

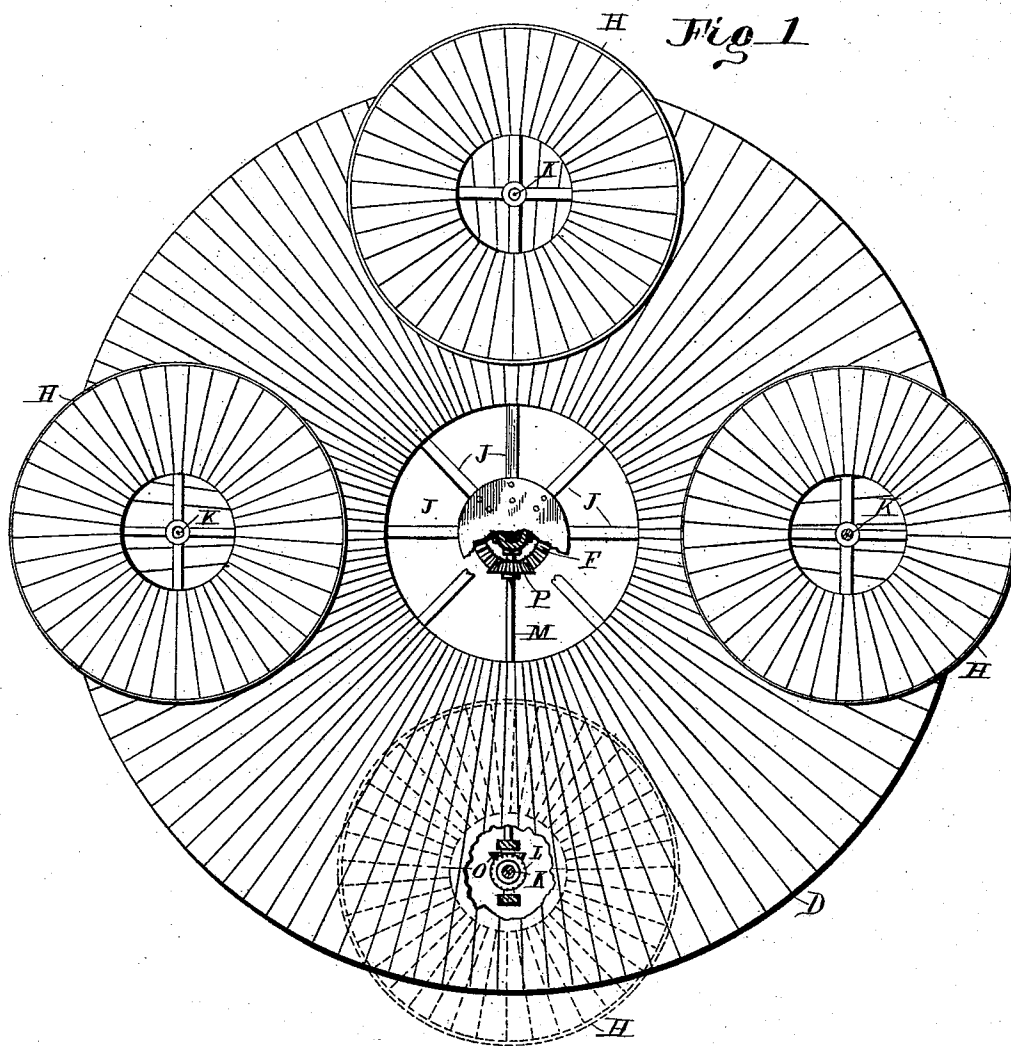
(No Model.)

2 Sheets—Sheet 1.

W. B. MYERS.
WIND WHEEL.

No. 472,763.

Patented Apr. 12, 1892.



