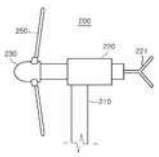
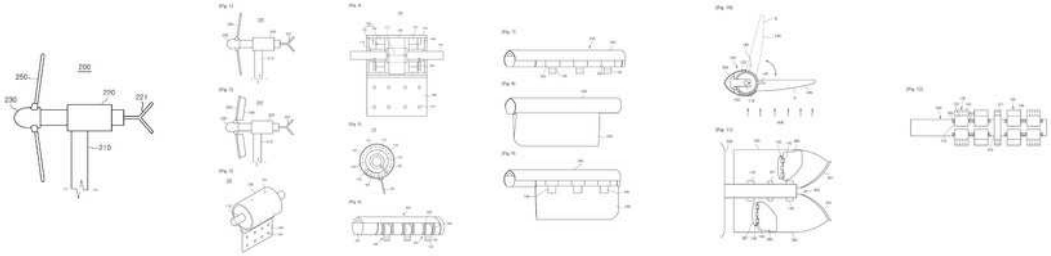
**125 filtered results for ( (power)/TI/AB/IW/CLMS/DESC/ODES/OBJ/ADB/ICLM/KEYW/TX AND (generat+ OR converter OR turbine)/TI/AB/IW/CLMS/DESC/ODES/OBJ/ADB/ICLM/KEYW/TX AND (helical)/TI/AB/IW/CLMS/DESC/ODES/OBJ/ADB/ICLM/KEYW/TX AND ("360")/TI/AB/IW/CLMS/DESC/ODES/OBJ/ADB/ICLM/KEYW/TX ) AND (F03D)/IPC - Collection: FAMPAT**

| # | Title | Publication number | 1st app. date | Applicant/Assignee | 1st publ. date | Publ. date |
|---|---|---|---|---|---|---|
| 1. | Blade angle control apparatus of wind **power generator** and wind **power generator** having same | KR101314996 | **2013-05-29** | KIM JINHWAN;Kim, Jin Hwan KIM, Jinhwan | 2013-10-04 | 2013-10-04 |

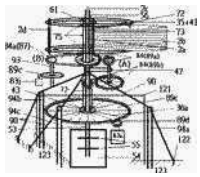
The present invention relates to an apparatus for controlling a blade angle of a wind **power generator** according to wind velocity, and a wind **power generator** having the same, the apparatus comprising: a shaft; a housing provided to enable the rotation of the shaft; and a spring having ends fixed respectively to the shaft and the housing to store elastic energy through the relative rotation of the shaft and the housing, and enables the relative rotation in the reverse direction so as to restore the shift and the housing to the original states when the **power** necessary for the relative rotation is released, wherein one of the shaft and the housing is fixed at a blade provision unit provided to rotate the blade by using wind pressure and the other is fixed at the blade, so as to control an area of the blade for receiving the wind pressure according the strength of the wind velocity by using the elastic force of the spring.

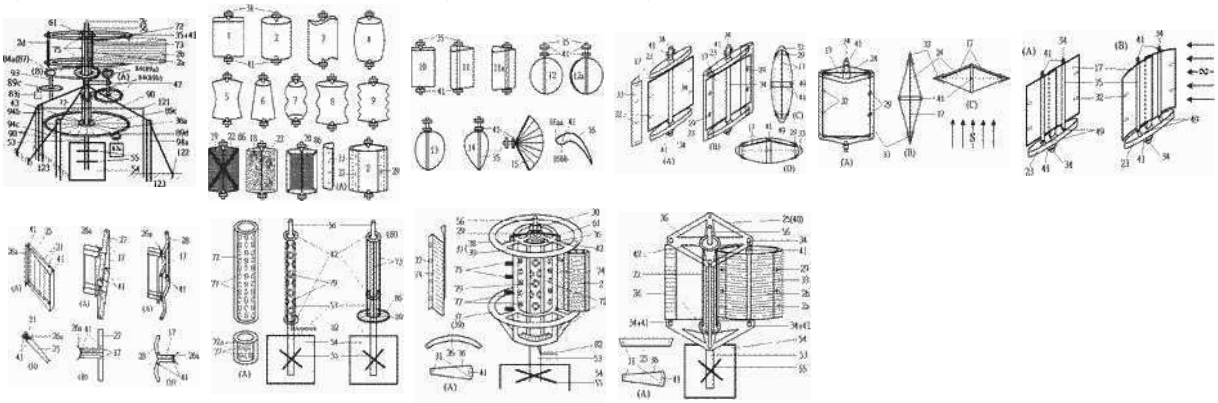




| 2. | Structure improvement of wind-driven **generator** | CN202645874 | **2012-03-09** | ZHONG QIANLIN | 2013-01-02 | 2013-01-02 |
|---|---|---|---|---|---|---|

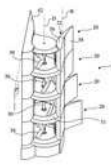
The utility model provides the structure improvement of a wind-driven **generator**, which comprises a blade structure, an operation mechanism, a speed changing unit, a matched **generator** and the like. Firstly, a blade is improved to be a pillar with a bearing and can be rotated on its own along with the wind or by a motor. When the blade is rotated to be at the downwind side, the entire blade bears a downwind maximum rotational urging force. When the blade is rotated to be at the headwind side, the blade is driven by wind **power** or by a motor to rotate. Thus, the side edge of the blade, instead of the entire blade, bears the rotational urging force. The rotational resistance against the wind is lowered suddenly, so that the utilization rate of wind **power** is improved. Secondly, an original heavy change gear set is improved to be lowered in weight, so that the burden is relieved. Thus, the blade can be driven to rotate even at a low wind speed, while the blade is fully loaded at the low wind speed simultaneously. Then a novel **power generator**, which is high in wind **power** utilization efficiency, is re-designed to match with the above structure, such as a multi-level pole type **generator**, a multi-level tube type **generator**, a multi-level sleeved type **generator**, a multi-level horizontal tube type **generator**, a multi-level disc type **generator**, a multi-set paralleled cage type **generator**, or **generators** of other types. In this way, the output of **generated** electricity is increased. By being matched with a spring type non-segmented variable speed gear and an automatic control unit, the **generator generates** less amount of electricity at a low wind **power**. Stronger wind **power**, larger output of **generated** electricity. Thus, the wind-driven **generator** fully utilizes wind **power** and the rotating speed of the **generator** is automatically controlled according to the wind speed, the rotating speed or the applied voltage so as to stabilize the **power** output. The conventional complicated **power** conversion system is no longer adopted and the cost is lowered. The above improved structure can be adapted on land, in an offshore area, on a ship, on a dock, on a raft and in a river, a lack or a desert, and is more suitable for a vertical shaft type wind-driven **generator** and a horizontal shaft type wind-driven **generator**. Due to the adoption of the improved structure, tough restrictions of a conventional wind-driven **generator** are greatly relieved, so that the utilization rate of wind **power generation** is greatly improved Thus, the structure improvement of the wind-driven **generator** enables wind **power generation** to be more popular.

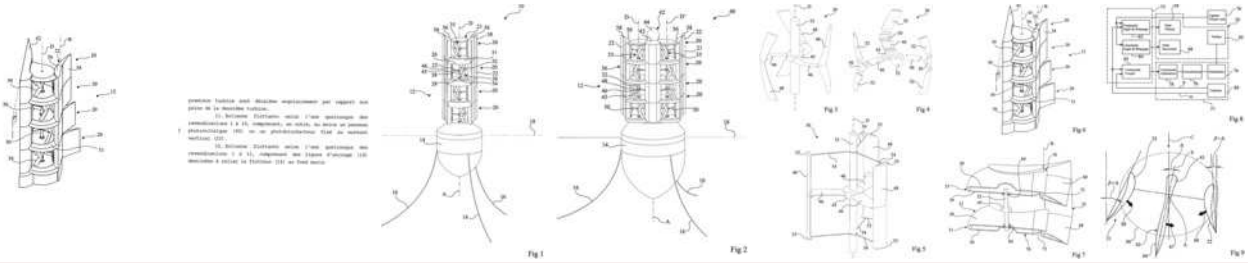




| 3. | Floating wind **turbine** comprising transverse-flow turbines with aerodynamic regulation | WO2013175123 | **2012-05-22** | CNRS - CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE* | 2013-11-28 | 2013-11-28 |
|---|---|---|---|---|---|---|

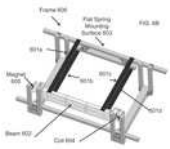
The invention relates to a floating wind **turbine** (10) comprising a float(14) and a **turbine** engine (12) resting on the float, the **turbine** engine (12) comprising first and second columns (35) of transverse-flow turbines (30) and a structure (21) for holding the turbines, the holding structure comprising, for each pair of adjacent turbines comprising a **turbine** of the first column and a **turbine** of the second column, a central vertical upright (42) between the turbines, and lateral vertical uprights on the side of the turbines of said pair opposite the central upright, the central upright extending upwards, in the wind stream direction, by a projecting part (44), called a stem, said stem comprising, for each pair of adjacent turbines, two vertical mobile flaps (68) called stem flaps.

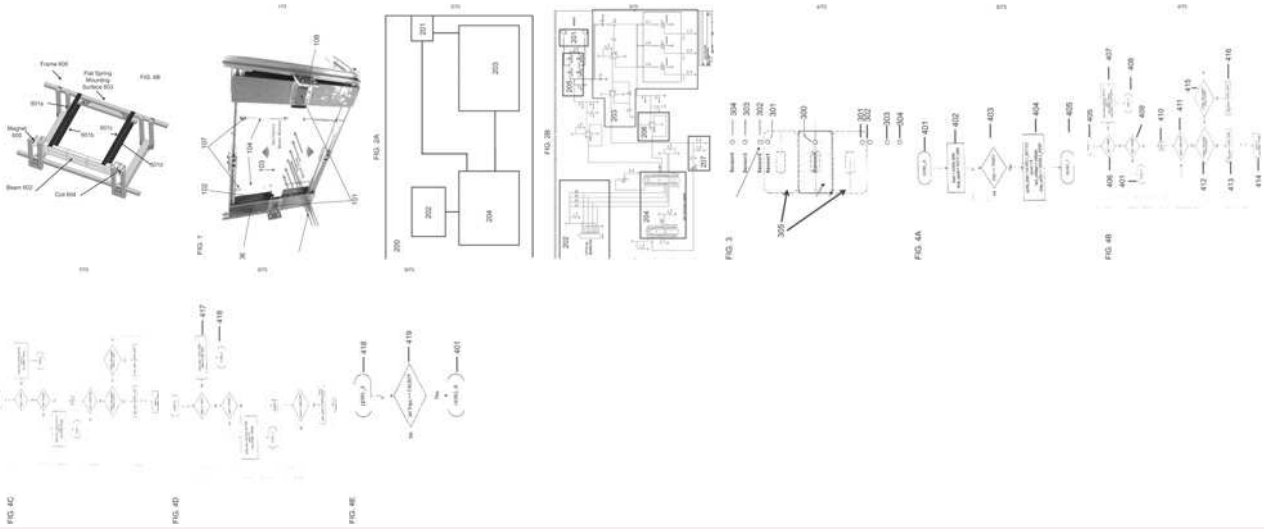




4. Improvements for a non-rotating wind energy **generator** WO2015020887 **2014-07-31** NORTHEASTERN UNIVERSITY* 2015-02-12 2015-02-12

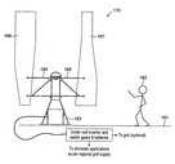
Aspects of the invention relate to a control system for a non-rotating wind energy **generator**. The control system can comprise a sensor that senses at least one of: an amplitude of oscillation of a bluff body of the non-rotating wind energy **generator**, a **power** output of a linear alternator system of the non-rotating wind energy **generator**, a voltage output of the linear alternator system of the non-rotating wind energy **generator**, and a current output of the linear alternator system of the non-rotating wind energy **generator**. Additionally, the control system can comprise a damper that applies a damping force to the bluff body based in part on at least one of the amplitude, the voltage output, the current output, and the **power** output.

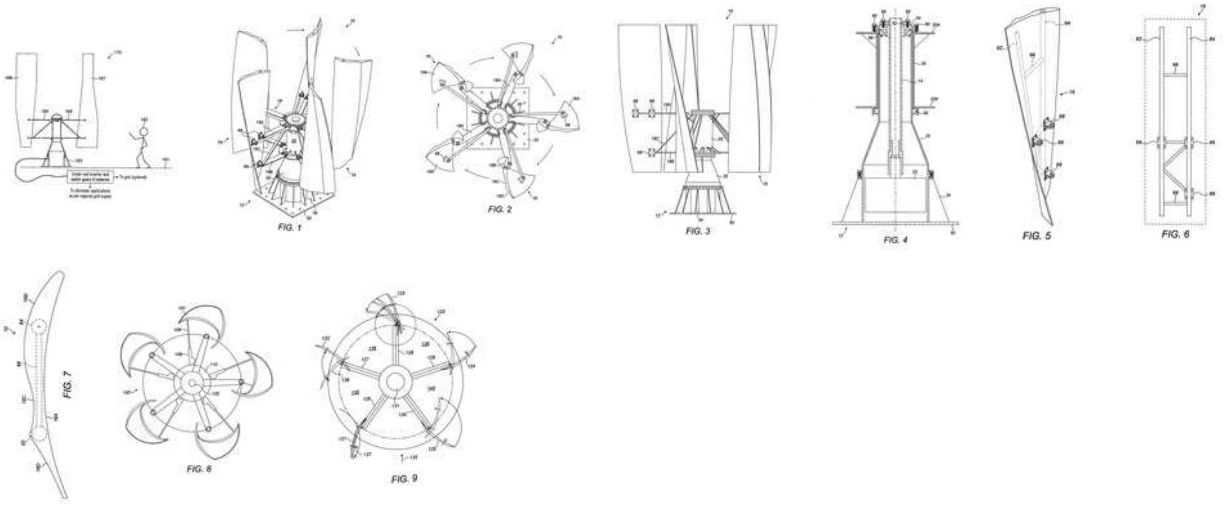




5. Vertical axis wind **turbine** WO2014033473 **2013-08-30** ADVANCE WINDPOWER* 2014-03-06 2014-03-06

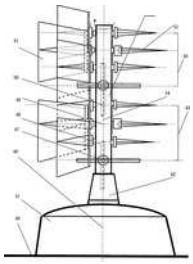
A toroidal vertical axis wind **turbine** apparatus (10) has a shaft (14) vertically mounted in a support (12) providing for rotation of the vertically mounted shaft (14) about its longitudinal axis, and a plurality of vertically oriented elongate **turbine** blades (16), each vertically oriented elongate **turbine** blade (16) having a length and a width, and a length- wise warp which extends along at least a substantial part of the length of the **turbine** blade (16), wherein each vertically oriented elongate **turbine** blade (16) is mounted upon the vertically mounted shaft (14) by support arms (18) such that the vertically oriented elongate **turbine** blades (16) are mutually spaced and outwardly spaced from the vertically mounted shaft (14) such that when contacted by wind, the plurality of vertically oriented elongate **turbine** blades (16) move around a toroidal path and cause axial rotation of the vertically mounted shaft.

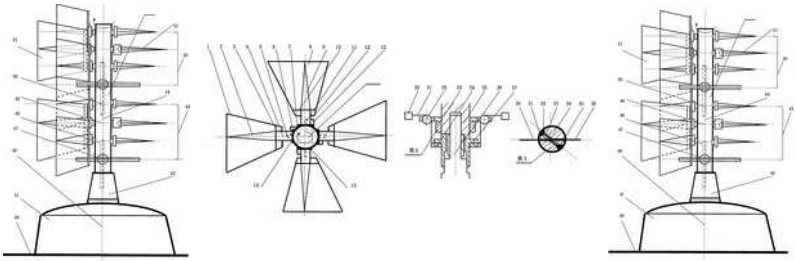




6. Tree-shaped wind **power generation** assembly CN103629052 **2013-12-04** Zhu Hua 2014-03-12 2014-03-12

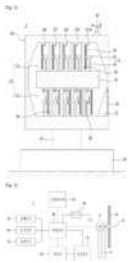
The invention discloses a tree-shaped wind **power generation** assembly, which consists of a Mongolian yurt-style plant, a transmission shaft, a supporting structure, fulcrum shafts, windiness blades, a transmission mechanism, a controller, a clutch and a vertical **generator** erection bridge plate. The Mongolian yurt-style plant is used for installing and managing the **power generation** assembly; the windiness blades is used for inducing wind **power**; the transmission shaft is used for transmitting torque; the controller and the clutch are used for controlling the operation of **generators**. The tree-shaped wind **power generation** assembly can be built on wind **power**-rich lands, such as bare hills and mountains, mountain tops, highways and railways and beside rivers and lakes, also can be built in wind **power**-rich water sides or shallow water, such as sea islands, coasts, beaches and the like, and also can be built on roofs. A **power** plant cab be built in a manner that multiple vertical **generators** are driven by using one tree-shaped wind **power generation** assembly, and the multiple tree-shaped wind **power generation** assemblies can form a **power generation** zone to supply **generated** energy of night wind **power** to night electric equipment, or supply the supply **generated** energy of the night wind **power** to rectification and energy storage **power** plants.

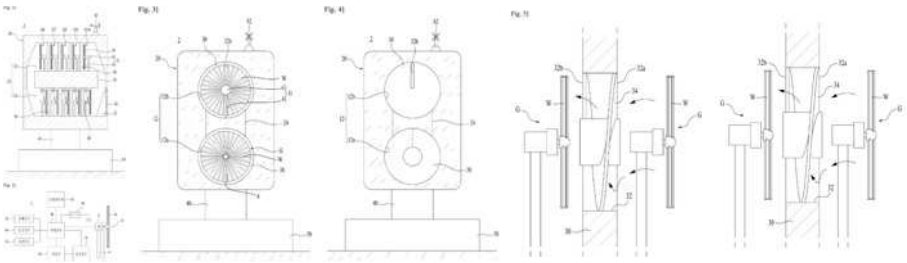




7. Wind **power generation** apparatus KR101266576 **2012-08-13** KIM YOUNG SHIL;KIM YOUNGSHIL 2013-05-22 2013-05-22

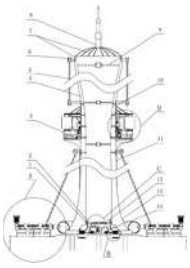
The present invention relates to a wind **power generation** apparatus. According to the present invention, a rotating blade that is rotated by wind **power** is provided on one side of a nacelle which is supported by a tower and disposed at a predetermined height from the ground surface, and wind **power generators** are driven by the rotation of the rotating blade. The wind **power generators** are disposed in a row within a wind guide structure in which a wind passage is formed, and the wind passage is formed in a circulation structure connecting a first floor space with a second floor space. Thus, the wind guide structure is used to guide the inflow and circulation of wind, and rotating blades of the multiple wind **power generators** disposed in a passage are rotated by using the wind during the guiding of the wind so that **power** can be **generated**.

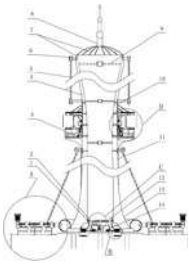


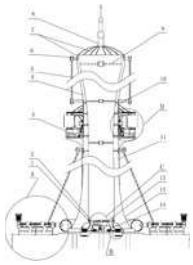


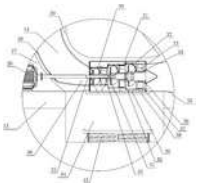
| | | | | | | |
|---|---|---|---|---|---|---|
| 8. | Optimization and integration system for wind and light auxiliary heat **power** mechanism solar tower-type **power** output | CN102410141 | **2011-10-25** | WUXI C SOLAR NEW ENERGY TECHNOLOGY* | 2012-04-11 | 2012-04-11 |

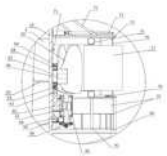
The invention relates to a **power** output optimization and integration system in multiple core technologies of a purification solar air heat collecting and flow storage subsystem, a solar tower pipe flow-type air **turbine generator** set subsystem, a solar tower hot air flow auxiliary heating subsystem, a resistance circulation shaftless wind **power generating** subsystem and a solar air flow guide functional tower subsystem, in particular to a wind and light auxiliary heat **power** mechanism solar tower-type **power** output optimization and integration system which comprises a solar tower body, a steel guy cable fastening piece, a steel guy cable, an anti-seismic and anti-cracking protection cover, a lightning-protection anti-collision device, a wheel-type support ring, a steel cylinder ring, a drain pipe, a plane base station in the solar tower, a solar tower base, an upper pulling hot air channel, a mechanical and operating room, a variable speed motor, a resistance air regulating cover, a solartower hot air auxiliary heating subsystem, a purification solar air heat collecting and flow storage subsystem, a solar pipe flow-type air **turbine generator** set subsystem and a resistance circulationshaftless wind **power generating** subsystem.

