

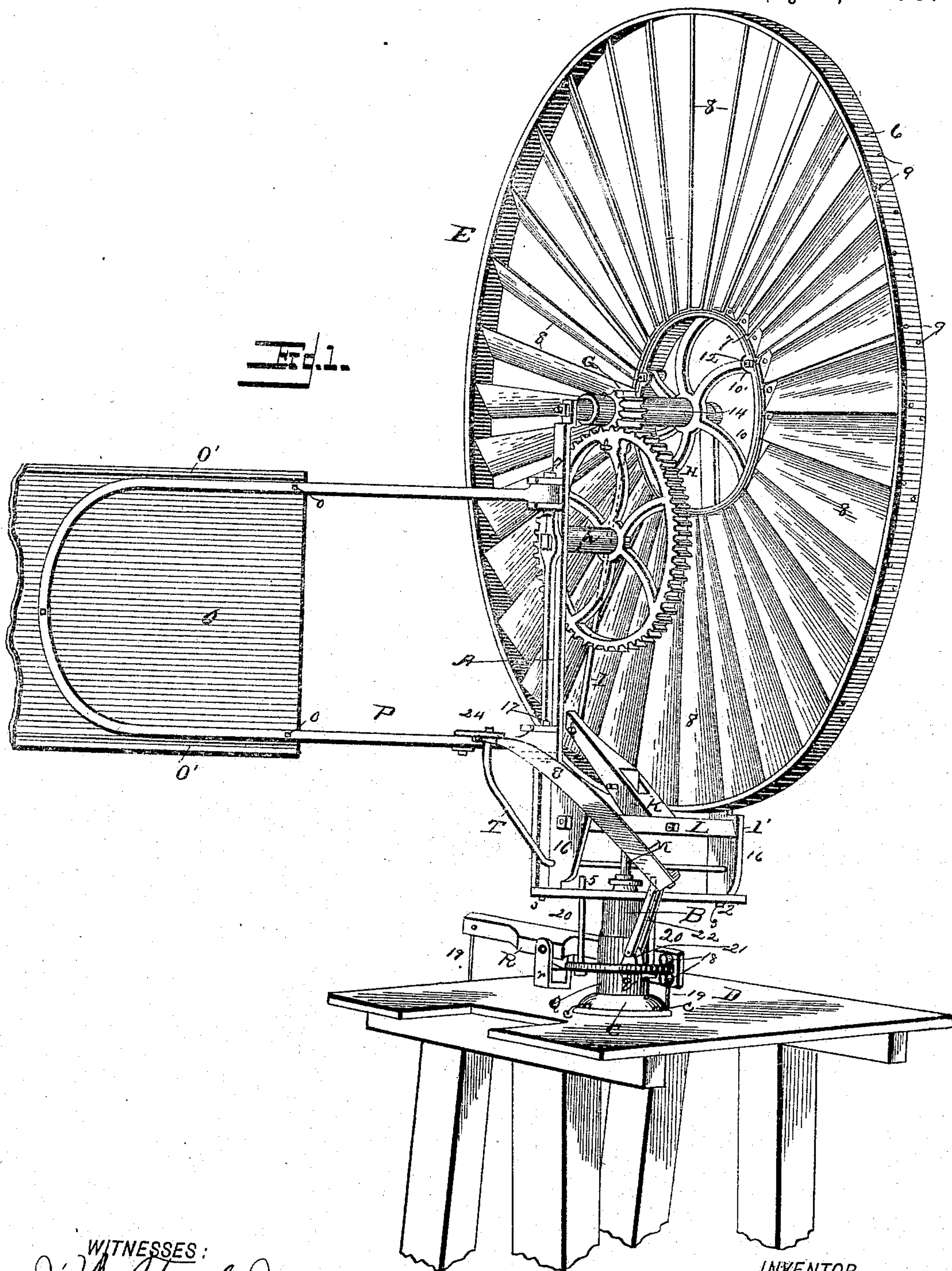
(No Model.)

