

D. A. FLANIGAN.

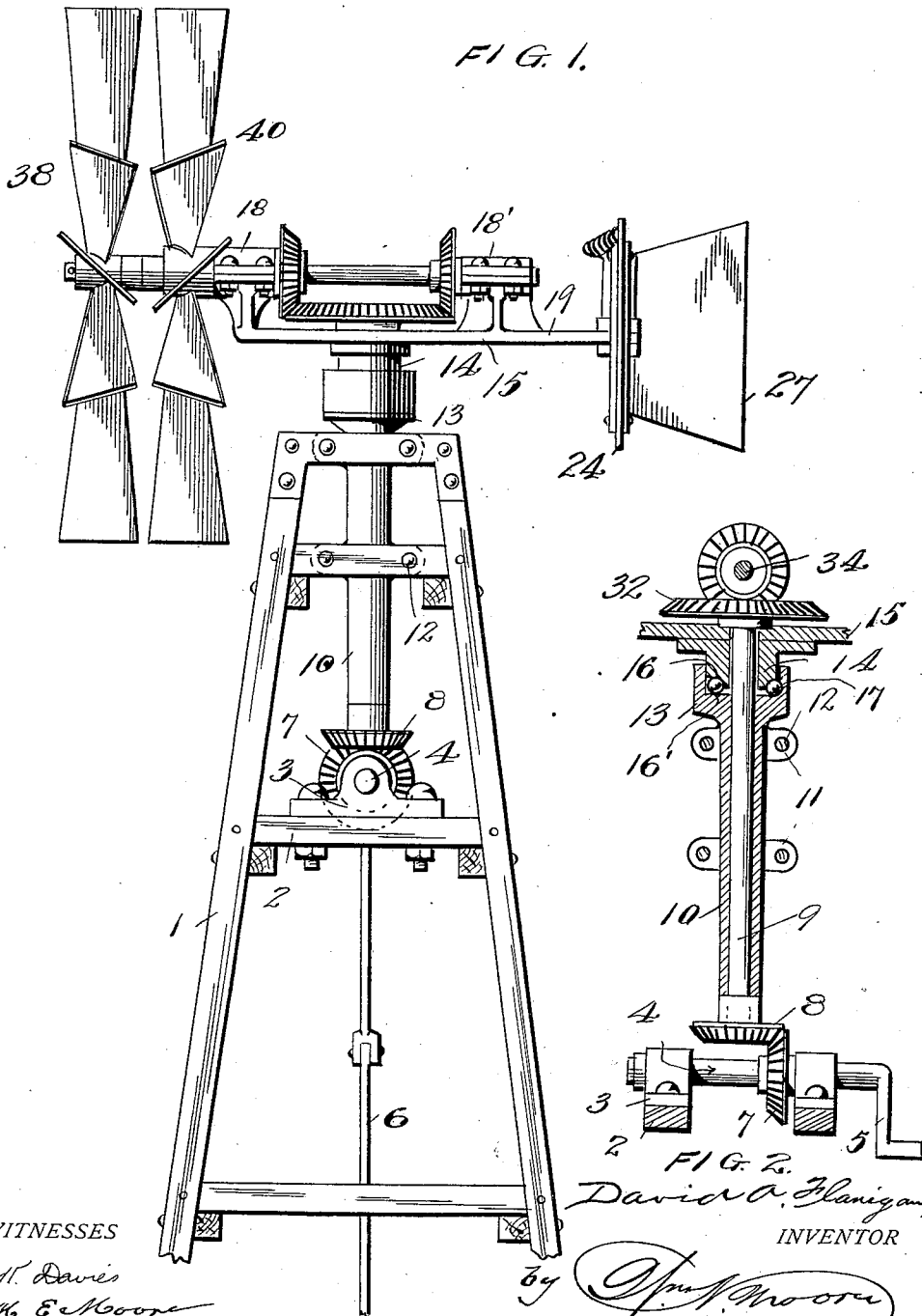
WINDMILL.

APPLICATION FILED MAY 16, 1911.

1,042,779.

Patented Oct. 29, 1912.