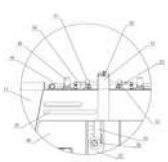


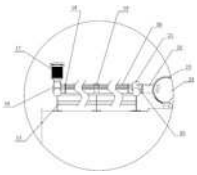


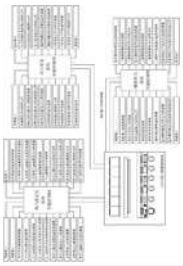






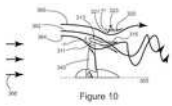


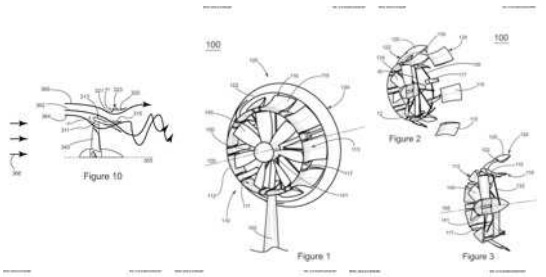


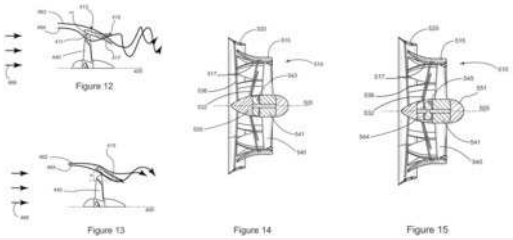


| | | | | | | |
|---|---|---|---|---|---|---|
| 9. | Fluid **turbine** with variable pitch shroud segments | CA2831395 | **2012-03-30** | FLODESIGN WIND TURBINE* | 2012-10-04 | 2012-10-04 |

One or more variable pitch airfoils in fluid communication with a rotor of a fluid **turbine** can control the amount of energy directed to the rotor, and further control the amount of energy **generated** by the **turbine**. Varying the pitch of the airfoils may provide a means of controlling the **power** output of a fluid **turbine** without the need to control the pitch of the rotor blades, and may further provide a means of mitigating the effects of wind shear on the rotor. Variable pitch airfoils may also include a means of controlling the active **power**, reactive **power** and SCADA, of a group of fluid turbines.

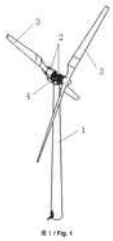


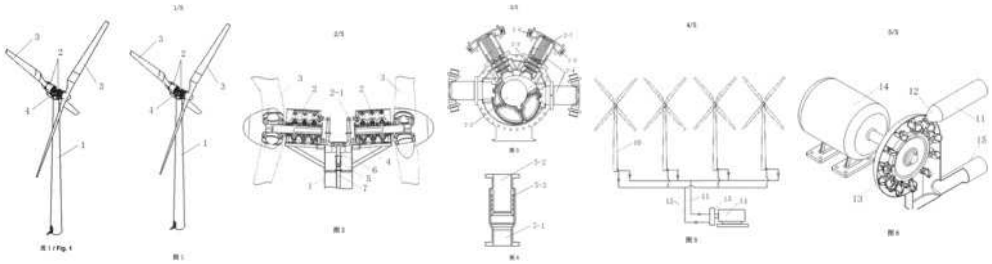



10. Wind energy collection device and wind **power generation** system thereof CN102384035 **2011-10-14** ZHU YONGBO 2012-03-21 2012-03-21

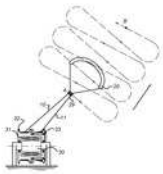
A wind energy collection device and a wind **power generation** system thereof comprise a cylindrical or truss-type tower body (1) erected on the ground. Two water pumps (2) operating independently are mounted back to back at the top of the tower body. Driving rotary shafts (2-1) of the two water pumps each have a wind **turbine** (3) mounted at one end. The rotation directions of the two wind turbines are opposite to each other. High pressure water outlet pipelines of the two water pumps converge and are then connected to a high pressure water delivery main pipe (11). One end of the high pressure water delivery main pipe is provided with a flow-fixed nozzle (12). A high-speed water flow sprayed out of the nozzle drives a water **turbine** (13) to rotate. The water **turbine** then drives a **generator** (14) to **generate** electricity. The wind energy collection device has a simple structure and a high wind energy utilization rate. The volume of the water pump and the flow of the nozzle of the water **turbine** in the wind **power generation** system are both fixed, so as to ensure that the total resistance coefficient of the whole water transmission system is constant, and therefore make the ratio of the rotation speed of the driving rotary shafts of the water pumps to the wind speed be constant, thereby enabling the wind energy conversion efficiency of the wind **turbine** to reach the highest value for different wind speeds.

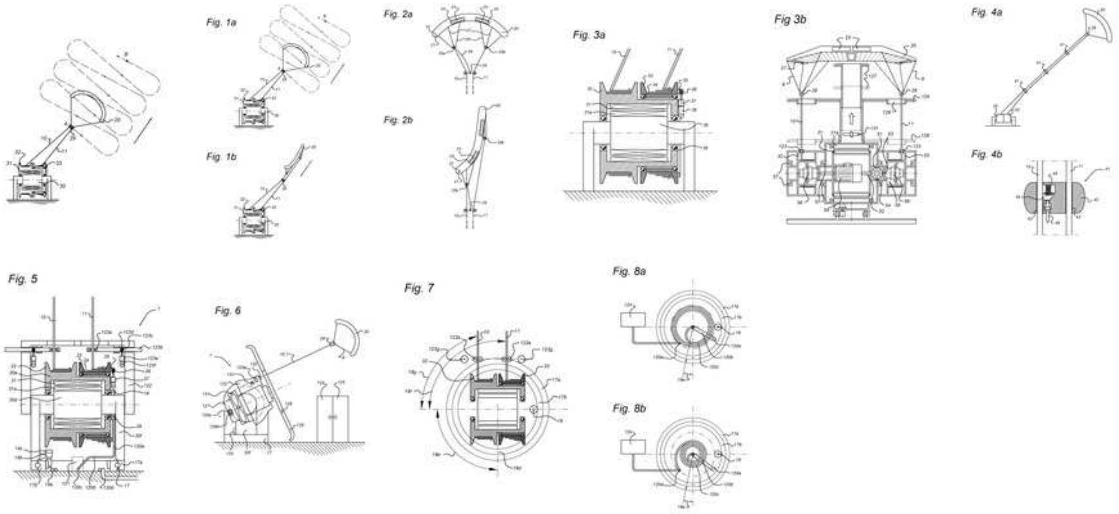




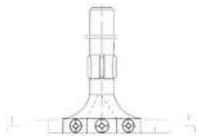
11. Kite **power** system WO2013147600 **2013-03-27** E KITE HOLDING* KITE HOLDING 2013-10-03 2013-10-03

Kite **power** system comprising a ground control unit with a **generator** (30), and a kite connected to the **generator** (30) via at least two main traction cables (10, 11). A rotor part (31) of the **generator** (30) comprises a winch pulley (32, 33) for each of the at least two main traction cables (10, 11), and each of the winch pulleys (32, 33) is indirectly mechanically connected to the **generator** (30). A further aspect relates to a kite for use in a kite **power generation** system, having an airfoil shaped body (20) with one or more air filling apertures (23) in a leading edge part of the airfoil shaped body (20). At least two main traction cables (10, 11) are connected to the airfoil shaped body (20), which further comprises an additional filling aperture (21) in a side part of the airfoil shaped body (20).

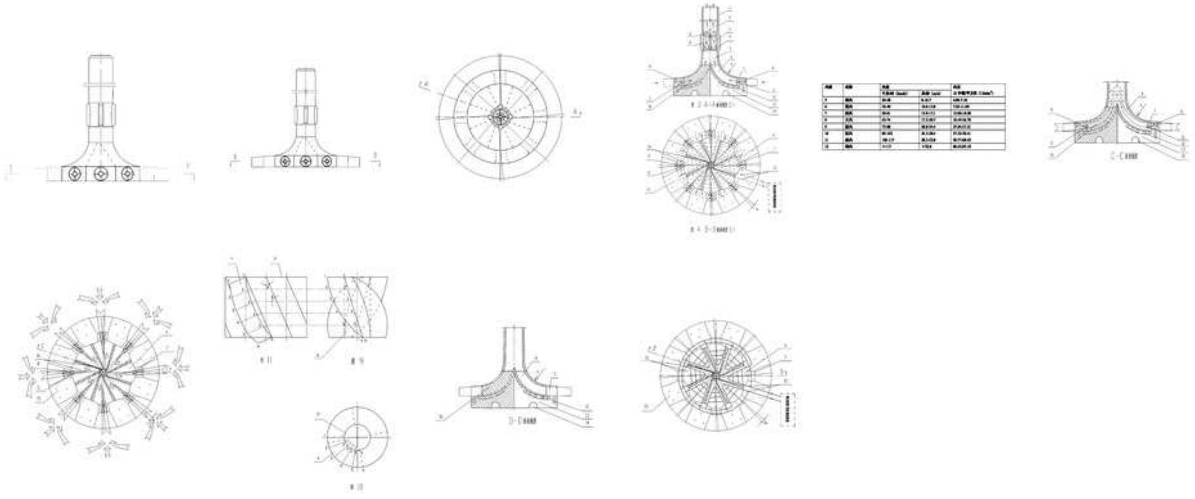




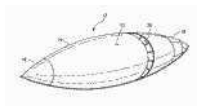
12. Atmosphere pressure difference wind **power** efficient integrated **power generation** device and efficient integration method — CN103388560 — **2012-05-10** — SUO ZENGZHI — 2013-11-13 — 2013-11-13



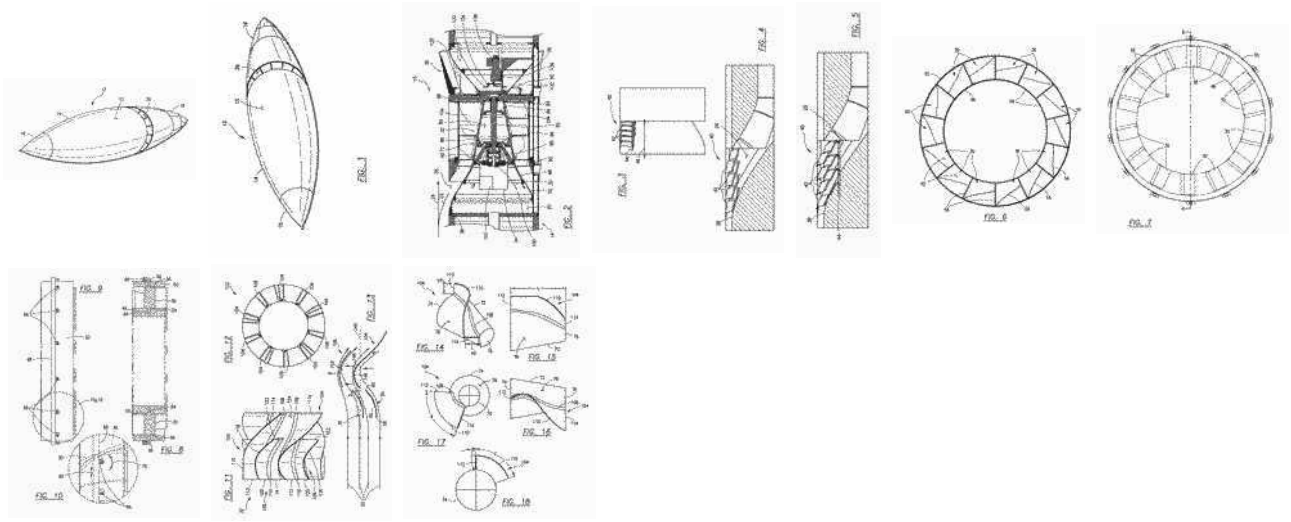
The invention discloses an atmosphere pressure difference wind **power** efficient integrated **power generation** device and an efficient integration method. The atmosphere pressure difference wind **power** efficient integrated **power generation** device comprises a wind guiding tower pipe, wherein the wind guiding tower pipe is internally provided with a pipe section of a narrow pipe, a universal flow guide chamber is connected with the bottom part of the wind guiding tower pipe, a wind inlet of the universal flow guide chamber is provided with a narrow pipe wind inlet duct, a wind outlet of the universal flow guide chamber is communicated with the wind guiding tower pipe, a narrow pipe effect structure is formed, the bottom part of the universal flow guide chamber is provided with a heating chamber and a heating device, and a shaft-type **helical** impeller is arranged in the narrow pipe and is connected with a **power generator** unit. Under the action of atmosphere pressure difference and the auxiliary heating of solar energy and terrestrial heat, wind can be **generated** in the wind guiding tower pipe, the wind in different wind directions can be subjected to flow guide and wind direction correction through the universal flow guide chamber, the wind direction interference can be removed, the character of natural wind can be changed, high-speed wind can be **generated** by utilizing a narrow pipe effect, the high-speed wind can act on the shaft-type **helical** impeller, the windage area can be increased, the action time of the wind can be prolonged, the wind energy utilization rate can be increased, and efficient integrated **power generation** can be realized by driving a **power generator**. According to the atmosphere pressure difference wind **power** efficient integrated **power generation** device disclosed by the invention, zero resource consumption can be realized, the **power generation** efficiency is high, the building and running cost is low, the structure is simple, industrialization is easy to realize, and large, medium and small-sized **power** stations can be built.



13. Ram air **turbine** electrical **power generating** apparatus with adjustable exhaust panel — US20120301273 — **2011-05-24** — ADVANCED TECHNOLOGIES* — 2012-11-29 — 2012-11-29

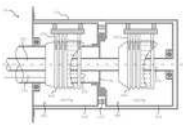


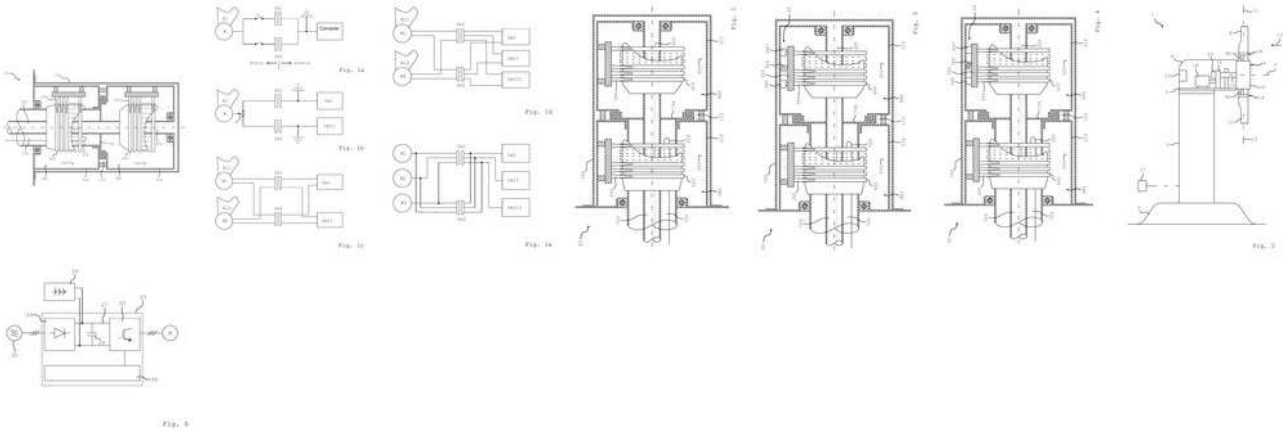
An adjustable exhaust apparatus for use with a pod having a pod housing formed with at least one exhaust opening comprises a number of exhaust panels each hinged to the pod housing in position to move between a closed position in which the at least one exhaust opening is sealed, and an open position in which the exhaust panels are oriented at up to about a 30° angle relative to the pod housing. The exhaust panels, when in the open position, are effective to create a negative pressure within at least the aft portion of the pod housing to draw air into the pod and to assists in maintaining or at least avoiding an appreciable drop in the kinetic energy of an air stream moving through the pod interior.



14. Redundant pitch system WO2011110429 **2011-02-24** SSB WIND SYSTEMS* 2011-09-15 2011-09-15

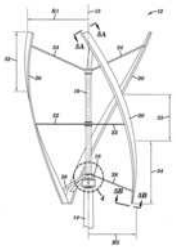
A pitch system for a wind **power** installation (1) comprising at least one electrically driven pitch drive (18, 19), which is associated with each rotor blade of the installation and has at least one electric motor (M), which is arranged in a rotating part of the installation (1), for blade adjustments, and a **power** and control unit which is associated with the motor (M) and has line connections (520) for transmission of **power** and control data from the **power** and control unit to the motor (M) and vice versa, wherein the line connections (520) are passed via a rotating bushing (Se1), which is arranged at a connecting point between the rotating part and an axially adjacent stationary region, and wherein the system has a further rotating bushing (Se2), which operates mechanically and electrically separately from the first rotating bushing (Se1) and is connected or can be connected to the **power** and control unit and to the motor (M), in order in this way to maintain reliable transmission of the **power** and control data if the first rotating bushing (Se1) fails.

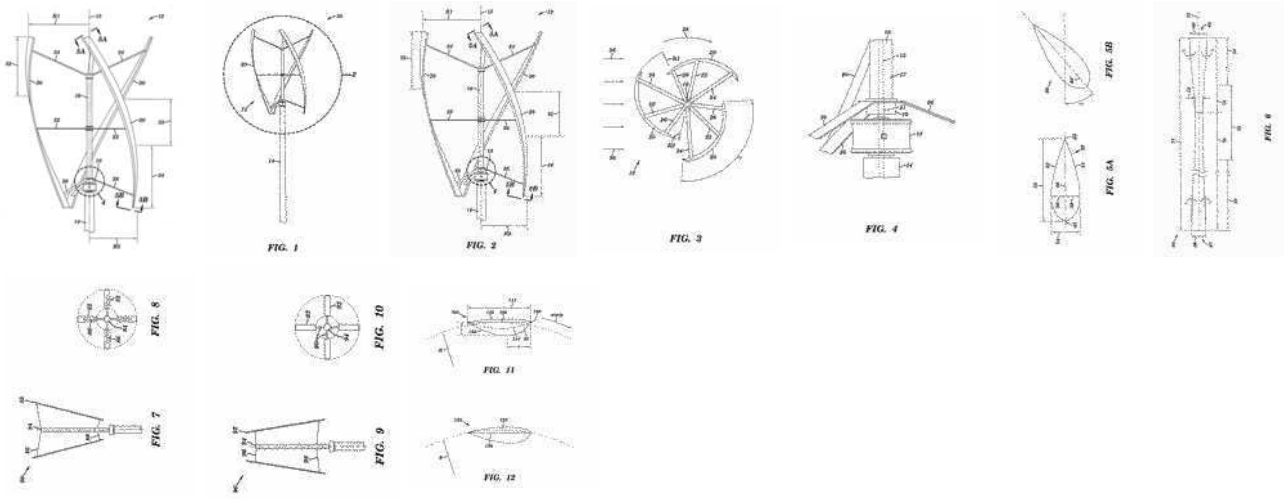




15. Wind **turbine** blade and **turbine** rotor US20110171025 **2011-01-11** WIND PRODUCTS* 2011-07-14 2011-07-14

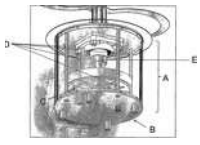
Wind **turbine** rotors (12, 80, 90, 212) and wind **turbine** blades (20, 82, 92, 220) having the startup capability of a drag-type **turbine** and the increased tip speed of a lift-type **turbine** are provided. The rotor (12, 80, 90, 212) includes a plurality of elongated blades (20, 82, 92, 220), each of the blades having a first portion (32, 232) mounted to a mast (26, 84, 94, 216) at a first radial distance from the mast and a second portion (34, 234) mounted to the mast at a second radial distance from the mast, less than the first radial distance. Each blade (20, 220) includes a first chord length (66) and a second chord length (68), and may include a third chord length (70) between the first and second chord length. The blades (20, 220) may be substantially straight or **helical**.

