

F03D

WIND MOTORS

Definition statement

This subclass/group covers:

Mechanisms for converting the energy of wind into useful mechanical power.

In particular:

Wind motors with rotation axis substantially parallel to the flow of air entering the machine

Wind motors with rotation axis substantially at right angle to the flow of air entering the machine

Other wind motors

Controlling wind motors

Adaptations of wind motors for special use

Combinations of wind motors with apparatus driven thereby

Other details, component parts, or accessories of wind motors

Relationship between large subject matter areas

[F03D](#) covers mechanisms for converting natural wind energy into useful mechanical energy, and the transmission of such mechanical energy to its point of use. Electrical power generation aspects of wind motors (e.g. dynamo-electric conversion and electric generators) are classified in [H02P](#). Arrangements or systems for supplying or distributing electric power are classified in [H02J](#). Circuit arrangements or sy

References relevant to classification in this subclass

This subclass/group does not cover:

Circuit arrangements or systems for supplying or distributing electronic power	H02J
Control or regulation of electric generators, or dynamo-electric converters	H02P

Examples of places where the subject matter of this class is covered when

specially adapted, used for a particular purpose, or incorporated in a larger system:

Electric propulsion of vehicles using wind power	B60L 8/00
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Vehicles for transportation	B60P 3/40
Rotors for airplanes and helicopters	B64C 27/00
Handling by cranes, hoisting, lifting	B66C
Machines or engines for liquids, Water turbines	F03B
Ventilators	F04D 25/08

Glossary of terms

In this subclass/group, the following terms (or expressions) are used with the meaning indicated:

Rotor	Wind engaging parts of the wind motor and the rotary member carrying them
Rotation axis	Axis of rotation of the rotor

Synonyms and Keywords

In patent documents the following expressions/words "wind turbine", and "windmill" are often used as synonyms.

In patent documents the following expressions/words "azimuth angle", and "yaw angle" are often used as synonyms.

In patent documents the following expressions/words "rotor hub", "rotor cone" and "spinner" are often used as synonyms.

F03D 1/00

Wind motors with rotation axis substantially in wind direction (controlling F03D7/00)

Definition statement

This subclass/group covers:

Wind motors having their rotation axis substantially parallel to the flow of air entering the machine. When the flow has been guided into a direction other than the original wind direction, the final flow into the wind motor should be considered for classification.

References relevant to classification in this group

This subclass/group does not cover:

Controlling of wind motors	H03D 7/00
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Solar updraft	F03G 6/045
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F03D 3/00

Wind motors with rotation axis substantially at right angle of wind direction (controlling F03D7/00)

Definition statement

This subclass/group covers:

Wind motors having their rotation axis substantially perpendicular to the flow of air entering the machine. When the flow has been guided into a direction other than the original wind direction, the final flow into the wind motor should be considered for classification.

References relevant to classification in this group

This subclass/group does not cover:

Controlling of wind motors	H03D 7/00
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F03D 3/0427

[N: with augmenting action, i.e. the guiding means intercepting an area greater than the effective rotor area (F03D3/0463, F03D3/049 take precedence)]

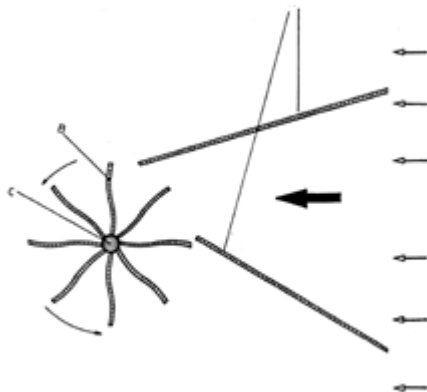
Definition statement

This subclass/group covers:

Wind motors characterised by the "effective area" of the rotor which is the cross section area of the rotor which contributes positively, i.e. causes a torque in/ to the desired rotation. The "augmenting" guiding means are those guiding means which intercept an area of flow greater than this "effective rotor area", and direct the flow into the rotor. The guiding means which fulfil this intercepting role are bounded on all sides from inlet to outlet into rotor, and therefore also accelerate or "concentrate" the flow into the rotor.

