

(No Model.)

2 Sheets—Sheet 1.

F. ALTMAN.

WINDMILL.

No. 364,983.

Patented June 14, 1887.

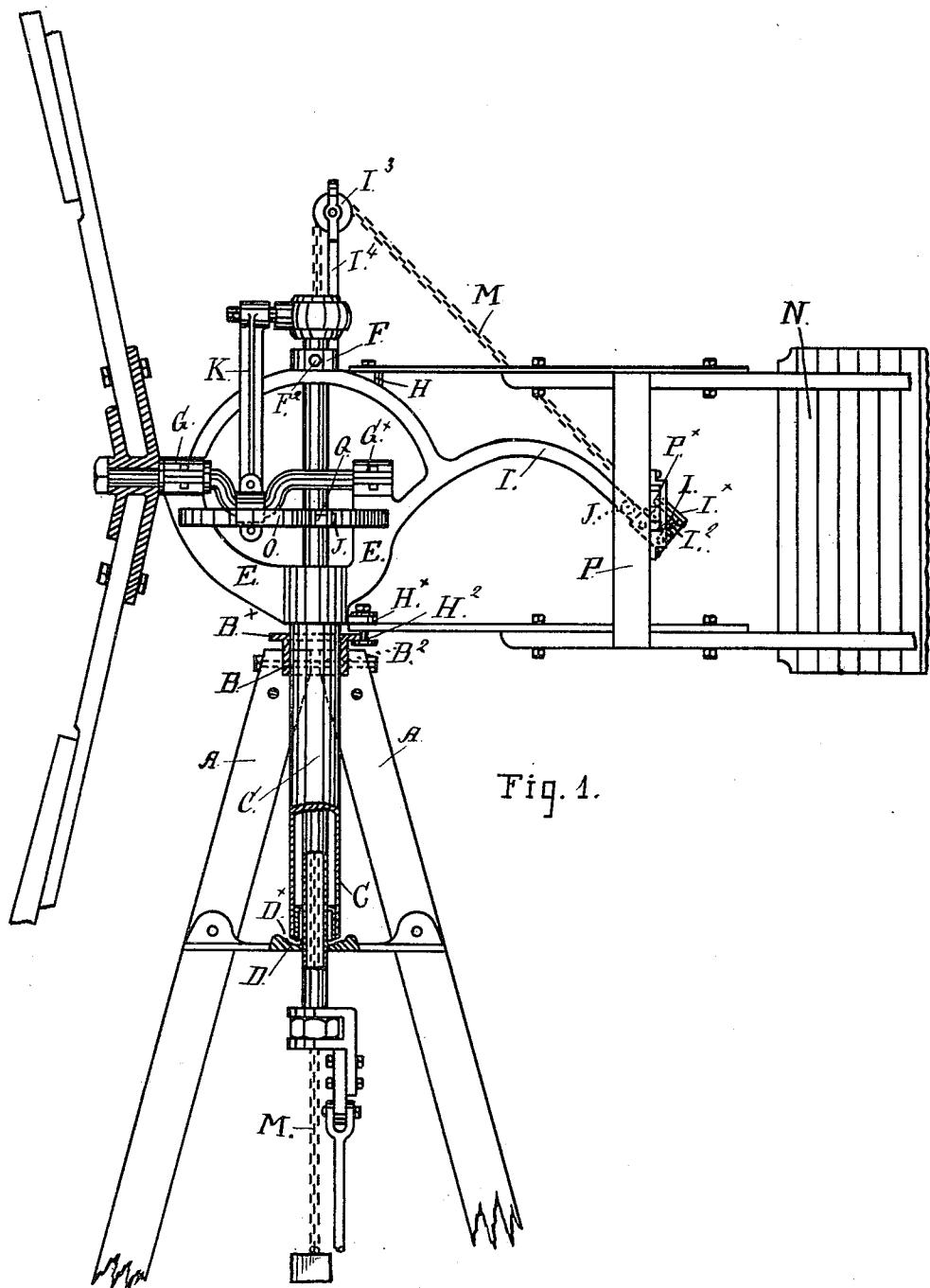


Fig. 1.

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Joseph E. Lord

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Inventor:
Frederick Atkinson
John Smith
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2 Sheets—Sheet 2.

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Fig. 2.

