

WINDMILL,

APPLICATION FILED JULY 12, 1909.

Patented Mar. 29, 1910.

Fig. 1.

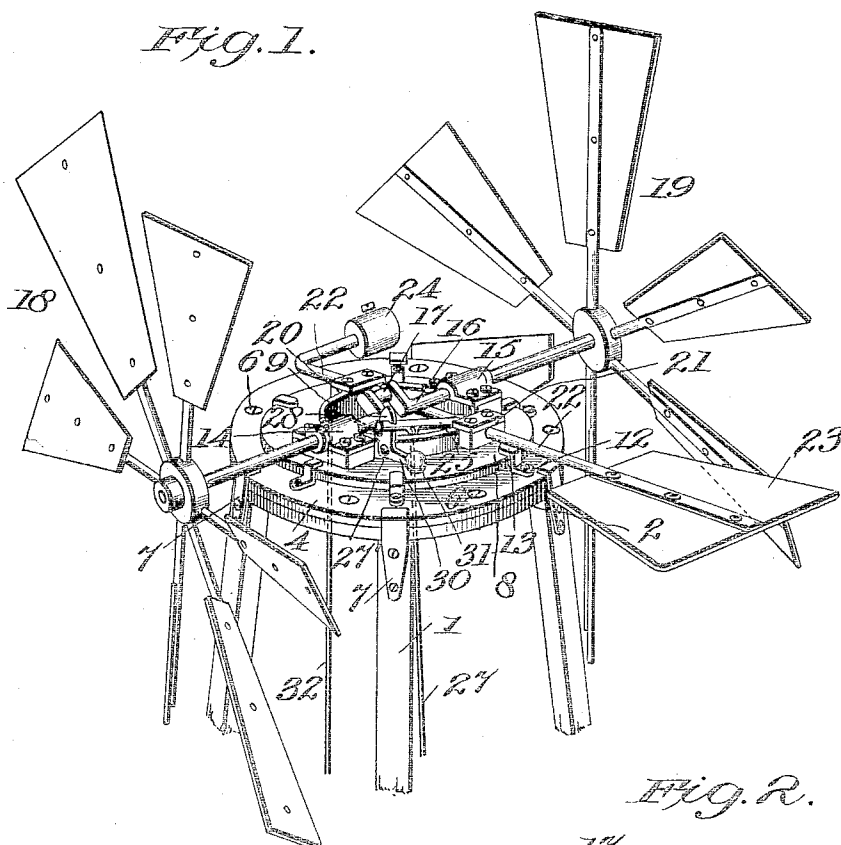


Fig. 2.

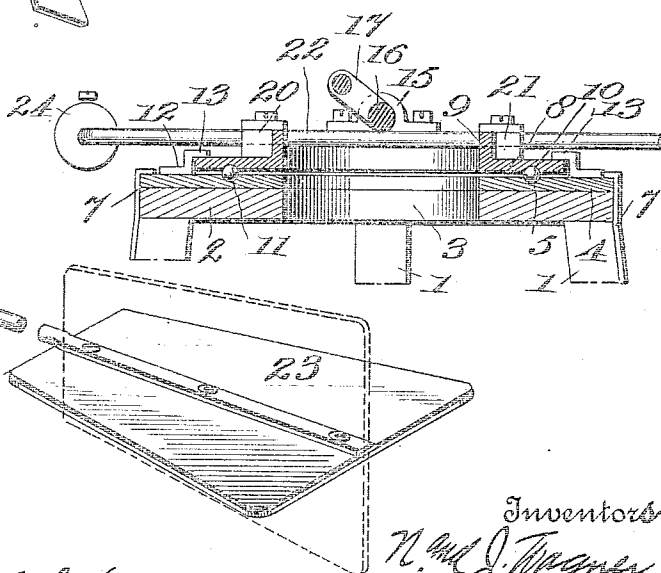
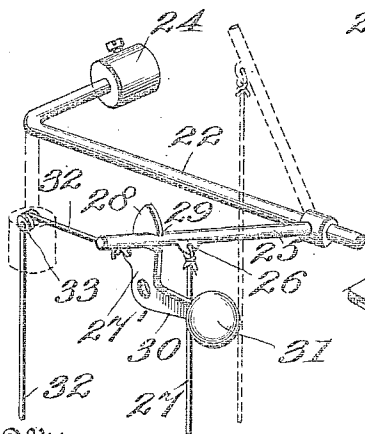


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

NICKOLAUS WAGNER AND JACOB WAGNER, OF CALDWELL, IDAHO.

