

(No Model.)

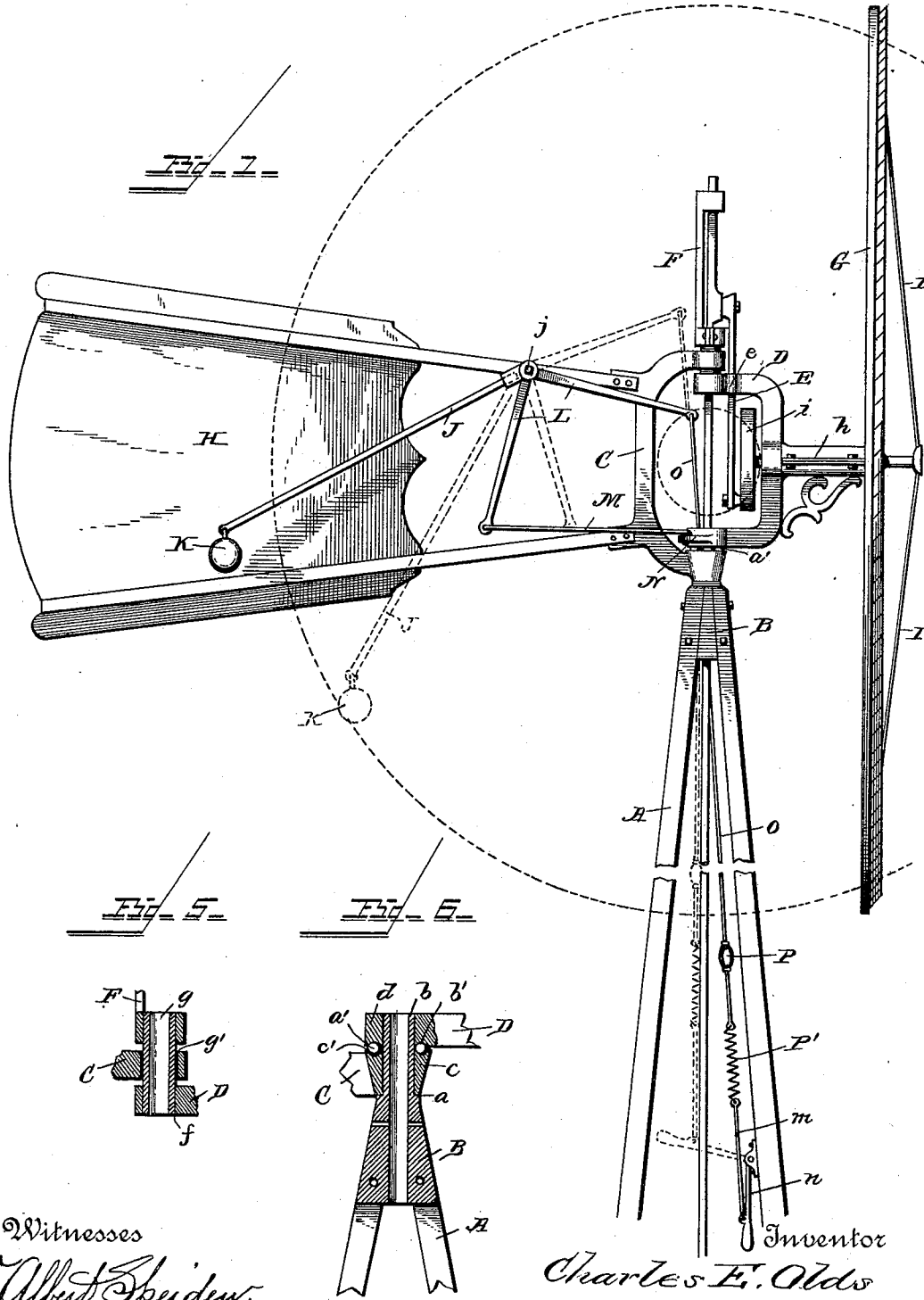
2 Sheets—Sheet 1.

C. E. OLDS.

WINDMILL.

No. 400,004.

Patented Mar. 19, 1889.



Witnesses
Albert Speiden.
E. H. Bond.

Inventor
Charles E. Olds
 By *Teis* Attorney

Cha. N. Fowler

(No Model.)

