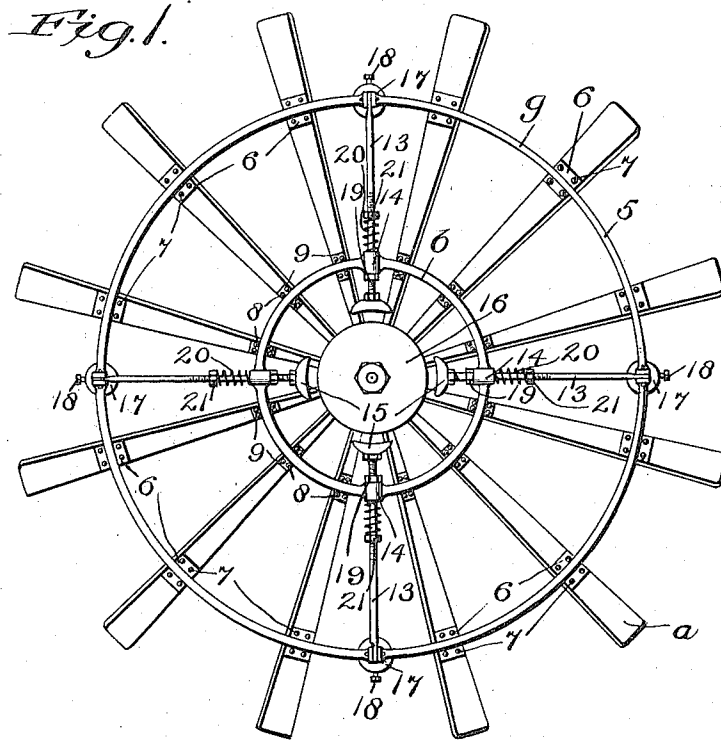
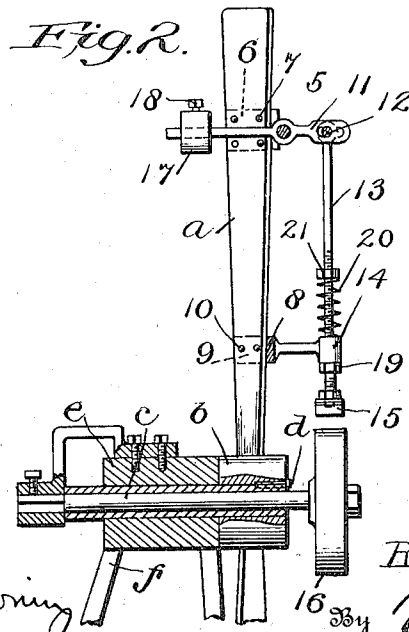


R. A. BISBEE.
WINDMILL BRAKE.
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1,152,271.

Patented Aug. 31, 1915.



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UNITED STATES PATENT OFFICE.

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WINDMILL-BRAKE.

1,152,271.

Specification of Letters Patent.

Patented Aug. 31, 1915.

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To all whom it may concern:

Be it known that I, ROBERT A. BISBEE, a citizen of the United States, residing at Central Park, Long Island, in the county of Nassau and State of New York, have invented new and useful Improvements in Windmill-Brakes, of which the following is a specification.

The general object of the invention is to obtain uniformity of speed on the part of the wheel or propeller of a wind mill. And to this end the invention resides in a governing device arranged to be operated by a predetermined degree of centrifugal force on the part of the propeller of the wind mill.

Other objects will appear and be better understood from that embodiment of my invention of which the following is a specification, reference being had to the accompanying drawings forming part hereof, in which:—

Figure 1 is an elevation of a conventional form of wind mill propeller with my improved device applied thereto. Fig. 2 is a vertical cross sectional detail looking at right angles to Fig. 1.

a indicates generally the blades of the propeller, *b* the hub, *c* the drive shaft which is suitably fastened to the hub, such as by a key *d*, and *e* the bearing for the drive shaft *c* which bearing is carried by the tower, a section of which is shown and indicated by *f*.

In carrying out my invention with the conventional form of structure just described, I arrange upon the blades *a* an outer support *g* and an inner support *h*. These supports may be of any desired construction found suitable for the purpose and formed of any suitable material as metal. In the embodiment shown the support *g* consists of a metallic annulus 5 connected to the outer portions of the blades *a* by brackets 6 which are secured to the blades by suitable fastening means such as bolts 7, while the inner support *h* is shown to consist of arms 8 carrying an annulus arranged concentric with the annulus 5. The arms 8 have brackets 9 which are secured to the blades by suitable fastening means, as bolts 10.

A series of levers 11 are fulcrumed on the annulus 5 and between the blades *a*. The ends of these levers are suitably con-

nected such as by pin and slot connections 12, to the outer ends of rods 13, which rods are slidably fitted in guides 14 carried by the inner annulus 8 and have at their inner ends friction shoes 15 arranged in the plane of a friction disk 16 located concentrically at one end of the drive shaft *c*. The disk 16 is held against rotation by any suitable means as for instance by making the shaft *c* hollow and extending a rod through the same and mounting the disk on the rod and securing the rod to the bearing *e*. Weights 17 on the power ends of the levers 11, operate to move the levers and rods, whereby, to effect frictional contact between the shoes and disk when the weights move outwardly under centrifugal force attained by the rotation of the propeller. It will be observed that the weights are adjustably mounted on the levers and secured by set screws 18, whereby, to have the brake action resulting from contact of the shoes with the disk, effected at predetermined speeds of the propeller.

While the attachment shown and just described may be employed with propellers that rotate in horizontal or vertical planes, it may here be stated that when the attachment is employed with the latter type of propeller, suitable nuts 19 are mounted on the rods 13 and between the guides 14 and shoes 15. These serve as stops to limit the movement of the levers and rods in one direction, while springs 20 surrounding the rods and bearing on the guides 14 and nuts 21 operate to yieldingly hold the shoes on the lower segment of the propeller, from contacting with the disk, when the propeller is rotating at such speed as will be insufficient to effect the outward movement of the weights.

With the employment of my invention the ordinary wind mill may be adapted for operating such apparatus whose function can be performed only at uniform speed, as dynamos and the like.

What is claimed as new is:

A speed regulator comprising a shaft, a wheel fixed to the shaft, inner and outer supports carried by the wheel and concentrically positioned with relation to the shaft, a disk concentrically positioned with relation to the shaft, a rod slidably mounted in the inner support and radially disposed with relation to the disk, a nut adjustably

mounted on the rod, a spring interposed between the inner support and the nut, a stop adjustably mounted upon the rod and engageable with the inner side of the inner support, a lever fulcrumed upon the outer support and disposed transversely of the wheel, a weight carried by the lever at one side of the wheel, said lever being operatively connected with the rod at the oppo-

site side of the wheel, and a shoe carried by the rod and engageable with the disk. 10

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

ROBERT A. BISBEE.

Witnesses:

JOHN A. DONEGAY,
GEO. A. BYRNE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."