WINDMILL.

953,566.

Specification of Letters Patent. Patented Mar. 29, 1910.

Application filed July 12, 1909. Serial No. 507,267.

To all whom it may concern:

Be it known that we, NICKOLAUS WAGNER and JACOB WAGNER, citizens of the United States, residing at Caldwell, in the county of Canyon and State of Idaho, 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.

This invention relates to improvements in windmills.

In applicants' former case, Serial No. 422,132, an apparatus was designed which was found to be of great practical utility when put into extensive use, but as these windmills are particularly designed for use in connection with large tracts of arid land requiring irrigation and in portions of the country where very strong winds prevail, it has sometimes been found quite impracticable to stop the wheels when desired, and not infrequently windmills of the ordinary type are thrown out of gear by very strong winds and the inability to control the rotation of the wheel.

One of the objects of the present invention is to overcome this difficulty by providing means which may be adjusted to automatically swing the wheels to such a position that they will not be acted upon by the force of the wind that rotates same.

Other objects and advantages will be apparent from the following description, the particular features of novelty being pointed out in the claims, and while the invention is not restricted to the exact details shown and described, still for the purpose of disclosure reference is had to the accompanying drawings illustrating a practical embodiment of the invention in which like numerals designate the same parts in the several views, and in which—

Figure 1 is a perspective view of the upper portion of the windmill with our present invention shown thereon. Fig. 2 is a vertical sectional view, the wind wheels being omitted, and the shaft of the controlling vane being broken away, and Fig. 3 is a detail perspective view of the automatic controlling means.

1 designates standards of any suitable type, at the upper ends of which is mounted

a base or support 2, provided with the central aperture 3, and above this support is a similarly apertured plate 4 provided with an annular groove 5 forming the lower portion of a ball race, said plate 4 being secured to the base 2 by any suitable means, such as screws 6, and the standards 1 are also connected with the top plate 4 by means of suitable angle irons 7 to make the structure the more rigid.

The lower plate 5 may or may not be provided with a cylindrical extension, not shown, adapted to extend upwardly into the annular aperture formed in the upper revoluble plate 8 provided with the cylindrical extension or annular rim 9. This revoluble plate 8 is provided on its underneath face with an annular groove 10, balls 11 being disposed in the annular raceway formed by the grooves 5 and 10.

12 designates angle bars or guides provided with the offset projections 13 extending above the revoluble plate 8, these retaining members being suitably secured to the base or bed plate 4 and forming circumferentially disposed guiding members for preventing the revoluble plate being thrown out of position. Where the cylindrical extension referred to is employed this will also assist in retaining the revoluble plate against displacement.

14 and 15 designate suitable bearings disposed on the revoluble plate 8, and in these bearings is journaled the shaft 16 provided with the crank 17, which connects with the pump rod, the crank being formed at the central portion of the shaft and operating above the apertures in said plates, wind wheels 18 and 19 being mounted on the projecting ends of the shaft.

20 and 21 designate another set of bearings or journals carried by the revoluble plate 8, and in which latter bearings there is journaled an auxiliary shaft 22 extending at right angles to the main shaft, but disposed to one side of the crank so as not to interfere with the latter's operation. This auxiliary shaft is provided at one end with a vane 23, and at its other end with an adjustable weight 24 mounted on the offset end of the auxiliary shaft, which end is bent at such an angle that the weight normally tends to hold the vane 23 with its blade extending in a vertical plane. 25 designates a lever

mounted on said auxiliary shaft 22, and to this lever, as at 26, is secured an operating cord 27.