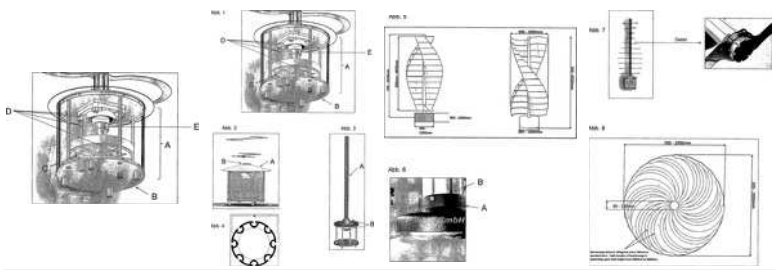





16. 0.5-5 kw vertically oriented wind **power**, the gear driven by a wind **generator** free pmg 2-blade with a 18° - **360**° helix windsail windless condition is directly. DE202012010744 **2012-11-09** MRT WIND* 2013-03-07 2013-03-07

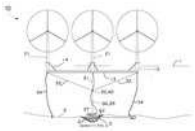
For a vertical wind **turbine** 0.5-5 kW with low **power**, 18° of each comprising two blades with a **helical** shape in **360**° - floor, which has a Mast the 3-phase, inner rotor **generator** operates free PMG or outer gear.

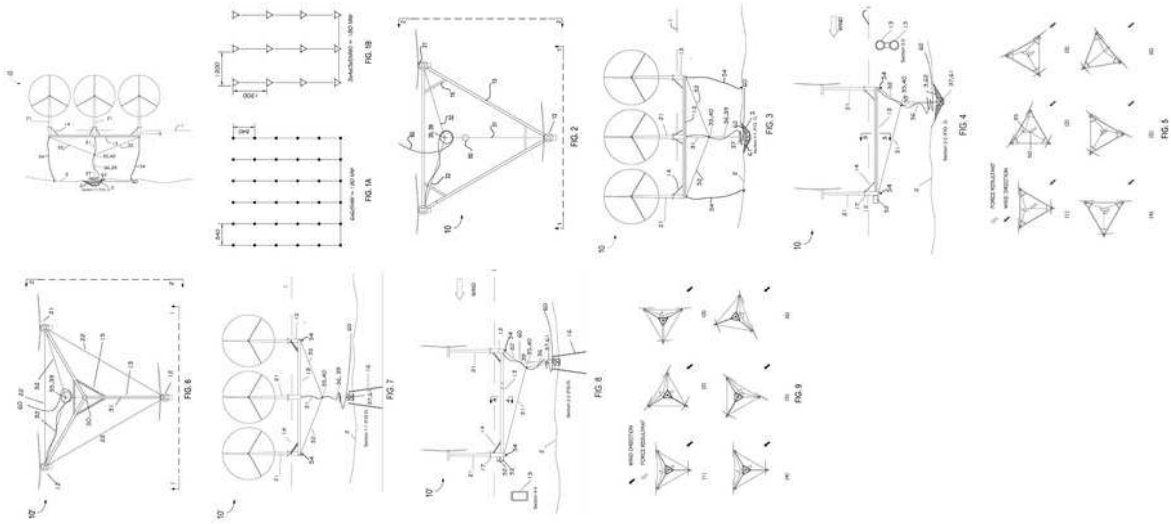




| | | | | | | |
|---|---|---|---|---|---|---|
| 17. | Wind tracing, rotational, semi-submerged raft for wind **power generation** and a construction method thereof | CN105240221 | **2014-07-08** | CBJ OCEAN PLATFORM ENGINEERING GUANGDONG CBJ OCEAN ENGINEERING* | 2016-01-13 | 2016-01-13 |

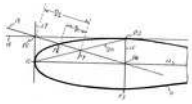
Disclosed are a semi-submersible raft wind **power generation** unit and a construction method therefor. The raft wind **power generation** unit includes at least three floaters (12) and at least three wind turbines (21) configured to be placed on the floaters (12). The raft is configured to turn about a vertical axis and be fixed to a seabed (2) by a mooring line (36). A force resultant from an incoming wind load passes closely around the center of geometry of the raft, which is a distance away from the center of rotation of the raft so that a yaw moment about the center of rotation is created that rotates the raft until the force resultant passes through the center of geometry and center of rotation.

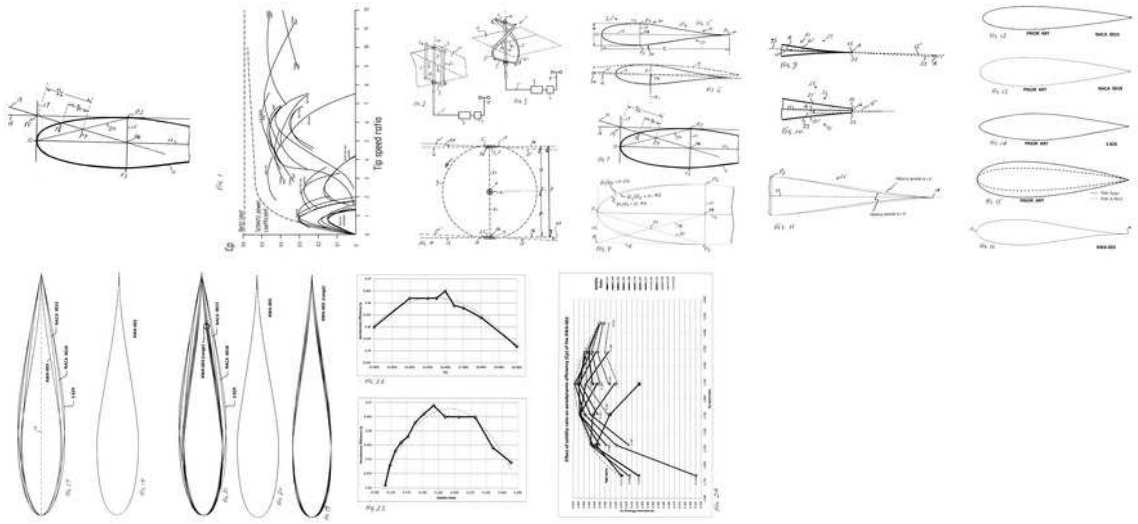




| | | | | | | |
|---|---|---|---|---|---|---|
| 18. | Vertical axis wind **turbine** rotor and aerofoil | GB201402529 | **2014-02-13** | LM WIND POWER* WIND POWER X X WIND POWER | 2014-04-02 | 2014-04-02 |

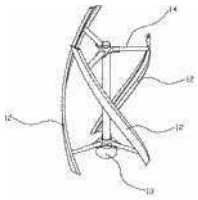
A vertical axis wind **turbine** comprises a symmetric aerofoil having a concavely curved tail portion defining a trailing edge angle of between 0° and 5° on either side of the chord, a maximum thickness centre point between 26% and 34% of the length of the chord from the leading edge, a leading edge curvature ratio (D1/D2) from 0.42 to 0.50, and a ratio of maximum thickness to chord length T/C from 0.12 to 0.19, preferably 0.16. Advantageously the rotor may have **helical** blades defining a cylindrical swept envelope with a positive angle of attack and a solidity ratio NC/D from 0.125 to 0.270, and is governed at a tip speed ratio from 2.25 to 4.00.

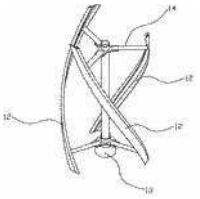
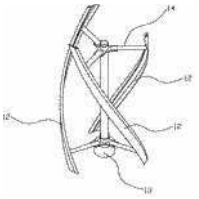
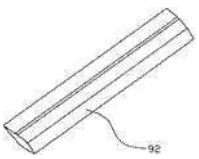
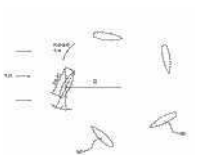
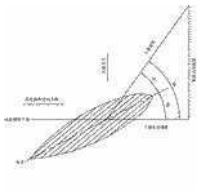
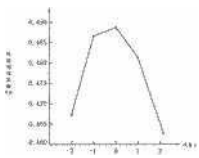
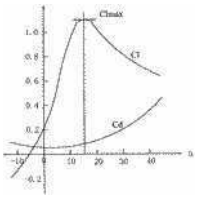
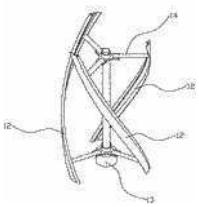
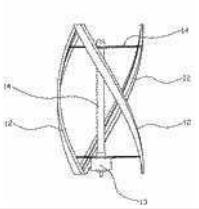
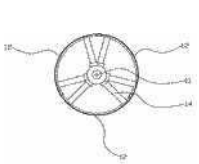




19. Wind **power generator** with vertical shaft CN202140253 **2011-06-03** Yi Bing 2012-02-08 2012-02-08

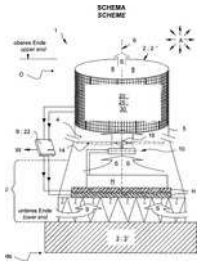
The utility model is applicable for the field of wind **power generators** and provides a wind **power generator** with a vertical shaft. The wind **power generator** comprises a longitudinal central shaft and at least two fan blades, wherein the fan blades are axially arranged along the central shaft and are bent into a spiral shape, a **generator** is coaxially arranged on the central shaft, the fan blades are connected with the central shaft by cross beams, the fan blades surround to form a **360**-degree wind wheel, and the plan view of the wind wheel is circular. In the utility model, as the spiral fan blades are adopted to form the **360**-degree wind wheel, and the plan view of the wind wheel is circular, the wind wheel can receive wind at **360** degrees, so that the fan blades always have an optimum angle of attack when the wind wheel rotates, the wind wheel is convenient to start at a low wind speed, the possibility of the stopping of rotation of the wind wheel under the same condition is avoided, the **generator** can **generate** electricity at a lower wind speed, and the problems of the reduced output **power** and easiness for the stopping of rotation at the lower wind speed caused by the change of the angle of attack due to the rotation of the wind wheel at the low wind speed of the traditional straight plate type fan blade are solved.

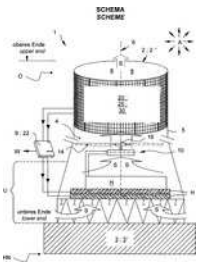
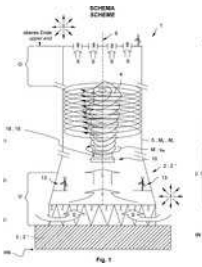
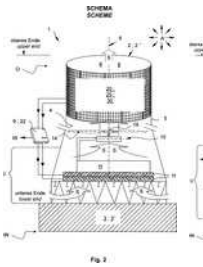
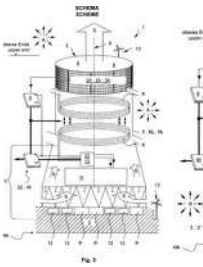
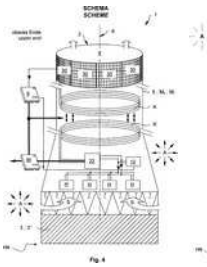
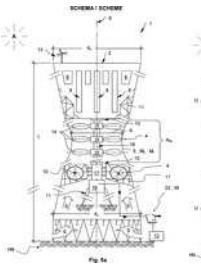
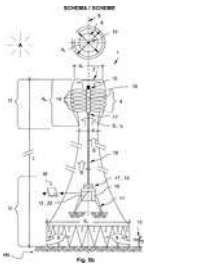
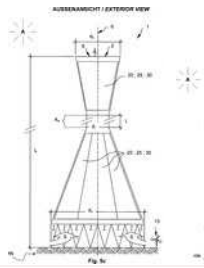
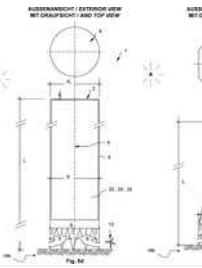
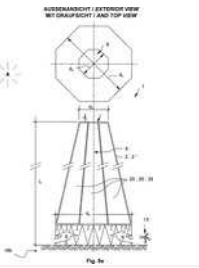


20. **Power** plant or energy transducer used as e.g. solar chimney **power** plant installed in e.g. lake used in e.g. commercial field, has solar modules/photovoltaic modules that are formed as mono-or-polycrystalline cells or solar panel film DE102012017707 **2012-09-07** DIETZ VOLKER 2014-03-13 2014-03-13

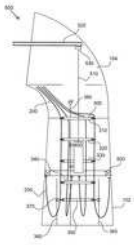
The **power** plant or energy transducer (1) has chimney (2) and hollow tower (2") through which the medium flow (S) of air or gas medium is obtained in the interior. The solar modules (20) and/or photovoltaic modules are formed as mono-or-polycrystalline cells or as solar panel film (25) for performing the sun radiation on the medium. A rotor or **turbine** (4) is fastened on the hub (19). The solar module and/or photovoltaic module are optionally provided with a flow or air sensor (13). An independent claim is included for a method for energy transformation of **power** plant or energy transducer.

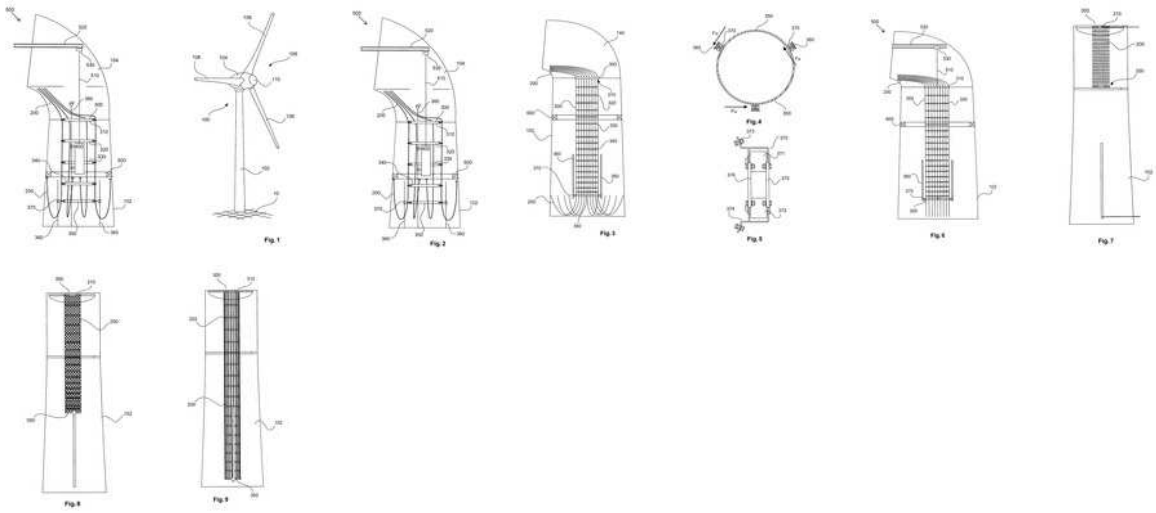


| | | | | | | |
|---|---|---|---|---|---|---|
| 21. | Wind **turbine** | CA2917777 | **2013-07-30** | THIS PROPERTY RIGHT OF CROW WOBBEN PROPERTIES* WOBBEN PROPERTIES WOBBEN PROPERTIES | 2015-02-05 | 2015-02-05 |

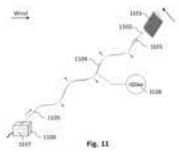
The invention relates to a wind **turbine**, comprising a tower (102) having a longitudinal axis, a nacelle (104) on the tower, a plurality of **power** cables (200), which extend into the tower (102) from the nacelle (104), and a transport unit (500). The transport unit (500) is fastened within the nacelle (104) and is used to transport loads (400) within the tower (102) to the nacelle (104). The transport unit (500) has a cable-guiding unit (300) having a plurality of rings (310 - 350), wherein the **power** cables (200) are fastened to the circumference of the rings (310-350), so that a region in the interior of the rings (310-350) is kept clear for the transport of the load (400). A topmost ring (310) is fastened onto the nacelle (104), and a bottommost ring (350) is fastened in or on the tower (102) in a rotationally fixed manner. The bottommost ring (350) has a rotationally fixed guide (**360**) along the longitudinal axis of the tower.

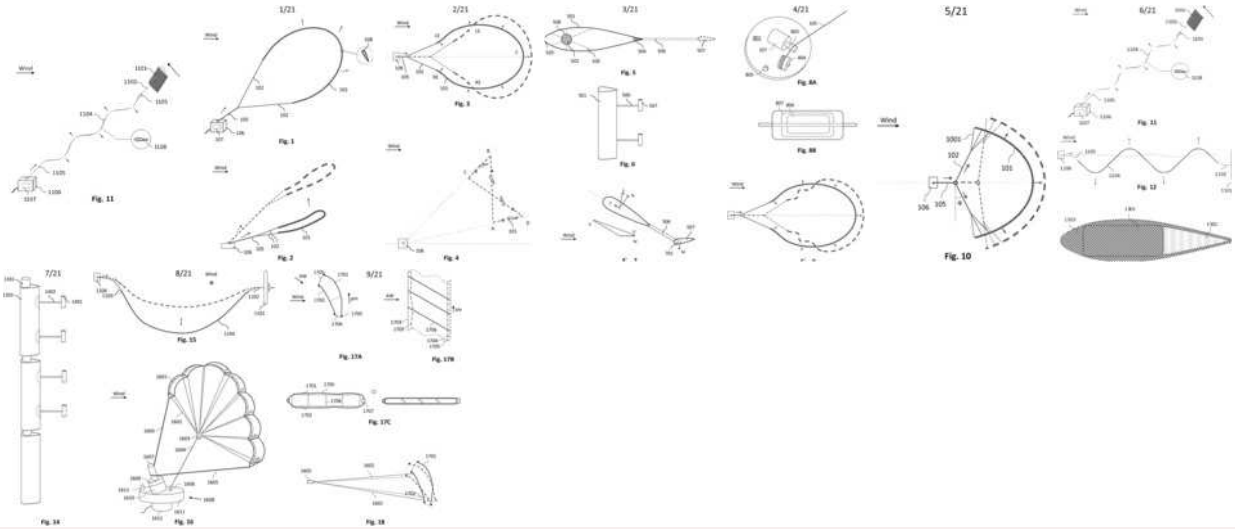




| | | | | | | |
|---|---|---|---|---|---|---|
| 22. | Airborne wind energy conversion system with ground **generator** | WO2014018424 | **2013-07-21** | GOLDSTEIN LEONID | 2014-01-30 | 2014-01-30 |

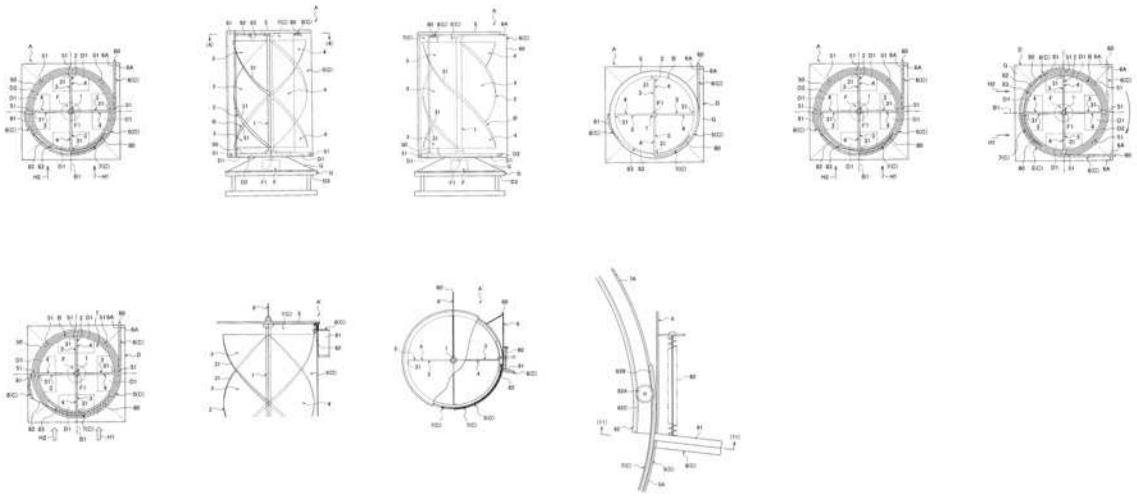
An airborne wind energy conversion system with a ground **generator** and unorthodox **power** transfer means, represented by such embodiments as: a system with an ultra-long flexible wing, which serves both for **power** harvesting and **power** transfer; a system with a tether, having an airfoil cross section in at least a substantial part of its length, the tether participating in the **power** harvesting; a system with a very long semi-circular wing, harvesting and transferring wind **power** by its **helical** motion; a system in which a conventional wing both harvests wind **power** and excites transversal waves in the tether, the waves transferring the **power**; a system where a wing temporarily accumulates harvested energy and then transfers it more efficiently in a separate transfer phase.