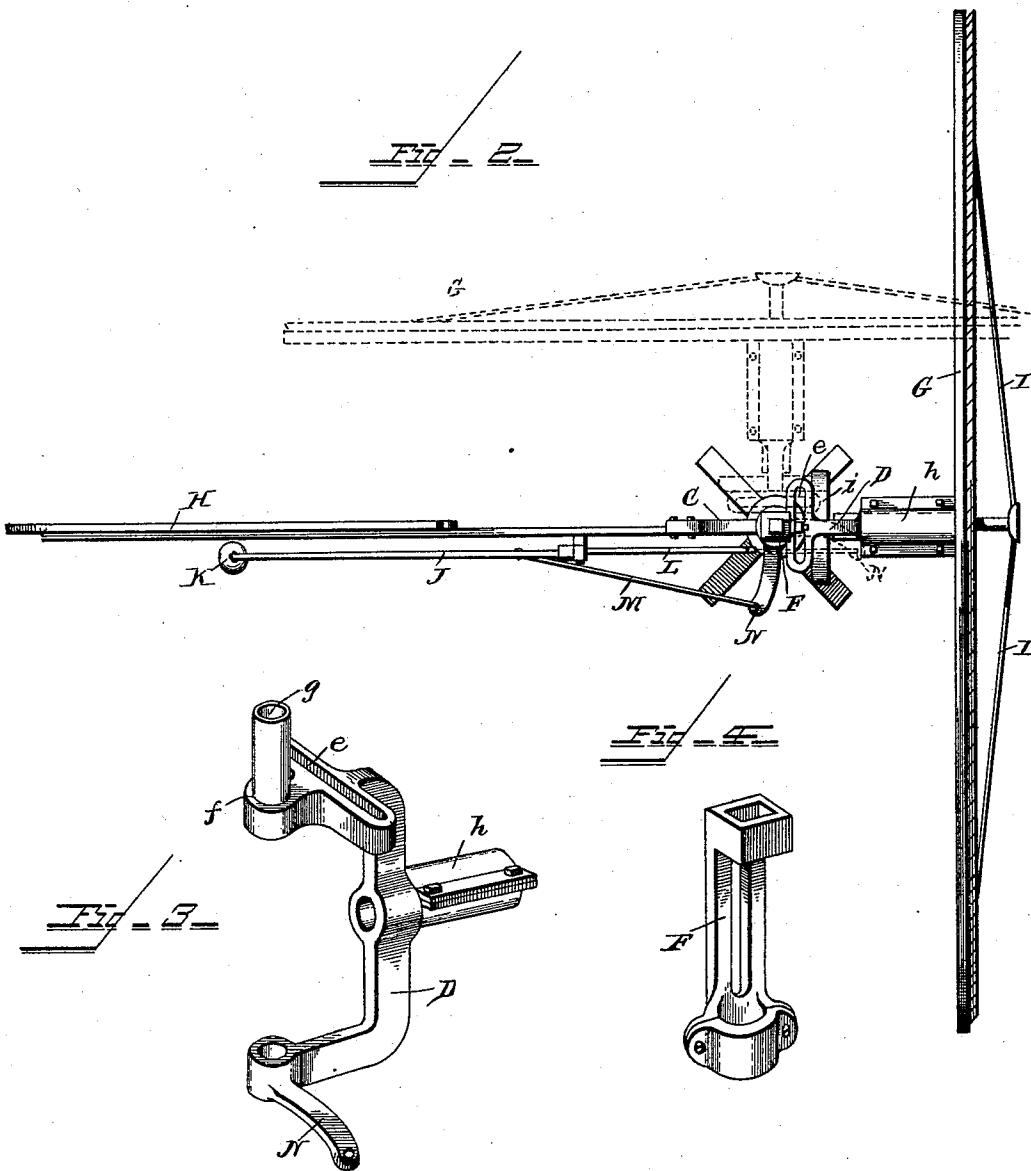
2 Sheets—Sheet 2.

C. E. OLDS.

WINDMILL.

No. 400,004.

Patented Mar. 19, 1889.



Witnesses
Albert Speiden.
E. H. Bond.

Inventor
Charles E. Olds
By *his* Attorney
Chas. N. Fowler

UNITED STATES PATENT OFFICE.

CHARLES E. OLDS, OF FAIRBURY, NEBRASKA, ASSIGNOR OF ONE-HALF TO
HUGH R. McEWEN, OF SAME PLACE.

WINDMILL.

SPECIFICATION forming part of Letters Patent No. 400,004, dated March 19, 1889.

Application filed October 9, 1888. Serial No. 287,616. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. OLDS, a citizen of the United States, residing at Fairbury, in the county of Jefferson and State of Nebraska, 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 same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

This invention relates to certain new and useful improvements in windmills, and has for its objects to improve upon previous constructions of this character and to render them more steady in motion, more efficient in operation, and more durable.