W. KOUNS.  
WINDMILL.

2 Sheets—Sheet 1.

No. 500,911.

Patented July 4, 1893.



WITNESSES:  
*J. A. Fowler Jr.*  
*H. M. Marble*

INVENTOR  
*Wesley Kouns*  
BY *E. M. Marble*  
His ATTORNEY.



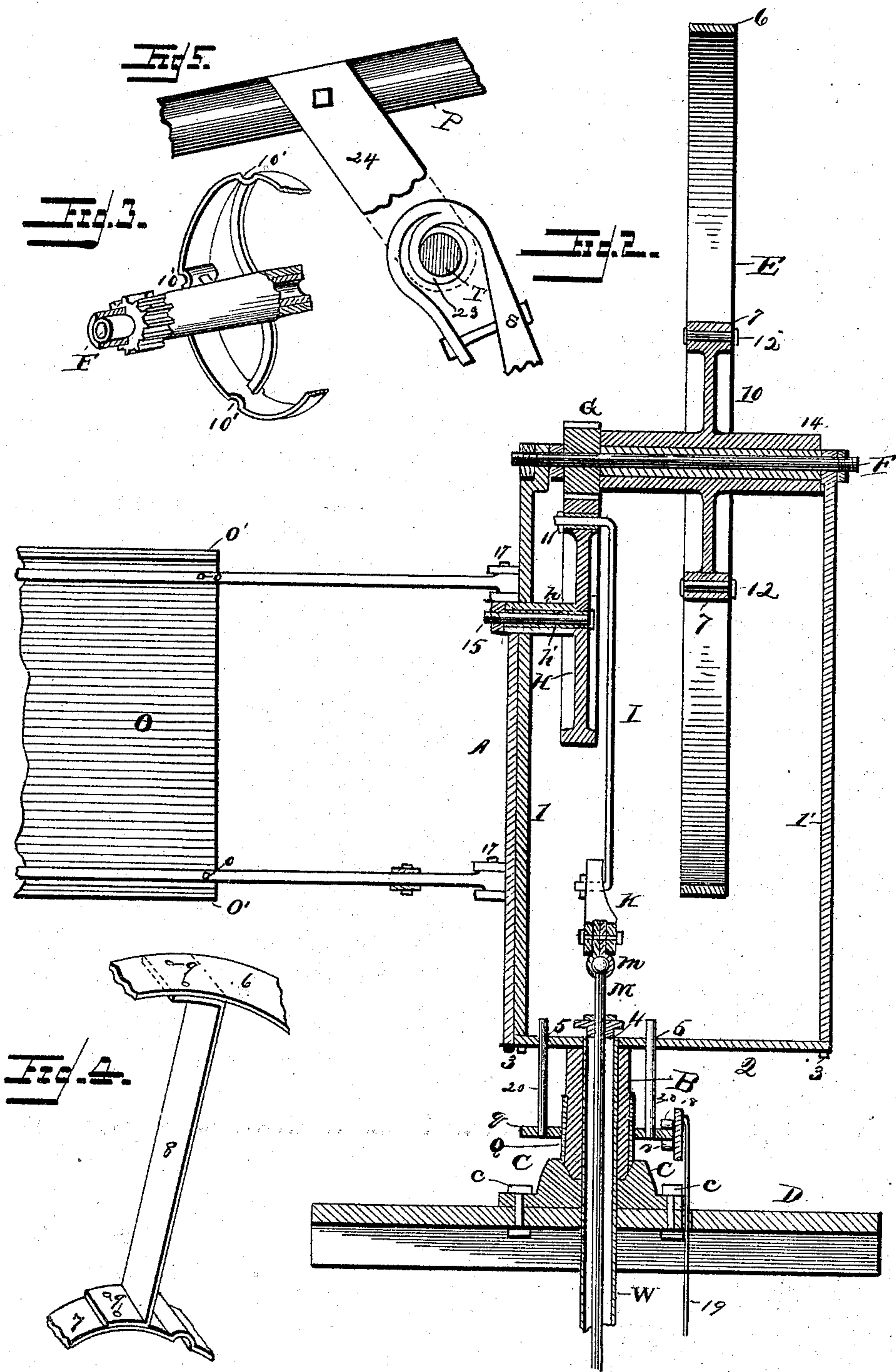
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By

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E. M. Marble  
His Attorney



# UNITED STATES PATENT OFFICE.

WESLEY KOUNS, OF SALINA, KANSAS.