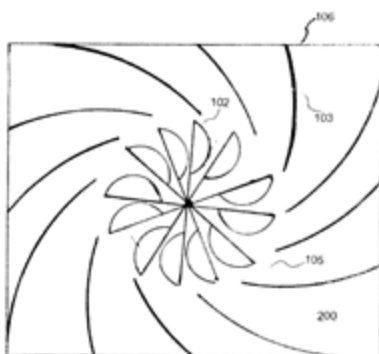
Example:

EP0226526



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GB2420831



Special rules of classification within this group

When the guiding means form also a shield means on one side of the rotor
[F03D 3/0463](#) or [F03D 3/049](#) take precedence.

F03D 3/0454

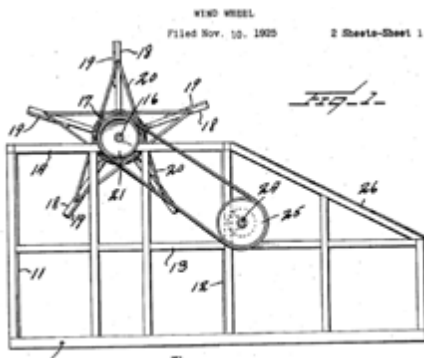
[N: and only with concentrating action, i.e. only increasing the airflow speed into the rotor ([F03D3/0463](#) takes precedence)]

Definition statement

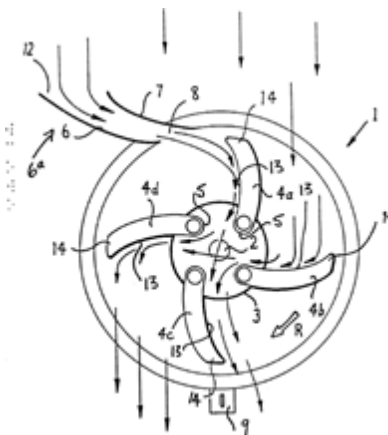
This subclass/group covers:

Wind motors with a concentrating means, i.e. the guiding means only increase the flow speed into the rotor without intercepting an area of flow greater than the effective rotor area (see definition of this effective area in [F03D 3/0427](#) entry). These concentrating guiding means can be either bounded on all sides or only on some.

US1596373



AU597755B (see channel 12)



F03D 3/067

[N: the wind engaging parts having a cyclic movement relative

to the rotor during its rotation]

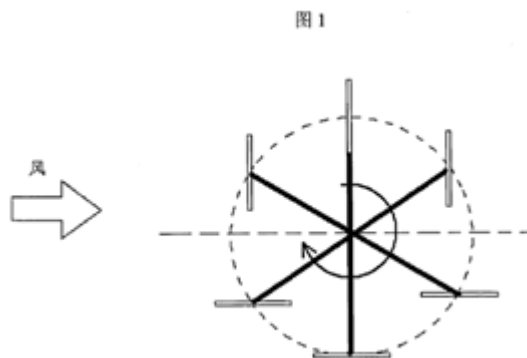
Definition statement

This subclass/group covers:

Wind motors wherein the wind engaging parts, i.e. the blades, vanes, paddles or cups, undergo a change of orientation within each cycle of rotation of the wind rotor, coming back to their original position after each revolution. This change of orientation happens of itself, passively, the direct result of the wind acting on the wind engaging parts as the relative wind direction changes with the rotation.

