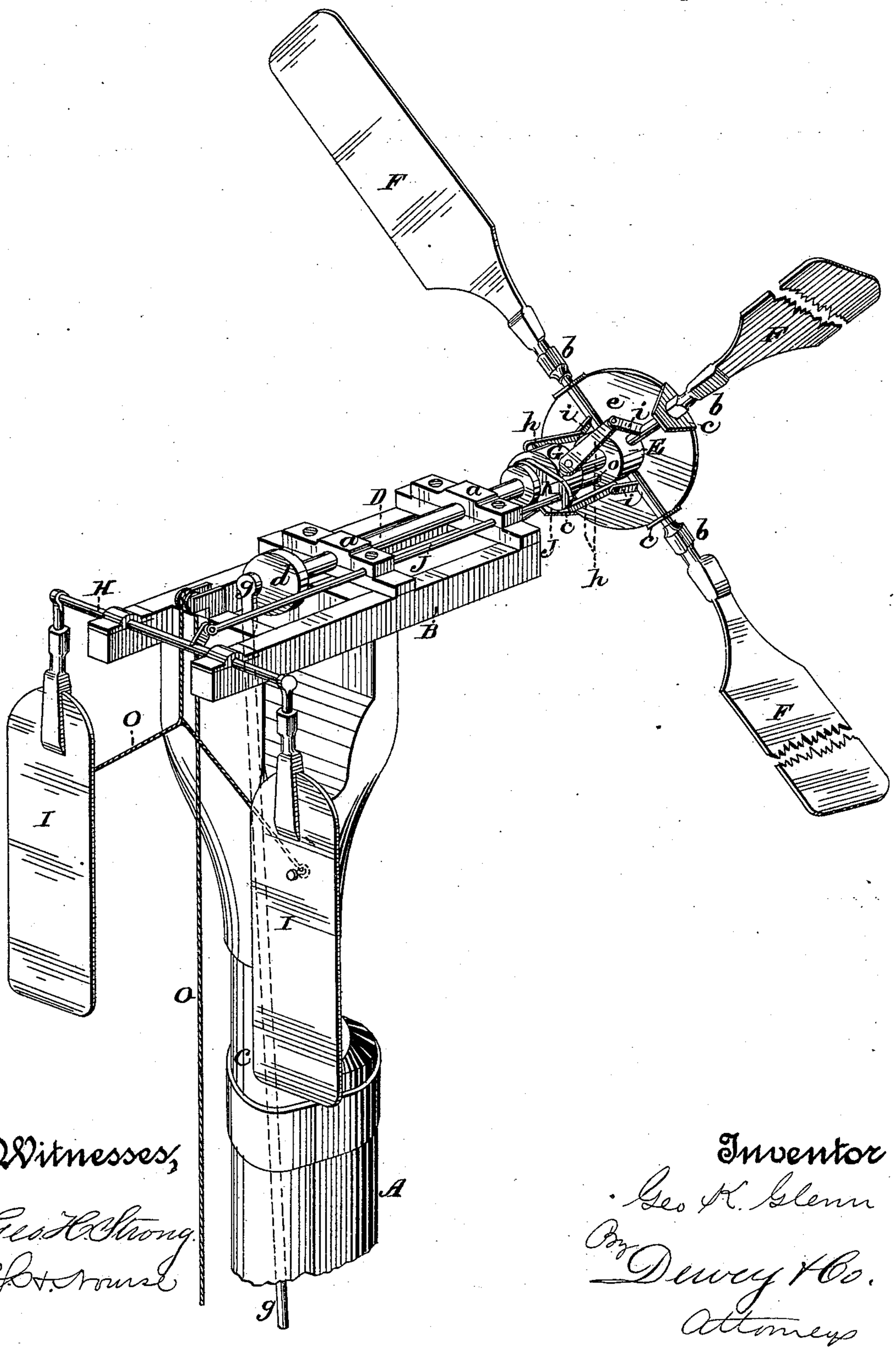
(No Model.)

G. K. GLENN.

SELF REGULATING WINDMILL.