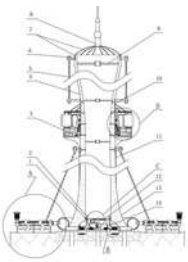
23. **Power** transmission device for wind **power generator** JP2013036461 **2012-05-10** ASAHI KENSETSU CONSULTANT* 2013-02-21 2013-02-21

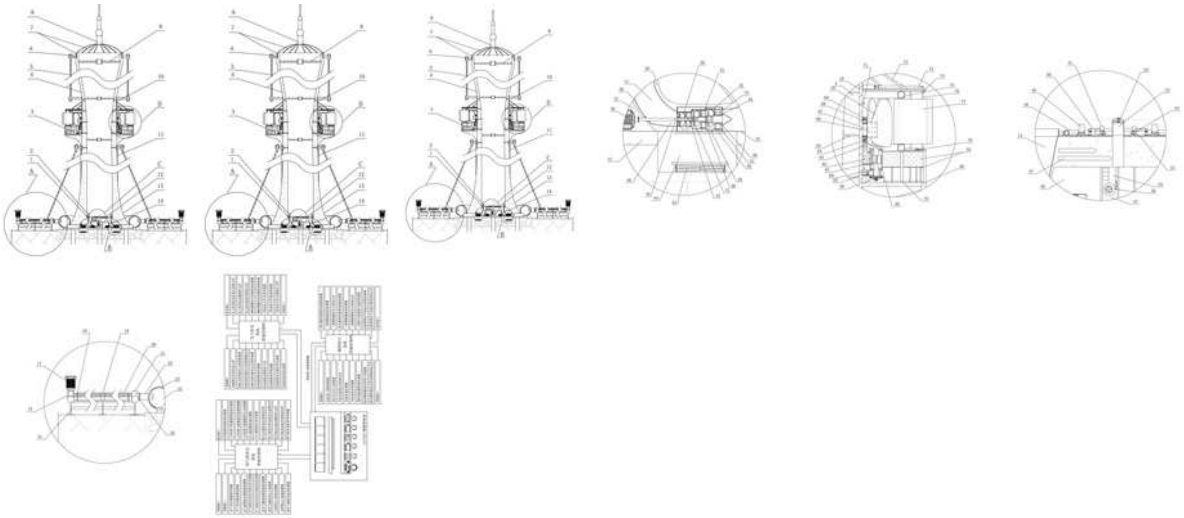
PROBLEM TO BE SOLVED: To provide a **power** transmission device for a wind **power generator** which holds effect of the **power** transmission device for the wind **power generator** and is further compact and low-cost.SOLUTION: The **power** transmission device for the wind **power generator** includes: a wind shelter plate 5 which is opposed to a wind direction to a contrary wind receiving face part 4 of a **helical** blade 2 over the entire vertical direction of the **helical** blade 2 on the outside of a rotating body B with the **helical** blade 2 disposed on the outer circumference of a rotating shaft 1, is concentric with the rotating body, and is supported so as to rotate around the rotating body; and a guide plate 6 for rotating the wind shelter plate 5 to face the wind direction to the contrary wind receiving face part 4 according to the wind direction. The wind shelter plate 5 is formed in a quarter arc with an axis concentric with the rotating body. The guide plate 6 is consecutively provided at one end of the wind shelter plate 5, in parallel with a center line B1 in a radial direction of the rotating body passing through the other end of the wind shelter plate 5, so that a front end 60 is positioned on the outside than the outermost circumference of the rotating body B.



24. Sun tower-type **power** output optimization integrated system of wind-light integrated heating **power**-assisted mechanism CN202300853 **2011-10-25** WUXI C SOLAR NEW ENERGY TECHNOLOGY* 2012-07-04 2012-07-04

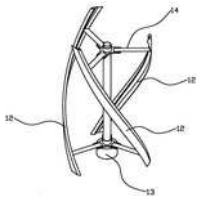
The utility model discloses a sun tower-type **power** output optimization integrated system of a wind-light integrated heating **power**-assisted mechanism, relating to **power** output optimization integrated systems with multiple important core technologies, such as a purification type solar energy air heat collection and flow storage subsystem, a sun tower pipe stream type air **turbine generator** set subsystem, a sun tower hot airflow auxiliary heating subsystem, a resistance type circulation shaftless wind driven **power generation** subsystem and a solar energy airflow guide function tower subsystem. The sun tower-type **power** output optimization integrated system comprises a sun tower body, a steel guy cable fastening member, a steel guy cable, an anti-shock and anti-cracking shield, a lightning-protection collision-prevention device, a wheel type support ring, a steel cylinder ring, a drainage pipeline, a plane base station in the solar energy tower, a sun tower foundation, an upper-pulling heat airflow channel, a mechanical and control working chamber, a variable speed motor, a resistance type wind regulating cover, a sun tower hot airflow auxiliary heating subsystem, a purification type solar energy air heat collection and flow storage subsystem, a sun tower pipe stream type air **turbine generator** set subsystem and a resistance type circulation shaftless wind driven **power generation** subsystem.

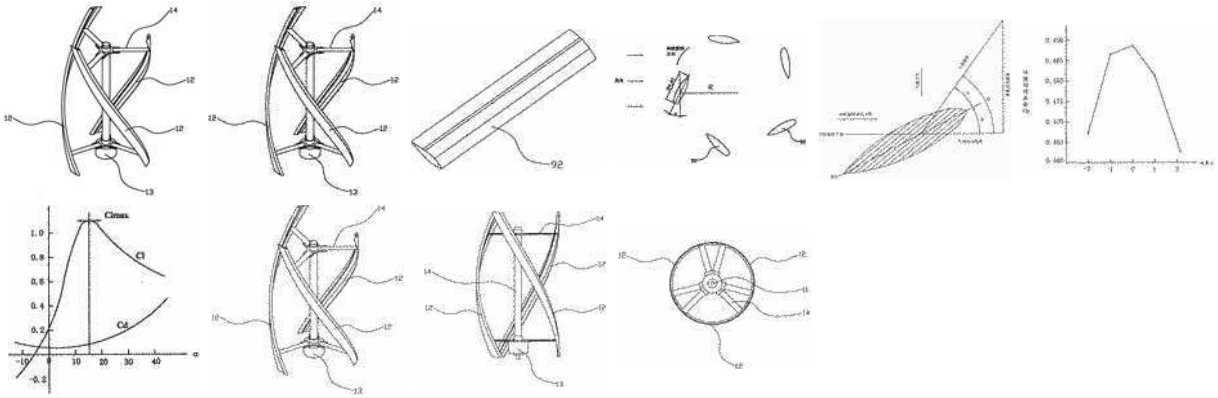




25. Vertical shaft wind driven **generator** CN102251931 **2011-06-03** Yi Bing 2011-11-23 2011-11-23

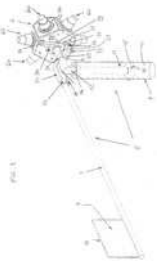
The invention is suitable for the field of wind driven **generators** and provides a vertical shaft wind driven **generator**. The vertical shaft wind driven **generator** comprises a longitudinal central shaft, and at least two fan blades which are axially arranged along a central shaft and are bent to form spiral shapes; the central shaft is coaxially provided with a **generator**; the fan blades are connected with the central shaft through cross beams; and a **360**-degree wind wheel of which the plan view is circular is formed by enclosing the fan blades. In the vertical shaft wind driven **generator**, the **360**-degree wind wheel of which the plan view is circular and is formed by enclosing the fan blades is adopted to ensure the **360**-dgree wind facing of the wind wheel, so that the fan blades have the optimal attack angles when the wind wheel rotates, and the wind wheel can be started at low wind speed, the possibility that the wind wheel stops rotating under the same condition is avoided, the **generator** can **generate** electricity at the low speed, and the problem that the output **power** is reduced due to the attack angle change caused by the rotation of the wind wheel at low wind speed and the wind impeller easily stops rotation at the low wind speed in the conventional straight-sheet fan blade is solved.

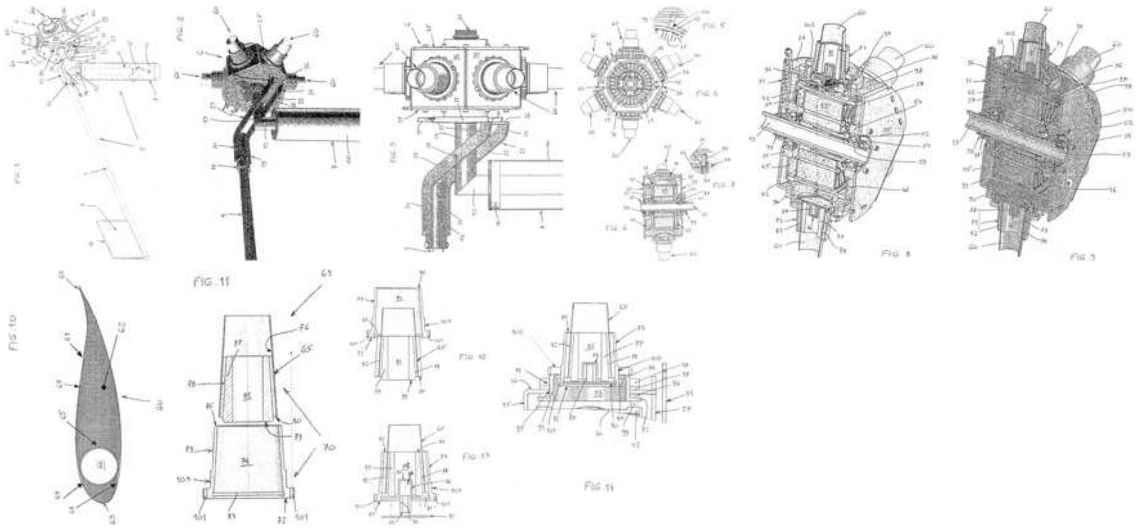




26. A wind **turbine** with a pitch regulation and furling out of wind ITPN20110075 **2011-11-18** INTERMEK* 2013-05-19 2013-05-19

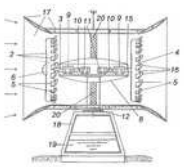
Electric energy eolian **generator**, made of relatively limited sizes, particularly for installations on inhabited environments, adapted to operate also under conditions of strong wind. **Generator** comprising a rotating rotor (6) supported by a support structure (7) and adapted to support the rotating vanes (60) and the electric energy **generator** (42, 43), connected mechanically to the vanes (60) and actuated in rotation by the rotation of the same vanes, for **generating** the electric energy. **Generator** in which the rotor (6) is supported articulated by means of support and articulation means (21; 111; 123), an end portion of which is pivoted to both the rotor (6), through leverage means (29, 30), and the upper end portion of the support structure (7). There are also described in detail the structural configuration of the rotor (6), the electric **generator** (42, 43), and the vanes (60) and further component parts of the eolian **generator**, as well as the operation of this latter.

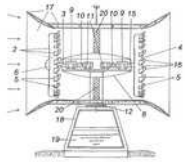


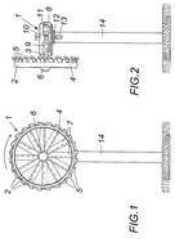


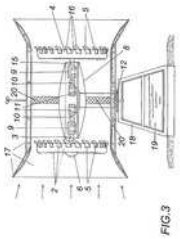
| | | | | | | |
|---|---|---|---|---|---|---|
| 27. | Wind **turbine** | WO2013071328 | **2011-11-17** | GOODWIN<br>GUDRUN WIESER<br>WIESER GUDRUN* | 2013-05-23 | 2013-05-23 |

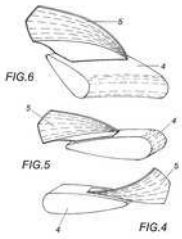
The invention relates to a wind **turbine** (1) for **generating** energy, comprising an axial-flow type rotating turbulence-forming wind concentrator (2) rotatably mounted on a shaft (3). The wind concentrator has an annular outer casing (4), on the outside of which are arranged guide devices distributed through **360**° and which, between the shaft (3) and the annular outer casing (4), is fitted with concentrator blades (7) distributed in a circle. In order to produce advantageous conditions, according to the invention the guide devices comprise saw-tooth curved guide profiles (5) which **generate** tip vortices that cause a downstream vortex coil over the entire cross-section of the annular outer casing (4).

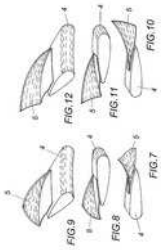


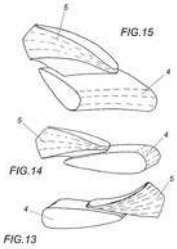


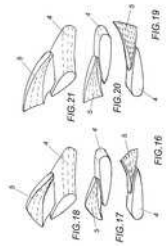


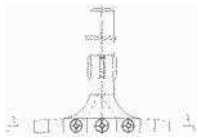



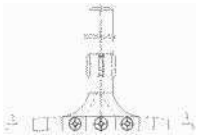



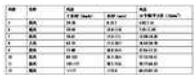



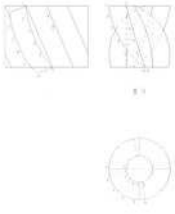

| | | | | | | |
|---|---|---|---|---|---|---|
| 28. | Atmosphere pressure difference wind **power** high-efficiency integrated **generation** set | CN202690321 | **2012-05-10** | SUO ZENGZHI | 2013-01-23 | 2013-01-23 |

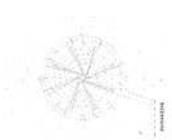
An atmosphere pressure difference wind **power** high-efficiency integrated **generation** set comprises a wind guide tower pipe, a narrow pipe section which is arranged inside and a universal flow guide chamber which is connected with the bottom of the wind guide tower pipe. An wind inlet of the universal flow guide chamber is provided with a narrow pipe wind inlet channel, and an outlet of the universal flow guide chamber is communicated with the wind guide tower pipe, a narrow pipe effect structure is formed, the bottom of the universal flow guide chamber is provided with a heating chamber and a heating device, a shaft type helicoradian impeller is arranged inside the narrow pipe and connected with a **generator** set. Under the auxiliary heating effect of atmosphere pressure difference, solar energy and terrestrial heat, wind is **generated** inside the wind guide tower pipe, winds with different wind directions pass through the universal flow guide chamber to obtain guide flow to correct wind direction, interferences of wind direction is removed, and the character of natural wind is changed. The narrow pipe effect is used to **generate** high speed wind, the high speed wind acts on the shaft type helicoradian impeller, windage area is enlarged, the acting time of the wind is prolonged, the utilization rate of wind **power** is improved, and a **generator** is driven to achieve high-efficiency integrated **generation**. The atmosphere pressure difference wind **power** high-efficiency integrated **generation** set does not consume resources, and is high in **generation** efficiency, low in construction and operation cost, simple in structure, easy to industrialize and suitable for being used to build large, medium and small **power** plants.





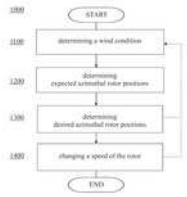


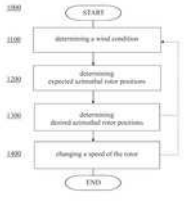


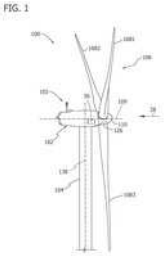


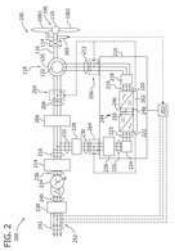
29. Wind **turbine** rotor control CA2818019 **2012-06-14** GE WIND ENERGY* GENERAL ELECTRIC 2013-12-14 2013-12-14

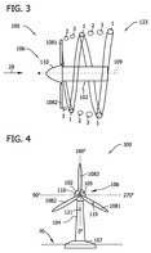
A method for operating a wind **turbine** (300) is provided. The method includes determining a wind condition, determining for the wind condition expected azimuthal positions of a rotating wind rotor (110) of the wind **turbine** (300), and for the wind condition determining desired azimuthal positions of the rotating wind rotor (110) so that at least one of a load balance of the rotating wind rotor (110) and a **power** uptake of the rotating wind rotor (110) is improved compared to the expected azimuthal positions.

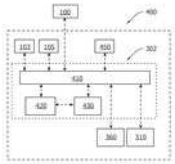


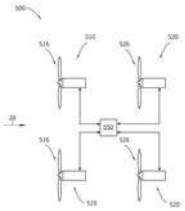


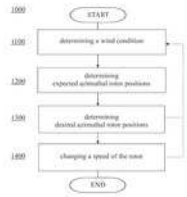


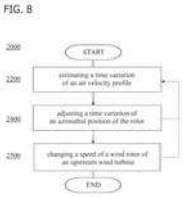






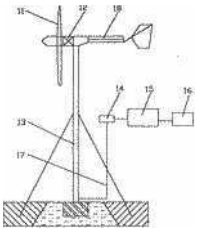


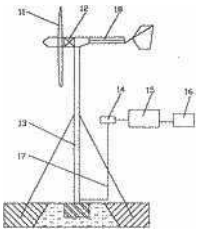


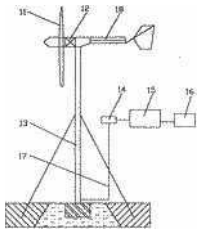


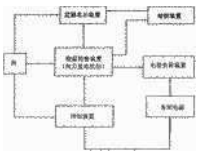
30. Small-size outer rotor permanent magnet direct-current **power generator** CN202181993 **2011-07-08** Yi Bing 2012-04-04 2012-04-04

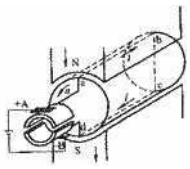
The utility model belongs to the field of wind **generators**, and provides a small-size outer rotor permanent magnet direct-current **power generator**. An existing outer rotor permanent magnet direct-current motor of an electric motor car is taken as the outer rotor permanent magnet direct-current **power generator**. In China, as the outer rotor permanent magnet direct-current motor has the huge advantages of batched production, standardization, marketization and mature industrial chain, and is changed to a small-size outer rotor permanent magnet direct-current wind **generator**, so that the cost of the small-size outer rotor permanent magnet wind **generator** is lowered greatly and the product quality is improved, therefore the good promotion function is provided for the stable and mature industrial chain of the small-size outer rotor permanent magnet wind **generator**.