Witnesses

C. C. Burdine
J. B. Lewis

per

Inventor

Wm. B. Myers.
John G. Manahan
his Attorney

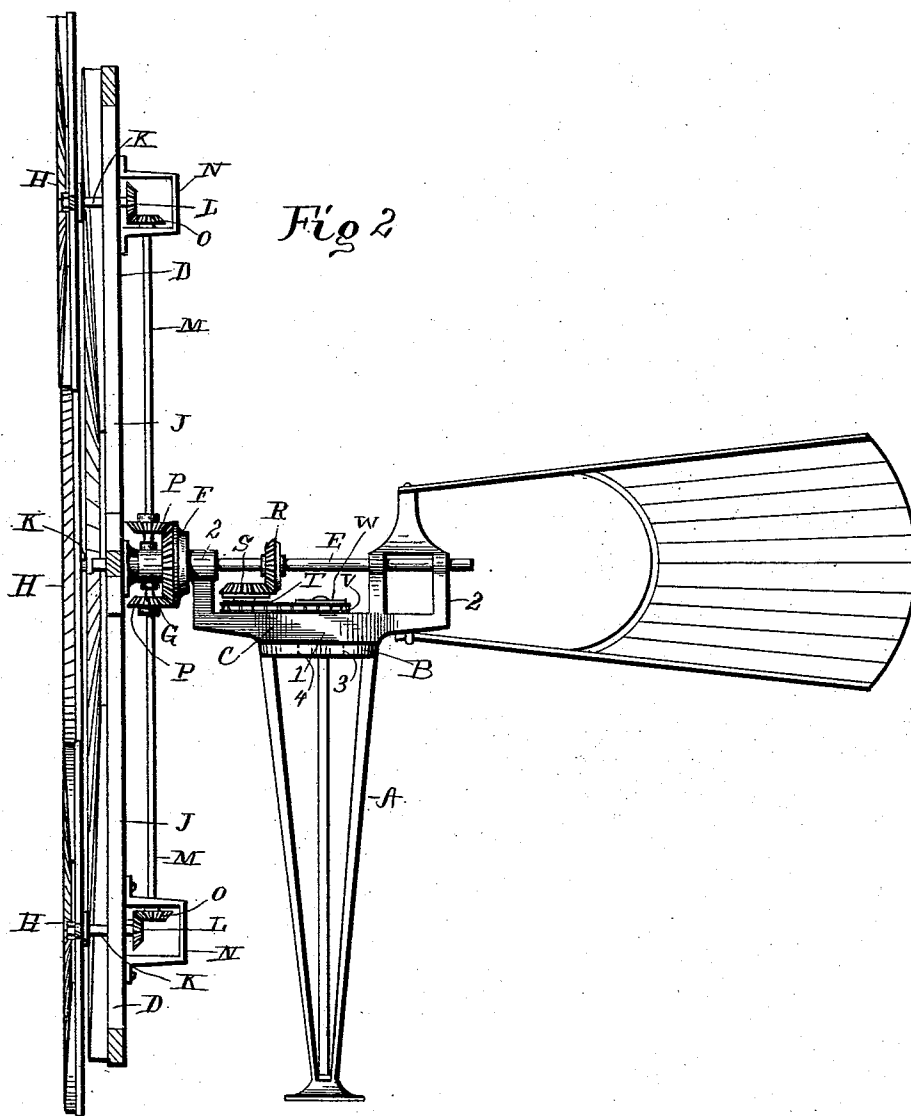
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UNITED STATES PATENT OFFICE.

WILLIAM B. MYERS, OF STERLING, ILLINOIS.

WIND-WHEEL.

SPECIFICATION forming part of Letters Patent No. 472,763, dated April 12, 1892.

Application filed March 30, 1891. Serial No. 387,006. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM B. MYERS, a citizen of the United States, residing at Sterling, in the county of Whiteside and State of Illinois, have invented certain new and useful Improvements in Wind-Wheels; and I do 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in wind-wheels, in which a series of smaller wind-wheels, pivotally seated in the windward face of the main wheel by means of short shafts projected horizontally through the arms of the main wheel, provided with a bevel-pinion at their rear extremities, which, by engagement with a similar bevel-pinion seated on a long shaft pivoted radially at its inner end in the hub of the main wheel and provided near its inner end with a second bevel-pinion adapted to engage and traverse a larger bevel-gear rigidly seated on the frame of the structure and extending loosely around the shaft of the main wheel, assists to rotate the main wheel; and the objects of my improvement are, first, to rigidly seat on the frame of the structure a stationary collar provided at its outer surface with a bevel-gear, and, second, by means of the radial shafts which are operated by the smaller wind-wheels, respectively, to afford a fulcrum by which said shafts exert a leverage upon the hub of the main wheel to assist in the rotation of the latter. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a front view of a wind-wheel provided with my invention. Fig. 2 is a side elevation in detail.

Similar letters and figures refer to similar parts throughout the several views.

As my invention has reference merely to improvements in augmenting the power of the wind-wheel and the connection of such improvements with the driving mechanism, and my invention is applicable to any of the

well-known types of utilizing the force of the wind, and the residue of the necessary parts are similar to those well known and in common use, I do not consider it necessary to show or describe the complete structure or any more than will illustrate the construction and operation of my invention.

My invention, while adapted to any use of a wind-wheel, is more especially advantageous in wheels utilized for operating heavy machinery, such as grinding-mills, sawmills, &c., in which an unusually large wheel has hitherto been required in order to present sufficient resisting-surface to the wind. An objection to this magnitude of the wheel, aside from its expense and great weight, has been that its movement, by reason of its size, was necessarily slow, and in order to obtain the essential velocity of the attached machinery there was required interposed series of gears to obtain the necessary speed of the machinery driven.