No. 275,036. Patented Apr. 3, 1883.



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UNITED STATES PATENT OFFICE.

GEORGE K. GLENN, OF WOODLAND, CALIFORNIA, ASSIGNOR OF ONE-HALF TO HALL & BIDWELL, OF SAME PLACE.

SELF-REGULATING WINDMILL.

SPECIFICATION forming part of Letters Patent No. 275,036, dated April 3, 1883.

Application filed December 12, 1882. (No model.)

To all whom it may concern:

Be it known that I, GEORGE K. GLENN, of Woodland, county of Yolo, State of California, have invented an Improved Self-Regulating Windmill; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to certain new and useful improvements in this class of windmills; and these consist in a novel means for rendering the arms self-regulating, whereby they may adjust themselves to the intensity of the wind.

The object of my invention is to provide a simple self-regulating windmill, and this object I attain by adopting an old and simple form of mill, and by means of simple changes and devices, hereinafter shown, convert it from its old and objectionable shape to an effective self-regulating mill.

Referring to the accompanying drawing, the figure is a perspective view of my device.

Let A represent any kind of suitable framework, upon and to which is pivoted or mounted the turn-table B, the stem C of which is here shown as passing down beside the frame.

In suitable bearings, *a*, upon the turn-table is mounted a horizontal shaft, D, the outer end of which carries a hub, E, with a flange, *e*, suitably braced from behind.

F represents the blades, or, as they are more commonly known in this form of mill, the "arms." These have heretofore been rigid, and though devices—such as a vane or tail—have been employed to veer them around the frame as a center, they have never, as far as I am aware, been caused to turn on their own axes, in or out of the wind; but in this case I journal the stems or shanks *b* of the arms F in the hub E, and give them additional bearing by the ears *c* on the rim of the flange *e*, through which ears said shanks pass loosely. They are mounted loosely in the hub and may readily be turned therein. The other end of the shaft D has a crank, *d*, with which the pitman *g* is connected.

The means for turning the arms F on their axes are as follows: Upon the shaft D, between the hub E and the outermost bearing *a*, or end of the turn-table, is mounted a collar, G, which is adapted to move longitudinally upon said shaft, and on a pin, *o*, extending from hub E. This collar is connected with the shanks *b* of the arms F through rods *h*, joined to arms or crank *i* upon the said shanks. Thus the collar will revolve with the shaft D, but may also move longitudinally upon it. Mounted across the other end of the turn-table is a shaft, H, to the ends of which are firmly secured downwardly-extending vanes I. With this shaft is connected a rod, J, the other end of which is connected suitably with the sliding collar G. The connection is here shown by means of an arm, *k*, journaled loosely in a groove of the collar, whereby the latter may revolve and the former remain stationary.

The operation of this mill is as follows: Having no tail-vane, the wind will drive the arms around to the opposite side of the main frame, and will therefore strike the regulating-vanes I first. It forces these, and thus oscillates the shaft H, to which they are attached. This draws on rod J and pulls the collar G back, which movement, through the connecting-rods *h* and cranks *i*, turns all the arms with their edges to the wind—that is, throws them out of the wind. In this manner, as the wind blows harder and harder the arms turn their edges more and more, and are thus self-regulating and less liable to suffer injury. When I wish to turn them out of the wind permanently I have a cord, O, within reach. This passes up and is attached to the vanes I in any suitable manner. By pulling down on this cord I draw on the vanes, and through the shaft H, rod J, collar G, rods *h*, and crank *i* turn the arms to any desired angle out of the wind.

The particular construction here shown of the old features of the mill—such as the frame A, the turn-table B, and the arms F—is unimportant, and is given only to illustrate the essential features of my device—namely, the turning of the arms F upon their own axes and the means for accomplishing the result.

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

In a windmill, the combination of the revolving mechanism with the dependent regulating-vanes I, connecting-rod J, for the purpose set forth, and the cut-off device O, all arranged to operate substantially as specified.

In witness whereof I hereunto set my hand.

GEORGE K. GLENN.

Witnesses:

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