

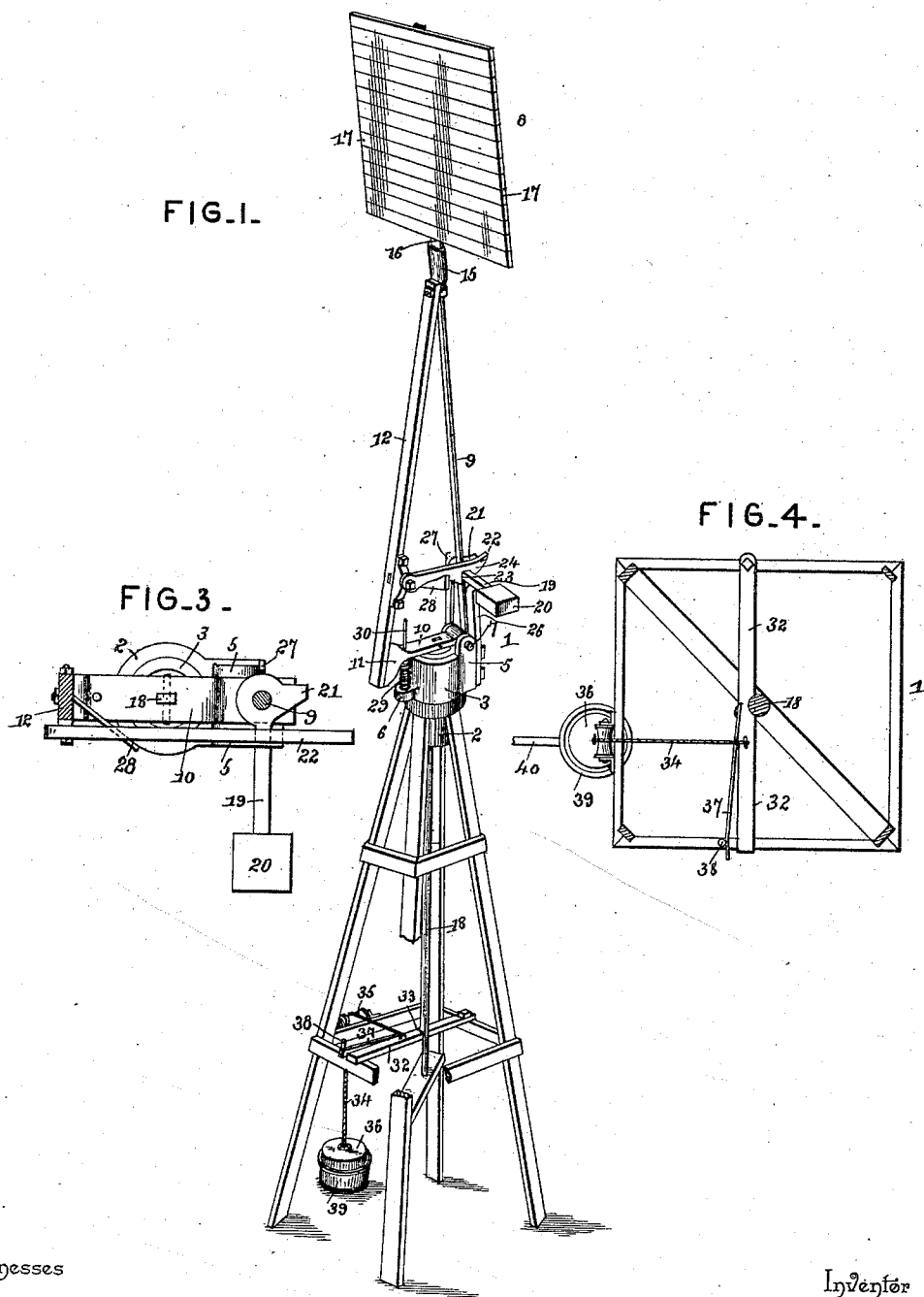
(No Model.)

2 Sheets—Sheet 1.

E. LAMPHEAR.  
WINDMILL.

No. 474,839.