## WINDMILL.

SPECIFICATION forming part of Letters Patent No. 500,911, dated July 4, 1893.

Application filed April 12, 1892. Serial No. 428,786. (No model.)

*To all whom it may concern:*

Be it known that I, WESLEY KOUNS, a citizen of the United States, residing at Salina, in the county of Saline and State of Kansas, have  
5 invented certain new and useful Improvements in Windmills; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to wind-mills, and consists in the construction and arrangement of the parts, which will be hereinafter more fully described, and particularly pointed out in the  
15 claims.

The object of my invention is to produce a wind mill, in which improvements in the gearing, supporting, and operating mechanism shall permit of the use of a very small wind  
20 wheel, with a gain in economy in construction, simplicity, efficiency, and durability in use, and superiority in operation.

My invention is fully represented in the accompanying drawings forming a part of  
25 this specification, in which the same reference letters and numerals indicate the same or corresponding parts, and in which—

Figure 1 is a perspective view of my windmill. Fig. 2 is a vertical section of my windmill. Fig. 3 is a perspective, partly sectional  
30 view of the main wheel, showing the notches or depressions in its periphery for holding the bolts which secure it to the wind wheel. Fig. 4 is a detail perspective view, showing the manner of connecting the blades or fans to the outer and inner rims of my wind wheel. Fig. 5 is a detail plan view, showing a portion of the mechanism for throwing the vane to and from the wind.

Referring to the drawings, A represents the frame of my windmill. It is composed of the upright standards 1 1', formed of cast iron or other suitable material, firmly secured to the main casting 2 by the bolts 3. The frame is  
45 held in position by the hollow axle W, which extends through the platform of the tower, and projects with its upper end through an opening 4 in the main casting 2. A hollow sleeve B, cast integral with the main casting 2, extends downward from the same, and rests  
50 with a conical bearing upon the base plate C,

said base plate being firmly secured to the platform of the tower D by the bolts c. The main casting 2 is also provided with the two openings 5 5, for a purpose hereinafter to be  
55 described.

E represents the wind wheel, which consists of the outer rim 6, and the inner concentric rim 7, between which the blades or fans 8 are secured at the desired inclination by the rivets 9, as more particularly shown in Fig. 4. The inner rim 7 encircles the periphery of the main wheel 10, and is firmly secured to the same by bolts 12, which pass through notches or depressions 10' of said wheel, as  
60 shown in Fig. 3, and the oppositely formed notches in the inner rim 7 of the wind mill, and hold the same firmly in position.

The construction of my wind wheel renders unnecessary the use of stay rods, thus removing a drag to the same, and decreasing its weight.

The wheel 10, provided with a horizontally extended hub 14, which is preferably lined with Babbitt metal, though any other anti-friction material may be used, is journaled upon the stationary shaft F, which holds firmly together the upper ends of the standards 1 1'. The hub 14 also carries the pinion G, whose teeth mesh with the teeth of the gear wheel H, and impart to the same the  
75 rotative force caused by the action of the wind wheel. The gear wheel H is provided with the horizontally extended hub h, which, with its Babbitt metal h', revolves upon the short shaft 15, which projects from the standard 1. The upper end of the pitman I is bent and passed through an aperture, lined with Babbitt metal, in the enlarged end of one of the radial arms of the gear wheel H, and is secured there by the spring key 11, the other end of the pitman being passed through and similarly held in an aperture in the end of the lever K, whose other end is bolted to the  
85 brace L, which has its bearings in the projecting flanges 16 of the standards 1 1', thus forming a pivot joint to the lever K. The pump rod M is secured to the lever K near the pivotal end of the same by the ball and socket joint m, shown in Fig. 2. The use of the ball and socket joint permits of the frame turning, without causing the turning of the pump  
90  
95  
100



rod. The great advantage of the lever K, placed intermediately between the pitman rod I and the pump rod M, is that it removes the weight of the pump lift from the gear wheel H, and throws it mainly upon the bearings of the brace L.