Example:

WO2010102517



F03D 3/068

[N: the cyclic relative movement being coupled to the movement of rotation; Controlling same, e.g. according to wind direction or force]

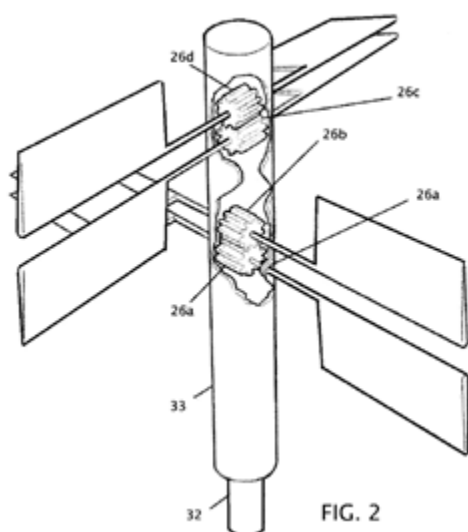
Definition statement

This subclass/group covers:

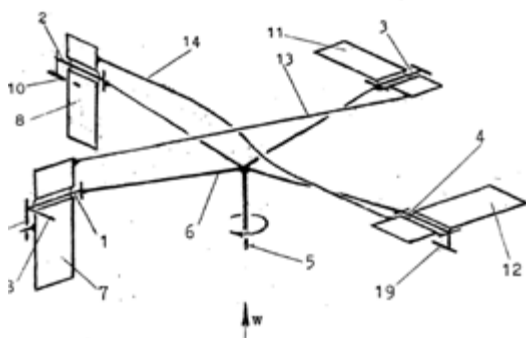
Wind motors whereby the cyclic movement of the wind engaging parts during each revolution of the rotor are forcibly and actively related to the rotor rotation, not the result of the action on the part by the wind flow itself .

Examples:

US2011091322



DE202008006980U



F03D 5/00

Other wind motors (controlling F03D7/00)

References relevant to classification in this group

This subclass/group does not cover:

Controlling of wind motors	H03D 7/00
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F03D 5/005

[N: Wind motors having a single vane which axis generate a conus or like surface]

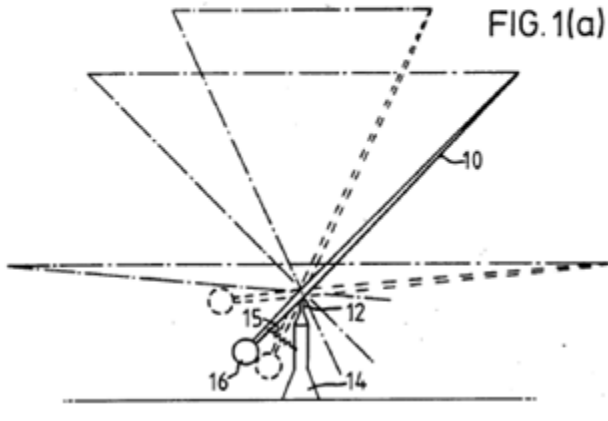
Definition statement

This subclass/group covers:

Illustrated example of subject matter classified in [F03D 5/005](#).

US4561826

U.S. Patent Dec. 31, 1985 Sheet 1 of 6 **4,561,826**



F03D 5/02

the wind-engaging parts being attached to endless chains or the like

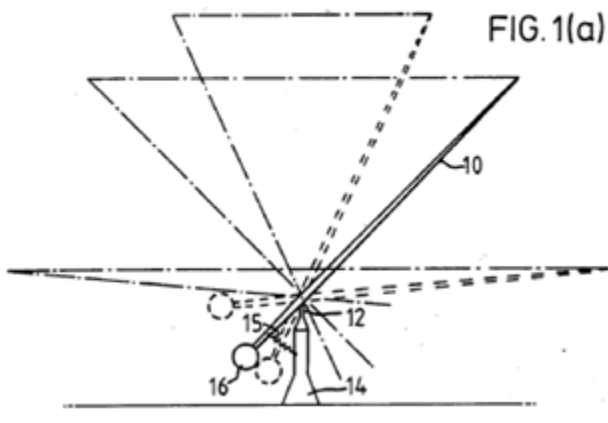
Definition statement

This subclass/group covers:

Illustrated example of subject matter classified in [F03D 5/02](#).