Patented May 17, 1892.



Witnesses

Inventor

*Edson Lamphear*

By his Attorneys,

Jas. K. McLaughlin  
H. F. Riley

Chas. Snow Geo.

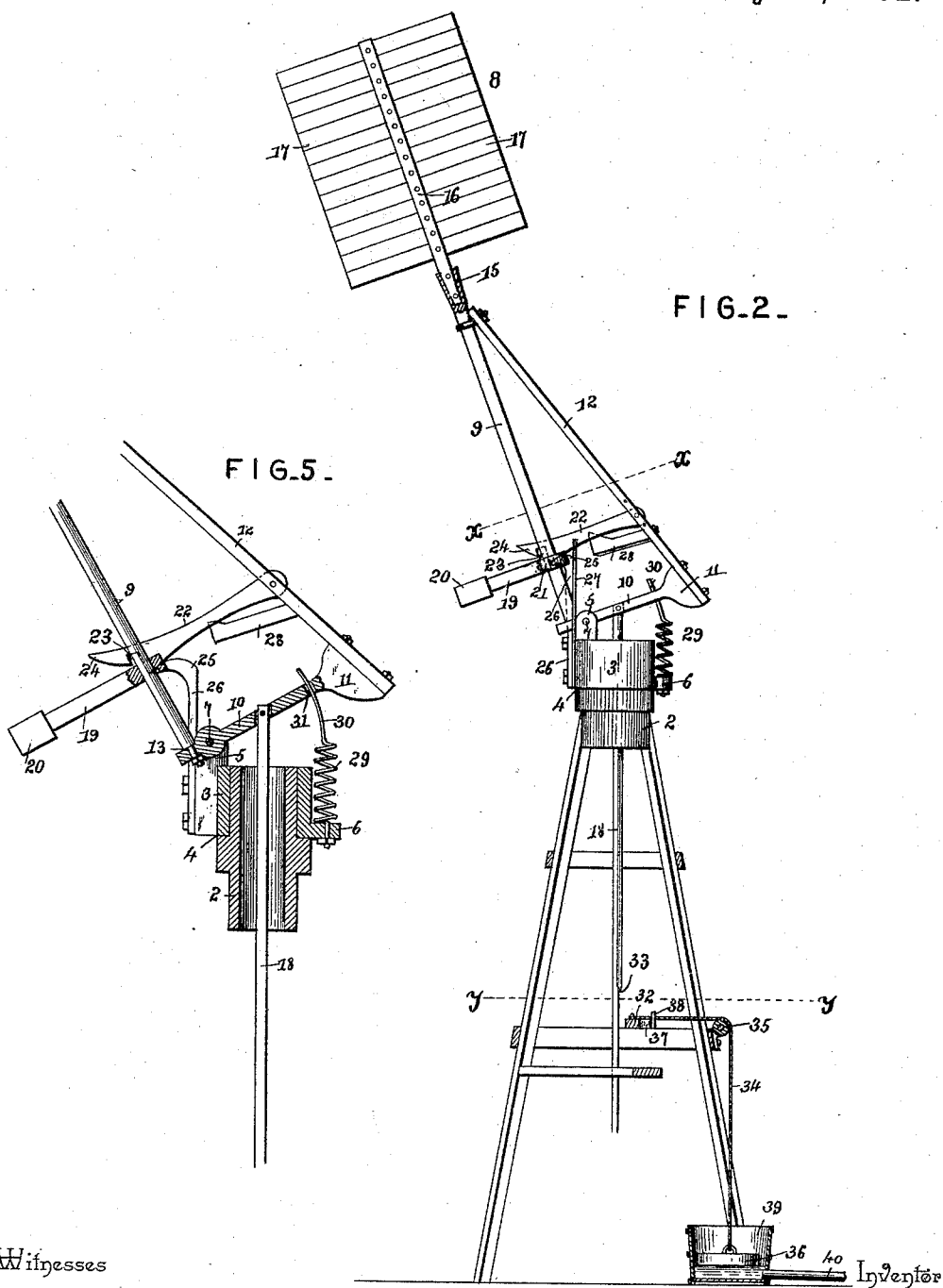
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By *his* Attorneys,

*Edson Lamphear*  
*C. A. Snow & Co.*

# UNITED STATES PATENT OFFICE.

EDSON LAMPHEAR, OF NEW ALMELO, KANSAS.

