A. W. CHILCOTT.
Windmill.

No. 220,343. Patented Oct. 7, 1879.

Fig. 1

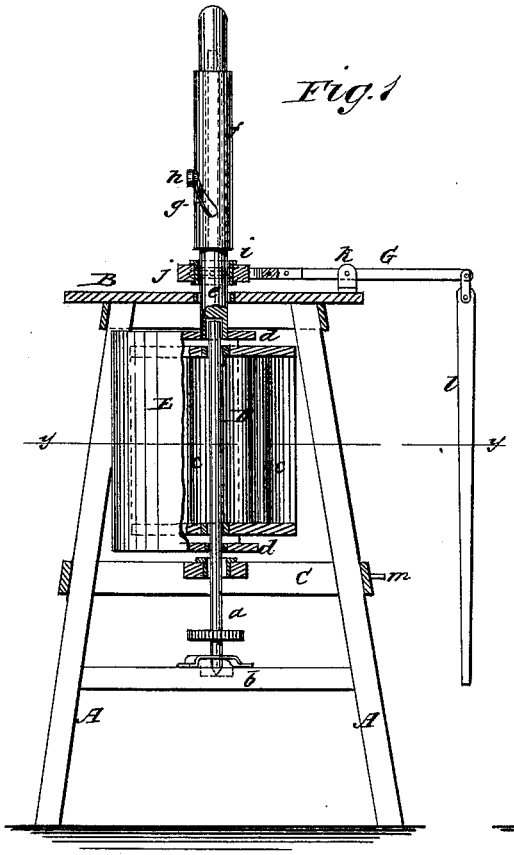


Fig. 2

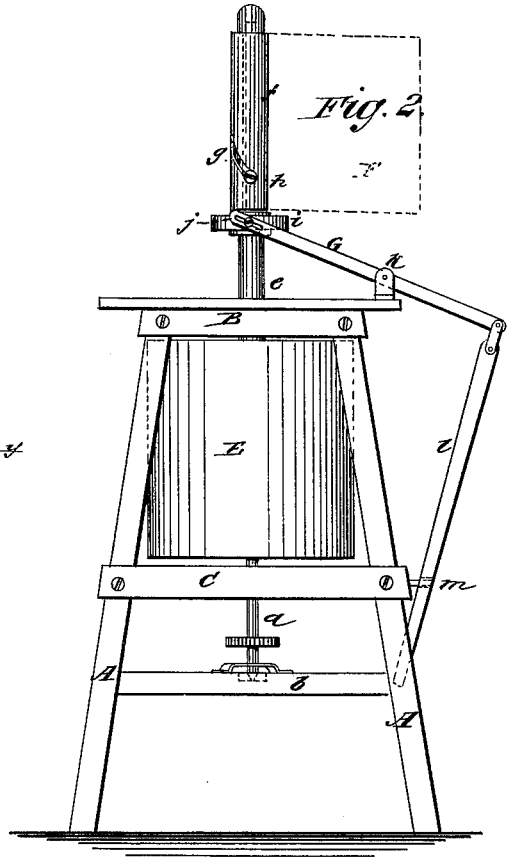


Fig. 3.

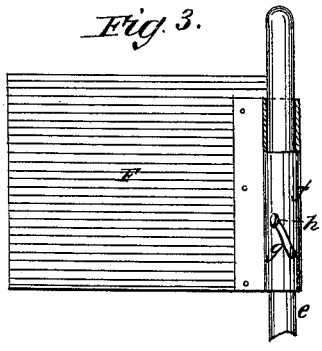
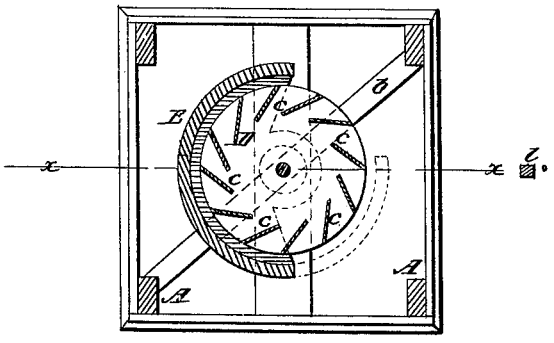


Fig. 4.



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UNITED STATES PATENT OFFICE.

AMON W. CHILCOTT, OF OTTUMWA, IOWA.

IMPROVEMENT IN WINDMILLS.

Specification forming part of Letters Patent No. **220,343**, dated October 7, 1879; application filed February 19, 1879.

To all whom it may concern:

Be it known that I, AMON W. CHILCOTT, of Ottumwa, in the county of Wapello and State of Iowa, have invented a new and Improved Windmill, of which the following is a specification.

