J. DAWES.

WIND WHEEL.

APPLICATION FILED MAR. 27, 1908.

909.764.

Patented Jan. 12, 1909.

2 SHEETS—SHEET 1.

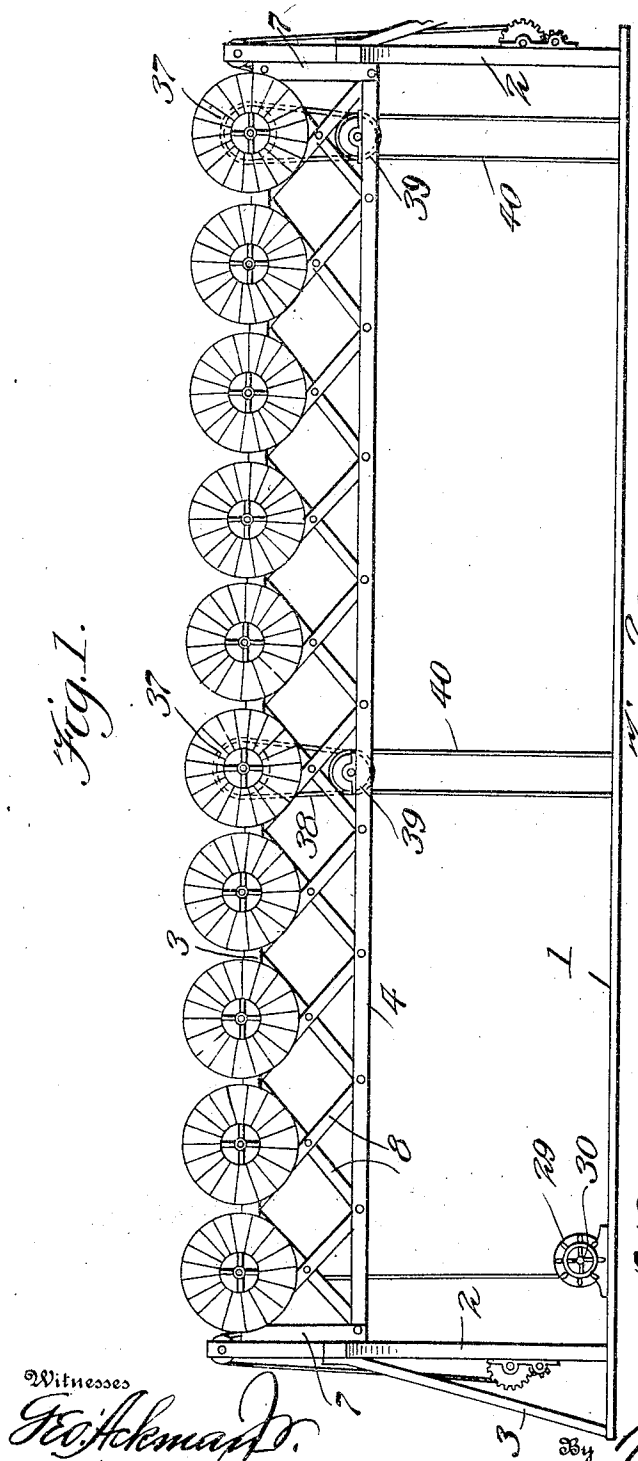


Fig. 1.

