April 15, 1930. W. S. SCHLOTZHAUER 1,754,698

WIND MOTOR

Filed July 28, 1927 2 Sheets-Sheet 1

Fig. 1.

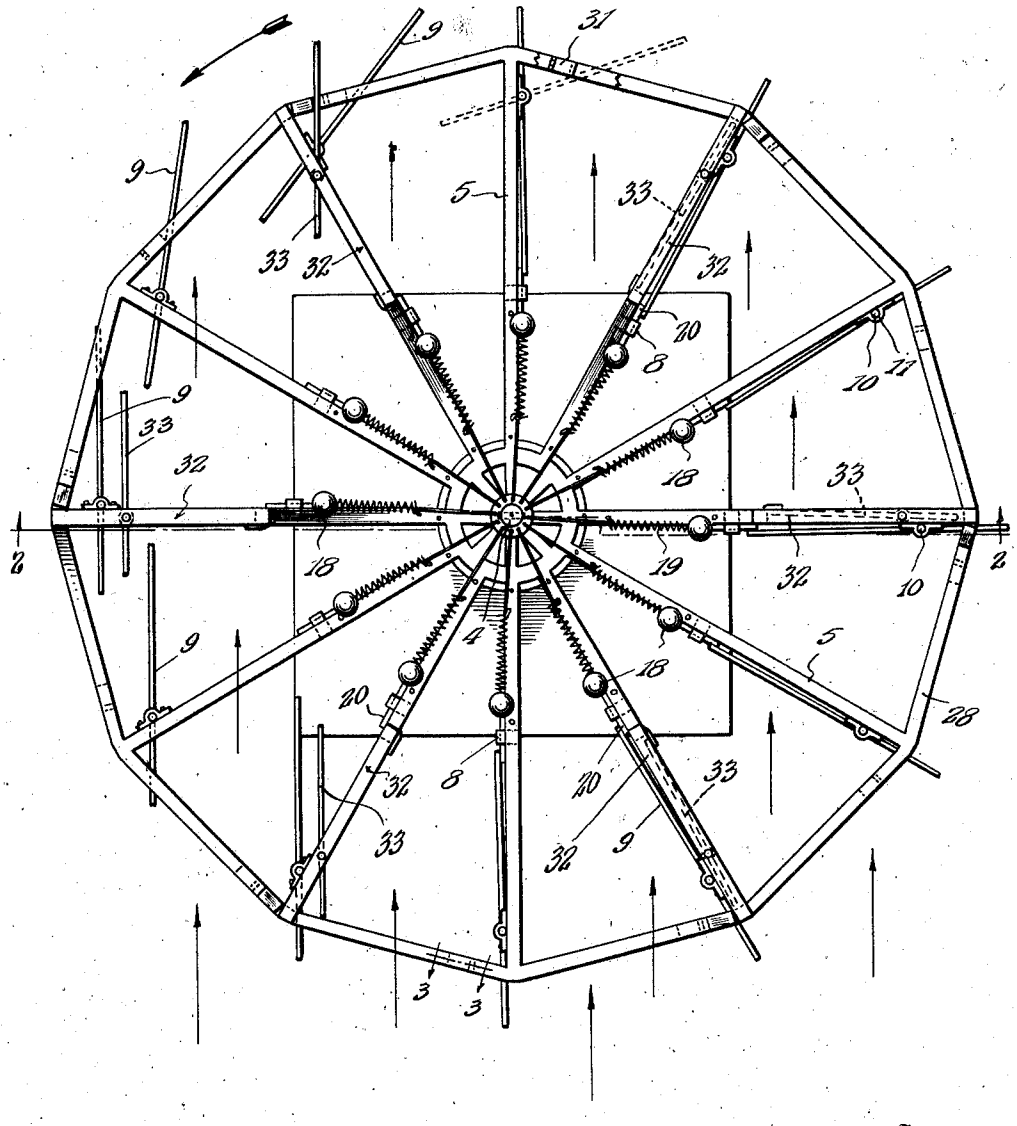
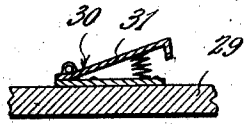


Fig. 3.