2 SHEETS—SHEET 1.



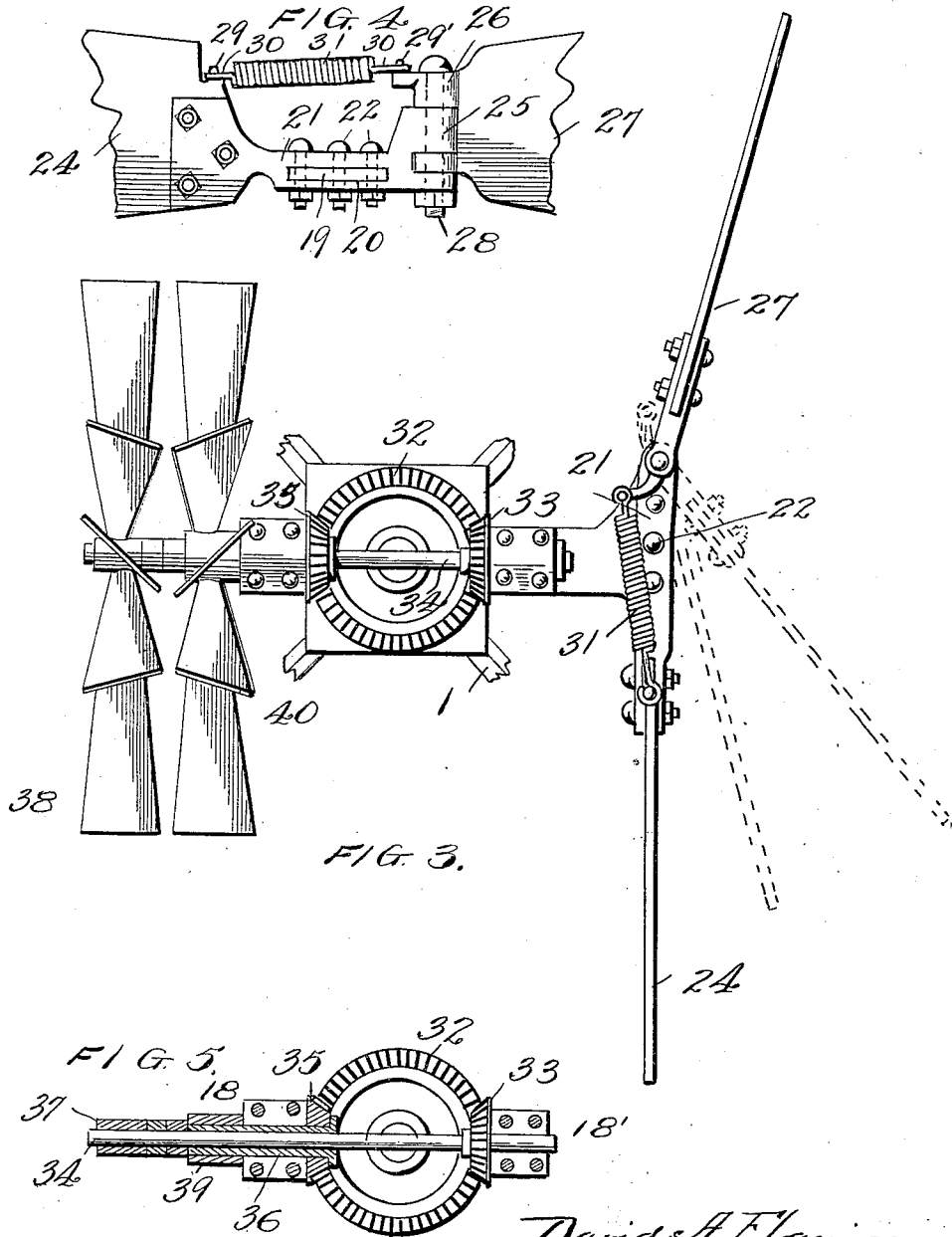
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David A. Flanigan

WITNESSES

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WINDMILL.

1,042,779.

Specification of Letters Patent.

Patented Oct. 29, 1912.

Application filed May 16, 1911. Serial No. 627,595.

To all whom it may concern:

Be it known that I, DAVID A. FLANIGAN, a citizen of the United States, residing at Springville, in the county of Utah and State of Utah, have invented certain new and useful Improvements in Windmills, of which the following is a specification.

My invention relates to improvements in windmills and one object of my invention is the provision of a windmill which will utilize the full force and power of the wind, which will run easily and smoothly and which will have novel and improved means for governing or regulating the windmill.

Another object of my invention is the provision of a windmill which will be composed of few working parts, thus insuring simplicity and cheapness and avoiding the risk of breakage or getting out of order as well as insuring thorough efficiency in operation.