WO2010060911

U.S. Patent Dec. 31, 1985 Sheet 1 of 6 **4,561,826**



F03D 5/04

the wind-engaging parts being attached to carriages running on tracks or the like

Definition statement

This subclass/group covers:

Illustrated example of subject matter classified in [F03D 5/04](#).

EP078853

EP 2 078 853 A1

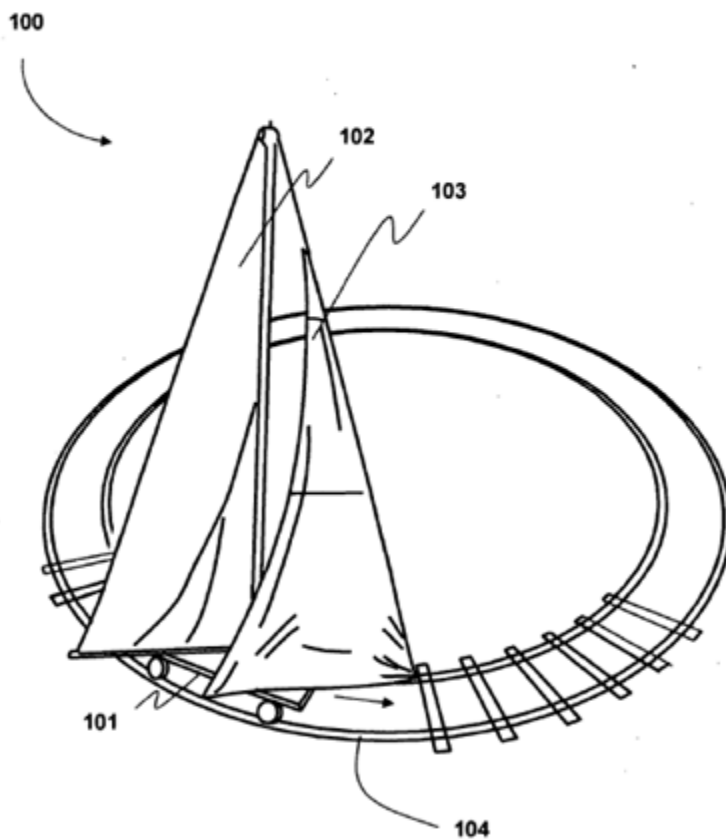


Fig. 1

F03D 5/06

the wind-engaging parts swinging to-and-fro and not rotating

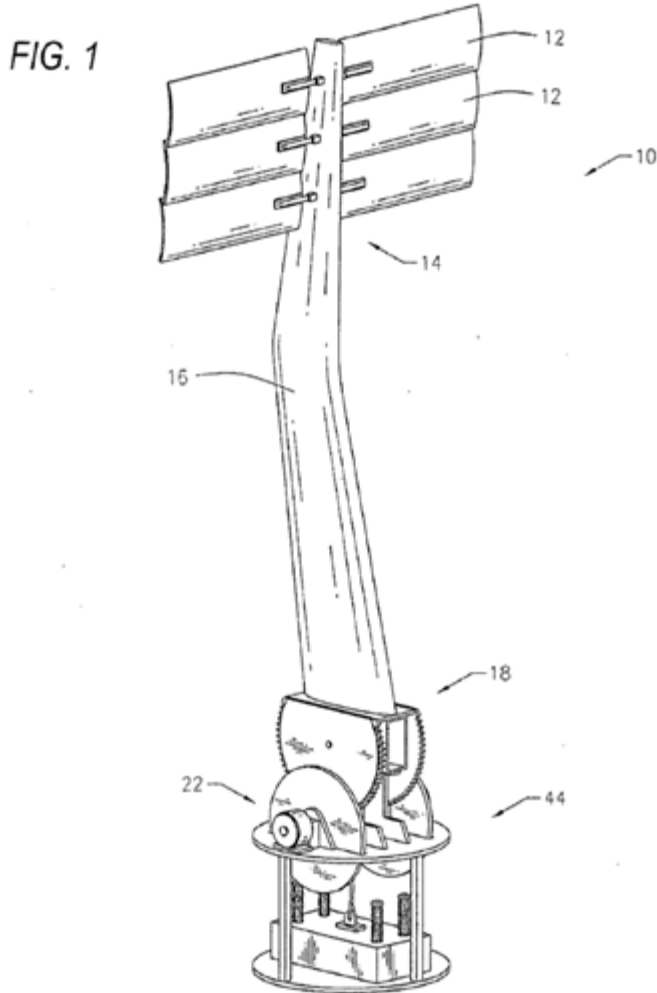
Definition statement

This subclass/group covers:

Illustrated example of subject matter classified in [F03D 5/06](#).

US2009/0224553

Patent Application Publication Sep. 10, 2009 Sheet 1 of 15 US 2009/0224553 A1



F03D 7/00

Controlling wind motors

Definition statement

This subclass/group covers:

Control of wind motors and related control arrangements.

[F03D 7/02](#) and [F03D 7/06](#) covers essentially the two main types of wind motors according groups [F03D 1/00](#) and [F03D 3/00](#). Main group [F03D 7/00](#) covers all other types of wind motors.

Subgroups [F03D 7/0204](#) to [F03D 7/0296](#) cover the purpose of the control or the type of control actuators. Subgroups under [F03D 7/04](#) cover the type of

controllers and/or the control methods.

References relevant to classification in this group

This subclass/group does not cover:

Supplying or distributing electric power	H02J
Controlling electric generators	H02P

Informative references

Attention is drawn to the following places, which may be of interest for search:

Controlling in general	G05B , G05D
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Special rules of classification within this group

Multi-aspect classification should be applied in this group. Documents should be classified in [F03D 7/02](#) for purpose of control or the type of controller and in addition according the control method or type of controller in group [F03D 7/04](#). For example, a model-based controller acting on the pitch system to reduce rotor noise should be classified in groups [F03D 7/045](#), [F03D 7/0224](#) and [F03D 7/0296](#).

F03D 9/00

Adaptations of wind motors for special use; Combinations of wind motors with apparatus driven thereby (aspects predominantly concerning driven apparatus)

Definition statement

This subclass/group covers:

Adaptations of wind motors for special use, e.g. for converting solar radiation into useful energy by producing heat or for producing heat in heat pump systems;

Combinations of wind motors with water energy converters, e.g. water turbines;

Combinations of wind motors with apparatus driven thereby, e.g. pumps or compressors, electrical generators, heat pump systems or apparatus storing energy.

References relevant to classification in this group

This subclass/group does not cover:

Examples of places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Arrangements in connection with vehicle propulsion units with power supply from wind	B60K 16/00
Propulsion of ships or other waterborne vessels by wind motors driving water-engaging propulsive elements	B63H 13/00
Pumps characterised by combination with wind motors	F04B 17/02

Informative references

Attention is drawn to the following places, which may be of interest for search:

Structural association of electric generator and wind motor	H02K 7/18
Supplying or distributing electric power, Grid connection	H02J
Systems for storing electric energy	H02J 15/00

F03D 11/00

Details, component parts, or accessories not provided for in, or of interest apart from, the preceding groups

Informative references

Attention is drawn to the following places, which may be of interest for search:

Cleaning in general	B08B
Cooling of machines	F01P

Shafts and Bearings per se	F16C
Gearing per se	F16H
Warning lights	F21S 8/00Q2
Investigating strength properties of materials	G01N 3/00
Wind / Weather forecasting	G01W
Cabling / Lighting protection	H02G

F03D 11/04

Mounting structures

Definition statement

This subclass/group covers:

The structures onto which the wind motors are mounted.

References relevant to classification in this group

This subclass/group does not cover:

Process of mounting the wind motors or their structures	F03D 1/001
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Offshore structures	E02B
Foundations	E02D 27/00
Masts/Towers in general	E04H 12/00

Special rules of classification within this group

Use codes [F05B 2240/90](#) for particular types of structures.

