June 30, 1931. A. C. GILLEY 1,812,400

WINDMILL

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Fig. 1.

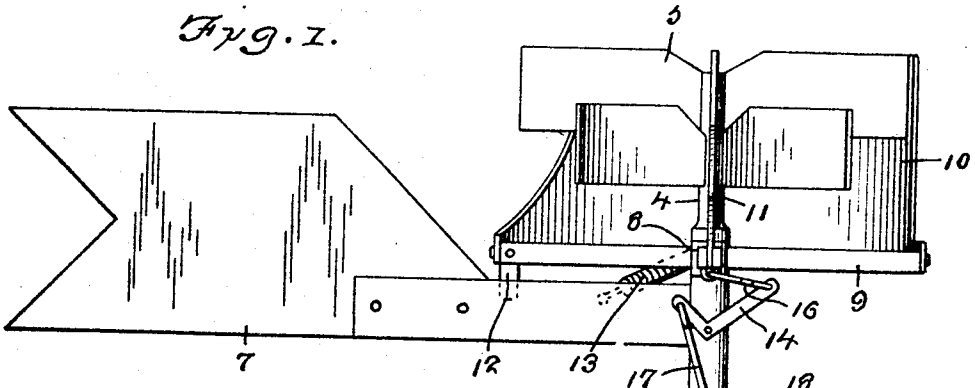
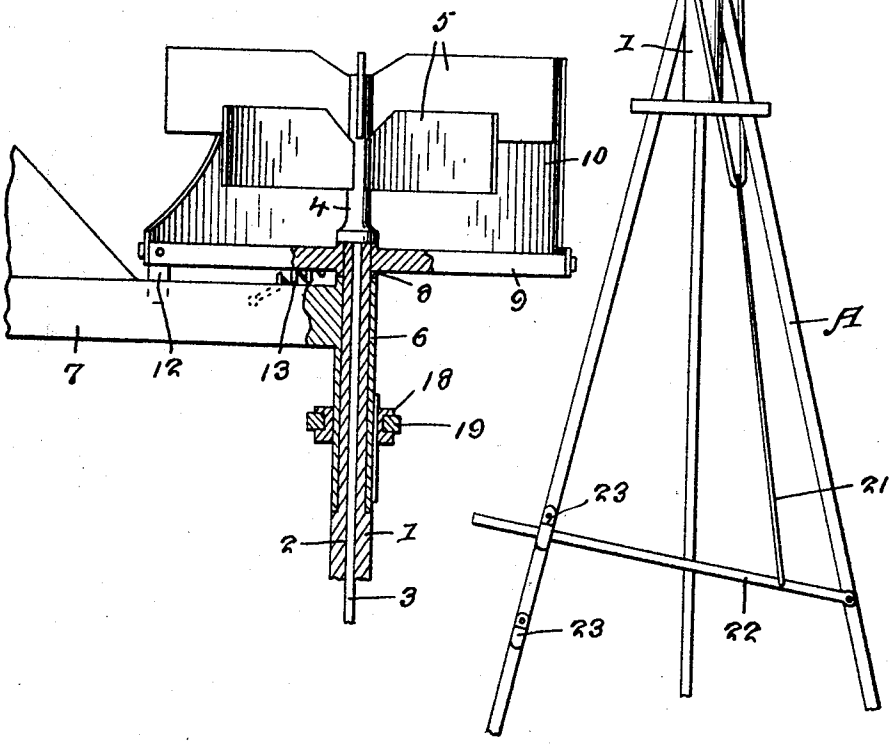


Fig. 6.