To attain the desired objects my invention consists of a windmill embodying novel features of construction and combination of parts substantially as disclosed herein.

Figure 1 represents a side elevation of a complete windmill constructed in accordance with and embodying my invention. Fig. 2 represents a vertical sectional view of what may be termed the driving mechanism of my windmill. Fig. 3 represents a top plan view of the windmill showing particularly the wheels, gearing and vanes or blades. Fig. 4 represents a detail view of the spring connection between the rudders and the manner of mounting or pivoting the inner ends of the rudders and Fig. 5 represents a sectional view of what may be termed the power transmitting shaft and gearing operated by the shaft.

Referring by numeral to the drawings in which similar numerals designate corresponding parts in the several views:—The numeral 1 designates the frame or supporting structure of my windmill which is of well known construction and is provided with the strips 2, upon which are secured the brackets 3, forming the bearings for the shaft 4, provided with the crank 5, for connection with the operating rod 6, which is used for pumping or other purposes.

The shaft 4 has mounted thereon the bevel gear wheel 7, which meshes with the bevel gear wheel 8, secured to the lower end of the vertical driving shaft 9. This shaft bears at each end in the bearing sleeve or

barrel 10, which is formed with ears 11, which receive fastenings 12 for rigidly securing the sleeve to the frame, and the sleeve at its upper end is formed with a cupped head 13 which forms a seat for the hub 14 formed on the revolving platform 15, and said hub is provided at its lower edge with a ball track 16, in which and the track 16' of the cupped head are the balls 17, thus forming a ball bearing between the hub of the platform and the bearing sleeve permitting the platform to turn with ease and without friction between the platform and sleeve.

The platform comprises a plate having at one end the shaft bearings 18 and near the other end the shaft bearings 18', and the platform adjacent the bearings 18' is formed with the broad portion 19, the purpose of which is to fit the opening 20 in the casting 21, which has the fastenings 22, and is formed at one end with the plate 23, connected with the rigid vane or blade 24, and has its other end formed with the pintles 25, which receive the ears 26, of the pivoted blade 27, and through the pintles and ears passes the hinge pin 28.

The wings are formed with the lugs 29 and 29', to which are connected the looped ends 30 of the coiled spring 31, whose purpose will presently appear.

Upon the upper end of the vertical driving shaft is mounted the large horizontally disposed driving gear 32, which meshes with the bevel gear 33, secured upon the shaft 34 and with the bevel gear 35 secured upon the sleeve 36, and by this construction it will be observed that motion is transmitted from both bevel gears to the single large bevel gear 32.

Upon the end of the shaft 34 is secured the hub 37 of the wheel 38, and upon the sleeve 36, is secured the hub 39 of the wheel 40, and it will be seen that the wheels receive the wind and are revolved in reverse direction but through the medium of the gears impart motion to the driving shaft in only one direction.

By this construction I utilize the full power of the wind and insure a steady driving of the driving mechanism and when in normal position the rigid and hinged blades are in the position shown in Fig. 3, and both wheels are presented to the wind, but should the velocity of the wind be too strong the

hinged blade will be swung around under the impulse of the spring to the position shown in dotted lines of Fig. 3 and the wheels moved out of the path of the wind and the speed of the mill will be regulated or slackened.

It will be noted that all the parts of my windmill are simple, strong and durable and will withstand hard usage; also that the mill will run steady and with an even distribution of work upon the parts; also that the speed of the mill is automatically regulated or governed and that from every point of view the invention is practical and efficient.

I claim:

1. In a windmill, a platform comprising a plate having shaft bearings near opposite ends and formed near one end with a broadened portion, a casting having an opening receiving said broadened portion and formed at one end with a plate, fastenings for said broadened portion, a vane rigidly connected with said last-named plate, the

other end of said casting being formed with pintles, a pivoted blade having ears, and a hinge pin passed through said pintles and ears.

2. In a windmill, a platform comprising a plate having shaft bearings near opposite ends and formed near one end with a broadened portion, a casting having an opening receiving said broadened portion and formed at one end with a plate, fastenings for said broadened portion, a vane rigidly connected with said last-named plate, the other end of said casting being formed with pintles, a pivoted blade having ears, and a hinge pin passed through said pintles and ears, said vane and blade being formed with lugs and a coiled spring having its ends connected with said lugs.

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

DAVID A. FLANIGAN.

Witnesses:

A. E. MORETON,
Ross M. BONNY.