(No Model.)

# M. S. PIRES.

## WINDMILL.

No. 458,766. Patented Sept. 1, 1891.

Fig. 1.

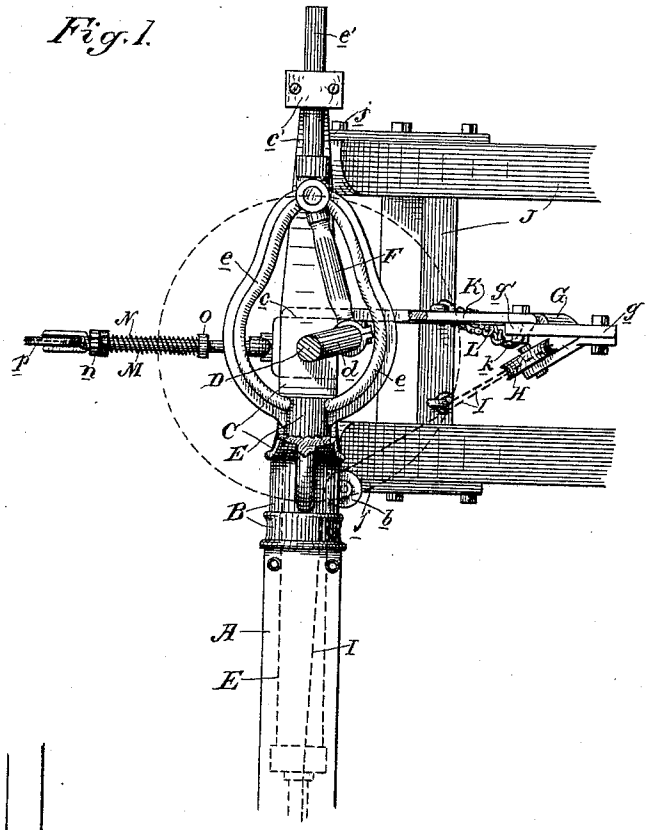
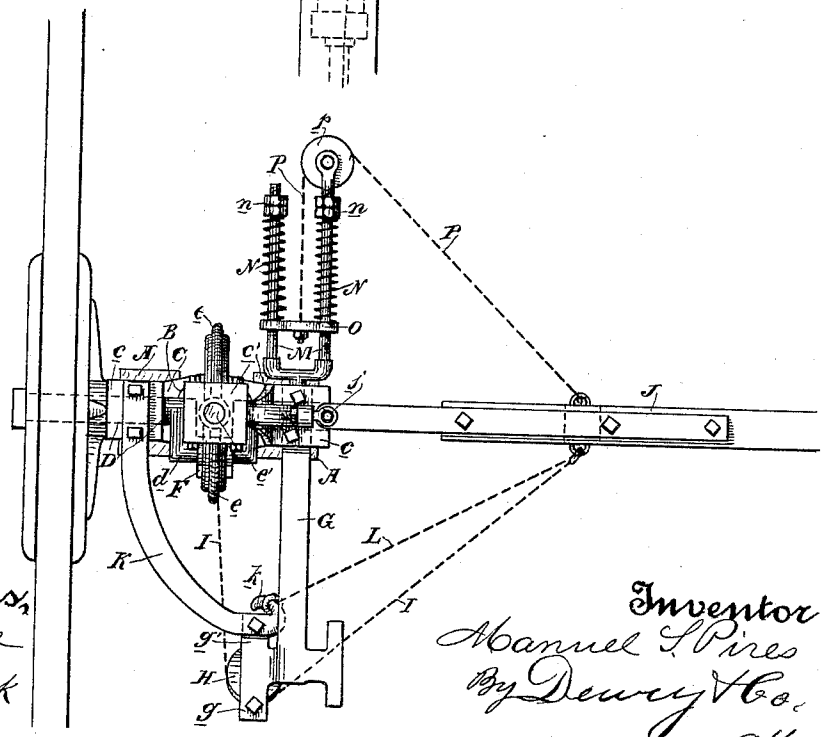


Fig. 2.