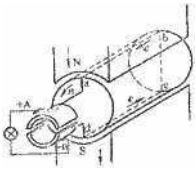


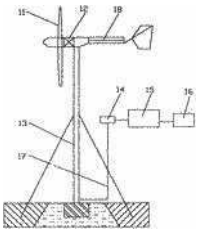


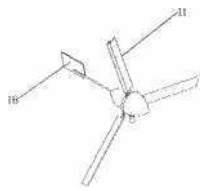


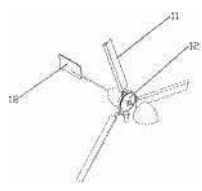


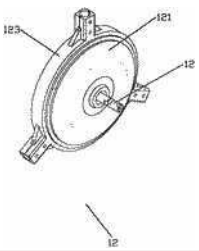


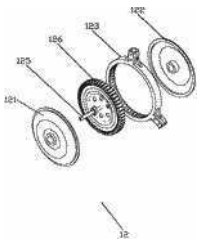






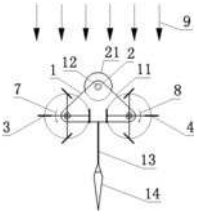


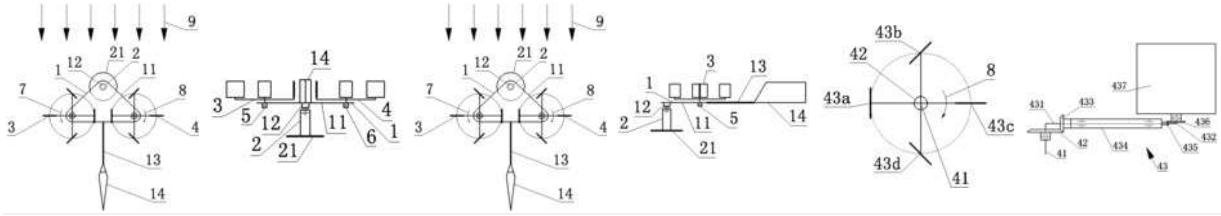




31. Wind **power generation** device with half-revolution blades — CN204283747 — **2014-12-15** — WANG ZHICHENG — 2015-04-22 — 2015-04-22

The utility model provides a wind **power generation** device with half-revolution blades, and belongs to the technical field of wind **power generation** equipment. The device comprises a platform, a supporting column, a left rotary blade device, a right rotary blade device, a left **power generator**, a right **power generator** and a rudder. The platform comprises a triangular plate and a platform rotary shaft. The rudder is located right behind the triangular plate and is fixedly connected with the triangular plate through a tail rod. The left rotary blade device and the right rotary blade device are identical in structure and work principle and are symmetrically installed on the left side and the right side of the platform. An input shaft of the left **power generator** and an input shaft of the right **power generator** are connected with the left rotary blade device and the right rotary blade device respectively. The right rotary blade device comprises a main shaft, a center gear and three or four or five rotary blades evenly distributed, and the transmission ratio between the center gear and a blade gear is two to one. When any arm shaft of the right rotary blade device is at the transverse position of the right portion of the main shaft, blade bodies of the corresponding rotary blades and the arm shaft are in the same plane. Automatic direction adjustment can be achieved through the wind **power generation** device. Wind force drives the left rotary blade device and the right rotary blade device to drive the left **power generator** and the right **power generator** to **generate power** at the same time. The wind **power generation** device is high in efficiency.



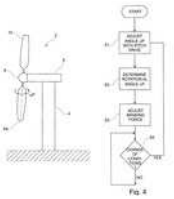


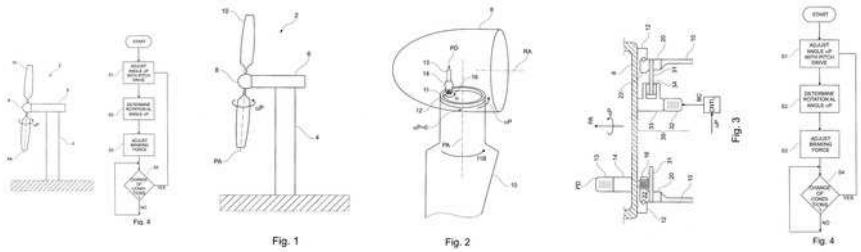
32. **Turbine** and aeolian aerogenerator of vertical axis for the energy **generation** — ES2578554 — **2015-01-21** — CLEAN & WIND SPAIN* — 2016-07-27 — 2016-07-27

**Turbine** and Aeolian aerogenerator of vertical axis for the energy **generation**. The **turbine** according to the invention understands a series of shovels that are reviradas so many degrees as the turn out to divide 360º by the number of existing shovels so that thus all of them cover **360**° with rotation. On the other hand, the Aeolian aerogenerator of vertical axis for the **generation** of energy according to the invention includes a walking stick, at least a device of illumination, a **turbine** of the type who finishes mentioning and a connected **generator** ELT to the base of this **turbine**.

33. Assembly for fixing in position the pitch angle of a rotor blade of a wind **power** plant — EP2602481 — **2011-12-06** — AREVA WIND* AREVA WINDOW — 2013-06-12 — 2013-06-12

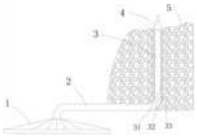
The invention relates to an assembly and a method of fixing a rotor blade of a wind **power** plant. The wind **power** plant comprises a rotor blade, a pitch adjustment means, a bearing for the rotor blade and a brake disk. There is an electro-mechanical brake configured to apply a controlled brake force to the brake disk that is a function of the pitch angle of the rotor blade

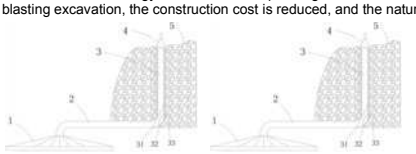




34. Solar hot airflow **power generation** wind collection and exhaust tower using sealed mountain for pressurization — CN105370501 — **2015-11-23** — QI RONGSHENG — 2016-03-02 — 2016-03-02

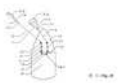
The invention provides a solar hot airflow **power generation** wind collection and exhaust tower using a sealed mountain for pressurization. The solar hot airflow **power generation** wind collection and exhaust tower using the sealed mountain for pressurization comprises a sunlight greenhouse. The upper end of the sunlight greenhouse is connected with a mountain air duct through a transition air duct. The mountain air duct is longitudinally formed in the mountain and comprises an inner wall layer and a filter layer. The filter layer is arranged outside the inner wall layer. The inner wall layer is provided with a flow channel. The mountain is provided with an internal water system. The internal water system is communicated with the mountain air duct. According to the solar hot airflow **power generation** wind collection and exhaust tower using the sealed mountain for pressurization, the structure of a building is stable and aseismic; the mountain air duct is formed in the mountain so that the geothermal source can be fully used, and the airtightness of the connection air duct is guaranteed; heat preservation and temperature increment are achieved through the connection air duct, so that the loss of stored solar heat energy is reduced, the operating cost is reduced, building waste is eliminated, building materials are replaced by a large amount of stone obtained through blasting excavation, the construction cost is reduced, and the natural environment of the mountain is protected.

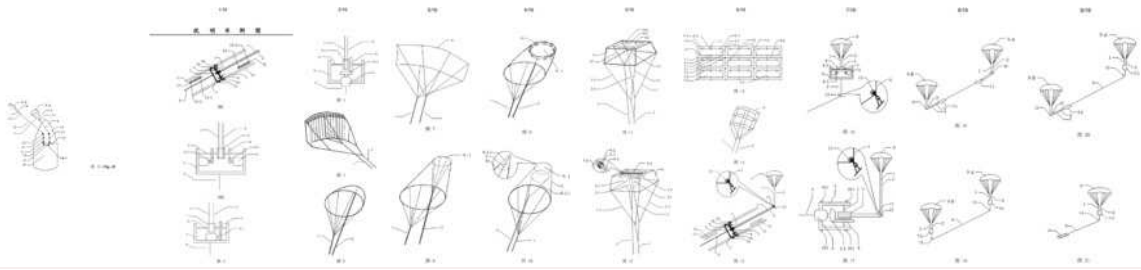




35. Reciprocating unloading and loading kite and kite-driving working mechanism thereof, **power generation** method, and vehicle or boat traveling method — WO2012146158 — **2012-04-23** — LUO CONGGUI;QIU HAOWEI — 2012-11-01 — 2012-11-01

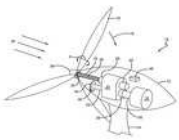
A reciprocating unloading and loading kite comprises a cable control machine and a completely deformable bi-cable kite (9-A, 9-B). The reciprocating unloading and loading kite can be opened at a starting point to float to an end point, and then folded to adversely flow to the starting point, which is repeated to draw a working machine to run. The reciprocating unloading and loading kite can **generate power** by using wind energy or water energy, to drive a vehicle or a boat to move forward.

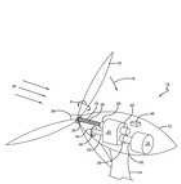




36. Wind **turbine** electric **generator** with torque limiting brake | US20140367967 | **2014-03-21** | COOPER INDUSTRY HOLDINGS* | 2014-12-18 | 2014-12-18

A wind **turbine** system includes **turbine** blades (16) that turn a low speed shaft (18). A shrink disc coupling (24) radially connects the low speed shaft to a low speed gear box input shaft (22). A brake (26) for the gear box input shaft is operatively connected with the coupling. At least one circuit including a processor controls the brake to keep torsional force on the gear box input shaft below a threshold. The at least one circuit is associated with sensors that can sense conditions away from the gear box input shaft. The at least one circuit can determine when a current condition exists which can cause the threshold to soon be exceeded if preventive braking is not timely applied to the gear box input shaft. The current condition can include a sensed weather condition that is approaching the wind **turbine** system.





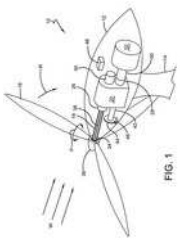


FIG. 1

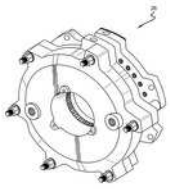


FIG. 2

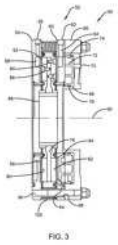


FIG. 3

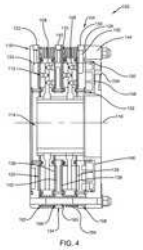


FIG. 4

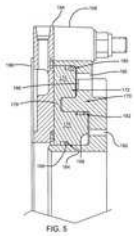


FIG. 5

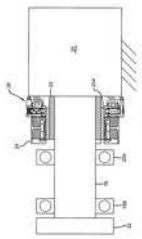


FIG. 6

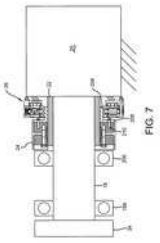


FIG. 7

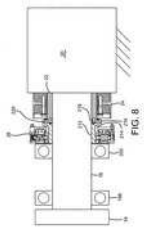


FIG. 8

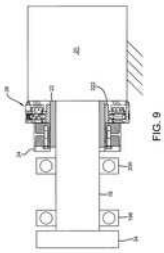
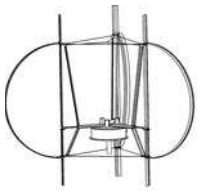
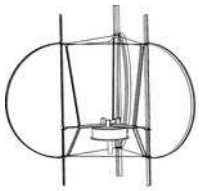


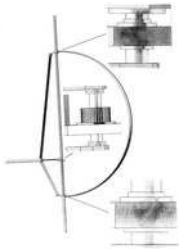
FIG. 9

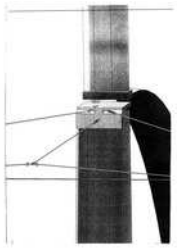
37. Non-backbone turntable-type vertical shaft wind **turbine** | CN103321830 | **2013-07-18** | WANG XIN | 2013-09-25 | 2013-09-25

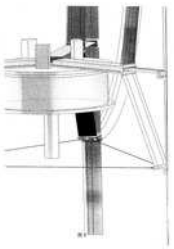
The invention discloses a non-backbone turntable-type vertical shaft wind **turbine** in which an iconic structure that blades and brackets of the classical and traditional vertical shaft wind turbines rotate around the backbone is concealed. The diameter of a blade rotating circle and the vertical length of the blade are directly increased on a turntable; the torque of the wind **turbine** is increased; main parts, except for nodes of the bracket, are hidden inside the blade in a penetrating manner; the resistance of the bracket is changed into powder of the blade; the rotation mode of an outer rotor is abandoned; a vertical shaft is driven by the turntable; a rotating shaft **generator** is directly driven by the vertical shaft; a **generator** is arranged between the turntable and a fixed plate; a **power** supply is provided for turntable equipment; the angle of the blade is adjusted by the motor; lubricating oil is automatically filled into a pivotal bearing which works in the sky. The non-backbone turntable-type vertical shaft wind **turbine** is applicable to large and medium-sized wind **power** systems.

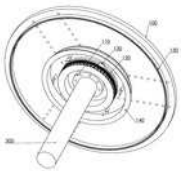


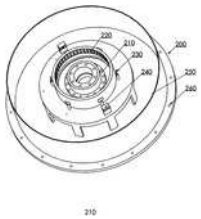


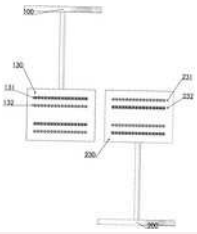






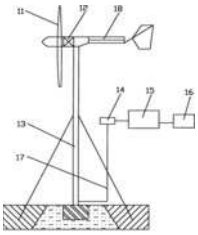


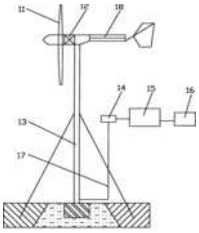


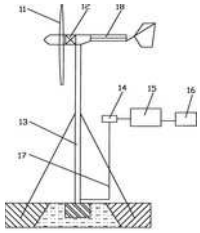


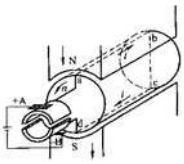
| | | | | | | |
|---|---|---|---|---|---|---|
| 38. | Miniature external rotor permanent magnet direct current wind-driven **generator** | CN102230452 | **2011-07-08** | Yi Bing | 2011-11-02 | 2011-11-02 |

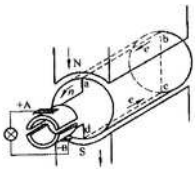
The invention belongs to the field of wind-driven **generators** and provides a miniature external rotor permanent magnet direct current wind-driven **generator**. The external rotor permanent magnet direct current motor of the conventional electric motorcycle is taken as an external rotor permanent direct current **generator**. The external rotor permanent magnet direct current motor of the electric motorcycle has the great advantages of mass production, standardization, marketization and mature industry chain, and by modifying the external rotor permanent magnet direct current motor of the electric motorcycle into the miniature external rotor permanent magnet direct current wind-driven **generator**, the cost of the miniature external rotor permanent magnet direct current wind-driven **generator** can be greatly lowered, and product quality can be improved, so that the stabilization and the maturation of a miniature external rotor permanent magnet direct current wind-driven **generator** industry chain can be well promoted.

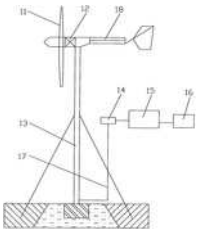


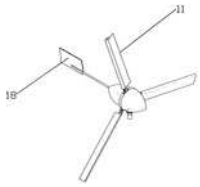


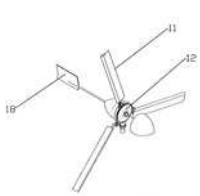


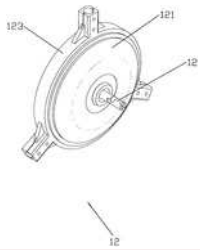


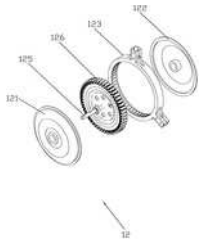






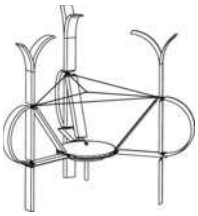


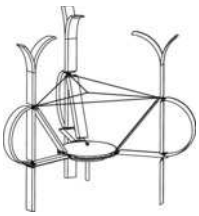


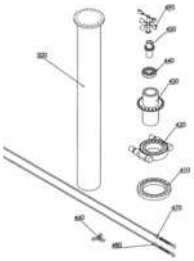


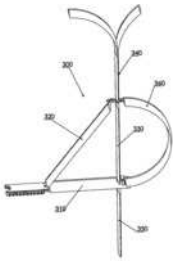
| | | | | | | |
|---|---|---|---|---|---|---|
| 39. | Main-rod-free rotating disc type vertical axis wind **turbine** | CN203548058 | **2013-09-16** | WANG XIN | 2014-04-16 | 2014-04-16 |

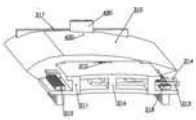
The utility model discloses a main-rod-free rotating disc type vertical axis wind **turbine**. Two or more branch blade groups are mounted on a rotating disc radially with equal radian and at intervals, blade rotation circle diameter and blade perpendicular length are increased directly, and torque of the wind **turbine** is increased; support structures for supporting blades, expect for intersections among the blades, are penetratingly hidden in wing profiles of the blades, and support resistance is changed into blade **power**; an outer rotor mode that the blades and supports thereof rotate around a main rod is abandoned, a wind impeller, the rotating disc and a spindle are assembled into a whole to be mounted on a rotary supporting rotor, and a rotating shaft **generator** is directly driven by the spindle; the **generator** is arranged between the rotating disc and a fixed disc to supply **power** to rotating disc equipment, a rotary drive is used for regulating the rotation angle of the blades, and lubricating oil is automatically injected to a rotary bearing running in high altitude. The main-rod-free rotating disc type vertical axis wind **turbine** is applicable to large and medium vertical axis wind **power generation** systems.