## WINDMILL.

SPECIFICATION forming part of Letters Patent No. 474,839, dated May 17, 1892.

Application filed June 26, 1891. Serial No. 397,649. (No model.)

*To all whom it may concern:*

Be it known that I, EDSON LAMPHEAR, a citizen of the United States, residing at New Almelo, in the county of Norton and State of Kansas, have invented a new and useful Windmill, of which the following is a specification.

The invention relates to improvements in windmills.

The object of the present invention is to provide a simple and inexpensive combined windmill and regulator adapted to stop automatically when a tank or reservoir is full of water and to commence working when the tank becomes empty.

The invention consists of the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a perspective view of a windmill constructed in accordance with this invention. Fig. 2 is a vertical sectional view, partly in elevation, the blade being arranged edgewise to the wind. Figs. 3 and 4 are horizontal sectional views on lines *xx* and *yy* of Fig. 2. Fig. 5 is a vertical sectional view.

Referring to the accompanying drawings, 1 designates a windmill-tower provided at its upper end with a tube 2, upon which is rotatively mounted a turn-table 3, arranged at the upper end of the tube 2 and resting upon an annular shoulder 4 and provided at its upper edge with perforated ears 5 and at a diametrically-opposite point on its lower edge with a lug 6. The triangular blade-frame is fulcrumed at one of its angles between the perforated ears 5 by a pivot 7, and it carries at its upper angle a blade 8, and it consists of a tubular rod 9, a lower bar or casting 10, constructed of metal and provided with an enlarged end 11, and a brace 12, connecting the enlarged end 11 of the metal bar or casting and the upper end of the tubular rod 9. The pivoted end of the bar or casting 10 is provided with a horizontal eye to receive the pivot 7 and has an opening 13, in which is arranged the lower end of the tubular rod 9, and the latter has its lower end reduced and journaled in the opening 13, and its upper end is journaled in an eye of the brace 12 and is provided with a socket 15, in which is secured

the inner end of a spring 16, and the said tubular rod is adapted to rotate partially to turn the blade 8, in order to present the same either broadside or edgewise to the wind.

The blade consists of a series of slats 17, which are centrally secured to the spring 16, and the spring 16 is flat and adapted to be bent by a heavy wind to present less surface and to arrange a portion of the surface of the blade at an angle to the wind to prevent the windmill being injured and to enable the same to operate in a heavy wind or storm.

The bar or casting 10 is centrally connected to the upper end of a pump-rod 18, and the rocking of the triangular frame reciprocates the pump-rod, and one swing of the triangular frame is caused by the wind and the other swing or return is caused by the weighted or enlarged end 11 of the casting or bar 10. In the first half of an oscillation the blade 8 is presented broadside to the wind, and in the second half or return the blade is arranged edgewise, so that the wind will have no purchase on the blade, and the weighted end 11 will be sufficient to carry the blade against the wind in the return stroke. An arm 19 is rigidly secured to the tubular rod near the lower end of the latter and is provided at its outer end with a weight 20 and at its inner end with a projection 21, which is arranged at right angles to the arm. During the first stroke of the triangular frame the weighted arm 19 is arranged at right angles to the frame and extends laterally therefrom and is held in this position by a pivoted latch 22, which is secured to the brace 12 and is provided with a recess 23 to receive and retain the weighted arm, and it has a shoulder 24, which is beveled and is adapted to be engaged by the head 25 of a bar 26 to lift the latch 22 and release the weighted arm 19 at the end of the stroke to allow the weighted arm to swing downward in a line with the triangular frame, whereby the tubular rod 9 will be turned and the blade 8 will be presented edgewise to the wind, so that the weighted end 11 of the casting will tilt or rock the triangular frame and cause the same to make the return stroke. On the return stroke, near the end of the same, the projection 21 is brought into engagement with a spring 27, which is straight and stiff and throws the weighted arm back

