No. 680,039. Patented Aug. 6, 1901.

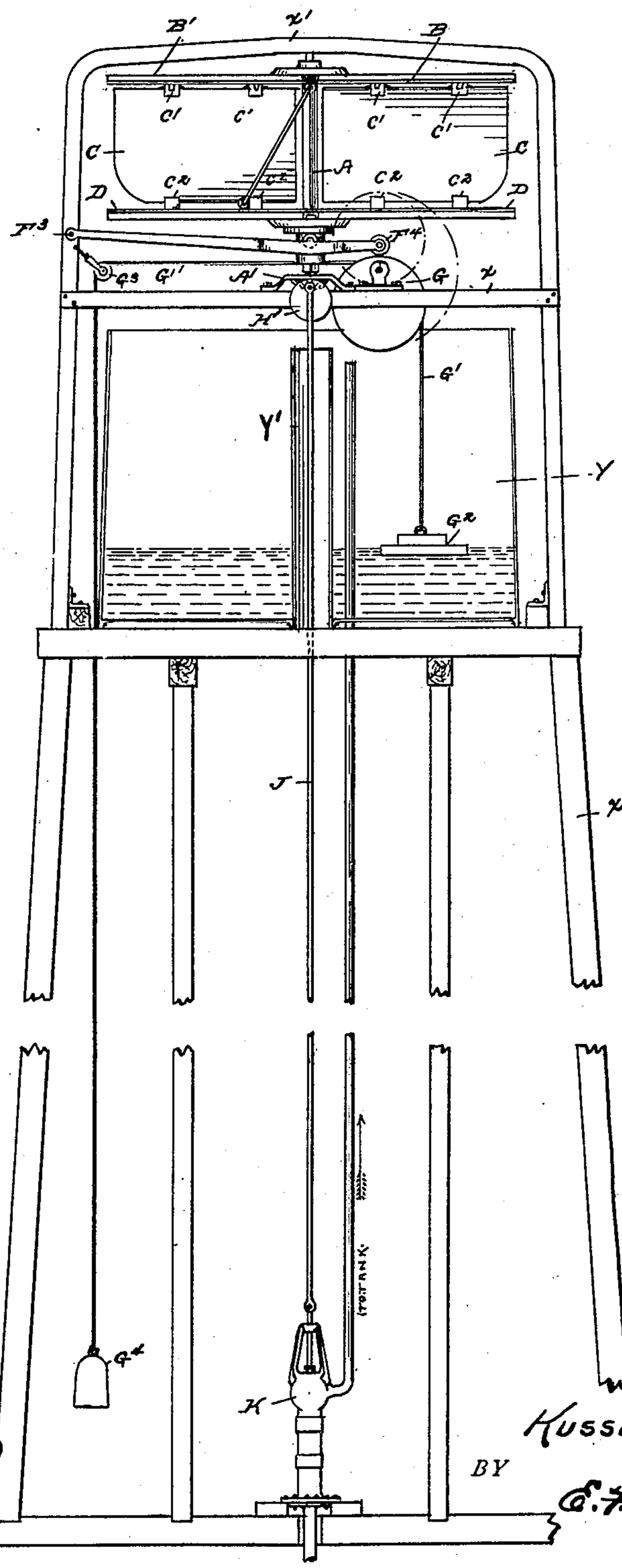
K. GORE.

WINDMILL.

(Application filed June 3, 1901.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.



WITNESSES:

Geo. Gpalding

M. M. Noble.

INVENTOR.

KUSSUTH GORE.

BY

E. F. Mundock & Co.

ATTORNEYS.

No. 680,039. Patented Aug. 6, 1901.

K. GORE.

WINDMILL.

(Application filed June 3, 1901.)

(No Model.) 2 Sheets—Sheet 2.

Fig. 2.