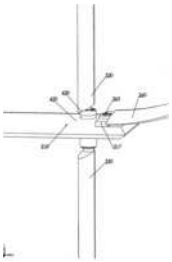


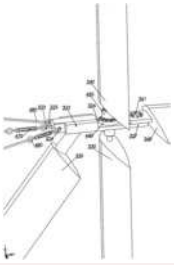


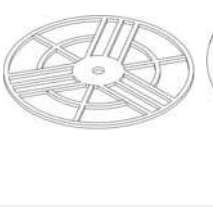


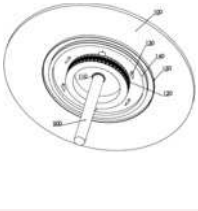






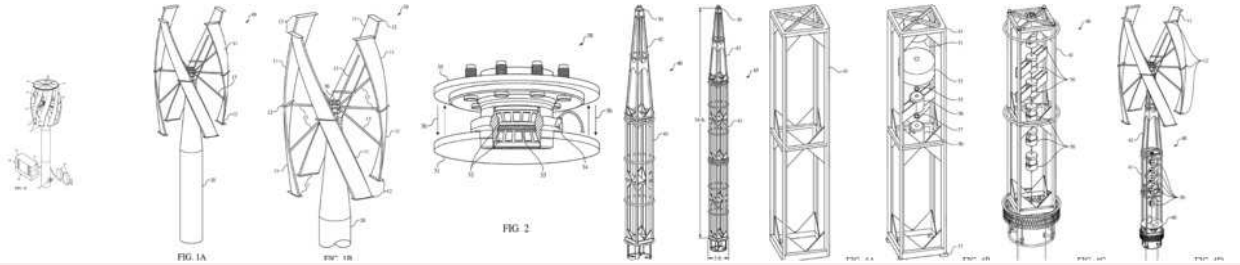






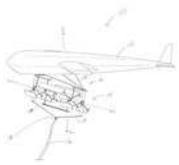
40. On or off grid vertical axis wind **turbine** WO2017019004 **2015-07-25** BARDIA JAIME MIGUEL 2017-02-02 2017-02-02

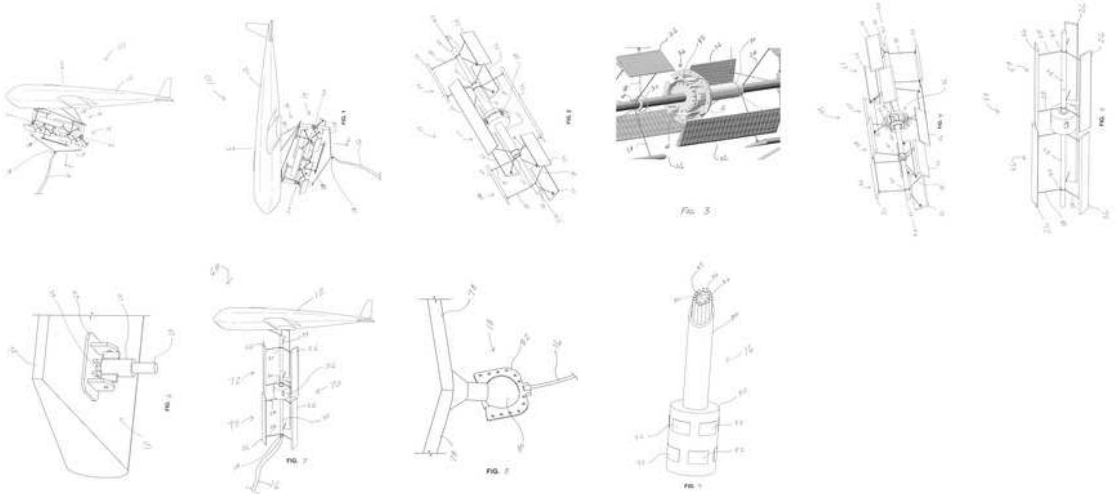
Vertical axis wind **turbine** and horizontal wind **turbine** each with a rotary airfoil assembly that has **helical** swept airfoils whose free ends each have a spoiler. The vertical axis wind **turbine** has permanent magnet discs for levitating static weight of an entirety of the rotary airfoil assembly via magnetic repulsion. There is a hub or affixing the permanent magnet discs within a frame structure in a manner that counteracts both a coefficient of friction ("COF") associated with rotation of the rotary airfoil assembly and ensuing bearing wear imparted from the rotary airfoil assembly. The horizontal axis wind **turbine** has collapsible telescoping towers.



41. Airborne wind energy system WO2013049732 **2012-09-28** CASE WESTERN RESERVE UNIVERSITY* 2013-04-04 2013-04-04

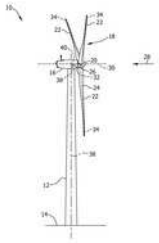
An airborne wind energy system includes a lift system, a wind **power generating** system, a tether, and a control system. The lift system including a substantially airtight chamber for storing lighter-than-air gases. The wind **power generating** system is coupled to the lift system and including two rotating assemblies and a **generator**. The tether is coupled to the wind **power generating** system and tethers the airborne wind energy system to the ground. The two rotating assemblies are coupled to the **generator** and arranged to rotate in opposite directions so that the **generator generates** electrical **power** when the two rotating assemblies rotate in opposite directions.





42. Vibration absorbing device for a wind **turbine** and method of absorbing vibrations in a wind **turbine** WO2013109558 **2012-01-20** GENERAL ELECTRIC* 2013-07-25 2013-07-25

A wind **turbine** is provided including a nacelle housing a **power** train of the wind **turbine**. The **power** train of the wind **turbine** includes a gearbox, a **generator**, and one or more rotatable shafts, each including a radial direction and an axial direction. Further, the wind **turbine** includes a vibration absorbing device being arranged on a shaft of the **power** train. The vibration absorbing device includes an energy storing arrangement, which includes a flexible element and a mass assembly. The vibration absorbing device is connected to the shaft in an axially symmetric way.



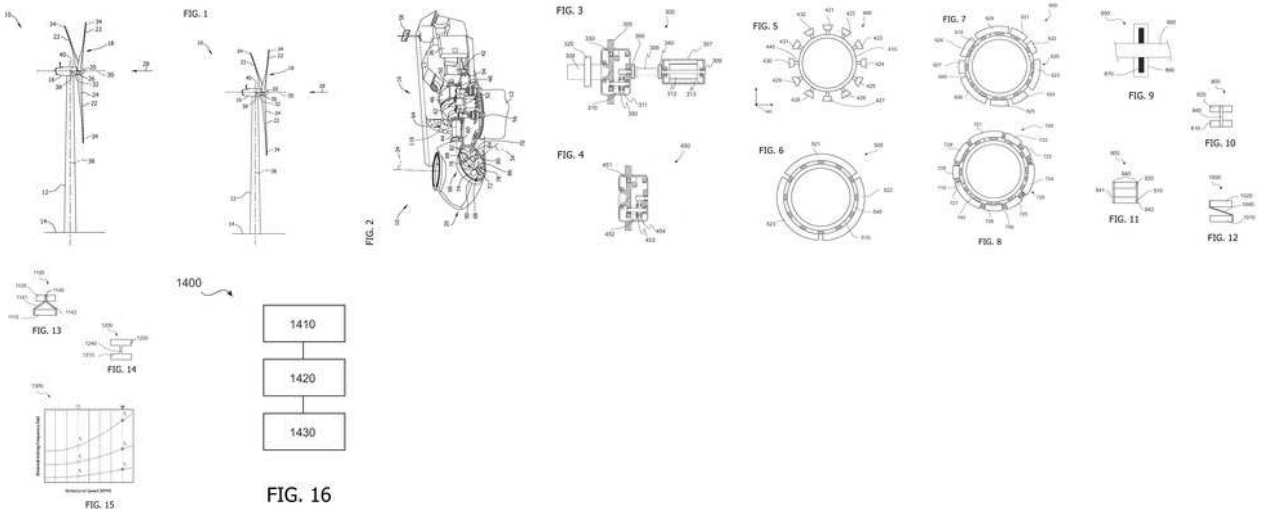
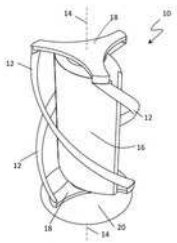
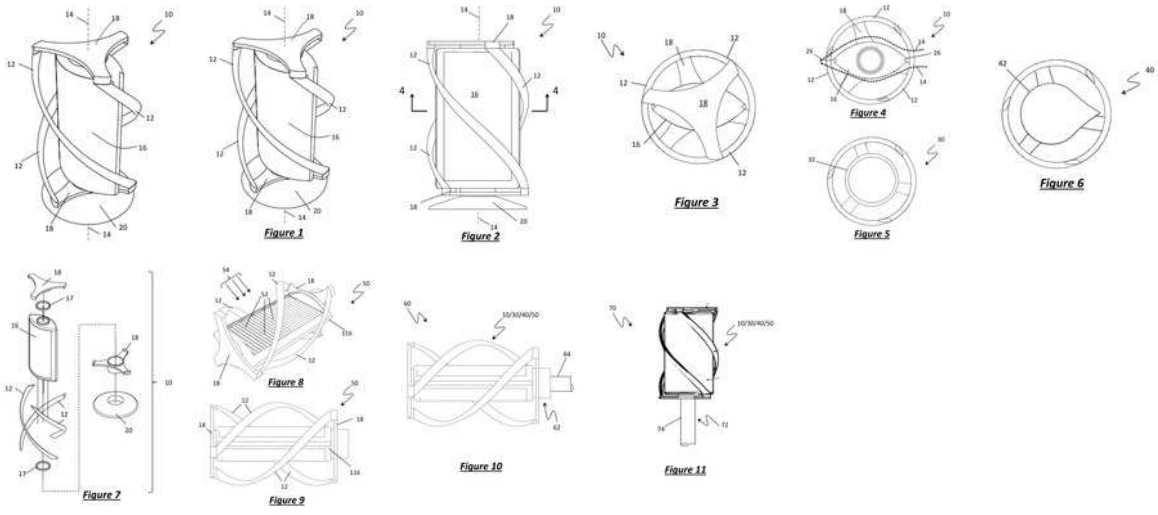



FIG. 16

43. Wind turbines and methods for capturing wind energy WO2013102223 **2012-12-31** NEBULA ENERGY* 2013-07-04 2013-07-04

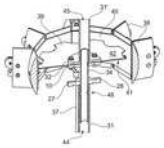
Wind turbines (10, 30, 40, 50, 600) and energy capturing assemblies (200, 300, 400, 500) for capturing fluid energy are provided. The wind turbines includes a plurality of **helical** air foil blades (12) mounted for rotation about an axis, and a cylindrical airfoil (16, 32, 42, 116) mounted along the axis and shaped to direct a flow of fluid, such as, air or water, toward the plurality of **helical** airfoil blades (12). Incorporating photovoltaic devices (52) within the turbines can enhance the energy capturing capacity of some turbines. The energy capturing assemblies (200, 300, 400, 500) include a plurality of airfoil blades (212, 312, 412, 512) mounted for rotation about an axis, a structure (230, 330. 430, 530) having an outer surface (240, 430, 440, 540) shaped to direct a flow of fluid toward the plurality of airfoil blades; and an electrical **generator** (250, 350, 450, 550) operatively connected to the plurality of airfoil blades. The structure may be a building, a residence, a tower, a tank, or a vessel. Methods and devices for capturing fluid energy are also included.

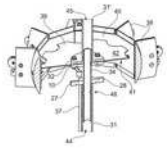




44. Unit for rotating cable spacing plates in a wind **turbine** tower — DK177637 — **2013-03-25** — ENVISION* — 2014-01-13 — 2014-01-13

A wind **turbine** having a wind **turbine** tower with a nacelle provided on the top to which a rotor hub with one or more wind **turbine** blades is rotatable mounted. A cable twisting system is arranged inside the wind **turbine** tower and suspended from the bottom of the nacelle. The cable twisting system comprises a number of cable spacing plates having a number of guiding means for guiding the electrical cables from the nacelle to the bottom of the wind **turbine** tower. A first and second element having engaging fingers configured to be brought into contact with each other are coupled to two adjacent cable spacing plates. The first element rotates relative to the second element when the nacelle is yawing, bringing the fingers into contact with each other. The two elements then rotate together as the nacelle continues to yaw in the same direction.





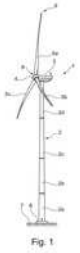


Fig. 1

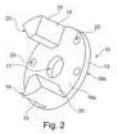


Fig. 2


Fig. 3

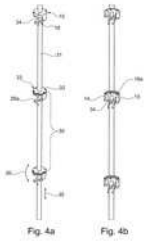


Fig. 4a Fig. 4b

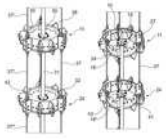


Fig. 5a Fig. 5b

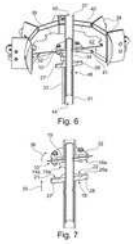


Fig. 6 Fig. 7

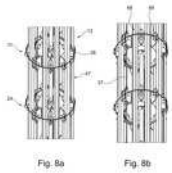


Fig. 8a Fig. 8b

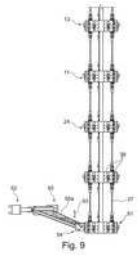
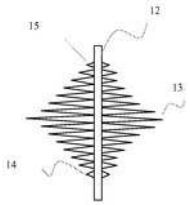
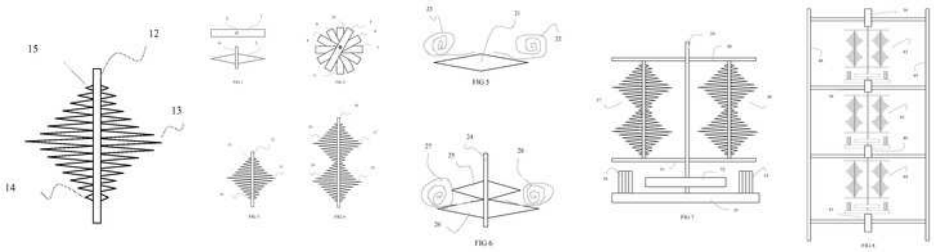


Fig. 9

45. Vertical axis wind **turbine** using **helical** blades with serrated edges — US20140294588 — **2013-03-27** — SARKAR AYUSH;SARKAR SHYAM SUNDAR — 2014-10-02 — 2014-10-02

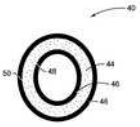
A vertical-axis wind **turbine** system includes a novel wind **turbine** having **helical** shaped blades with serrated edges that exhibit unique airfoil characteristics. Such innovative designs of blades improve the efficiency of the **turbine**. Airfoil characteristics of such blades make it effective at lower wind speeds than conventional wind turbines. The exemplary system is expandable for more efficiency when the number of turns in the **helical** shape of blades is increased. Such a design of blades in a wind **turbine generate** airflow and drag in the upward direction affecting other wind **turbine**(s) located vertically above in close proximity. This system is modularized with many smaller wind turbines sharing the same vertical axis arranged one above another in close proximity to each other. Such an incremental design of modularized wind turbines is uniquely used to scale up for increased **power generation** needs.

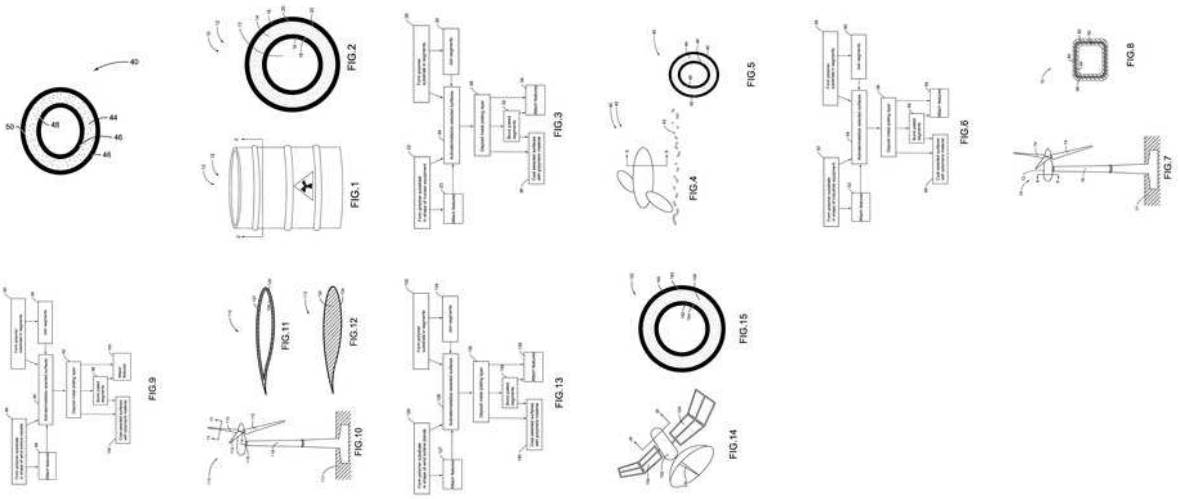


46. Vehicular engine and transmission components made of plated polymers | CA2917643 | **2014-07-09** | UNITED TECHNOLOGIES* | 2015-01-15 | 2015-01-15

A vehicular component comprising a polymer substrate formed in a shape of the vehicular component, and a metallic plating layer plated on at least one surface of the vehicular component is described. The vehicular component may be a pulley, a leaf spring, an impeller, a bearing ball, a compliant mechanism and a gear.



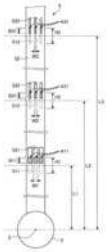


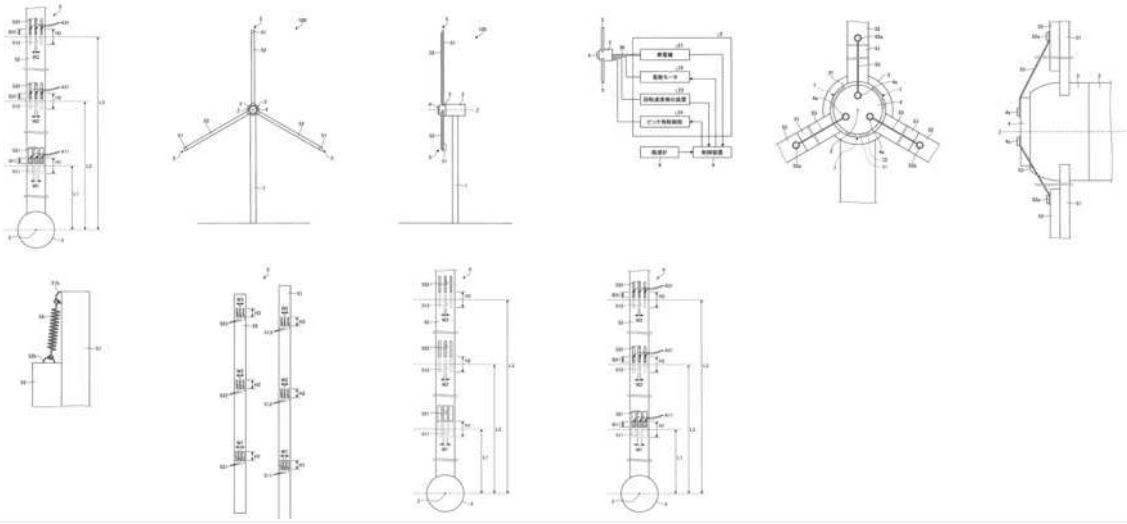
47. Dragon winding type rotational flow dedusting **power generation** tower | CN104074682 | **2014-06-11** | MA XUYONG | 2014-10-01 | 2014-10-01

A dragon winding type rotational flow dedusting **power generation** tower aims to have a **power generation** function and a dust depositing function and is a novel wind **power generation** device. Air must be led down to achieve the two targets, and dust is separated and drops, the air volume is collected, and wind pressure is improved. The tower is composed of 30 layers, each layer is provided with series connection hollow center poles with the diameters of 1.5 m, each tower layer is provided with an independent universal induced air port, the induced air port with the front large and the rear small is downward at a 45-degree angle, incoming air enters a rear air pressing throat through downward contraction for the first time, and a spiral downward channel is positioned below. The shape of the dragon winding type rotational flow dedusting **power generation** tower is like dragons adhering to the center poles and opening large mouths, the dragon mouths and dragon bodies compress air and turn the air into downward rotational flow, and dragon tails send the rotational flow into the center poles. The tower layers are provided with four winding dragons, and the mouths are opened in all directions. Downward common spiral channels are positioned in the center poles, dust-containing air input from the dragon tail of each tower layer is collected into consistent downward rotational flow along the spiral channels, air and sand are separated at the tail end of a track, the sand is deposited in a sand storage chamber, and main air flow rushes at a wind wheel to do work.

