

(No Model.)

F. A. & F. L. FRANKLIN.
WINDMILL.

No. 527,276.

Patented Oct. 9, 1894.

Fig. 1.

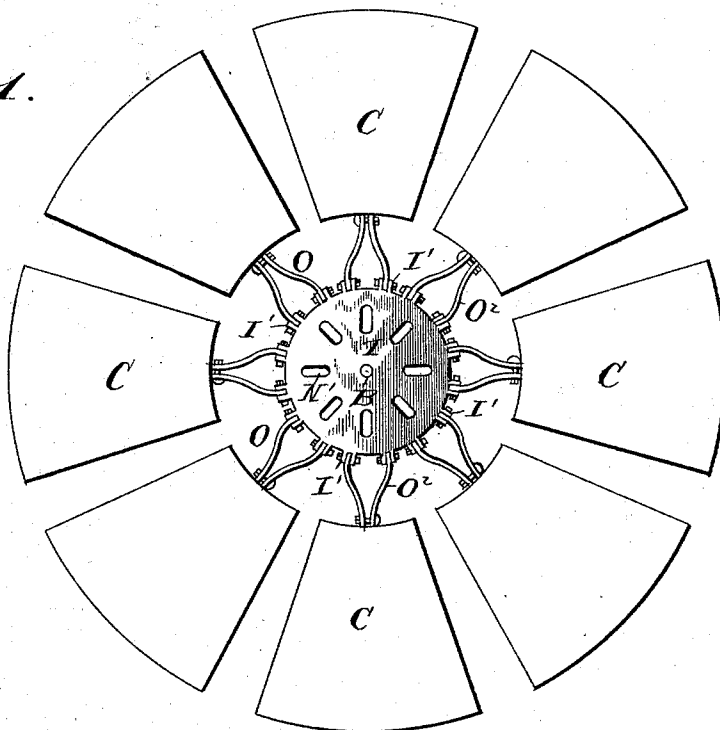
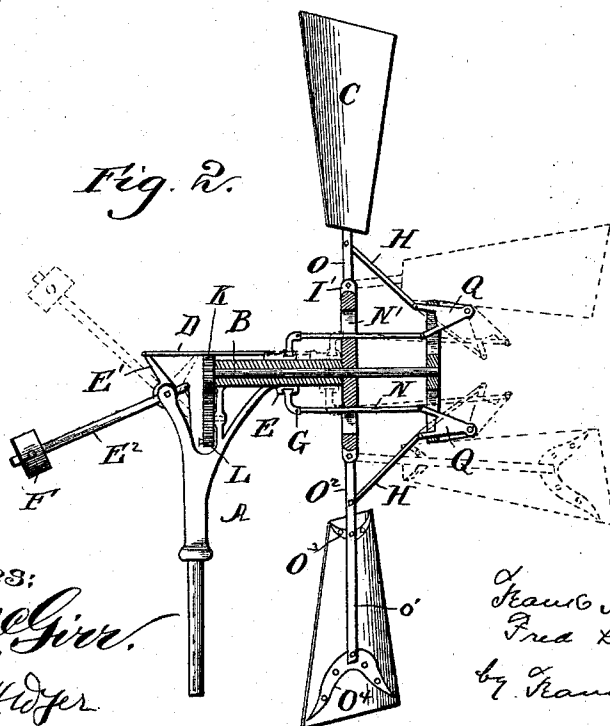


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

FRANK A. FRANKLIN AND FRED L. FRANKLIN, OF EVANSVILLE, WIS-
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WINDMILL.

SPECIFICATION forming part of Letters Patent No. 527,276, dated October 9, 1894.

Application filed November 22, 1893. Serial No. 491,656. (No model.)

To all whom it may concern:

Be it known that we, FRANK A. FRANKLIN and FRED L. FRANKLIN, citizens of the United States, residing at Evansville, in the county of Rock and State of Wisconsin, have invented certain new and useful Improvements in Windmills, and we do hereby declare the following to be 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.

This invention relates to various new and useful improvements in steel windmills, and the particular features of these mills to which our invention especially relates are the windwheels thereof and the governing mechanism for such wheels.