Witnesses,
P. Howse
H. F. Ascheck

Inventor,
Manuel S. Pires
By Dewey & Co.
Attys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

# UNITED STATES PATENT OFFICE.

MANUEL S. PIRES, OF CENTREVILLE, CALIFORNIA.

## WINDMILL.

SPECIFICATION forming part of Letters Patent No. 458,766, dated September 1, 1891.

Application filed January 13, 1891. Serial No. 377,654. (No model.)

*To all whom it may concern:*

Be it known that I, MANUEL S. PIRES, a citizen of the United States, residing at Centreville, Alameda county, State of California, have invented an Improvement in Windmills; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to the class of windmills; and it consists in the novel construction and arrangement of the parts forming the head-casting of the mill, as will be hereinafter fully described, and specifically pointed out in the claim.

The object of my invention is to provide a simple and strong windmill-head by which the wheel and vane are properly supported and may have their several movements and the power of the crank is transmitted to the pump-rod directly from below, thus avoiding any tendency to cramping or binding.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a front elevation, the wheel being removed. Fig. 2 is a top view.

A are the suitable supports of the mill, in which is mounted and adapted to have an axial movement the turn-pipe B, which carries at its top the head-casting, (represented generally by C.) In bearings *c* in this casting is mounted the wheel-shaft D, having the crank *d*.

E is the upper connection of the pump-rod, which passes up through the turn-pipe B, and it is formed at its upper portion with a yoke *e*, from which extends upwardly a guide-rod *e'*, which is fitted and moves in a bearing in the top of the vertical arm *c'* of the main casting C. The yoke *e* embraces the crank *d* and is wide enough to allow said crank to have its movement freely within it.

F is a pitman or connecting rod joining the crank with the upper end of the yoke of the pump-rod connection. Now it will be seen that by this construction the crank is directly in line with the movement of the pump-rod and bears up under its yoke, so that it lifts it directly from below, thus avoiding any tendency to cramp or bind due to side pressure.

J is the vane, hinged to the casting C at points *j*.

Secured to one of the boxes *c* of the main casting and extending therefrom is a brace-arm G, the outer end of which has two branches *g* and *g'*. In the former of these is mounted the guide-pulley H, over which the chain I passes, one end of said chain being secured to the vane J and the other end passing to a pulley *b* and down through the turn-pipe B to within reach of the operator below. This brace-arm thus furnishes a proper support for the chain I, and by pulling upon said chain the effect is to pull the vane around parallel with the wheel, so that the mill will be thrown out of the wind, and also said chain furnishes the automatic regulator for the mill by hanging upon its lower end weights, which hold the mill into the wind and yield before a forcible blow, which tends to throw the mill out of the wind, all in the ordinary manner of self-regulators.

K is a second brace-arm, which is secured to the other box of the main casting C, and thence extends to and is bolted to the other branch *g'* of the brace-arm G. The end of the brace-arm K is formed with a hook *k*, in which is secured a chain L, the other end of which passes to and is connected with the vane J. The object of this chain is to keep the vane from turning the wrong way and hold it when in operation at right angles with the wheel.

Extending from the box *c* in an opposite direction from the brace-arm G are parallel rods M, connected at their outer ends. Upon these rods are springs N, controlled by nuts *n*. Sliding upon the inner ends of the rods M is a bar O, against which one end of springs N bear. To the middle portion of this bar is secured a chain P, the other end of which is connected with the vane, as shown. The object of these springs is to return and hold the vane strongly at right angles with the wheel. The chain passes over a pulley *p* in the end of one of the rods M.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a windmill, the combination of the head-casting and the vane hinged thereto with the parallel rods extending from the casting, the sliding bar on said rods, the springs on said rods, acting against the bar, and the chain connected with the said bar and with the vane, substantially as herein described.

In witness whereof I have hereunto set my hand.

MANUEL S. PIRES.

Witnesses:
S. H. NOURSE,
H. F. ASCHECK.