

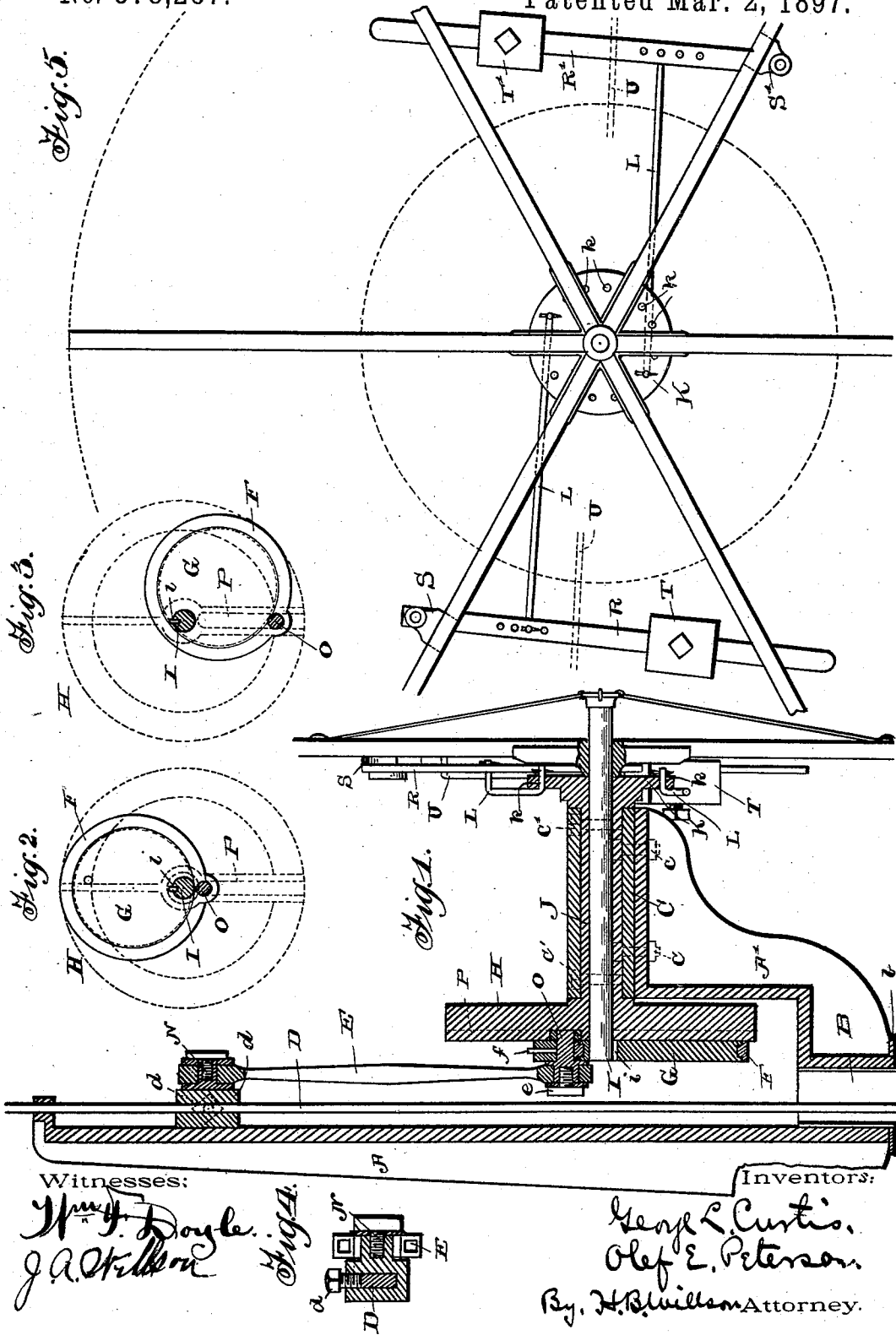
(No Model.)

G. L. CURTIS & O. E. PETERSON.

WINDMILL.

No. 578,287.

Patented Mar. 2, 1897.



# UNITED STATES PATENT OFFICE.

GEORGE L. CURTIS AND OLEF E. PETERSON, OF CACHE COUNTY, UTAH.

## WINDMILL.

SPECIFICATION forming part of Letters Patent No. 578,287, dated March 2, 1897.

Application filed October 12, 1895. Serial No. 565,532. (No model.)

*To all whom it may concern:*

Be it known that we, GEORGE L. CURTIS and OLEF E. PETERSON, citizens of the United States, residing in the county of Cache and Territory of Utah, have invented certain new and useful Improvements in Windmills; and we 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, reference being had to the accompanying drawings, forming a part of this specification.