The objects of the invention are to provide and produce a windwheel which can be constructed economically, which can be set up easily, which will be effective in use, and which will be rigid in construction.

Concerning the governing mechanism for this mill, the object thereof is to provide a simple and effective means whereby a proper predetermined speed of the windmill will be maintained under all ordinary conditions.

For a better comprehension of our invention, attention is directed to the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a front view of the windwheel; and Fig. 2 is a side view partly in section of our improvements.

In both of the above views corresponding parts are designated by the same letters of reference.

The windwheel proper consists of a number of radial fans C, the drawings showing eight, but this number may be varied at pleasure. These fans are preferably made of sheet steel cut or otherwise formed in the shape shown. Each fan is secured by rivets or any other fastening to the supporting spider frame O. This frame O, consists of the back-bone O' riveted or bolted to the braces O³, O⁴, secured to the fan. The inner end of the back-bone O' is bifurcated at O² and the two arms thus formed are pivoted to the ears I', I' formed upon the circumference of the hub or spider

I, which is circular in form. This hub I is rigidly mounted to the horizontal axle B, which rotates freely within the main frame A, of the mill.

P, is a shipper spider keyed to the shaft B slightly in advance of the spider I. On the outer circumference of this spider P are mounted—as many as there are fans in the mill—a number of bell cranks Q. Each bell crank Q is connected to a fan and to the frame thereof by a brace rod H. The other extremity of the bell crank is connected to a swivel G, which rotates freely within a sleeve E. This sleeve E, is capable of sliding back and forth around the main frame A. The rods N pass through openings N' within the spider I. These openings are made of sufficient size to admit of free movement of the rods.

D, is a main shipper rod connected to the lever E', at right angles to the governing bar E, which carries the governor weight F at its outer extremity.

K and L are suitable gears for connecting the mill with the driven machinery.

The operation of the device is as follows: The mill being set up as shown in the drawings, the governor weight F, will be heavy enough by its weight to force the fans C in a vertical position and at the same time to counterbalance the weight of the windwheel and shipping mechanism on the opposite side of the vertical pivot of the mill. This will allow the wheel to readily turn and it will always to the side opposite to the wind. As the wind increases, the pressure of the wind upon the fans will move them more or less toward the position shown in dotted lines, which will retract the bell cranks Q, moving up the swivel shipper G, toward the wheel and by means of the main shipper rod D, will raise the governor weight F as shown in the dotted lines. This will close the windwheel like an umbrella and will reduce its surface exposed to the wind.

R, is a cord, chain or wire attached to the governor lever E, and is used for throwing the windwheel out of gear. It will be seen that when the wheel is out of gear (as shown in dotted lines Fig. 2) the bell cranks and

other mechanism will be entirely covered over by the fans and will be protected from rain, ice, sleet and snow.

Having now described our invention, what we claim as new therein, and desire to secure by Letters Patent, is as follows:

1. In a wind mill, the combination of a spider I, mounted on the windmill shaft; fans C, pivoted on said spider; at their inner ends the spider G, mounted on the windmill shaft; bell crank levers Q pivoted in spider G; connections H, between said levers and fans C; swivel E, mounted on the main shaft bearing; connections N, between said levers Q and said swivel; weight lever pivoted to main frame, and carrying weight; and shipper rod D, connecting said weight lever and said swivel, substantially as set forth.

2. In a windmill, the combination of the spider I, mounted on the windmill shaft B; the fans C, pivoted to said spider I; at their inner ends the spider G on said shaft B; the bell crank levers Q, mounted in said spider G, con-

nections H, between said levers Q and said fans the swivel E, on the main shaft bearing; the slots N' in said spider I; the connecting rods N between said levers Q and said swivel and working in said slots; the weight lever pivoted to the main frame of the windmill; and carrying the weight F; and the shipper rod D, connecting said weight lever and said swivel, substantially as set forth.

3. In a windmill, a windwheel, consisting of a hub or spider I, having ears I', I', formed upon the circumference thereof, and the fans C formed of the back bone O' bifurcated at O² and pivoted to the aforesaid spider, all combined, substantially as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

FRANK A. FRANKLIN.
FRED L. FRANKLIN.

Witnesses:

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