48. Wind **power generation** apparatus | JP2017048765 | **2015-09-04** | CHUGOKU ELECTRIC POWER* | 2017-03-09 | 2017-03-09

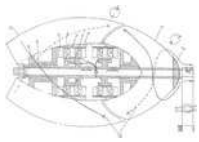
PROBLEM TO BE SOLVED: To provide a wind **power generation** apparatus capable of reducing occurrence frequencies of cutouts and suppressing repetition of strong twists and weak twists in blades.SOLUTION: A wind **power generation** apparatus is provided with: a tower; a nacelle provided at an upper end of the tower; a hub 3 rotatably supported to the nacelle; a plurality of blades; a cover 52; and a controller. The blades are attached to the hub, and have: first holes 511 arranged at positions at first distance L1 from a rotary shaft Z of the hub; and second holes 512 arranged at positions at second distance L2 larger than the first distance from the rotary shaft. The cover is arranged by being overlapped with the blades, and attached to be slidable in a longitudinal direction of the blades. The controller adjusts a position of the cover. Opening areas of the second holes to be **generated** according to the position of the cover are smaller than opening areas of the first holes.SELECTED DRAWING: Figure 9

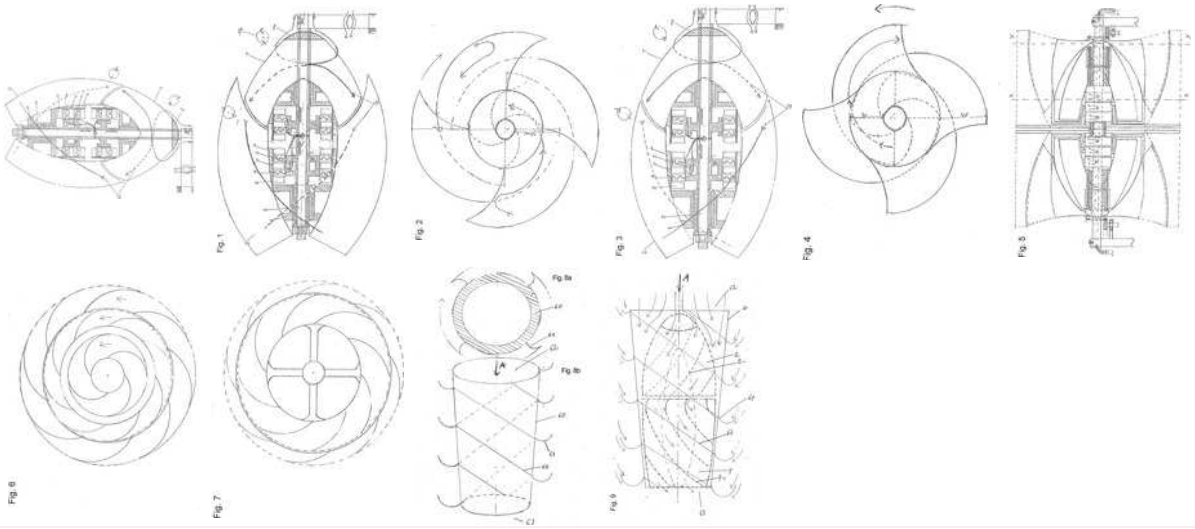




| | | | | | | |
|---|---|---|---|---|---|---|
| 49. | To a multiple electric **generator** driven rotor assembly | DE202013103528 | **2013-08-06** | BLASCHKO SIEGFRIED* | 2014-12-18 | 2014-12-18 |

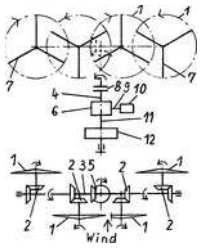
It shows a schematic diagram in accordance with the invention each optical sensing device with a cleaning device, in, spiral flow direction expanding **helical** symmetry on a surface that is, the blade of the second Rotor along a second, extend helicoidally spiral, the second, spiral helix at least partially tapering in flow direction on a rotationally symmetric surface is first, in the flow direction of the first Rotor and maximum Rotor diameter end directly adjacent to the beginning of the second Rotor is .NN

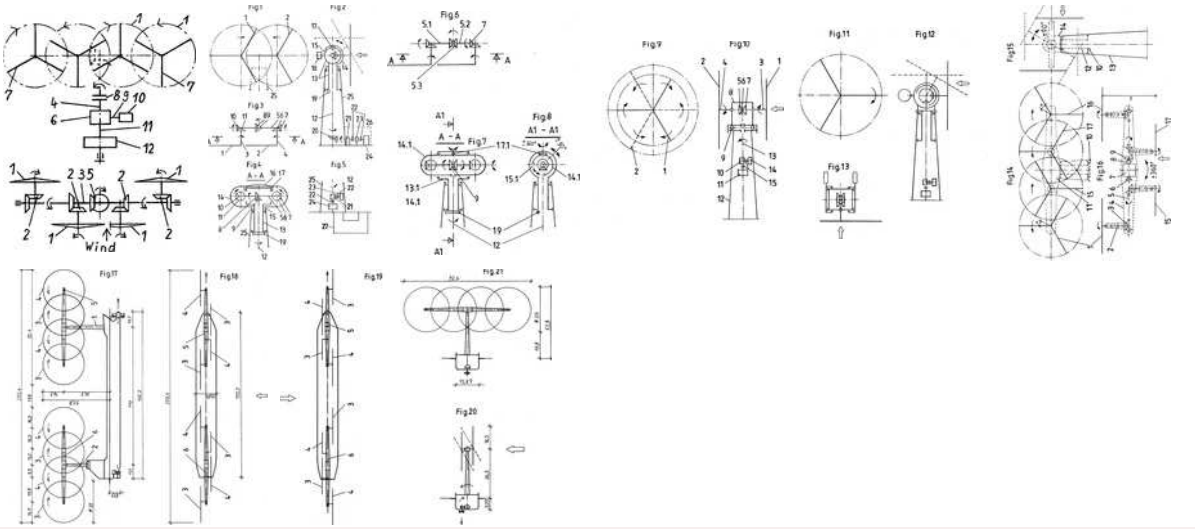




| | | | | | | |
|---|---|---|---|---|---|---|
| 50. | Wind **power** plant comprises counterrotating rotor blades, which work in comb-shaped manner on collecting shaft and engage into each other by aligned pinions | DE102011015303 | **2011-03-23** | GRUENBERG ECKHARD | 2013-01-31 | 2013-01-31 |

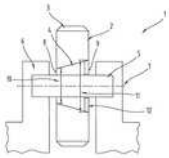
The wind **power** plant has counterrotating rotor blades (1,2), which work in a comb-shaped manner on a collecting shaft and engage into each other by aligned pinions. The collecting shaft drives a perpendicular main shaft by pinions. The main shaft drives a gear-system, an electric **generator** system and a hydraulic system arranged perpendicular in the mast step or offset in a machine house. The collecting shaft directly drives a machine system, which is mounted on a tower head.

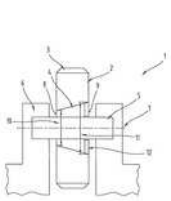


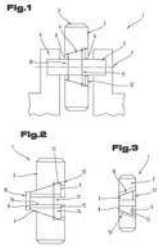


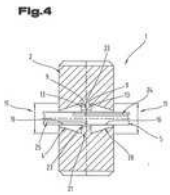
51. Wind **power** plant gear mechanism AT513516 **2013-01-30** MIBA GLEITLAGER* MIBA GLEITLAGER AUSTRIA 2014-05-15 2014-05-15

The invention relates to a wind **power** plant gear mechanism (1) with an axle (5) and a gearwheel (2), wherein at least one sliding bearing bush (4, 20) is arranged between the axle (5) and the gearwheel (2), and wherein the at least one sliding bearing bush (4, 20) is connected to the gearwheel (2) via a conical press fit, wherein the at least one sliding bearing bush (4, 20) has a first end surface (8) and a second end surface (9) which lies opposite the former along a longitudinal centre axis (7) through the at least one sliding bearing bush (4, 20), and wherein the first end surface (8) has a diameter d (10) and the second end surface (9) has a diameter D (11), wherein the diameter D (11) is greater than the diameter d (10), and wherein a bearing surface (13) for the at least one sliding bearing bush (4, 20) is formed so as to adjoin the end surface (9) with the diameter D (11).







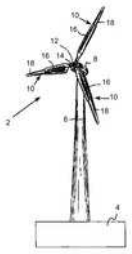



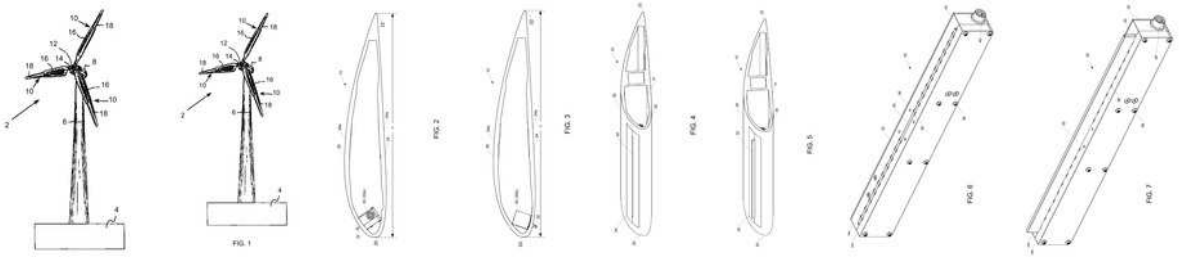

52. Miniature high-efficiency wind **power** gaining device CN102518562 **2011-12-22** CHONGQING UNIVERSITY* 2012-06-27 2012-06-27

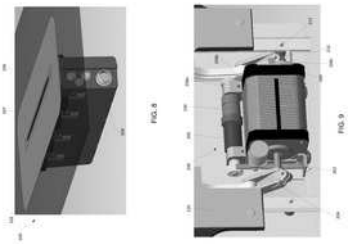
A wind energy gaining device belongs to a miniature high-efficiency energy gaining device capable of converting wind energy into electric energy and mainly consists of a wind guide window 1, a miniature wind **power** conversion component 2, a miniature wind rudder tail wing 3 and a support component 4. The wind guide window 1 is connected with the miniature wind **power** conversion component 2, the tail of the miniature wind **power** conversion component 2 is connected with the miniature wind rudder tail wing 3, and the lower portion of the miniature wind **power** conversion component 2 is connected with the support component 4. The application of the miniature high-efficiency wind **power** gaining device includes that the miniature wind rudder tail wing 3 tracks wind direction under the action of wind **power**, the front side of the wind guide window 1 can be windward and gather coming wind, the wind acts on the miniature wind **power** conversion component 2 to **generate** induced electromotive force, and accordingly the wind energy can be converted into the electric energy. The miniature high-efficiency energy gaining device is small in size, light in weight, low in cost, easy in productization, can meet the application requirements of wind energy collection of low-**power**-consumption electronic equipment, and has wide application prospect in the field of energy replenishment for outdoor wireless sensor network nodes particularly.

53. Failsafe deployment system for wind **turbine** blade air deflector BR102014006359 **2013-03-15** FRONTIER WIND GE INFRASTRUCTURE TECHNOLOGY* 2014-04-01 2014-04-01

An apparatus and system for automatically deploying an air deflector of a load compensating device when there is a loss of communication or **power** is provided. In some examples, the apparatus and system may include a spring configured to rotate a gear, thereby deploying the air deflector. In some arrangements, the spring may be a torsion spring and may be biased to rotate the gear when released from a hold position maintained by a latch. The latch may be controlled by a release mechanism, such as a solenoid, that may be configured to activate upon occurrence of a communication loss event. The release mechanism may release the latch, thereby releasing the spring and deploying the air deflector.

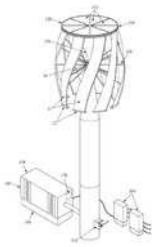


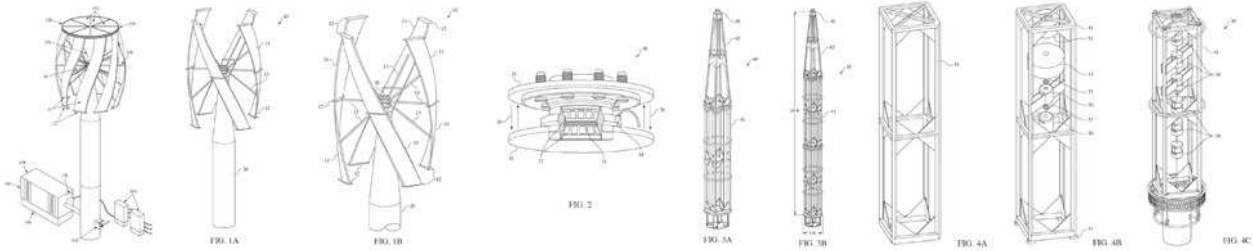




| | | | | | | |
|---|---|---|---|---|---|---|
| 54. | On or off grid vertical axis wind **turbine** and self contained rapid deployment autonoous battlefield robot recharging and forward operating base horizontal axis wind **turbine** | US9103321 | **2013-09-12** | BARDIA JAIME MIGUEL;BARDIA JAIME MLGUEL | 2015-08-11 | 2015-08-11 |

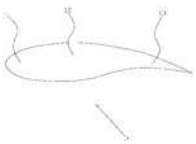
Vertical axis wind **turbine** and horizontal wind **turbine** each with a rotary airfoil assembly that has **helical** swept airfoils whose free ends each have a spoiler. The vertical axis wind **turbine** has permanent magnet discs for levitating static weight of an entirety of the rotary airfoil assembly via magnetic repulsion. There is a hub or affixing the permanent magnet discs within a frame structure in a manner that counteracts both a coefficient of friction ("COF") associated with rotation of the rotary airfoil assembly and ensuing bearing wear imparted from the rotary airfoil assembly. The horizontal axis wind **turbine** has collapsible telescoping towers.

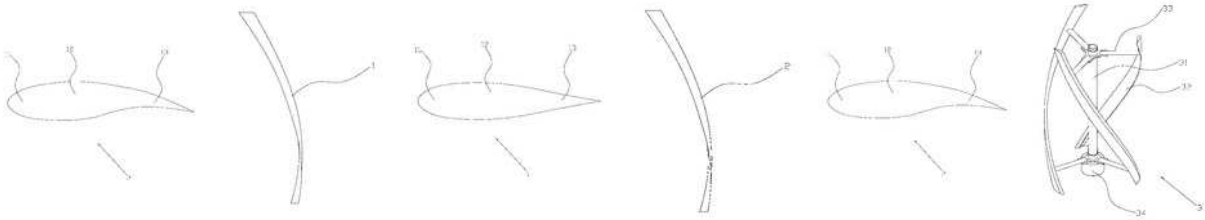




| | | | | | | |
|---|---|---|---|---|---|---|
| 55. | Blade and **turbine generator** using same | CN203214236 | **2013-03-26** | Yi Bing | 2013-09-25 | 2013-09-25 |

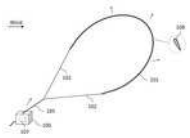
The utility model belongs to the field of **generators** and provides a blade. The cross section of the blade is of a symmetric fish-shaped structure or an asymmetric fish-shaped structure. The utility model further provides a **turbine generator** adopting the blade. As the tail part of the blade provided by the utility model is of a slender conical or strip-shaped structure, the tail part is light in weight and large in windward area, the tail part is easier to be driven, and the utilization rate of wind energy or water energy is high; and in addition, as the head part of the blade provided by the utility model is of an oval or circular structure, the wind resistance of the head part is small, and the loss of wind energy or water energy is small. The **turbine generator** adopting the blade can realize a high utilization rate of energy and improve **power generation** efficiency during the process of converting the wind energy or the water energy to electrical energy.

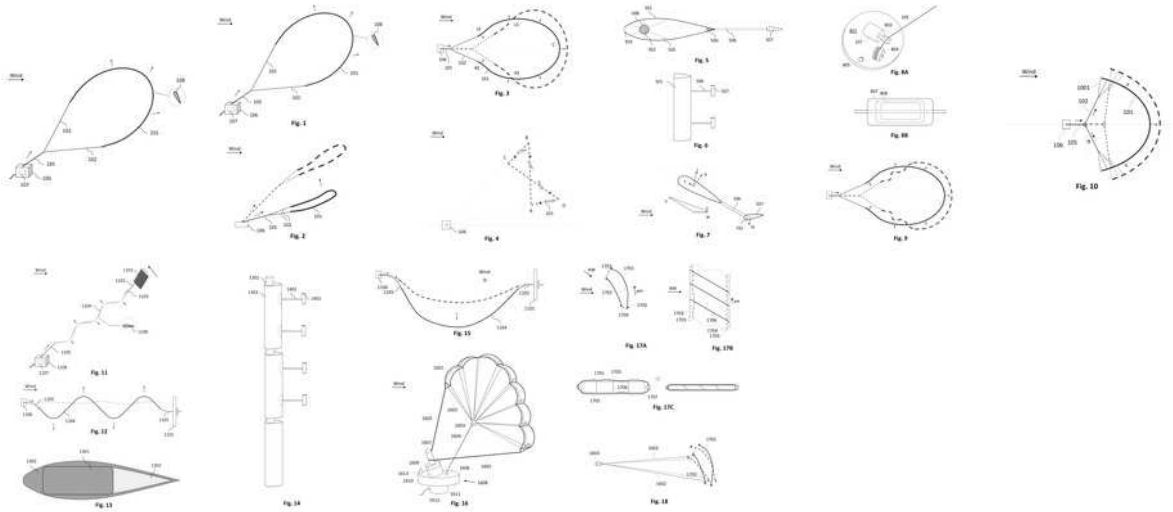




56. Airborne wind energy conversion system with ground **generator** and unorthodox **power** capture or transfer — US20150130188 — **2015-01-20** — GOLDSTEIN LEONID — 2015-05-14 — 2015-05-14

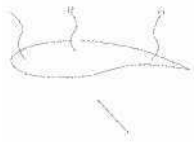
An airborne wind energy conversion system with a ground **generator** and unorthodox **power** capture or transfer means, including such embodiments as: a system with an ultra-long flexible wing, which serves both for **power** harvesting and **power** transfer; a system with a tethered wing, the tether having an airfoil cross section in at least a substantial part of its length and participating in **power** harvesting; a system with a very long semi-circular wing, harvesting and transferring wind **power** by its **helical** motion; a system in which a conventional wing both harvests wind **power** and excites waves in the tether, the waves transferring the **power**.

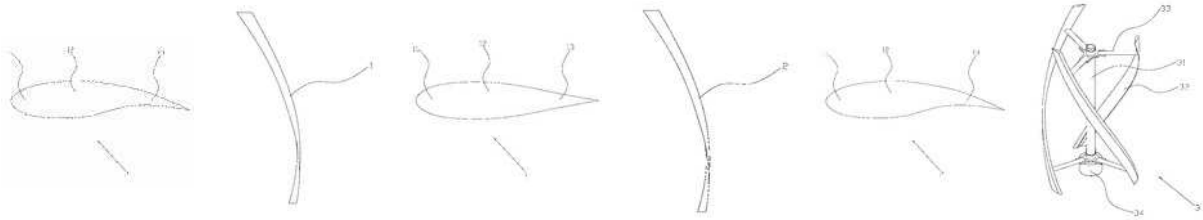




57. Vane and **turbine generator** using vane — CN103133239 — **2013-03-26** — Yi Bing — 2013-06-05 — 2013-06-05

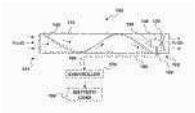
The invention belongs to the field of **generators** and provides a vane. A cross section of the vane is in a symmetrical fish-shaped structure or a dissymmetrical fish-shaped structure. The invention further provides a **turbine generator** using the vane. Due to the fact that the tail of the vane is in a lathy cone shape or a bar-shaped structure, the tail is light and a wind area is large, so that the tail is easy to drive, and the utilization rate of wind energy or water energy is high. In addition, the head of the vane is in an elliptic or round structure, windage of the head is small, and losses of the wind energy or the water energy are little. By the adoption of the **turbine generator** using the vane, in the process of converting the wind energy or the water energy into an electric energy, capacity usage ratio is high, and **generating** efficiency is improved.

