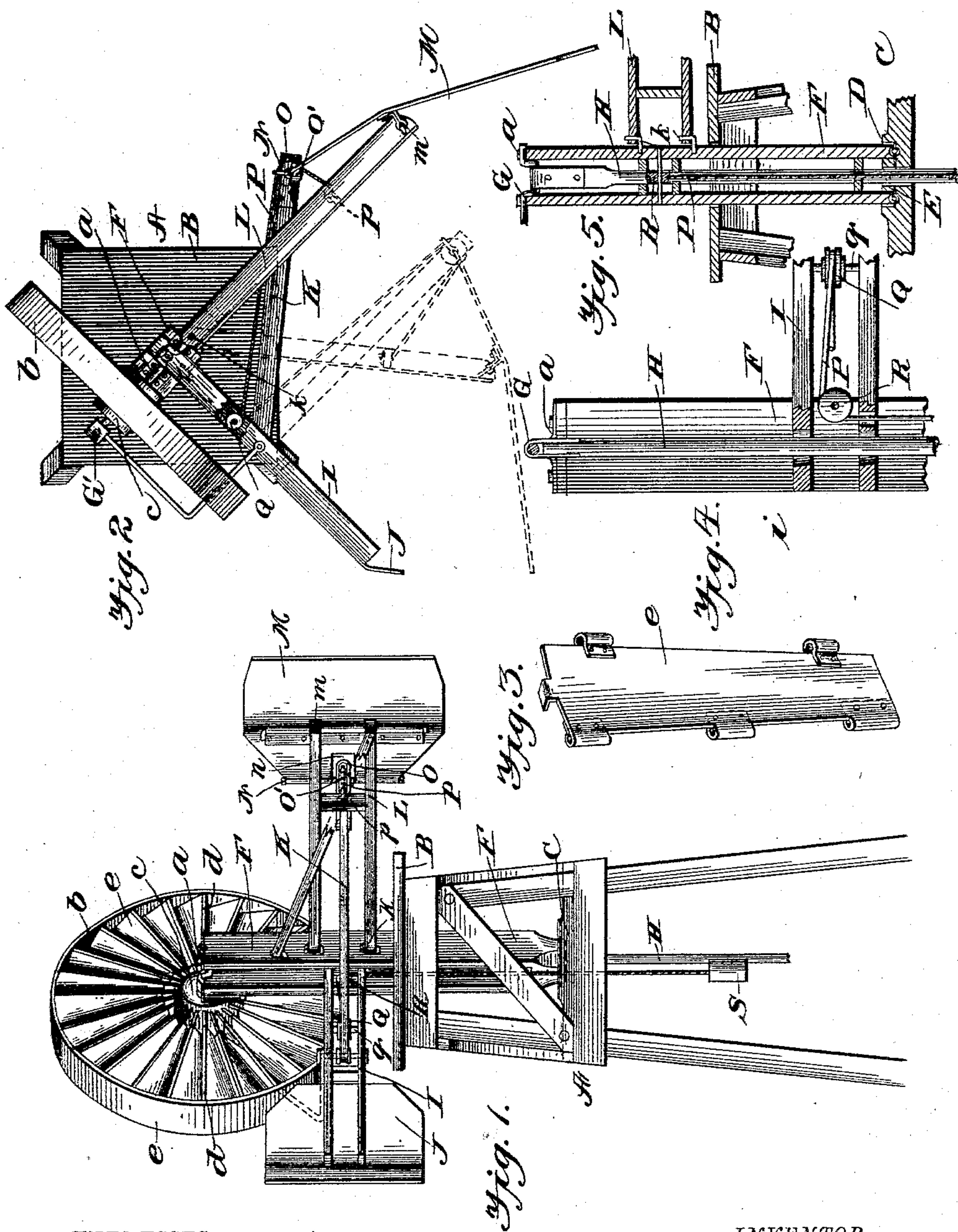


(No. Model.)

C. H. BARKER.
WINDMILL.

No. 589,807.

Patented Sept. 14, 1897.



WITNESSES
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WINDMILL.

SPECIFICATION forming part of Letters Patent No. 589,807, dated September 14, 1897.

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To all whom it may concern:

Be it known that I, CAPTAIN H. BARKER, a citizen of the United States, residing at Wallville, Chickasaw Nation, Indian Territory, have 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.

This invention relates to certain new and useful improvements in windmills; and it has for its objects, among others, to provide a simple and cheap construction whereby the mill is rendered automatic in its regulation or governing of the speed, and also automatically stopped when the tank is full or the water therein has reached a predetermined height, thereby rendering the necessity of running after the tank is full useless and unnecessary. I also provide means whereby the mill will be automatically stopped during a storm, thus preventing injury to the mill by the jerking of the parts.

The device is composed of few parts, those readily assembled, not liable to get out of order, and most efficient in its operation.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be specifically defined by the appended claims.