A. C. Gilley INVENTOR

BY Victor J. Evans

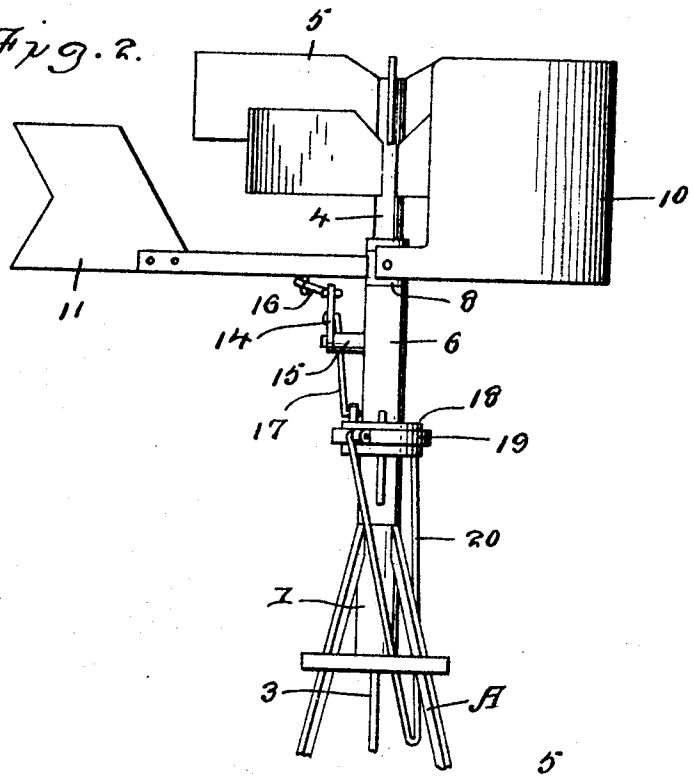
ATTORNEY

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WINDMILL

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Fig. 2.



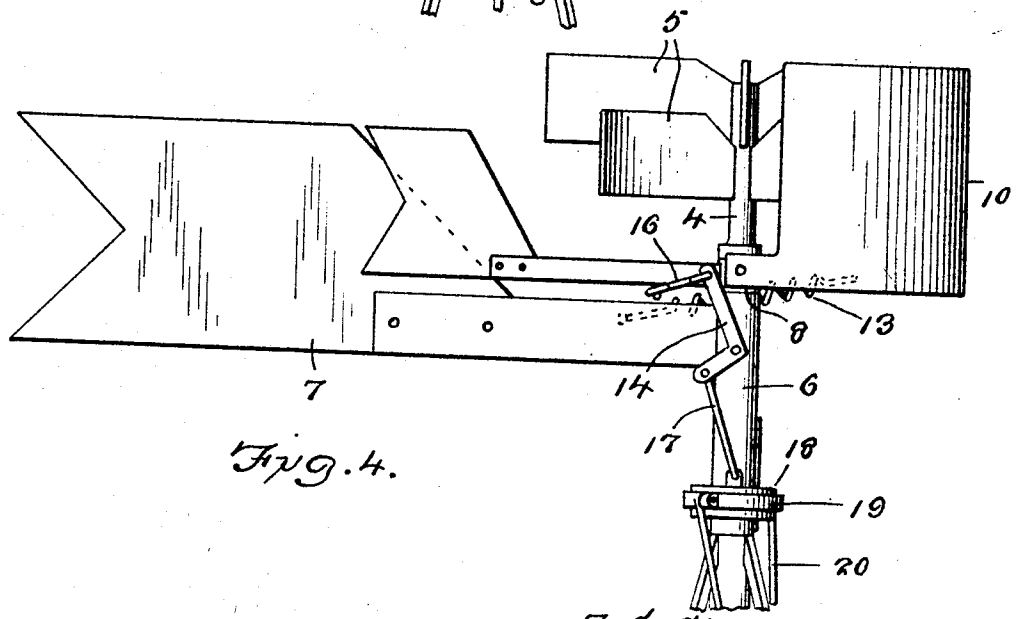


Fig. 4.

A. C. Gilley INVENTOR

BY Victor J. Evans

ATTORNEY

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WINDMILL

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Fig. 3.