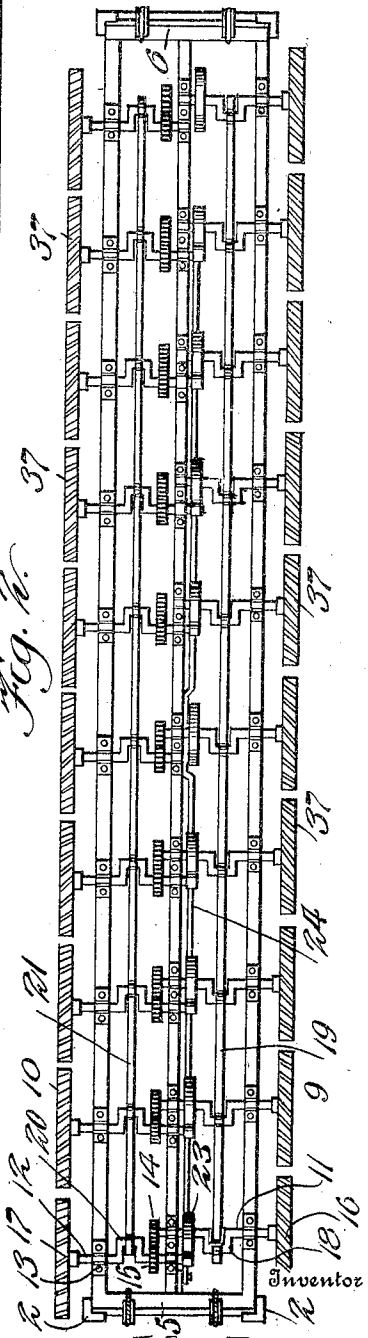


Fig. 2.

Witnesses

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Fig. 4.

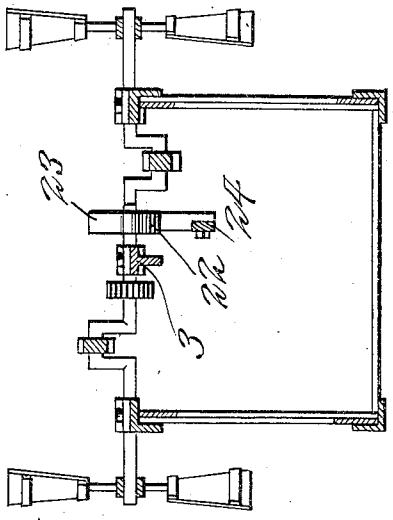
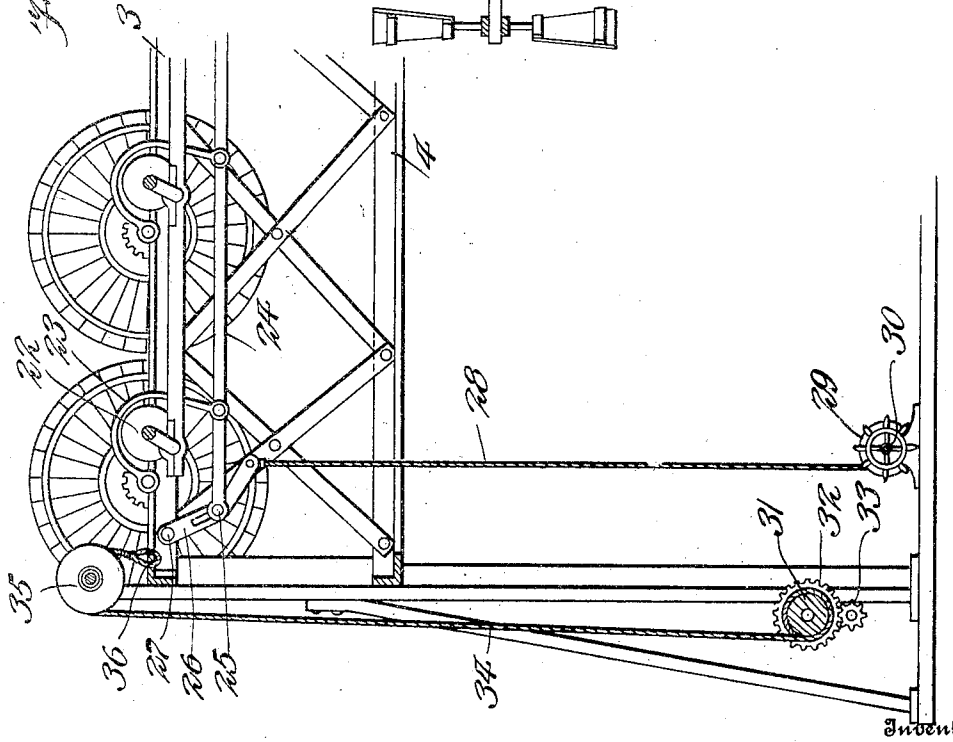


Fig. 3.



