No. 764,571. PATENTED JULY 12, 1904.

J. J. FISHER.

WIND MOTOR.

APPLICATION FILED FEB. 27, 1904.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

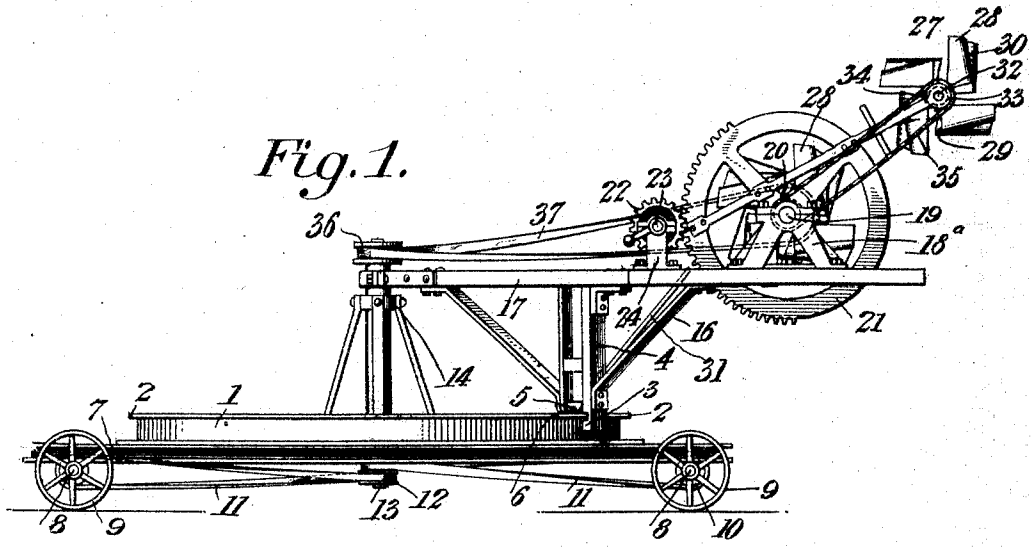
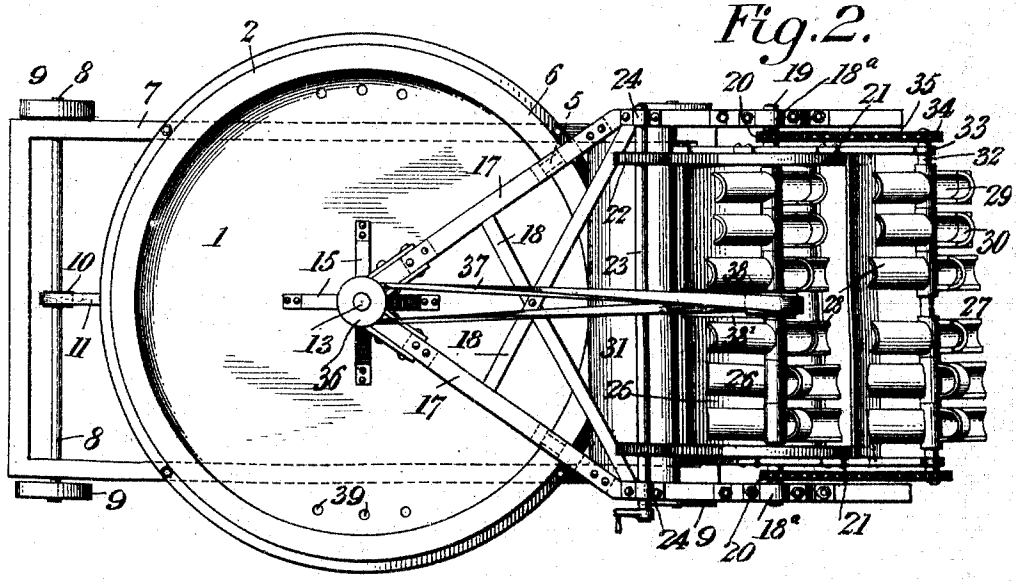


Fig. 2.