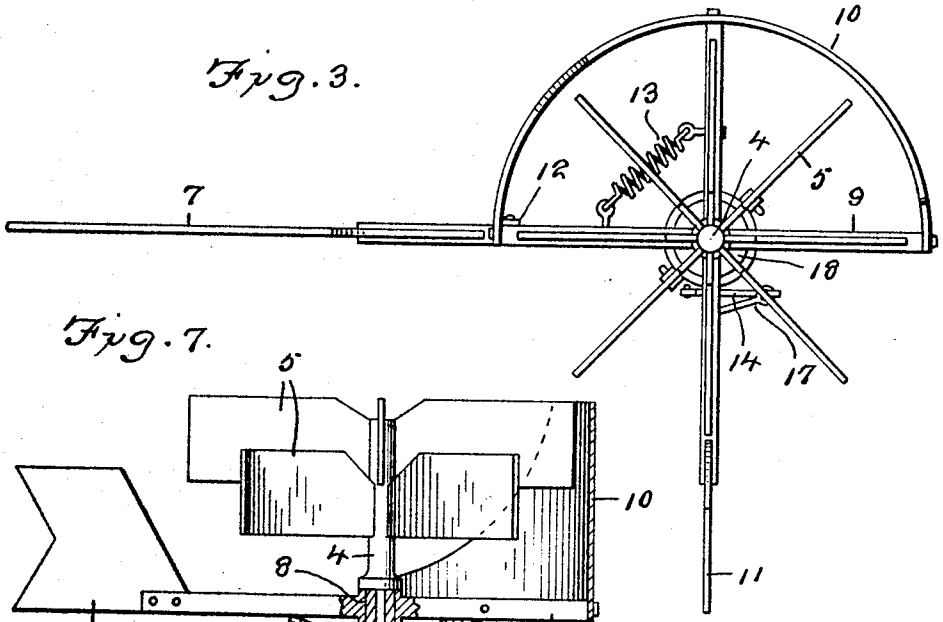
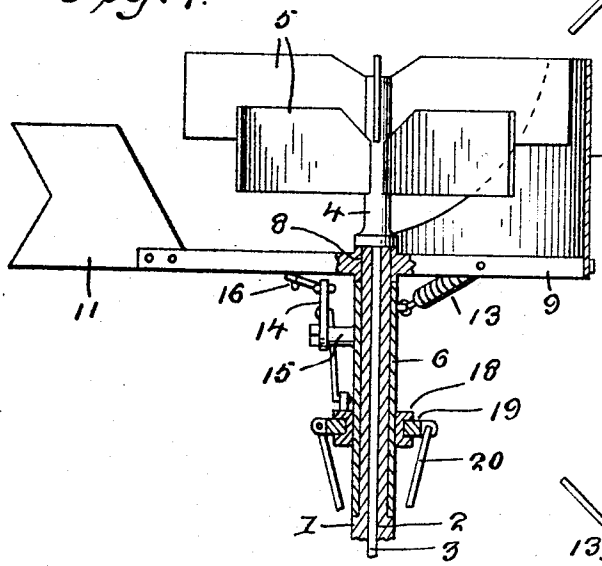


Fig. 7.



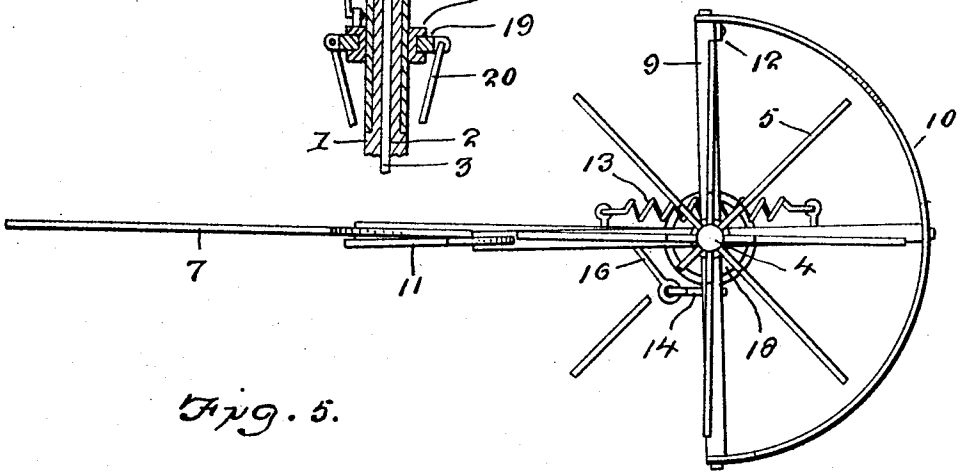


Fig. 5.

A. C. Gilley
INVENTOR

BY Victor J. Evans
ATTORNEY

Patented June 30, 1931 1,812,400

UNITED STATES PATENT OFFICE

ARTHUR C. GILLEY, OF WHITE, SOUTH DAKOTA

WINDMILL

Application filed July 10, 1929. Serial No. 377,209.