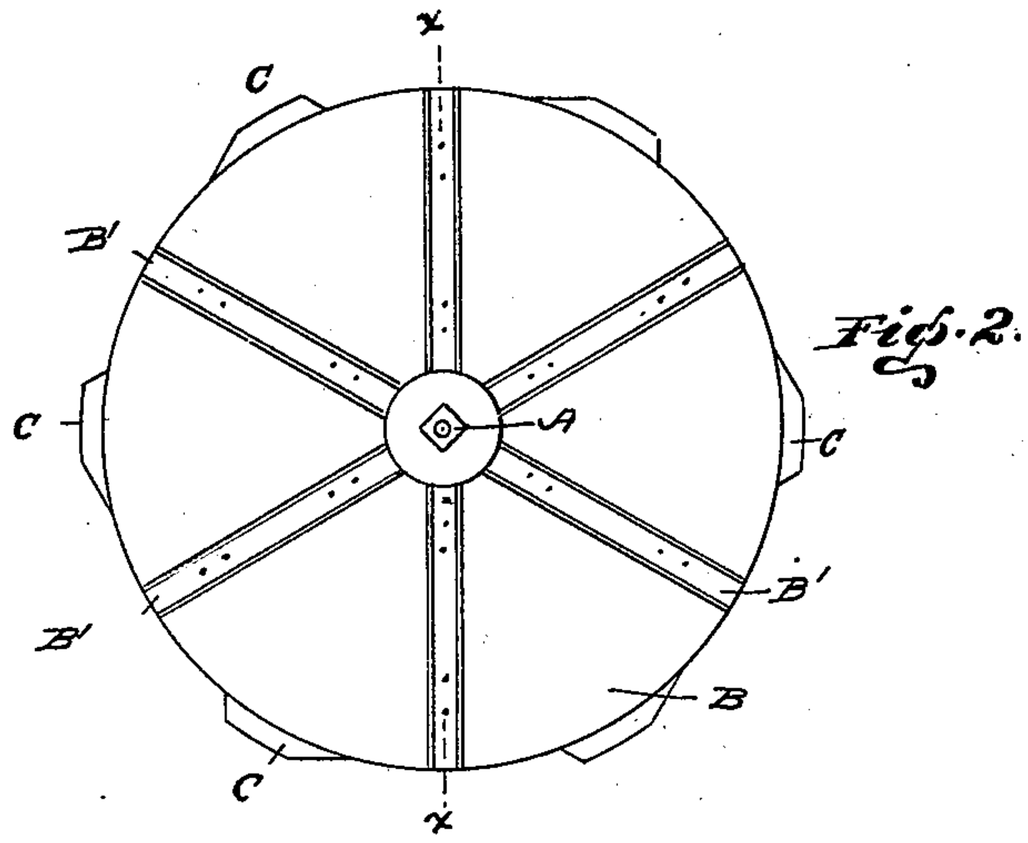
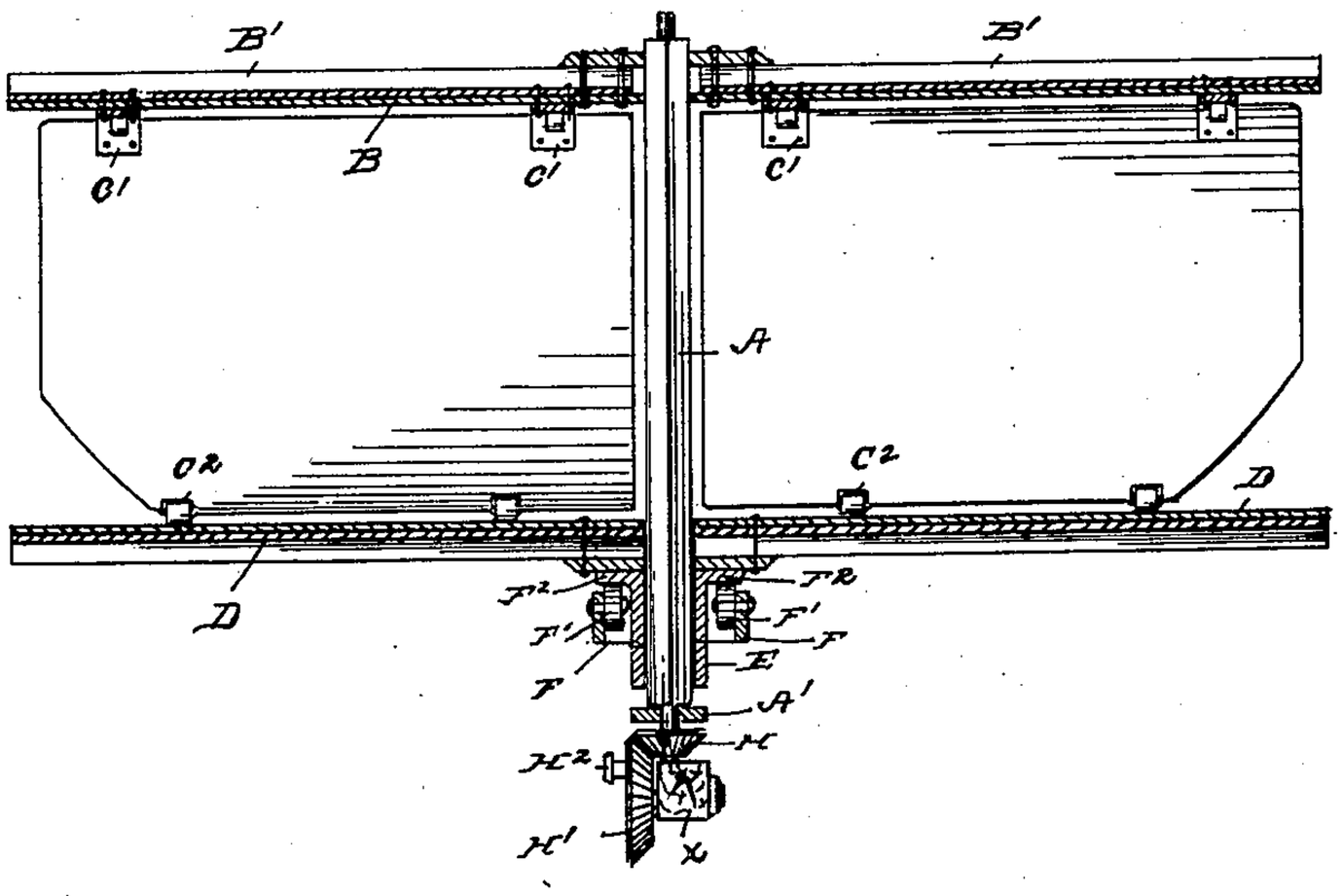