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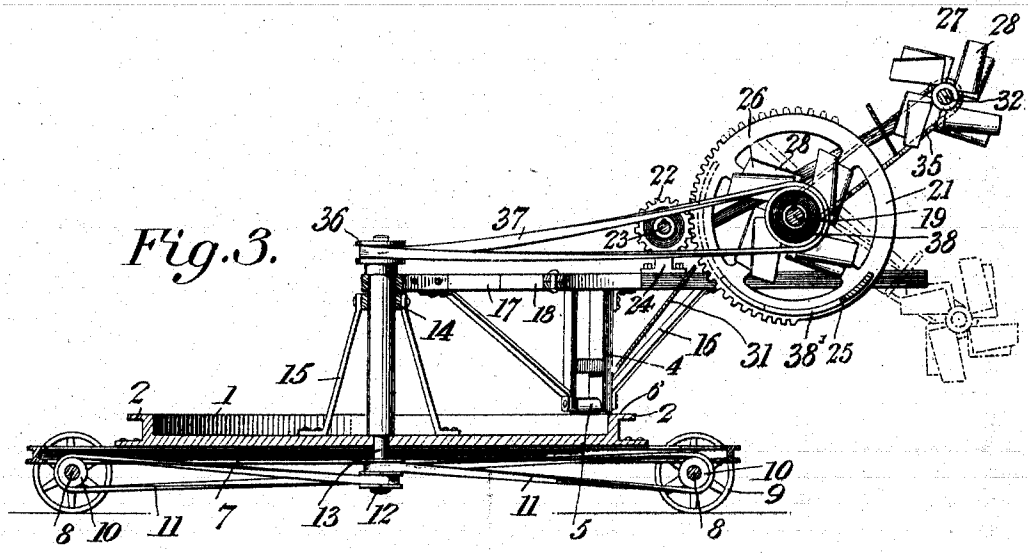
NO MODEL. 2 SHEETS—SHEET 2.

Fig. 3.



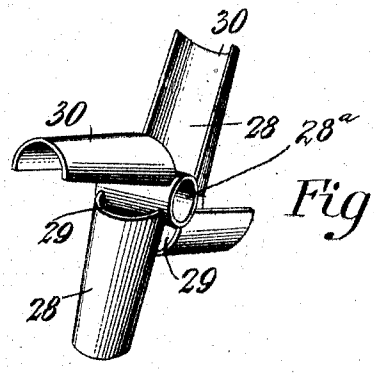


Fig. 4.

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No. 764,571. Patented July 12, 1904.

UNITED STATES PATENT OFFICE.

JOSEPH J. FISCHER, OF BELLEPLAINE, MINNESOTA, ASSIGNOR OF ONE HALF TO EDWARD EARNEST CHARD, OF BELLEPLAINE, MINNESOTA.

WIND-MOTOR.

SPECIFICATION forming part of Letters Patent No. 764,571, dated July 12, 1904.

Application filed February 27, 1904. Serial No. 195,612. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH J. FISCHER, a citizen of the United States, residing at Belleplaine, in the county of Scott and State of Minnesota, have invented a new and useful Wind-Motor, of which the following is a specification.

This invention relates to wind-motors.

The object of the invention is in a ready, practical, and feasible manner to utilize the force of the wind for propelling a vehicle over the ground and, further, by a slight change in arrangement in some of the parts of the device to adapt the same as a source of power for raising water or for doing other mechanical work common to wind-driven machines.

With the above and other objects in view, as will appear as the nature of the invention is better understood, the same consists, generally stated, in a wind-motor embodying in its construction a novel form of wind-wheel and means for utilizing the power generated from the wheels for driving the motor. It is intended to employ either pulleys or sprocket-wheels and belts or sprocket-chains to transmit motion to the various parts of the apparatus, and to avoid repetition the generic terms "belt-wheel" and "belt" will be employed to designate these parts. The motor embodies a table or platform supported upon wheels the axles of which are provided with belt-wheels around which pass belts to belt-wheels carried by the lower end of a shaft supported vertically by the table or platform and projecting through the bottom thereof, the upper end of the shaft being provided with a belt-wheel around which passes a belt to and around a belt-wheel on one of the wind-wheel shafts.

One of the novel features of this invention resides in the fact that two coöperating wind-wheels are employed, one of which, hereinafter designated the "main" wheel, operating to drive the belt connected with the vertical shaft, and the other wheel, which will hereinafter be designated the "auxiliary" wheel, being connected up with the main wheel in such manner that its power will be transmitted thereto.