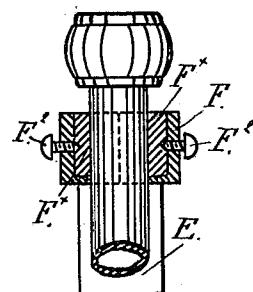
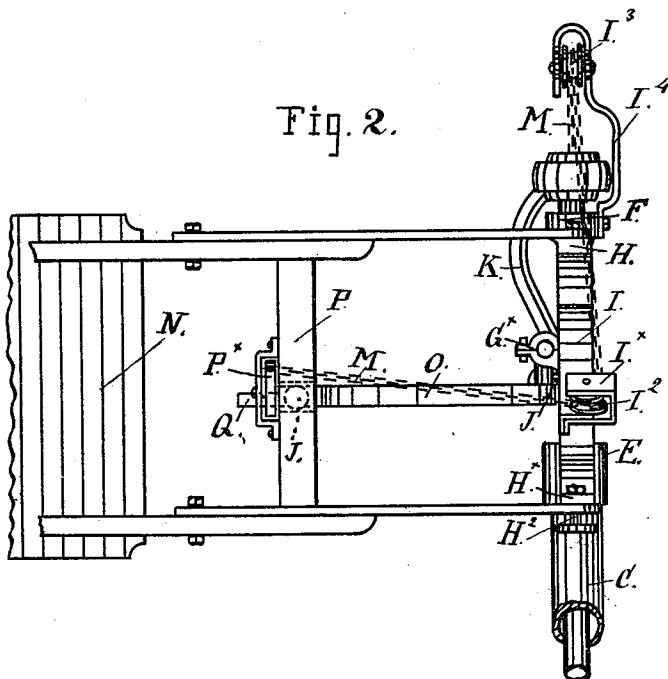


Fig. 4.

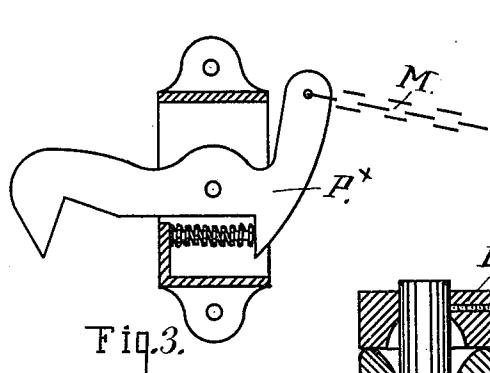


Fig. 3.

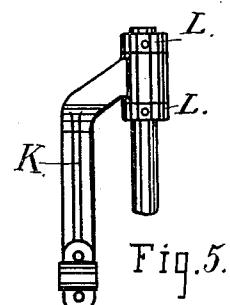
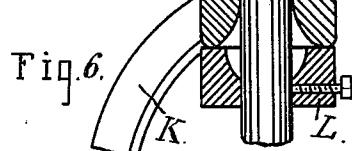


Fig. 5.



Witnesses:

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UNITED STATES PATENT OFFICE.

FREDERICK ALTMAN, OF SAN JOSÉ, CALIFORNIA.

WINDMILL.

SPECIFICATION forming part of Letters Patent No. 364,983, dated June 14, 1887.

Application filed April 22, 1886. Serial No. 199,850. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK ALTMAN, a citizen of the United States, residing at San José, in the county of Santa Clara and State of California, have invented certain new and useful Improvements in Windmills, of which the following is a specification.

My invention relates to certain improvements in windmills; and it consists in the construction, arrangement, and combination of parts, substantially as will be hereinafter described, and then more particularly pointed out in the claim.

In the accompanying drawings, forming a part of this specification, Figure 1 is a front view of my windmill thrown out of the wind. Fig. 2 is a side view of the yoke, frame, and vane. Fig. 3 is a view in detail of the latch by which the vane is held to the wind. Fig. 4 is a cross-section, through boxing, of pump-rod. Fig. 5 is a side view of pitman and its connections with pump-rod. Fig. 6 is a cross-section through Fig. 5.

Similar letters refer to similar parts throughout the several views.

Let A represent the tower, constructed much in the usual way, with four vertical posts converging at the upper ends. Within the converging ends of these posts is set a collar, B, having a flanged rim, B^x, and a vertical web, B², upon each side, through the latter of which the collar is secured to the tower by bolts passing through the posts and flanges, as shown. The collar extends above the top of the posts, so as to form a groove around it below the flange or rim B^x, the object and purpose of which will be hereinafter described.