The novelty in the present instance resides in the peculiar combinations and the construction, arrangement, and adaptation of parts, all as more fully hereinafter described, shown in the drawings, and then specifically pointed out in the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a side elevation of a windmill constructed in accordance with my invention. Fig. 2 is a plan view of the same. Figs. 3 and 4 are detached perspective views of parts which will be more particularly referred to hereinafter. Fig. 5 is a vertical section through the upper bearing of the pump-rod, and Fig. 6 is a similar section through the lower bearing.

Referring now to the details of the drawings by letter, A designates the upper portion of a tower, which may be of any well-known construction.

B is a casting of the shape shown in Fig. 6, secured between the upper ends of the uprights of the tower, and formed with a shoulder, *a*, and an upwardly-extending boss, *b*, on which is sleeved the tail-vane casting C, which is supported on said shoulder, as seen in said Fig. 6. The upper face of the sleeve *c* of this tail-casting has a circumferential groove, *c'*, in which are placed the anti-friction rollers *a'*, which also work in a similar groove, *b'*, in the lower face of the sleeve *d* of

the wheel-casting D. Both the sleeve *c* of the tail-casting and the sleeve *d* of the wheel-casting are sleeved on the boss *b* of the casting B, as seen in Fig. 6.

The wheel-casting D has at its upper end an elongated slot, *e*, in which works the pitman E, and an opening, *f*, in which is placed a piece of pipe, *g*, which extends up through a similar hole, *g'*, in the tail-casting, and then fastens in the pump-rod carrier F at the lower end thereof, so that they both turn in unison in the hole in the tail-casting.

G is the wheel, which may be of any approved construction suited to the purpose, the shaft thereof passed through the bearing *h* on the wheel-casting D, and has connected with its inner end the crank-disk *i*, which is connected with the pitman E in the usual manner.

The pitman is connected with the pump-rod preferably by a detachable connection, as shown, so that it may be readily connected or detached when desired.

The tail-vane H is secured to the tail-casting C in any suitable manner.

I are braces for the wheel.

J is an arm or lever, pivoted at *j* on the tail-vane and carrying at its free end a weight, K. On the same pivot and rigid with the arm J is the bell-crank lever L, one arm of which is connected by means of the rod M with the lateral arm N on the wheel-casting D, the other arm of said lever being connected to the upper end of the rod O, which is preferably formed of two parts connected by means of a turn-buckle, P, and the lower end provided with a spring, P', connected by the short arm *m* with the lever *n*, pivoted at one end to the upright of the tower, and provided with a suitable handle, by which it is operated.

Normally, when the mill is in operation, the parts are in the position indicated by full lines in Fig. 1, the weight being held in position by means of the rod O and the connections above described. When it is desired to throw the mill out of the wind, the lever *n* is thrown into the position shown in dotted lines in Fig. 1, when the parts assume the position indicated by dotted lines in Fig. 2, being held by the weight and its connections, as shown in dotted lines in Fig. 1.

It will be observed that by the construction shown the spring holds the mill in operative position and acts as a governor, for as the wind increases the spring tends to throw the wheel out of the wind. Thus this, in connection with the anti-friction bearing, produces a very steady motion of the pump-rod and most perfect regulation.

What I claim as new is—

1. In a windmill, the combination, with the tower, the wheel, its casting, and the tail-vane, of the lever J, pivoted on the tail-vane and carrying at its free end the weight K, the bell-crank lever L, pivoted on the pivot of the lever J on the tail-vane, the rod M, connected at one end to the wheel-casting and at the other to one end of one of the arms of the bell-crank lever, the lever *n*, pivoted to the tower, the rod O, connected at one end to the other arm of said bell-crank lever, the spring *p'*, connected to the other end of the rod O, and the arm *m*, connecting the other end of the spring with the lever *n*, substantially as shown and described.

2. In a windmill, the combination, with the tower, the wheel, its casting, and the tail-vane, of the lever J, pivoted on the tail-vane and carrying at its free end a weight, K, the bell-crank lever L, pivoted on the pivot of the lever J rigid with said lever, the rod M, connected at one end to the wheel-casting and at the other to one of the arms of the bell-crank lever, the lever *n*, pivoted on the tower, the rod O, connected at one end to the other arm of said bell-crank lever, formed of two parts connected by the turn-buckle P, the spring *p'*, connected to the other end of the rod O, and the arm *m*, connecting the other end of the spring with the lever *n* near its pivot, substantially as and for the purpose specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

CHARLES E. OLDS.

Witnesses:

A. W. MATTHEWS,
HUGH R. MCEWEN.