Our invention has relation to windmills; and the object is to produce a self-regulating mill that will automatically adjust itself to the velocity or force of the wind; and to this end the novelty consists in the construction, combination, and arrangement of the same, as will be hereinafter more fully pointed out in the claims.

In the accompanying drawings the same letters of reference indicate the same parts of the invention.

Figure 1 is a side elevation, partly in section, of a windmill embodying our invention. Fig. 2 is a front elevation of the main driving-head with adjustable driving mechanism at the point of minimum stroke. Fig. 3 is a similar view showing the relation of the same parts near the point of maximum stroke. Fig. 4 is a cross-section of the upper end of the pump connecting-rod, and Fig. 5 is a front elevation of the wind-wheel.

A is the cast head, formed with an integral horizontal bearing-plate *b*, which rests upon a similar bearing-plate (not shown) on the upper end of the tower or derrick. B is a sleeve rigidly secured to the head A and extending down into the top of the tower to form a journal, upon which the head A turns, and A' is an integral arm on the head A, the upper horizontal end of which forms a support for the journal-box C, which is secured thereto by bolts *c c*, the usual top being secured to the box by bolts *c' c'*.

J is a sleeve journaled in said box C, and its outer end is formed with the integral governor-disk K, provided with the adjusting-holes *k*, to which the governor-rods L L are adjustably connected. The inner end of said sleeve J is provided with an integral disk H,

formed with a radial dovetail slot P, in which the similarly-shaped head of the wrist-pin O is radially adjustable. This wrist-pin O is rigidly secured in the eccentric-strap F by means of a pin *f*, and on its outer end is mounted the lower end of the connecting-rod E, being held in place by a washer and bolt *e*.

G is an eccentric located in the eccentric-strap F, and it is rigidly secured to the inner end of the main driving-shaft I by means of a key *i*, and on the outer end of said shaft I is mounted the usual "solid" wind-wheel.

The upper end of the connecting-rod E is mounted on the wrist-pin N, adjustably secured by the set-screw *d* on the block *d'* to the pump-rod D.

In the radially opposite holes *k k* in the governor-disk K are pivoted the ends of the governor-rods L L, the outer ends of which are pivoted in holes in the levers R R', fulcrumed in the blocks S' S', secured to the frame of the wind-wheel, and these levers R R' are provided with adjustable weights T T', by means of which the stroke of the pump is automatically regulated.

U U' are guide-braces secured to the frame of the wheel, and they assist in keeping the governor-levers R R' in the same plane when the wheel is rotating.

The normal position of the parts when the wheel is at rest or rotating slowly is shown in Fig. 2, where the weights on the levers R R' are in toward the center of the wheel, and as the wheel increases in speed the weights on the levers R R' fly outwardly from the center by centrifugal force, and the levers, acting upon the governor-rods L L, rotate the sleeve J on the shaft I, so as to shift the eccentric G in its strap F. This forces the wrist-pin O outwardly in the slot P, so as to carry it from the center and consequently increase its throw, thus lengthening the stroke of the pump-rod E. As the velocity of the wheel diminishes the weights T T' are restored to their normal position, and through their levers and rods the sleeve returns to its first position, its eccentric drawing the wrist-pin O inwardly toward the center of the shaft I.

Having thus fully described our invention, what we claim as new and useful, and desire to secure by Letters Patent of the United States, is—

1. A self-governing windmill, comprising a main driving-shaft, on the outer end of which is mounted the solid wind-wheel, and its inner end provided with an eccentric and an  
5 eccentric-strap, in which is mounted a wrist-pin, to one end of which the connecting-rod of the pump-rod is secured, and having its opposite end mounted in a radial slot in the face of a rotating disk mounted upon the in-  
10 ner end of a sleeve rotating on the main driving-shaft, substantially as and for the purpose set forth.

2. The combination with a wind-wheel mounted on the main driving-shaft I, the inner  
15 end of which is provided with the eccentric G and strap F having wrist-pin O adjustably secured in the slot P in the disk H mounted on the sleeve J, journaled on the main shaft I, and means substantially as described, for  
20 varying the position of said sleeve with ref-

erence to the main shaft, substantially as and for the purpose set forth.

3. The combination with a wind-wheel, the rotating frame of which is provided with a pivoted lever having an adjustable weight, 25 and connected by a rod as L to the disk K, mounted on one end of the sleeve J, the opposite end thereof being formed with a disk H having a radial slot P, in which is adjustably mounted the wrist-pin O secured to the eccen- 30 tric-strap F on the eccentric G mounted on the main driving-shaft I, journaled in said sleeve J, substantially as and for the purpose set forth.

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Witnesses:

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RALPH MULVANE.