to its first or lateral position and turns the blade broadside to the wind to put the same in position for another stroke. The head 25 of the bar 26 is rounded, so that it will readily engage the beveled shoulder of the latch, and the latter is prevented dropping too far and is held in position to be readily engaged by the weighted arm when the latter is swung around by the spring 27 by a stop 28, which is secured to the brace 12 and extends outward therefrom and is arranged beneath the latch.

The triangular frame is cushioned, and shocks to the windmill are prevented by a spiral spring 29, which is secured to the lug 6 and extends above the turn-table and is arranged to be engaged by the bar or casting 10, and the upper end of the spring is extended to form a guide 30, arranged in a perforation 31 of the bar or casting 10.

The windmill is stopped by a spring-actuated bar 32, which is pivoted at one side of the tower and is arranged to engage a shoulder 33 of the pump-rod and is connected by a cord or chain with a float. The cord or chain 34 passes over a roller 35, and the float 36 is sufficiently heavy to withdraw the bar 32 from the shoulder 33 of the pump-rod against the action of a spring 37, which has one end secured to the pivoted bar 32 and its other end is free and engages a pin 38 of the tower. When the water in the tank empties, the float falls and withdraws the spring-actuated bar 32 from engagement with the pump-rod and starts the windmill, and when the tank is full the float allows the spring-actuated bar 32 to engage the pump-rod again and stop the windmill.

The windmill is designed to be connected with a stock-watering trough and the float is arranged in a bucket 39, which will communicate with the trough by a pipe 40, and when the tank is full the float will rise in the bucket and stop the windmill, and as the water in the tank is drunk the float falls and the tank is refilled. By this arrangement the float has comparatively little play and completely controls the operation of the windmill.

What is claimed as new is—

1. In a windmill, the combination of a tower, a rocking frame mounted on the tower and having a rod journaled in suitable bearings, a blade secured to the upper end of the rod, a weight for returning the rocking frame, a weighted arm rigidly secured to the rod, a latch secured to the frame and arranged to engage the weighted arm, a spring arranged

to engage the weighted arm and throw the same into engagement with the latch, and means for lifting the latch and releasing the weighted arm, substantially as described.

2. The combination of the rocking frame, a turn-table carrying the frame, a rod journaled in the frame, a blade secured to the upper end of the rod, a weighted arm rigidly attached to the rod, a latch arranged to engage the weighted arm, and means for throwing the weighted arm into engagement with the latch and releasing it therefrom, substantially as described.

3. In a windmill, the combination of a tower, a rocking frame mounted on the tower and having a rod journaled in suitable bearings, a blade secured to the upper end of the rod, a weight for returning the rocking frame, the weighted arm rigidly secured to the rod, a latch arranged to engage the arm, a spring arranged to throw the arm into engagement with the latch, and a bar arranged to lift the latch out of engagement, substantially as described.

4. In a windmill, the combination of a tower, a rocking frame mounted on the tower and having a rod journaled in suitable bearings, a blade secured to the upper end of the rod, a weight for returning the frame, a weighted arm rigidly secured to the rod, a latch, a spring arranged to engage the weighted arm and to throw the same into engagement with the latch, the bar adapted to lift the latch, and a stop disposed below the latch and adapted to hold the same in position to be engaged by the weighted arm, substantially as described.

5. In a windmill, the combination of a tower, a rocking frame mounted on the tower, a pump-rod connected with the rocking frame, a blade carried by the rocking frame, means for turning the blade and returning the rocking frame, and a spring arranged on the tower and adapted to be engaged by the rocking frame and forming a cushion, substantially as described.

6. In a windmill, the combination of the rocking frame and the blade consisting of the spring and a series of slats secured to the spring, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

EDSON LAMPHEAR.

Witnesses:

FRANK ORGAN,  
ALBERT REINHART.