The vane O, provided with the flanged edges O' for stiffening it, is held by the bolts o to the curved frame P, which is secured to the standard 1 by the bolts 17. The mechanism for throwing the vane to and from the wind is as follows: On the hollow shaft B is mounted the collar Q, which has an annular rim q, and is controlled as regards position by means of the flanged rollers 18, one on either side of the rim q, which rollers are placed at one end of the lever R. The lever R is pivoted to the platform D at r, and has cords 19 attached to each end which pass through openings in the platform to the ground, where they are attached to a lever similar to R, so that the collar Q can be easily moved up and down. Guide rods 20, attached to the collar Q, pass up through the openings 5 in the main castings 2, and help to steady said collar in its motion. On opposite sides of a lug 21 on the collar Q, and bolted loosely to said lug, are upwardly projecting iron straps 22, which at their upper ends are loosely bolted to one end of the bent lever S. The other end of the bent lever S is bent around the upper end of the bent shaft T, which extends downward and has bearings in the two flanges 16 of the standards 1 1', and is bolted loosely to said lever. A brace 23, tightly mounted at one end on the bent lever T, is attached at its other end to the inner curved portion of the bent lever S, thus serving both as a brace and a lever. An iron strap 24 is bolted at one end to the curved frame P of the vane O, and at the other end is slipped loosely over the end of the bent lever T, and held on by a spring key, thus forming a secure swivel connection between said lever and said frame. Thus when the collar Q is moved up or down, a corresponding movement of the strips 22, and the one end of the bent lever S is produced. This motion is transmitted through the other end of the bent lever S to the bent shaft T, and through the iron strap 24 to the vane O, thus moving said vane back and forth. The brace 23 acts to moderate and ease the motion of the bent shaft T.

The operation of my wind mill is as follows:

The rotation of the wind wheel E communicates, through the pinion G, the gear wheel H, and the pitman I, a reciprocating motion to the lever K, and hence to the pump rod M. The vane can be thrown to and from the wind by means of the lever S, and its attachments.

Having thus fully described my invention, what I claim as new is—

1. In a windmill, the combination with a stationary platform and revolving frame, of a hollow axle for steadying and holding in position the revolving frame, a sleeve surrounding said axle, secured to the revolving frame and supporting the same, a collar surrounding and attached to said sleeve, guide-rods engaging with said collar and passing through the bottom of the revolving frame, a vane hinged to the revolving frame, means for connecting said vane with said collar, and means for moving said collar up and down, and thereby throwing the vane to and from the wind, substantially as described.

2. In a windmill, the combination with a vane, hinged to the revolving frame of the mill, of a lever secured to a collar surrounding the base of the revolving frame at one end, and to a bent shaft at the other end, said shaft being pivoted in the revolving frame, and secured by connecting straps or rods to the vane, and means for moving said collar up and down, and thereby throwing the vane to and from the wind, substantially as described.

3. In a wind mill, the combination with the frame A, of the wind wheel E, the vane O, the stationary platform D, the lever S, the bent shaft T, collar Q, pivoted lever R, and means for operating said lever R, whereby the wind wheel may be turned against or out of the current of air, substantially as described.

4. In a wind wheel, the combination with the vane O, straps 24, shaft T, lever S, straps 22, collar Q, lever R, and cords 19, of the flanged rollers 18, whereby the revolving frame A is permitted to have free movement without disarranging the mechanism for operating the vane, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

WESLEY KOUNS.

Witnesses:

I. W. WELLINGTON,  
F. H. BRUEN.