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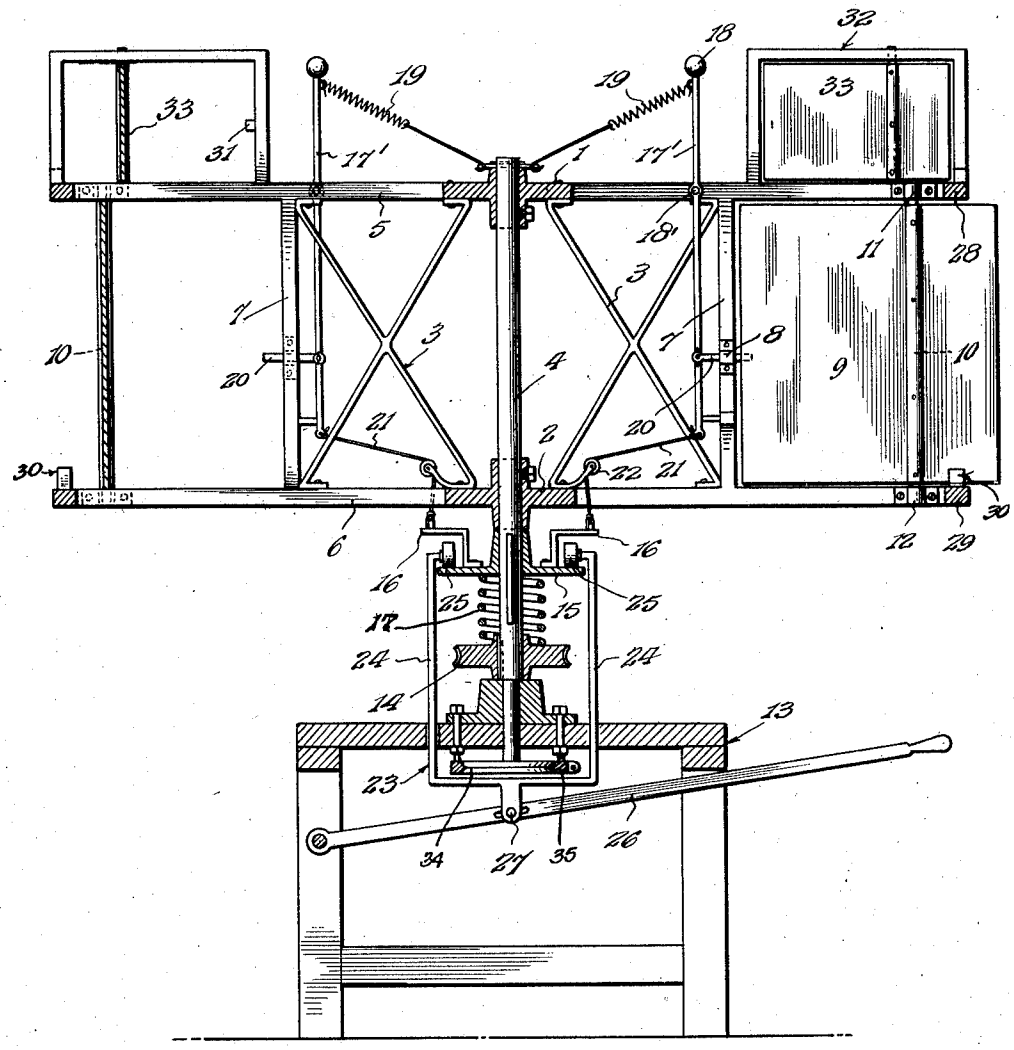
By Lacey & Lacey, Attorneys

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Fig. 2.



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UNITED STATES PATENT OFFICE

WALTER S. SCHLOTZHAUER, OF DOUGLAS, ARIZONA

WIND MOTOR

Application filed July 28, 1927. Serial No. 209,055.

The present invention is directed to improvements in wind motors.

The primary object of the invention is to provide a device of this character so construct that the vanes will be positively held in such position that their surfaces will be presented to the wind, said vanes being releasable when desired, either automatically or manually.

Another object of the invention is to provide a device of this character so constructed that should the wind reach above a certain velocity the vanes will be released so that their edges will be presented to the wind in order to prevent injury to the motor.

In the accompanying drawing:

Figure 1 is a top plan view of the device.

Figure 2 is a sectional view on line 2—2 of Figure 1.

Figure 3 is a sectional view on line 3—3 of Figure 1.

The wind motor comprises upper and lower hubs 1 and 2 maintained in spaced relation by brace members 3 of any suitable construction, said hubs being fixed upon the drive shaft 4. These hubs have radiating therefrom spokes 5 and 6, also braced by the member 3. The spokes are connected by vertical standards 7 having guides 8 carried thereby, the purpose of which will be later explained. The propelling vanes are provided with shafts 10 which are fixed thereto off center and have their ends journaled in the bearings 11 and 12 carried by the respective spokes 5 and 6. The shaft 4 has its lower end journaled in a supporting frame 13 and has fixed thereto a gear 14 of any suitable type for transmitting power. Slidably seated upon the shaft 4 is a plate 15 carrying brackets 16, there being an expansion spring 17 encircling the shaft and interposed between the gear 14 and plate.