Fig. 3.



WITNESSES:

Geo Spalding

M. M. Noble.

INVENTOR.

BY Kossuth Gore.

E. F. Murdock & Co.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

KOSSUTH GORE, OF BERKELEY, CALIFORNIA.

WINDMILL.

SPECIFICATION forming part of Letters Patent No. 680,039, dated August 6, 1901.

Application filed June 3, 1901. Serial No. 63,031. (No model.)

To all whom it may concern:

Be it known that I, KOSSUTH GORE, a citizen of the United States, residing at 1625 Steuart street, Berkeley, in the county of Alameda and State of California, have invented certain new and useful Improvements in Windmills; and I do hereby declare the following to be a full, clear, and exact description of said invention, such as will enable others skilled in the art to which it most nearly appertains to make, use, and practice the same.

This invention relates to improvements in windmills, and particularly to the construction and controlling of the wind-wheel.

The object of this invention is to so construct the wind-wheel that it will be automatically thrown out of operative position in a gale. This object is accomplished by pivoting the wind-vanes in such a manner that their own centrifugal force under stress of undue speed will cause them to close and reduce the surface presented to the wind.

In the drawings, Figure 1 is a side elevation, partially in section, of a wind-wheel constructed in accordance with this invention. Fig. 2 is a plan view from above of the wind-wheel. Fig. 3 is an enlarged detail in cross-section on line $x\,x$, Fig. 2, of the wind-wheel.

In construction the invention consists of the square vertical spindle A, having its lower end journaled in the bracket A′ on the brace X, its upper end being guided in the overhead brace X′. The roofing B is preferably constructed of sheet-iron, having radial arms B′ extending from the center to the periphery, the whole being rigidly fixed to the vertical spindle A. The wind-vanes C are hinged beneath the radial arms B′ on the hinges C′, the wind-vanes hanging normally at a slight angle off the perpendicular and the lower edge being supported by the rollers C^2, resting upon the platform D, which is slidably mounted upon the square spindle A. The roofing B being rigidly fixed to the spindle A the raising and lowering of the platform D causes the vanes C to fold up or open between the roofing and the platform.