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WIND-WHEEL.

No. 909,764. Specification of Letters Patent. Patented Jan. 12, 1909.

Application filed March 27, 1908. Serial No. 423,694.

To all whom it may concern:

Be it known that I, JOHN DAWES, a citizen of the United States, residing at Jacksons Mills, in the county of Monmouth and State of New Jersey, have invented new and useful Improvements in Wind-Wheels, of which the following is a specification.

This invention relates to wind motors, the object of the invention being to provide apparatus embodying a series of wind wheels arranged in batteries and so geared together that the power of all of said wheels may be harnessed and transmitted to a single driven element or distributed to a plurality of driven elements, the mechanism embodying novel means whereby the full power of the wheels is utilized and whereby also the entire battery or batteries of wheels may be raised and lowered for the purpose of subjecting the same to greater or less currents of air and whereby also braking power may be applied to the wheels for the purpose of reducing the driving power thereof or stopping the mechanism altogether.

With the above and other objects in view, the nature of which will more fully appear as the description proceeds, the invention consists in the novel construction, combination and arrangement of parts as herein fully described, illustrated and claimed.

In the accompanying drawing:—Figure 1 is a side elevation of the complete apparatus. Fig. 2 is a plan view thereof. Fig. 3 is an enlarged vertical longitudinal section through one end of the apparatus. Fig. 4 is a vertical cross section through the adjustable frame and the mechanism mounted on and carried thereby.

The apparatus contemplated in this invention is designed to be mounted upon a suitable support at the required elevation, such as a roof of a building and for that purpose the apparatus, as a whole, is constructed to embody a base 1 of suitable width and length having extending upward from the opposite ends thereof uprights 2 arranged in parallel pairs and each preferably consists of angle iron, as shown in Fig. 2. These standards are secured fixedly to the base 1 and are further connected with the base 1 by means of inclined braces 3 to give the required rigidity to the structure.

Mounted to move up and down between and upon the standards 2 is a vertical adjustable frame comprising upper and lower sets of horizontal bars 3 and 4, respectively, corresponding sets of end cross bars 5 and 6, respectively, and corner posts 7, as clearly shown in Figs. 1 and 2. The upper and lower horizontal bars 3 and 4 are connected by means of cross diagonal braces 8 thereby giving the necessary rigidity to the vertical adjustable plane, as a whole. In the preferred embodiment of the invention, the upper and lower horizontal bars of the vertically adjustable frame are constructed of angle iron as shown in Figs. 3 and 4.

Mounted upon the vertically adjustable frame, are two series of batteries of wind wheels, 9 the one series of wheels and 10 the other series of wheels arranged at the opposite side of the frame. Each of the wheels 9 is mounted on a rotary shaft 11 while each of the wheels 10 is mounted on a rotary shaft 12, the said shafts being mounted in bearings 13 on the upper horizontal bars 3 of the frame. By reference to Fig. 2 it will be seen that the shafts are arranged in geared pairs, or in other words, the shafts are arranged sufficiently out of vertical alinement with each other to admit of the use of intermeshing spur gear wheels 14 and 15 fast on the shafts 11 and 12, respectively, whereby the adjacent shafts are permitted to rotate in opposite directions and in this connection it will be noted that the blades 16 of one set of wheels are pitched reversely to the blades 17 of the other series or battery of wheels, as clearly shown in Fig. 2, while at the same time the shafts are geared together so that the power of both shafts is utilized for driving a common element or plurality of elements, as will hereinafter appear.