The invention in this instance resides in the peculiar combinations and the construction, arrangement, and adaptation of parts, all as more fully hereinafter described, shown in the drawings, and then particularly pointed out in the claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a perspective view of my improvement. Fig. 2 is a detail showing the connection between the two rudders. Fig. 3 is a perspective view of one of the blades detached. Fig. 4 is a vertical section through the line of the pump-rod. Fig. 5 is a substantially central vertical section with a portion broken away.

Like letters of reference indicate like parts throughout the several views.

Referring now to the details of the drawings

by letter, A designates the tower, which may be of any suitable or well-known form of construction. At its upper end there is the platform B, while below the same is the plate or horizontal timber C, through which there is an opening D, and surrounding this opening is a socket E, in which the lower end of the shaft or column F is mounted to revolve freely. This column is preferably formed of the two pieces, as shown, held at the desired distance by the blocks arranged between them, and at the upper end thereof are the boxes or bearings *a*, in which is mounted the crank-shaft G, which forms a continuation of the shaft upon which the wind-wheel is secured. The outer end of this shaft is mounted in a bearing at the upper end of the arm G', supported from the column, as shown. This wheel is preferably formed of the rim *b*, the hub *c*, and the spokes *d* of wire extending from the hub to the rim in other than parallel planes, and to these spokes are secured the wings or blades *e*, arranged as shown, leaving a space about the axis, as shown.

H is the pump-rod connected with the crank-shaft in any suitable manner and working between the two parts of the column, as shown, and through a hole *i* in the inner end of the arm I of the small rudder or vane. This arm is secured between the two parts of the column, and to its outer end is secured the rudder or vane J, the outer end of which is somewhat bent at an angle to the length thereof, as shown. This arm is preferably formed of two parallel pieces suitably connected or braced, and between these pieces is pivotally mounted one end of the arm K, the other end of which is disposed as hereinafter described.

L is the arm of the large vane or rudder. It is pivotally mounted on a vertical pivot *k* on the column F, the said arm being composed of the two pieces suitably braced or held at the desired distance apart and at the outer end having pivotally mounted thereon on a vertical pivot *m* the large vane or rudder M. The inner end of this rudder is provided with a slot *n*, in which is designed to work the end of the arm K, which is mounted on the vertical pin or pivot N, held in the end of the vane, and this end of this arm has the clamp O, in which is held the grooved pulley

O', through the center of which the vertical arm or pivot N works, and around this pulley passes the cord P, one end of which is secured to the vertical block p on the arm of the large rudder, and then it passes around the grooved pulley Q on the vertical axis q, held between the two pieces of the arm of the small rudder, and then around another grooved pulley R at the inner end of said arm, and thence passes downward through a hole in the inner end of the said arm of the small rudder and through the hole D in the timber C, and to its lower end is attached a weight S.

With the parts constructed and arranged substantially as above described the operation is as follows: Under ordinary circumstances the mill works in the usual manner, the pump-rod being reciprocated through its connection with the crank-shaft, which forms the continuation of the shaft of the wind-wheel, as will be readily understood. The wind acting upon the small rudder turns the column around and throws the wheel parallel with the wind, thus governing the speed, and also stops the mill in a very hard wind or storm. When the wind becomes strong enough to turn the column, the arm carrying the large rudder swings toward the small rudder and assumes such an angle with relation thereto as may be necessary for the control of the speed of the mill, and when the wind ceases to blow so hard the large rudder is brought back at right angles with the small rudder by means of the cord P. The weight is of such weight as to bring the large rudder back to place when it has been blown out of place and at the same time large enough to float in the barrel or tank. When the tank

is full, the weight floats up and loosens the cord, which is attached to a hook or other means on the tower, and the mill blows around and thereby automatically stops the mill.

Both the large and small rudders or vanes are placed down near the top of the derrick, so as to take the weight off the top of the column F, thereby rendering it less liable to get out of order.

What is claimed as new is—

1. The combination with the column and the wheel and its shaft, of the rudder-arm rigidly secured to the column, the rudder fixed thereon, the larger rudder-arm, the rudder pivoted on the outer end thereof, and the pivotal connection between the same and the other rudder-arm, as set forth.

2. The combination of the two rudder-arms, one rigid and the other pivoted, of the rudder pivotally mounted on the pivoted arm, the arm pivotally connecting the inner end of the pivoted rudder with the fixed arm, as set forth.

3. The combination of the two rudder-arms one rigid and the other pivoted, of the rudder pivotally mounted on the pivoted arm, the arm pivotally connecting the inner end of the pivoted rudder with the fixed arm, and the cord connected with the pivoted arm and carrying a weight, as and for the purposes specified.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

CAPTAIN H. BARKER.

Witnesses:

S. HEARD,

J. T. BLANTON.