Associated with each vane 9 is a lever 17′ pivotally connected, as at 10′ to the associated spoke 5, said levers having weights 18 upon their upper ends, coil springs 19 connecting the levers 17′ with the upper end of the shaft 4. Latch bars 20 are pivotally connected to the levers 17′ and are slidable in the guides 8, said levers having one of the ends of the cables 21 secured to their lower ends which are trained over pulleys 22 supported by the brace member 3. The other ends of the cables are secured to the brackets 16.

A yoke 23 is provided and has its arms 24 slidable in the frame 13, said arms having rollers 25 upon their upper ends for engaging the upper surface of the plate 15. A hand lever 26 is pivotally connected at one end to the frame 13 and is pivotally and slidably connected intermediate its ends, as at 27, to the yoke 23.

In the case the wind attains a speed above a predetermined point the weights 18 will, by centrifugal force, rock the levers 17′ in a direction to cause their lower ends to swing inwardly, whereupon the latch bars 20 will be slid inwardly in order that the vanes will be free to swing so that their edges will be presented to the wind. It will be of course understood that the latch bars 20 are employed for maintaining certain of the vanes with their sides presented to the wind. The spokes 5 are connected by the rim 28 and spokes 6 are connected by rim 29, and mounted upon the lower rim adjacent each vane is a latch 30 which includes a spring pressed inclined pivotally mounted plate 31, said plate serving to engage the vanes in case of reverse swinging thereof but permitting the same to ride thereover.

Mounted upon certain of the upper spokes 5 are supplemental frames 32 which pivotally support the auxiliary vanes 33, said frames having stops 31 carried thereby to limit the swinging movement of the auxiliary vanes. These vanes serve to start the device when the same stops in a calm, since they will be in a position to offer resistance to the wind and rotate the device until the vanes 9 are positioned for action by the wind. When the vanes 9 have been released by the automatic operation of the latch bar 20 and have their edges presented to the wind, and a calm occurs, the auxiliary vanes 33 will then operate to start the device when the wind again starts to blow. A drum 34 is fixed to the lower end of the shaft 4 and has engaged thereon a brake band 35 operable to prevent rotation

of the device in order that the vanes 33 which are comparatively small will not act to start the device before it is desired to do so.

When it is desired to stop the motor the lever 26 is forced downwardly, thus carrying the yoke downwardly so that the rollers carried thereby will move the plate 15 downwardly, thus drawing upon the cables to swing the levers to permit the withdrawal of the latch bars 20 from engagement with the vanes 9, thus permitting the vanes to present their edges to the wind. Any suitable means may be provided for holding the lever in its down position.

Having thus described the invention, I claim:

1. A wind motor including a drive shaft, hubs carried by the shaft, spokes carried by the hubs, standards connecting the spokes and having guides carried thereby, vanes pivotally connected between the spokes, latch bars slidable in the guides for engaging the vanes to arrest the swinging movement thereof, levers pivotally connected to certain of the spokes and with the latch bars, yieldable connections between the shaft and levers, said levers being operable by centrifugal force to withdraw the latches to permit free swinging of the vanes, and independent means for swinging the levers for disengaging the latches from the vanes.

2. A wind motor comprising a drive shaft, hubs carried by the shaft, spokes carried by the hubs, standards connecting the spokes, vanes pivotally mounted between the spokes, levers pivotally connected with certain of the spokes, latch bars pivotally connected with the levers and slidably supported by the standards, and adapted to engage the vanes to hold them in wind resisting positions, a plate yieldably seated upon the shaft, flexible connections between the plates and levers, and manually controlled means for lowering the plate to actuate the flexible connections to rock the levers, thereby sliding the latch bars from engagement with the vanes.

3. A wind motor including a drive shaft vertically spaced hubs carried by the shaft, spokes carried by the hubs, frames carried by the uppermost spokes and having stops, vanes pivotally mounted between the spokes, latch bars slidably associated with the vanes for limiting the swinging movement thereof, means for disengaging the latches from the vanes, and auxiliary vanes pivotally mounted in the frames and adapted to engage the stops to hold said auxiliary vanes in wind resisting position.

4. A wind motor including a frame, a shaft having its lower end journaled in the frame, a plate slidably and yieldably supported on the shaft, a yoke slidably associated with the frame and having rollers carried thereby for engagement with the plate, hubs carried by the shaft and having spokes carried thereby, vanes pivotally mounted between the spokes, levers pivotally supported by certain of the spokes, latch bars pivotally connected to the levers and engageable with the vanes to arrest the pivotal movement thereof in one direction, flexible connections between the plate and levers, and means for operating the yoke to shift the levers to actuate the latch bars to permit free swinging of the vanes.

In testimony whereof I affix my signature.

WALTER S. SCHLOTZHAUER.