The shafts 11 are provided with cranks 18 and all of said cranks are coupled together so as to rotate in unison by means of a single connecting rod 19. Likewise, the shafts 12 are provided with cranks 20 all of which are coupled together by a common connecting rod 21. This insures the simultaneous rotation of all of the shafts and by arranging the cranks of one series of shafts at the proper angle to the cranks of the other series of shafts, dead centers are avoided. One series of shafts is provided with friction or brake wheels 22 as best illustrated in Fig. 3 and in connection with said wheels, I employ brakes or friction straps 23 and connect all of said brake shoes or friction straps to a common connecting and operating rod 24. The operating rod 24 constitutes a brake beam common to all of the brake shoes and

has one end thereof pivotally connected as shown at 25 to a lever 26 fulcrumed on the vertically adjustable frame as shown at 27 and having attached to the other end thereof an operating connection 28 which extends around a drum 29 on a shaft 30, as shown in Fig. 3. The opposite end of the brake beam 24 is similarly connected to the vertically adjustable frame by a link corresponding with the upper portion of the lever 26. Thus, by winding the flexible connection 28 on the drum 29 by means of the shaft 30 all the brake shoes may be simultaneously applied to all of the shafts of the wind wheel.

The means for raising and lowering the vertically adjustable frame is best illustrated in Figs. 1 and 3, wherein it will be seen that windlasses 31 are mounted to opposite ends of the frame of the uprights and provided with winding gears 32 and 33, the latter being carried by a shaft adapted to receive a suitable winding crank, not shown. From the windlasses 31, flexible connections 34 extend upward over guide pulleys 35 and have their ends connected to the vertically adjustable frame, as shown at 36. In this way by operating the windlasses 31, the adjustable frame may be moved upward and downward and held sustained at any desired elevation to place the wind wheels in a stronger or weaker current of air according to the power required.

One or more of the wind wheel shafts may be provided with a belt pulley 37 as shown in Fig. 1 from which a driving belt 38 will lead off to a second pulley 39 journaled in bearings on the lower horizontal bars 4 of the vertically adjustable frame, while from the pulley 39 another belt 40 may be led downward to the driven element, not shown, which may consist, for example, of a dynamo or generator of any desired type. The vertical adjustment of the frame which carries the wind wheels will not interfere with the operation of the brake mechanism as the brake operating connection 28 may be wound upon or unwound from the drum 29 according to the adjustment of said vertically movable frame. Any ordinary means may be employed to take slack in the belt 40.

I claim:—

1. A wind motor comprising a stationary frame embodying angle iron standards, a horizontally disposed angle iron frame adjustable up and down and guided by said standards, means for raising and lowering said adjustable frame, a battery of wind wheels each journaled on said adjustable frame, means for coupling the shafts of said wheels together, and a driven element to which the combined power of all of said shafts may be transmitted.

2. A wind motor comprising a stationary frame embodying standards, a horizontally disposed frame adjustable up and down between said standards, means for raising and lowering said adjustable frame, a battery of wind wheels each journaled on said frame, means for coupling the shafts together for simultaneous rotation, brake shoes for each of said wheels, and a brake beam or connecting rod common to all of said brake shoes, substantially as described.

3. A wind motor comprising a stationary frame embodying fixed standards, a horizontally disposed frame adjustable vertically between said standards, means for raising and lowering said adjustable frame, a battery of wind wheels each journaled on said vertically adjustable frame, means for coupling the shafts of all of said wheels together for simultaneous rotation, friction wheels on the wind wheel shafts, brake shoes embracing said friction wheels, a common connecting rod or brake beam having all of said brake shoes attached thereto, and means for moving said brake beam to simultaneously apply all of the brake shoes, substantially as described.

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

JOHN DAWES.

Witnesses:
MATILDA H. STRAHAN,
ELIZABETH STRAHAN.