A catch 28 provided with a notch 29 is pivotally secured to the annular rim 9, as at 27', this catch being provided with a lateral arm 30 weighted as at 31 and being operated by the latch string 32 reeving over a suitable roller 33, the whole forming a weighted pawl normally holding said lever 25 in the position shown in Fig. 1.

In operation it will be evident that the wind wheels are so mounted that they are free to turn not only in a vertical plane but also revolve about their support to accommodate themselves to the direction of the force of the wind, all of the operating parts moving with the revoluble plate 8.

In the position shown in Fig. 1 the wind wheels are free to revolve, but when it is desired to stop the wheels a pull on the latch string 32 will unlatch the pivoted pawl and the lever 25 being released the weight 24 will rotate the auxiliary shaft 22 so that the vane 23 will adjust itself to a vertical plane, as shown in dotted lines in Fig. 3, in which position the force of the wind against this vane 23 will revolve the wheel support, and hence throw the wheels out of operative relation with reference to the direction of the force of the wind, and practically braking the action of the pumping mechanism.

When it is desired to start the wheels up again a pull on the operating cord 27 will restore the vane 23 to its horizontal plane, the lever being automatically latched by the notch of the pivoted pawl.

Having thus described the invention, what we claim is:—

1. The combination of a stationary support, a revoluble support mounted thereon, a crank shaft journaled on said revoluble support, a wind wheel carried by said crank shaft, an auxiliary shaft journaled on said revoluble support extending laterally beyond and at an angle to said crank shaft, said auxiliary shaft being provided with a vane, means normally holding said vane latched in a horizontal position, and a counterbalancing weight carried by said auxiliary shaft to automatically rotate said vane to a vertical position when unlatched, substantially as described.

2. The combination of a stationary support, a revoluble support mounted thereon, a crank shaft journaled on said revoluble support, a wind wheel mounted on said crank shaft, an auxiliary shaft journaled on said revoluble support, provided at one end with a vane and at its other end with a weight, means for holding said auxiliary shaft locked against movement in the position with the weight and vane disposed

in a horizontal direction, and means for releasing said holding means, substantially as described.

3. The combination of a stationary support, a revoluble support thereon, a crank shaft journaled on said revoluble support, a wind wheel carried by said crank shaft, an auxiliary shaft journaled on said revoluble support, said auxiliary shaft being provided at one end with a vane and at its other end with a weight, a lever carried by said auxiliary shaft, a pivoted latch adapted to engage said lever and hold said auxiliary shaft locked against movement with said vane and weight lying in a horizontal direction, and means for releasing said latch whereby said vane assumes a vertical position, substantially as described.

4. The combination of a stationary support, a revoluble support thereon, a crank shaft journaled on said revoluble support, a wind wheel carried by said shaft, an auxiliary shaft journaled on said revoluble support, said auxiliary shaft being provided at one end with a vane and at its other end with a counterbalancing weight, a lever connected to said auxiliary shaft and lying substantially in the same plane as said weight and vane but opposed to the direction of said weight, a pivoted pawl of bell crank construction provided with a notch on its vertical arm and a weight on its horizontal arm, an operating cable connected to said lever, and an operating cable connected to said pivoted pawl, substantially as described.

5. The combination of a stationary support embracing a bed plate having an annular groove on its upper face, a revoluble plate provided on its underneath face with a similar groove and cooperating with balls to form a ball bearing support, means for retaining said revoluble plate in position, a crank shaft journaled on said revoluble support, said shaft being provided with a central crank operating in an aperture formed centrally of said supports, and said shaft extending outwardly and being provided at each end with a wind wheel, an auxiliary shaft journaled on said revoluble support, provided at one end with a vane and at its other end with a counterbalancing weight, an operating lever for said auxiliary shaft, latching means engaging said lever, and operating cables connected to said lever and to said latching means, substantially as described.

In testimony whereof, we affix our signatures, in presence of two witnesses.

NICKOLAUS WAGNER.
JACOB WAGNER.

Witnesses:

C. H. DZUCK,
R. H. JOHNSON.