A further feature of the invention is the manner of supporting the wind-wheels upon the table or platform to permit of their being shifted automatically or otherwise, so as to cause them always squarely to face the wind, and thus insure proper driving of the motor. This result is obtained either by making the table or platform circular or by providing it with a circular track upon which will run the standards supporting the framework of the wheels, said framework rotating around the table or platform with the vertical shaft as its axis or center.

A further feature of the invention is in the provision of novel means for rendering the wind-wheels inoperative when desired, and this is effected by the provision of a shield combined with the main wheel, said shield being carried by heads movable on the main-wheel shaft, the heads being rotated at will to raise the shield and at the same time to depress the auxiliary wheel, thus to throw it out of line with the wind.

Further and more specific objects and details of construction will be hereinafter fully described, and particularly pointed out in the claims.

In the accompanying drawings, forming a part of this specification, and in which like characters of reference indicate corresponding parts, there is illustrated one form of embodiment of the invention capable of carrying the same into practical operation, it being understood that the elements therein exhibited may be varied or changed as to shape, proportion, and exact manner of assemblage without departing from the spirit thereof, and in these drawings—

Figure 1 is a view in side elevation of the motor. Fig. 2 is a view in top plan. Fig. 3 is a vertical longitudinal sectional view. Fig. 4 is a detail view of one of the sections of the wind-wheel.

Referring to the drawings, 1 designates the table or platform of the motor, which may be constructed of any suitable material and be made in any shape desired. The table is provided with a circumferential flange 2 at its upper edge, which flange projects outward and is designed to be engaged by lugs or projections 3, formed on or carried by uprights

4, which support the wind-wheels and their accessories presently to be described. As before stated, it is essential that provision be made whereby the wind-wheels may rotate freely upon the table or platform in order that they may always squarely face the wind, and to effect this result the uprights 4 carry rollers 5, which bear upon the upper edge or track portion 6 of the table, and thus permit ready turning of the wind-wheels and the mechanism coacting therewith.

Secured in any suitable manner to the under side of the table or platform are bolsters 7, which project beyond the table and carry at their outer ends axles 8, upon which are mounted wheels 9 of any preferred construction and which serve to support the structure for propulsion by the wind-driven mechanism presently to be described. Each of the axles carries a belt-wheel 10, around each of which passes a belt 11, the bends or loops of the belts being passed around a belt-wheel 12, carried by the lower end of a vertical shaft 13, which is mounted for rotation in a journal or sleeve 14, supported centrally of the table or platform by inclined standards or braces 15.

Supported by the uprights 4 (which are connected and braced in any preferred manner, as by the employment of cross stay rods or braces 16) is a horizontally-disposed frame comprising two divergent members 17, the inner ends of which are suitably secured to the vertical shaft 13, the said members 17 being held from spreading and also braced to resist strain by cross-braces 18. The members 17 project some distance beyond the table or platform and carry at or near their outer ends journal-boxes 18^a, in which is journaled a shaft 19, carrying on each end a belt-wheel 20, the latter being arranged on the inner sides of the journal-boxes. Loosely mounted upon the shaft 19 on the inner sides of the journal-boxes 18^a are two open-work heads 21, the peripheries of which are toothed to be engaged by pinions 22, carried by a crank-shaft 23, which is mounted in journals 24, suitably supported upon the members 17. The heads are connected and rendered rigid by a shield 25, which, as will presently appear, operates to throw the machine out of the wind under certain conditions. This shield is normally disposed below the plane of the members 17; but upon the crank-shaft being turned in the proper direction the heads 21 are revolved upon the shaft 19, and the shield is thus raised to the position shown by dotted lines in Fig. 3, thus to shunt or cut off the wind from the wind-wheels.