In my invention it is designed to utilize as the large wheel one of ordinary size and to increase its power without diminishing its velocity by supplementing the power separately furnished by it with that of auxiliary smaller wheels assisting to rotate its operative shaft, and thus dispense with the intermediate gearing aforesaid.

A represents the usual tower, having on its upper end the rigid cap B.

C is a usual turn-table, consisting of the horizontal portion 1 and upward-projecting ends 2 2 and suitably pivoted centrally upon the cap B by means of a hollow stud 3, centrally formed on the bottom of said table and inserted in a corresponding opening 4 in said cap.

D is the usual wind-wheel, rigidly seated upon its shaft E, the latter being journaled horizontally in and through the projections 2.

F is a gear-faced collar rigidly attached to the wheel end of the turn-table C, having a central opening sufficiently large to permit the passage through and free rotation within it of the wheel-shaft E.

G is the hub of the wind-wheel D, projected slightly inward.

H H H H are smaller wind-wheels of any suitable construction, pivotally seated equi-

distant on the windward face of the wheel D and carried on the radial arms J thereof.

5 K K are the shafts of the wheels H, to which the said wheels are rigidly affixed, and said shafts are projected through arms J and provided on the opposite side of the wheel D with bevel-pinions L.

10 M M M M are rotating shafts journaled, respectively, at their inner ends in the hub G, and extending radially therefrom to a point adjacent, respectively, to the pinions L and there journaled in brackets N, seated on the arms J and provided with pinions O, adapted to be engaged and actuated by the pinions L on small wind-wheel shaft, respectively. The opposite or inner end of the shaft M is provided with a bevel-pinion P, adapted to engage and traverse the gear-face formed on the outer side of the rigid collar F. As thus 20 arranged it is evident that the rotation of the small wheels H will cause the pinion P to travel around the collar F and cause the wheels H to swing around in a circle with the shafts M as a radius. As the wheels H are each secured to the larger wheel D, their rotation will thus be transferred to the larger wheels and cause it to travel faster than it would if it were not for the rotation of the smaller wheels. Consequently the speed of 30 the larger wheel can be increased without increasing its size by simply gearing the small wheels to the collar, so that passage of the wind through the vanes of the smaller wheels will cause them to swing around in a circle faster than the large wheel would turn with the wind passing through its vanes at the same rate as it passes through the small wheels.

35 R is a bevel-pinion rigidly seated on the shaft E intermediate the ends 2 of the table C and adapted to engage and actuate a similar bevel-pinion S, pivotally seated on the upper surface of the part 1 of said table and near one end of the latter. The shaft of the pinion S, which is carried with it, also carries a sprocket-wheel T, from which a sprocket-chain V communicates rotation to a sprocket-wheel W, rigidly seated on the shaft Y, journaled at its upper end to the table T and in any suitable manner at its lower end in 45 the tower A and connected in any suitable mode to the machinery to be driven.

50 The wheel D and auxiliary wheels H may be constructed of any of the usual forms.

I do not confine myself to the number of auxiliary wheels H here shown, as my invention can be utilized with a greater or less number of said wheels. 55

What I claim as my invention, and desire to secure by Letters Patent of the United States, is— 60

1. The combination of a wind-wheel D, auxiliary wind-wheels H, seated in the arms thereof and provided with shafts K and pinions L, rigid gear-collar F, shaft E through said collar, and shafts M, pivoted at one end in the hub G of wheel D and at the other end to the arm J thereof and provided with pinions P and O, substantially as shown, and for the purpose described. 65

2. The combination of the turn-table C, pivotally seated on the tower A, shaft E, journaled in said table, collar F, rigidly seated on said table around said shaft, wheel D, rigidly seated on shaft E, shafts K, journaled transversely in the arms of wheel D and provided with pinion L, auxiliary wheels H, rigidly seated on shaft L, and shaft M, journaled at one end in the hub of wheel D and at the other end to the arm of said wheel and provided with pinions O and P, substantially as shown, and for the purpose specified. 70 75 80

3. The combination of the table C, collar F, rigidly seated thereon, horizontal shaft E, journaled in said table loosely through said collar and provided with pinion R, wind-wheel D, rigidly seated on said shaft, wind-wheel H, journaled on wheel D, shaft K, provided with pinions L, shaft M, provided with pinions O and P, and mechanism, substantially as shown, for connecting pinion R with any suitable machinery, for the purpose specified. 85 90

4. In a wind-wheel, the combination of a main wind-wheel, auxiliary smaller wind-wheels journaled on the arms of said main wheel, and interposed mechanism, substantially as shown, to connect the rotation of said auxiliary wheels to that of said main wheel, for the purpose described. 95

In testimony whereof I affix my signature in presence of two witnesses. 100

WILLIAM B. MYERS.

Witnesses:

JOHN G. MANAHAN,
ADDA E. WARD.