To cause the platform D to operate with reference to the water-supply, the sleeve E is mounted under the platform and is straddled by the yoke F, having the rollers F′, which support the weight of the platform upon the annular flange F^2 of the sleeve. The yoke F is fulcrumed at the point F^3 to the framework of the windmill, the other end being provided with the roller F^4, which rides upon the periphery of the eccentric G, mounted upon the cross-beam X. The cord G′ makes a turn around the eccentric G (which may, as indicated in the drawings, be grooved to receive said cord) and has a float G^2 attached to the end within the water-tank Y. The other end of the cord G′ passes from the eccentric through the pulley G^3 down to near the ground, supporting the counterbalance-weight G^4.

The beveled gear H is fixed upon the lower end of the spindle A and is meshed with the gear H′, journaled in X. The pitman-rod J is hung upon the pin H^2 and extends downward through the central shaft Y′ in the water-tank, connecting with the pump-pitman. The pitman is reciprocated by the rotation of the gear H′, operating the pump K, which empties into the tank.

The operation of the windmill is as follows: The wind impinging upon the vanes C is pocketed in the angle of the vane and the roofing B. This takes effect upon the half of the mill presenting vanes with the inclines from the wind, causing rotation of the wind-wheel. This sets in motion the gearing H, which operates the pump, as described. This continues evenly so long as there is no undue fluctuation of the wind. In the event of a squall, causing a too-rapid rotation of the wheel, the vanes C would, by reason of their centrifugal force, rise from the platform D, making the angle between the roofing B and the vane more acute, thus presenting less resistance to the wind. It is apparent that as each vane passes out of direct opposition to the wind its angle of inclination causes it on the "dead" side of the wheel, so to speak, to float or present little resistance to the wind. As the pump raises the water-level in the tank Y the float G^2 rises, causing, by reason of the weight G^4, a rotation of the eccentric G, which raises the yoke F, which in turn raises the platform D, gradually closing the vanes C. In this lifting action the effective radius of the eccentric G increases from a minimum at the lowest position of the float. Should it at any time be desirable to stop the rotation of the

wheel, the cord G′ may be pulled downward independent of the water-level, raising the float G^2 therefrom, and in this manner raising the platform D and closing the wheel.

It is obvious in this construction that a very simple, effective, and well-governed windmill is produced. Such a mill could be placed in isolated localities where it is impracticable to give it constant attention. A mill constructed in this way insures against overflowing the tank or causing damage by "racing" of the wheel.

As shown in the drawings, the vanes C have been given a form (see Fig. 2) to close flat against the roofing B. This is not absolutely necessary, as it reduces somewhat the surface of the vanes C, and the flat closing of the wheel is not necessary to prevent its rotation. Particular attention is called to the fact that the roofing B is a solid disk—that is to say, there is no opportunity given the wind to escape upward. This is a decided advantage, as it is necessary to give some inclination to the vanes, so as to prevent them jamming perpendicularly between the roofing and the platform D. This inclination, were it not assisted by the roofing, would present little resistance to the wind.

It is not necessary that the platform D should be constructed as described with reference to the roof B; but it is thought advisable, because it thus presents a better flooring for the rollers C^2.

The construction as described with reference to the wind-wheel has been demonstrated to be a very effective water-wheel; but it is deemed immaterial whether the operative current be air or other fluid, and no further reference is made to this adaptability.

Having thus described this invention, what is claimed, and desired to be secured by Letters Patent, is—

In a windmill, a wheel adapted to be rotated by wind-power, consisting of a vertical central shaft journaled at each end; a horizontal platform rigidly secured to said central shaft by radial arms therefrom; pendent wind-vanes hinged to said radial arms, the lower edges of said wind-vanes being supported by rollers resting upon a platform slidable vertically upon said central shaft; means for raising and lowering said slidable platform consisting of a lever fulcrumed to the frame of the windmill and supporting the slidable platform; an eccentric-wheel journaled in the frame of the windmill supporting upon its periphery the free end of the lever, a cord passing around said eccentric-wheel, its one end attached to a float within the reservoir, and its other end suspending a counterbalance; substantially as described.

In testimony whereof I have hereunto set my hand this 27th day of April, 1901.

KOSSUTH GORE.

Witnesses:
BALDWIN VALE,
W. C. MORAN.