The object of this invention is to construct the windmill so as to utilize the full force of the wind, and thus obtain a greater power than from the present construction of windmills; also, to furnish an arrangement for quickly and easily stopping the mill by means of the tail.

The invention consists in connecting the tail with its shaft through a socket or sleeve fixed to the tail, slipped over the shaft, and having in it a spiral slot making a quarter-turn of the sleeve. A pin in the shaft projects through the slot. By means of a lever the tail can be lifted, and the pin engaging the slot turns the tail one-quarter against the wind, which forces it around and causes the shield to cover the wheel and thus stop the mill.

In the accompanying drawings, Figure 1 is a vertical section of the mill on line *x x*, Fig. 4. Fig. 2 is a side elevation of the same. Fig. 3 represents the tail of the mill, and Fig. 4 is a horizontal section on line *y y*, Fig. 1.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents the uprights of the frame of the windmill. B is the top, and C is the horizontal part, of the frame. In the middle of the frame is supported the vertical shaft *a*, the lower end wherof is pivoted in the cross-timber *b*.

D represents the wind-wheel. It is composed of the two heads connected together by the vertical wings *c c c*, &c., set at an angle to the radii of the head. The shaft *a* passes through this wheel and is keyed to it, forming the axis on which it turns.

E is the shield. It is a half-cylinder with heads *d d*, and is placed over the wind-wheel, so as to partially inclose the same, its heads fitting over the heads of the wheel, and the shaft *a* passes loosely through the lower one, but is pivoted in the upper one. This shield revolves freely around the wind-wheel. From its upper head a shaft, *e*, rises up through the top B.

F represents the tail of the mill. At its rear edge is a sleeve, *f*. This is slipped over shaft *e*, and thus connects the tail and shaft together. In the sleeve is a spiral slot, *g*, running one-quarter around the sleeve, and through this slot projects a pin or stud, *h*, in the shaft. The sleeve and tail are supported by the pin *h* bearing against the upper end of the slot, as clearly shown in Fig. 1, thus permitting them to be lifted the whole length of the slot on the shaft.

A collar, *i*, is placed on shaft *e* below the sleeve and is pivoted to the two arms *j* on the end of lever G, fulcrumed at *k*, and provided with a pendent handle, *l*, by which it is operated from below. By means of this lever the sleeve and tail are lifted upon the shaft, and the stud *h* bearing against the side of the slot turns the sleeve and tail (as the slot is spiral) just one-quarter turn backward, as clearly shown by the dotted lines, Fig. 2.

It will be observed that when the tail and sleeve are down, supported by the stud *h* in slot *g*, the tail is in line with the two edges of the shield or parallel to the diameter of the cylinder from which it is divided, whereby, the wind forcing the tail around in the direction it is blowing, the shield is turned so as to cover one-half the wind-wheel, leaving exposed the wings on the side where their setting enables them to take the full force of the wind. The force of the wind is exerted directly against the wings at all times, as the tail and shield are so set with relation to each other and the wind-wheel that the wind only reaches them on that side where their outer edges are turned toward the wind as they emerge from the shield, as clearly shown in Fig. 4, and it does not reach the other side at all; consequently there is no drawback. Thus the full force of the wind is utilized, and the result is, greater power is obtained from this mill than others now in use.

To stop the mill the lever is drawn down by handle *l*. This throws the collar up, and, lifting the sleeve *f*, the stud *h*, guiding the groove, causes the tail to turn around one-quarter of the distance against the wind, thus placing it at right angles to the shield E, and in this relative position it is secured by fastening the lever in the position to hold the sleeve upon the shaft by hooking the handle *l* to hook *m*. As the tail turns back when lifted the wind, of

course, forces it back in the direction it is blowing, but its position with relation to the shield is not changed; consequently this is forced around with it, thus interposing itself between the wind and the wheel, shutting off the wind and causing the mill to stop.

This windmill contains but few parts, is strong and durable in construction, utilizes the full force of the wind, and, lastly, is completely under control.

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

1. The sleeve *f*, fixed to tail F and provided with slot *g*, engaging the pin *h* in the shaft *e*, in combination with the shield E, whereby, when the pin is at the upper end of the slot, the tail and shield are held in position so that the wind reaches the wind-wheel, substantially as described.

2. The sleeve *f*, fixed to tail F and provided with a slot, *g*, engaging the pin *h* in shaft *e*, in combination with shield E and lever G, whereby the said tail can be lifted and turned one-quarter around, changing its position relative to the shield, so that as the wind forces it around it turns the shield so as to shut the wind off from the wheels, substantially as described.

AMON W. CHILCOTT.

Witnesses:
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JOHN GUTHRIE.