Within the tower-posts, and bolted to these, is placed a hollow grooved step, D, upon which the end of the well tube or pipe C operates, and through which the pump-rod passes. The end of the pipe C is beveled, to correspond with the groove D^x in the step, and the groove is filled with oil, so that the end of the pipe will always be lubricated. The well tube or pipe C extends up through the flanged collar B and base of the yoke-frame, the latter being bored out to receive the upper end of the said pipe C, upon which a shoulder may be formed, 50 against which the lower end of the yoke-frame

may rest and be kept from contact with the collar B.

The yoke for the head-gear of the mill consists of a frame, E, cast in one piece, bored out at the bottom, as before described, and having a square box or lug, F, to receive a packing and lubricant for the working of the upper portion of the pump-rod, lugs G G^x for the journal-boxes of the wind-wheel, lugs H H^x for connecting the vane, and an arm, I, for a pulley, and cushion or spring J. The boxing F at the top of the yoke, in which the upper end of the pump-rod works, is cast with a square seat at the base thereof, upon which rests a wooden packing or bearing, F^x, for the pump-rod, held in place within the body by the set-screws F². The upper portion of the curved pitman K is bent at an angle of about forty degrees, and to the end of it is cast a hollow collar having interiorly convexed faces, 70 as shown in Fig. 6, through which collar the pump-rod passes. This collar is held in position upon the pump-rod between the two fixed collars L, situated one above and one below the collar aforesaid. By this construction of pitman the movement or thrust will be more nearly in an axial line with the pump-rod than if connected to a right-angled arm, as shown in Fig. 1.

The wooden packing or bearing is boiled in oil for three or four days before using, so as to absorb as much oil as possible. It is divided centrally, so as to embrace the pump-rod as it moves up and down in this guide, and when the bearing has a tendency to become heated, 85 the oil will be drawn from the block or blocks of wood composing the bearing and thoroughly lubricate the pump rod, giving off no surplus from the lower end of the boxing.

A lug, I^x, is secured to the end of the curved arm I of the yoke-frame, to which is attached a grooved pulley, I². This pulley is so connected to the end of the arm as to operate at an angle of about forty-five degrees, and be in line with the grooved pulley I³ at the end of 95 the upright arm I⁴, secured to box F. Over these pulleys is passed a chain or cable, M, which enters the hollow pump-rod and extends downward to near the ground, and is weighted at the lower end. The upper end of this chain 100

or cable connects with a latch on the vane or tail of the mill. By this means the mill is hauled out of the wind with ease and readiness by drawing down the chain or cable, as the 5 location of the pulleys are such that but little friction is had upon the chain, either in throwing the mill out of the wind or allowing it to adjust itself as against the changes or pressure of the wind.

10 The tail or vane N is bolted to the yoke-frame through lugs H H^x. The head of the bolt H² is placed downward and engages with the flange B^x of the collar B; and this is an important feature of my 15 invention, for by this means the head-gear or turn-table is prevented from being lifted up bodily in a gale or high wind, in which event the running-gear of the mill would become disarranged.

20 The outer face of the vertical post P, which connects the two arms of the vane, has attached to it a spring-latch, P^x, to which the outer end of the weighted chain or cable M is connected. From the vertical yoke-frame extends a brace, 25 O, having angle-arms Q bolted to the side of the frame. Upon the outer end of this brace is made a catch, which, as the vane is thrown backward, engages with the latch on the stud or post and firmly locks and holds the vane out

of the wind until the weighted chain or cable 30 is drawn down and lifts the latch from the catch, and permits the vane to be carried back against the arm I of the yoke-frame.

In order to take up the shock so incident to this backward and forward movement of the 35 vane, I employ india-rubber springs J, attached to the inner face of the arm I back of the pulley and to the outer end of the brace O back of the catch, against which the vertical stud or post of the vane cushions as the mill 40 is thrown into or out of the wind.

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

In a windmill, the combination of the posts 45 of the tower, the collar B, having web B², whereby it is secured between the upper ends of the posts, and having also flange B^x, the vane, and the reversed headed bolt by which the lower arm of said vane connects with flange 50 B^x, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand and seal. -

FREDERICK ALTMAN. [L. S.]

Witnesses:

C. W. M. SMITH,
CHAS. E. KELLY.