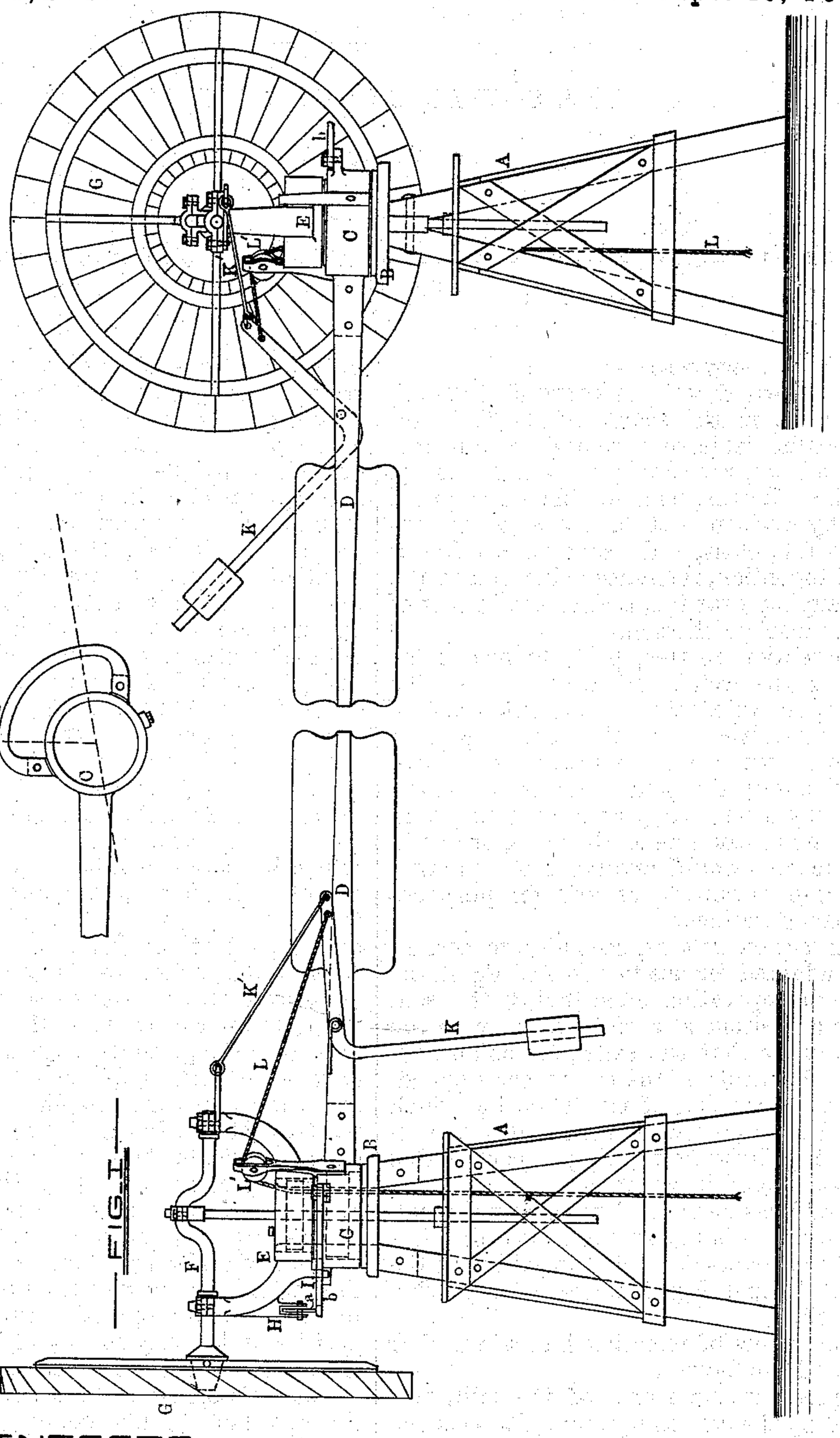

FIG. III

FIG. I

WITNESSES:

Wm. W. Towson

W. W. Wharton

INVENTOR:

Merritt J. Covell,

by G. H. & R. T. Howard,

Attys.

UNITED STATES PATENT OFFICE.

MERRITT J. COVELL, OF SYCAMORE, ILLINOIS.