Upon the shaft 19 is mounted the main wind-wheel, (designated generally 26,) this wheel, as well as the auxiliary wind-wheel 27, being composed of a plurality of propelling-blades 28, arranged in this instance in series of four, thus causing each wheel to present, in effect, a plurality of wind-wheels; but as all of the blades are rigid with the shaft supporting them the combined effect of the series of blades is the same as would result from a single wheel. As each of the blades on both wheels is of the same construction, a description of one will serve for all. Each blade is approximately scoop-shaped and has its rear end 29 open, thus to permit passage of wind to the next succeeding blade, the wind-wall 30 of the blade being disposed on a plane tangential to the axis of rotation of the supporting-shaft. The blades are secured in any suitable manner to a sleeve 28^a, there being one of these sleeves for each set of blades, and the sleeve is keyed or otherwise rigidly secured upon the shaft 19, and therefore turns therewith. In operation the wind strikes the wind-wall and escapes tangentially from the one blade to the next adjacent one, and thus rotates the wheel. To direct the wind to the blades, an inclined deflector 31 is provided, which is disposed in front of the main wind-wheel and below the plane of the shaft thereof, as shown in Fig. 3.

The shaft 32 of the auxiliary wind-wheel 27 is mounted upon bracket-arms 33, which are secured in any suitable manner to the heads 21, so that as the heads are moved through the medium of the crank-shaft 23 the auxiliary wind-wheel will be depressed and moved to the position shown by dotted lines in Fig. 3, where it will be rendered inoperative. The shaft 32 carries at each end a belt-wheel 34, around which pass belts 35 to and around the belt-wheels on the shaft 19.

The upper end of the vertical shaft 13 carries a belt-wheel 36, around which passes a belt 37 to and around a belt-wheel 38 on the shaft 19, the shield 25 being provided intermediate of its ends with a slot 38′ to receive the belt 37, when the said shield is raised to the position shown in Fig. 1.

It will be seen that through the medium of the belt 37 the power of the main wind-wheel is transmitted directly to the shaft 13 and from this through the medium of the belts 11 to the wheel-axles 8. The power from the auxiliary wind-wheel is transmitted through the medium of the belts 35 to the main wind-wheel, and by this double application of power to the axles 8 the vehicle or motor will be driven in a certain and positive manner.

Should it be desired to employ the motor for power purposes alone, such as for operating a pump or for driving a piece of machinery, the wheels 9 may be removed and the table or platform placed upon the ground, where it may be held firmly posted by pins or bars driven through openings 39 in the base.

So long as the wind-wheels are in the position shown in Fig. 1 and there is any wind the center shaft 13 will be positively driven, and owing to the manner in which the wind-wheels are supported if the direction of the wind should shift the frame supporting the

wheels will immediately be shifted to hold the wind-wheels to the wind.

It will be seen from the foregoing description that although the machine of this invention is exceedingly simple in construction it will be found entirely efficient in use and will positively secure the objects sought.

Having thus described my invention, what I claim is—

1. In a wind-motor, a wind-wheel composed of a plurality of propelling-blades, each comprising a hood-shaped structure the sides of which are arranged in approximate parallelism and the outer wall of which is tangential to its axis.

2. In a wind-motor, a wind-wheel composed of a plurality of propelling-blades, each comprising an open-ended hood-shaped structure, the sides of which are arranged in approximate parallelism and the outer wall of which is tangential to its axis.

3. In a wind-motor, a wind-wheel composed of a sleeve and a plurality of propelling-blades rigid therewith, each blade comprising a hood-shaped structure the sides of which are arranged in approximate parallelism, and the outer wall of which is tangential to its axis.

4. In a wind-motor, a base, a vertical shaft supported thereby, traction-wheels carried by the base, power-transmitting mechanism connecting the axles of the wheels with the shaft, a wheeled supporting-frame rotatable about the shaft, a main and an auxiliary wind-wheel supported by the frame, means for transmitting the motion of the auxiliary wind-wheel to the main wheel, means for transmitting the motion of the main wind-wheel to the vertical shaft, and means for transmitting the motion of the said shaft to the supporting-wheels.

5. In a wind-motor, the combination with a wheeled base, a vertical shaft supported thereby, and power-transmitting means connecting the shaft and the axles of the wheels, of a supporting-frame rotatable on the base about the shaft as its axis, an auxiliary wind-wheel, a main wind-wheel, means for transmitting the power of the auxiliary wind-wheel to the main wind-wheel, means for transmitting the power of the main wind-wheel to the vertical shaft, a shield coacting with the shaft of the main wind-wheel, and means for lifting the shield and at the same time depressing the auxiliary wind-wheel thus to throw the machine out of operation.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOSEPH J. FISCHER.

Witnesses:
E. E. CHARD,
M. E. RYAN.