This invention relates to a windmill, the general object of the invention being to provide the mill with one or more horizontally arranged wind wheels and a substantially semi-circular hood rotatably supported on the tower of the mill and which, when in one position, will cover the forwardly moving blades of the wheel or wheels, so as to prevent the wind from contacting said blades while the wind is acting on the other blades and when moved to another position, the hood will prevent the wind from acting on the blades so that the apparatus will be inactive.

A further object of the invention is to provide a small vane for causing the wind to automatically adjust the hood to cover more or less of the blades, thereby providing a governor for controlling the speed of the apparatus according to the wind.

A still further object of the invention is to provide manually operated means for moving the small vane against the large regular vane when the mill is to be shut down.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claim.

In describing the invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:—

Figure 1 is an elevation of the improved windmill, with the parts in operative position.

Figure 2 is a front view of Figure 1.

Figure 3 is a plan view of Figure 1.

Figure 4 is a side view, with the parts in inoperative position.

Figure 5 is a plan view of Figure 4.

Figure 6 is a view somewhat similar to Figure 1, but showing parts in section.

Figure 7 is a view similar to Figure 6, but taken a quarter turn from said figure.

In these views, A indicates the tower of the windmill which carries an upright 1 at its upper end, said upright having a longitudinally extending bore 2 therein through which passes a shaft 3, the bore forming a bearing for the shaft, and a vertically arranged elongated hub 4 is fastened to the upper end of the shaft. One or more sets of blades 5 radiate from the hub 4, the sets being superimposed, with the blades of one set alternately arranged with those of the other set. A sleeve 6 is rotatably mounted on the upright 1 and the main vane 7 is carried by this sleeve. A hub 8 is rotatably mounted on the upper end of the member 1, above the sleeve 6, and carries the radiating arms 9, to the outer ends of which is attached a substantially semi-circular hood 10 which partly encloses the blades. A small vane 11, is attached to the hub 8 and is diametrically opposite the center of the hood. A depending projection 12 is carried by the outer end of one of the arms 9 and a spring 13 connects the main vane 7 with another arm and acts to hold said vane against the projection 12. A bell crank 14 is pivoted to a bracket 15 projecting from the sleeve 6 and one end of this bell crank is connected by a link 16 with the arm of the small vane 11 and the other arm of the bell crank is connected by a link 17 with a grooved collar 18 slidably but non-rotatably mounted on the sleeve. A ring 19 is arranged in the groove of the collar and a forked member 20 is pivotally connected with the ring. The lower end of this member 20 is connected by a flexible member 21 with a lever 22 pivoted to a part of the tower and adapted to be held in adjusted position by the keeper members 23 on another part of the tower.

From the foregoing it will be seen that the large vane will act to hold the wheels in the wind, with the hood at one side of the wheels, so that this hood acts to prevent the wind acting on the forwardly moving vanes, but permits the full force of the wind to act on the rearwardly moving vanes. However, if the wind becomes very strong, it will act on the small vane 7 and move the same toward the large vane so that the hood will be moved toward the front of the mill and thus reduce the blade surfaces exposed to the wind so that the speed of the wheels will be reduced. Thus the hood and the small vane act as a

governor for controlling the speed of the wheels according to the strength of the wind. When the windmill is to be shut down, it is simply necessary to lower the lever, which pulls the collar downwardly, and this movement of the collar will move the small vane against the large vane through the action of the bell crank and the connections shown and thus the hood will be placed in front of the wheels to prevent the wind reaching the wheels. As before stated, any number of wheels or sets of blades can be used.

It is thought from the foregoing description that the advantages and novel features of the invention will be readily apparent.

It is to be understood that changes may be made in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claim.

What I claim is:—

A windmill including a horizontally arranged wheel and a support, an inner sleeve mounted on the support and having a wheel journalled thereon, an outer sleeve journalled on the inner sleeve, pairs of oppositely disposed and connected arms journalled on the inner sleeve between the outer sleeve and the wheel, a semi-circular shield carried by certain ones of said arms and positioned to receive a portion of the wheel therein, a main vane secured to the outer sleeve, a stop on one of the arms, and tension means between one of the arms and the vane to normally urge the stop against the vane, an auxiliary vane secured to one of the arms, and a control having a portion thereof splined to the outer sleeve and connected to the auxiliary vane for moving the latter relative to the main vane for controlling the operation of the wheel.

In testimony whereof I affix my signature

ARTHUR C. GILLEY.