IMPROVEMENT IN WINDMILLS.

Specification forming part of Letters Patent No. **182,271**, dated September 19, 1876; application filed April 27, 1876.

To all whom it may concern:

Be it known that I, MERRITT J. COVELL, of Sycamore, in the county of De Kalb and State of Illinois, have invented certain new and useful Improvements in Windmills, of which the following is a specification; and I do hereby declare that in the same is contained a full, clear, and exact description of my said invention, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

My invention relates, first, to means for equalizing the weight or strain of the yoke or stand, in which the main crank-shaft of the mills revolves, upon the revoluble head to which the vane is rigidly attached, and to means whereby the said shaft is prevented from at any time occupying a position parallel with the center line of the vane, or one in which the sails would revolve in a plane at a right angle therewith, as and for purposes hereinafter described.

My invention relates, secondly, to certain devices adapted for use in the folding of the mill or the operation of swinging the said shaft to a position at a right angle with the vane, in order that the sails may be uninfluenced by the wind and the machinery stopped.

In the description of my invention which follows due reference must be had to the accompanying drawing, forming a part of this specification, and in which—

Figure 1 is a side view of my improved windmill with the sails facing the wind; Fig. 2, a view of the reverse side of the mill with the sails folded; and Fig. 3, a plan of a portion of the mill.

Similar letters of reference indicate similar parts in all the figures.

A represents the frame of the mill, surmounted by the stationary stand B. C is the revoluble vane-head, resting on the stand B, and to which the vane E is rigidly attached. E is the yoke or stand for the crank-shaft F, to which the sails G are secured. An arm, H, extends downwardly from a part of the yoke E, and is adapted at the lower end to carry a roller or wheel, *a*. The roller *a* rests upon and, in the revoluble movement of the yoke independently of the vane-head C, traverses the circular track *b*, secured to the said head, for the purpose of equalizing the weight or strain of the yoke upon the parts supporting it, and to counteract the tendency of the side of the yoke from which the end of the shaft extending to the sails projects to droop or sink by reason of its superior weight. I is a stop on the lower part of the yoke E, for the purpose of limiting the independent movement of the yoke before alluded to, by coming into contact with the ends of the track *b*. The position of the track *b* on the vane-head with reference to the stop I is such as to prevent the shaft F from at any time occupying a position parallel with that of the vane, for purposes hereinafter described.

In Fig. 3 the extreme position of the shaft in either direction is represented by dotted lines. The relative positions of the shaft F and vane D, as shown in Fig. 1, are maintained by means of a bent lever, K, the lower end of which is weighted, and the upper end connected, by a rod, K′, to an eye projecting from a part of the yoke E. A rope or wire, L, is also attached to the upper end of the bent lever K, and passes over a sheave, L′, supported in a strap extending from the vane-head C to the ground. By means of this rope or wire the mill is folded—that is, the shaft and sails and vane are placed in the relative positions shown in Fig. 2, and the edge of the sails brought to the wind.

The object in preventing the sails from at any time exposing a full surface to the wind, or allowing the plane of revolution of the sails to come at a right angle with the direction of the same, is to allow of the sails being forced by excessive pressure of the wind toward the position which they occupy in Fig. 2, whereby the strain upon them is reduced.

This arrangement of parts also provides for the speed of the mill being governed by the position of the weight on the lever K, as in the movement of the sails, as described, the weighted lever K is elevated.

Having thus described my invention, what I claim as new, and wish to secure by Letters Patent of the United States, is—

1. The yoke E, provided with the roller *a*, in combination with the track *b*, secured to the vane-head C, substantially as and for the purpose described.

2. In combination with the vane-head C and track *b*, the stop I, projecting from the yoke E, adapted to limit the movement of the yoke and attachments independently of the said vane-head, substantially as and for the purpose specified.

3. In combination with the yoke E and vane D, the bent weighted lever K, rod K′, and rope or wire L, adapted to regulate the relative positions of the vane and yoke, with its attachments, substantially as and for the purpose set forth.

In testimony whereof I have hereunto subscribed my name this 18th day of April, A. D. 1876.

MERRITT J. COVELL.

Witnesses:
N. J. VAN VLEET,
W. S. COVELL.