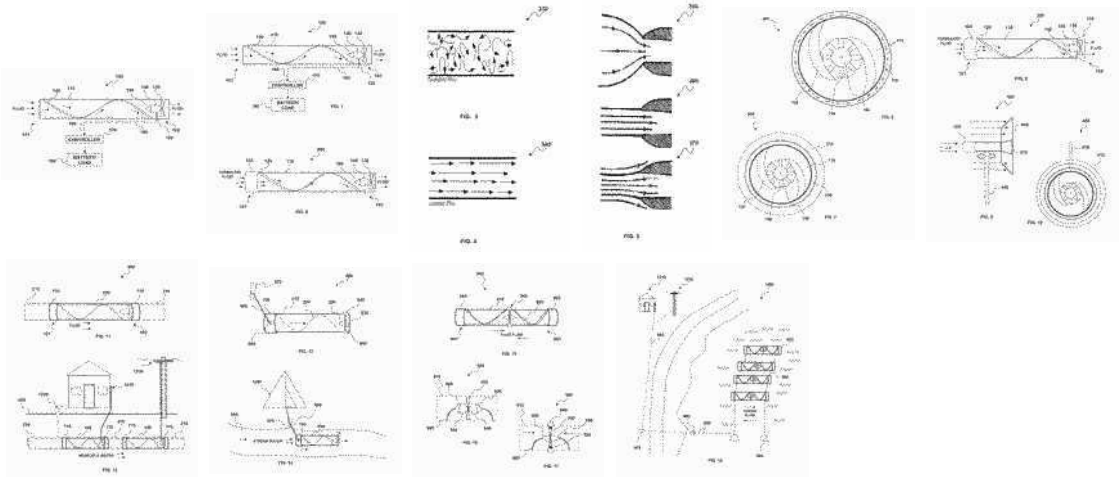




58. Fluid driven electric **power generation** system — US20110285134 — **2011-08-03** — MDL ENTERPRISE* MDL ENTPR* — 2011-11-24 — 2011-11-24

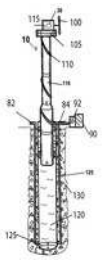
A tubular housing can include at least one fixed **helical** vane formed onto the inner surfaces of the tubular housing in a spiral and adapted to direct fluid into a spiraled flow and focus fluid onto a fan blade assembly associated with an alternator system and located within the tubular housing before a system exhaust. A **generator** cone can be mounted near the center and front of the fan blade assembly facing fluid passing through the tubular housing. As fluid passes over the **generator** cone it experiences compression between the **generator** cone and housing resulting in increased pressure and velocity of the fluid, thereby increasing rotational speed of the **generator** blades and **generator** as the compressed, spiraled fluid passes through the blades and exits the tubular housing. The system can be used for fixed or mobile applications in water, wind and manually induced fluid flow.

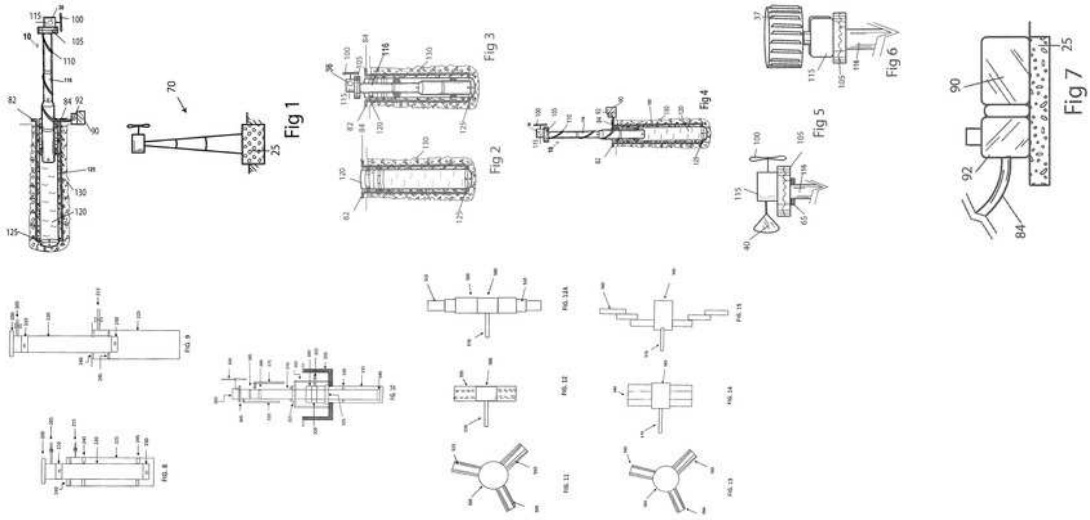




59. Wind **turbine** system US20170101982 **2015-10-13** OZCAN HUSEYIN 2017-04-13 2017-04-13

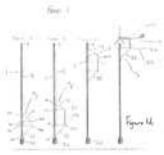
The present invention is an improved arrangement for a wind **turbine** system wherein the **power generator** unit is independently installed at ground level to minimize the vertical compressive load imposed on the poles. The wind **turbine** system is powered by an integrated hydraulic **power** unit comprising a hydraulic pump driving a hydraulic motor operationally coupled to the **power generator** at ground level. A lighter weight hydraulic pump replacing the old system **generator** is operationally coupled to the wind **turbine** rotor blades disposed atop the pole. An umbilical hose supplies high pressurized fluid from the hydraulic pump to the hydraulic motor thereby causing the **power generator** to rotate.

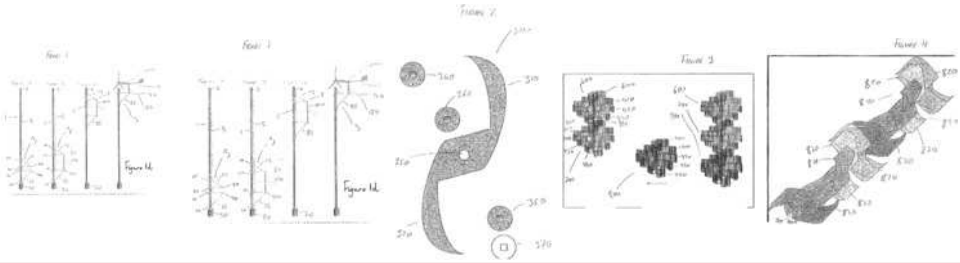





60. Wind **power** devices GB201117789 **2011-10-14** CARR MARK* 2011-11-30 2011-11-30

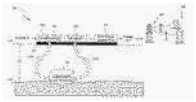
There is herein described an invention relating to turbines, particularly to extendible vertical wind and water turbines as well as mechanisms to raise and lower turbines supported on a mast.

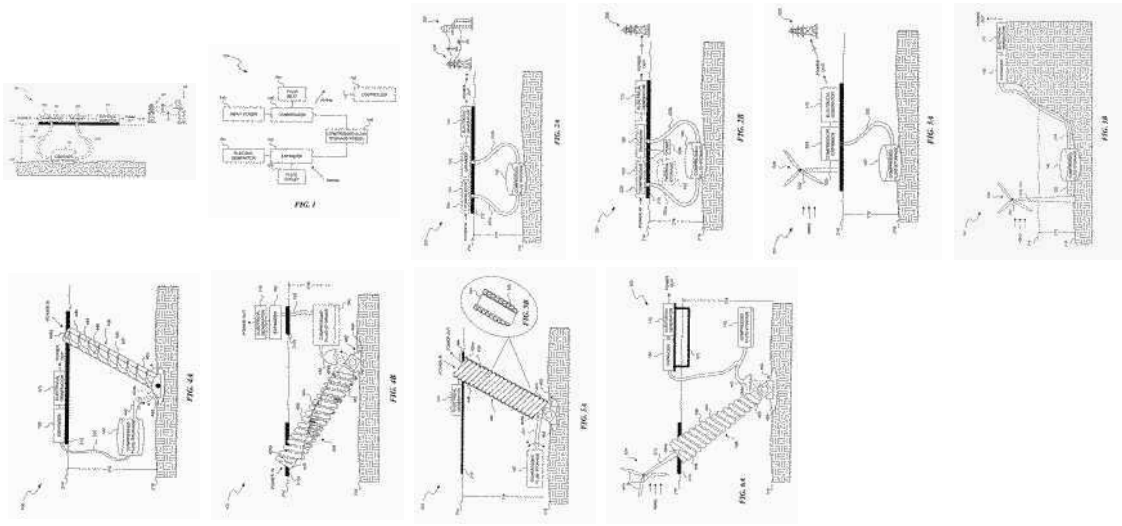




61. Pneumatic gearbox with variable speed transmission and associated systems and methods — WO2012009584 — **2011-07-14** — BRIGHT ENERGY STORAGE TECHNOLOGIES* — 2012-01-19 — 2012-01-19

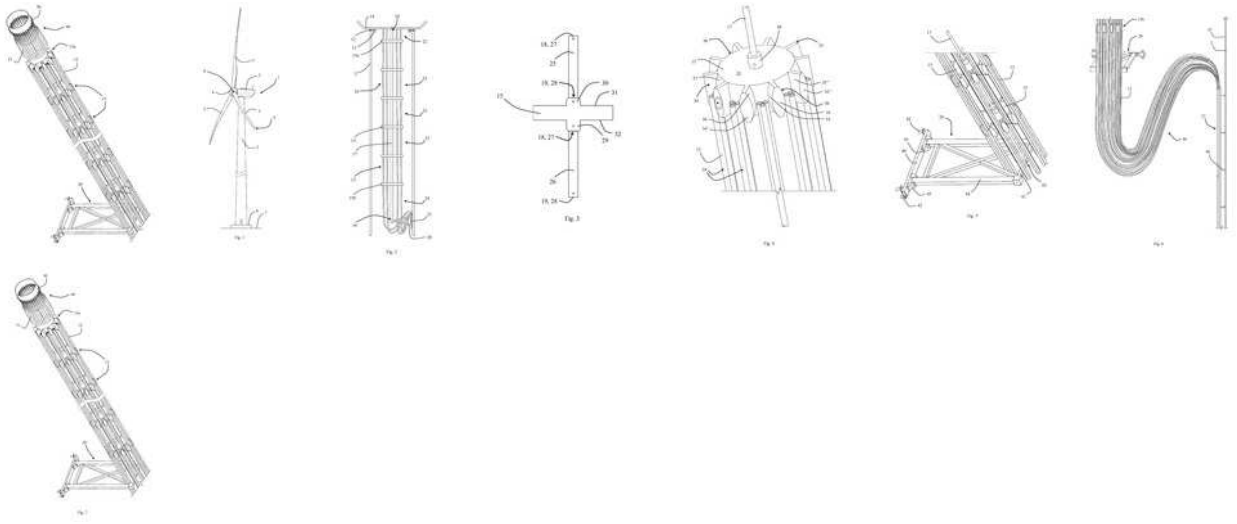
The present technology is directed generally to pneumatic gearbox systems with variable speed transmission and associated systems and methods. In selected embodiments, pneumatic gearbox systems can include a variable input **power** source and a compressor operatively coupled thereto. The compressor can be configured to compress a fluid at a first cyclic frequency from the variable **power** input **power** source. The system can further include a storage vessel in fluid communication with the compressor and an expander in fluid communication with the storage vessel. The storage vessel can be configured to retain a volume of the fluid after compression until the expander draws upon it to expand the fluid at a second cyclic frequency different from the first cyclic frequency. The second cyclic frequency can be configured to synchronize with that of an electrical **generator**.





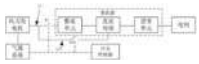
62. System for twisting cables in a wind **turbine** tower — DK201270766 — **2012-12-06** — ENVISION* — 2014-06-06 — 2014-06-06

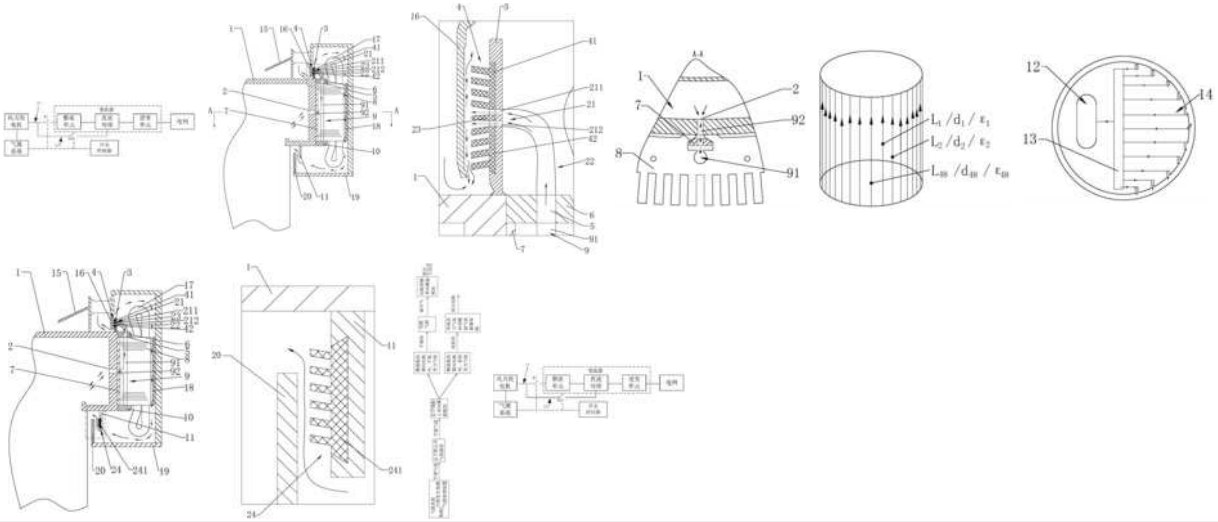
The invention relates to a wind **turbine** having a wind **turbine** tower and a nacelle provided on top of the tower to which a rotor hub with one or more wind **turbine** blades is rotatably mounted. A cable twisting system is arranged inside the tower and suspended from the bottom of the nacelle. The cable twisting system comprises cable spacing plates coupled to a suspension element. Guiding means guide the electrical cables from the nacelle to the bottom of the tower. The suspension element is a torsion element having a first end capable of twisting relative to a second end when torque is applied to the first end therefore allowing individual cable spacing plates to be rotated in a more uniform manner when the nacelle is yawing. This also allows upwards movement of the cable spacing plates caused by the applied torque to start at the uppermost cable spacing plate.



| | | | | | | |
|---|---|---|---|---|---|---|
| 63. | Permanent magnet direct-drive wind-powered **generator** system and sealing coordinating drying control method thereof | CN104810997 | **2015-04-15** | GOLDWIND SCIENCE & TECHNOLOGY XINJIANG GOLDWIND SCIENCE & TECHNOLOGY* | 2015-07-29 | 2015-07-29 |

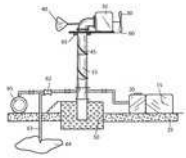
The invention provides a permanent magnet direct-drive wind-powered **generator** system and a sealing coordinating drying control method thereof. The system comprises a wind-powered **generator** and a **converter**, wherein the **converter** comprises a rectifying unit, a DC busbar and an inverting unit; the inverting unit is connected with a **power** grid; a **power** supply switch is arranged on a first transmission line between the rectifying unit and the wind-powered **generator**; a permanent magnet direct-drive wind-powered **generator** comprises a stator, a rotor, an air source system, a net side reversing **power** supply switch, a switch controller and a jet sealing device; the switch control is connected with the air source system, the **power** supply switch and the net side reversing **power** supply switch and used for controlling the on and off of the **power** supply switch and the net side reversing **power** supply switch as well as controlling the start and stop of the air source system. According to the system, the airflow **generated** by the air source system, the heat **generated** by the wind-powered **generator** around a stator winding and the heat **generated** by reversing **power** supply can be comprehensively controlled and utilized, so as to achieve sealing coordinating drying of the wind-powered **generator**.

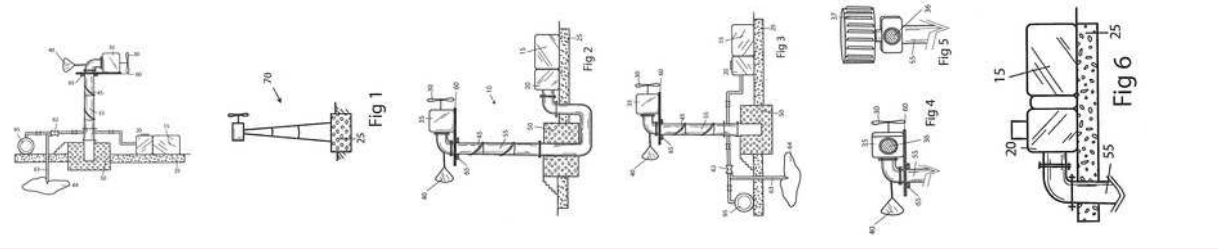




| | | | | | | |
|---|---|---|---|---|---|---|
| 64. | Use of compressed air to **generate** energy using wind turbines | US20170101981 | **2015-10-13** | OZCAN HUSEYIN | 2017-04-13 | 2017-04-13 |

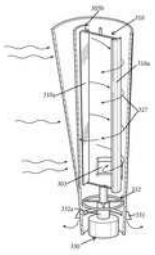
The present invention is an improved arrangement for a wind **turbine** system wherein the **power generator** unit is independently installed at ground level to minimize the vertical compressive load imposed on the poles. The wind **turbine** system is powered by an integrated air **power** unit comprising an air pump driving an air motor operationally coupled to the **power generator** at ground level. A lighter weight air pump replacing the old system **generator** is operationally coupled to the wind **turbine** rotor blades disposed atop the pole. A pipe line supplies pressurized air from the air pump to the air motor thereby causing the **power generator** to rotate.

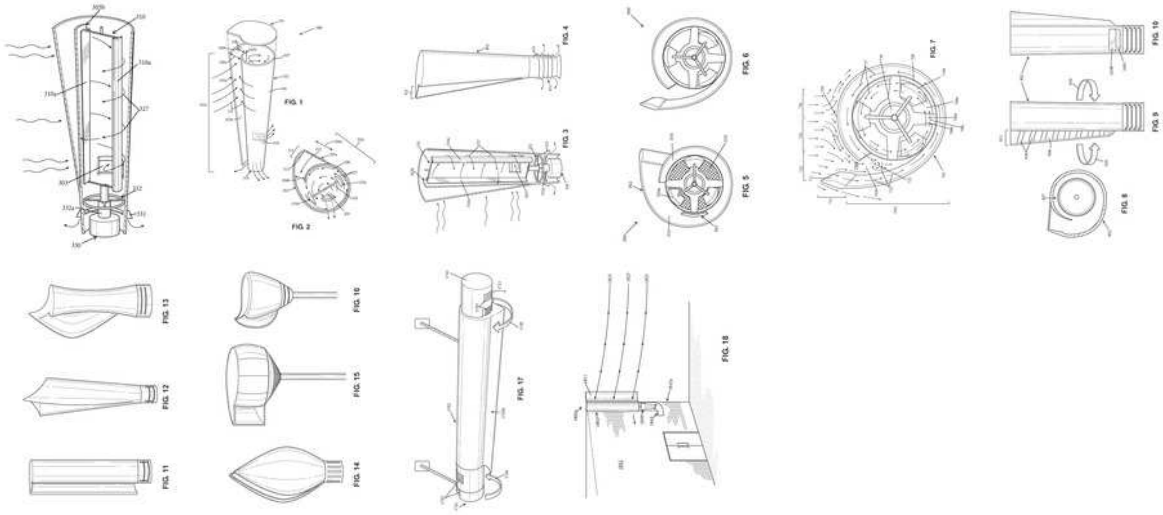




65. Cyclonic aeolian vortex **turbine** US9371818 **2015-08-10** MONTO MARK T 2016-06-21 2016-06-21

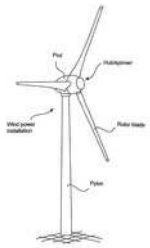
A wind **turbine** is provided that has a blade encased into a substantially circular portion of a shell, the shell having an interior surface, an exterior surface, a first end, an opposite second end, and an intake opening between the first and the second end, wherein the first end is closed and wherein the shell has an exhaust opening at or near the second end, wherein wind ingested into the shell through the intake opening is forced to become a vortex having a higher speed than the ingested wind and concentrating the ingested wind substantially near the interior surface of the shell into a spiral air stream traveling toward the exhaust opening, in order to increase an amount of energy harvested by the blade from the ingested wind before the ingested wind, devoid of the amount of energy harvested, exits the shell through the exhaust opening.

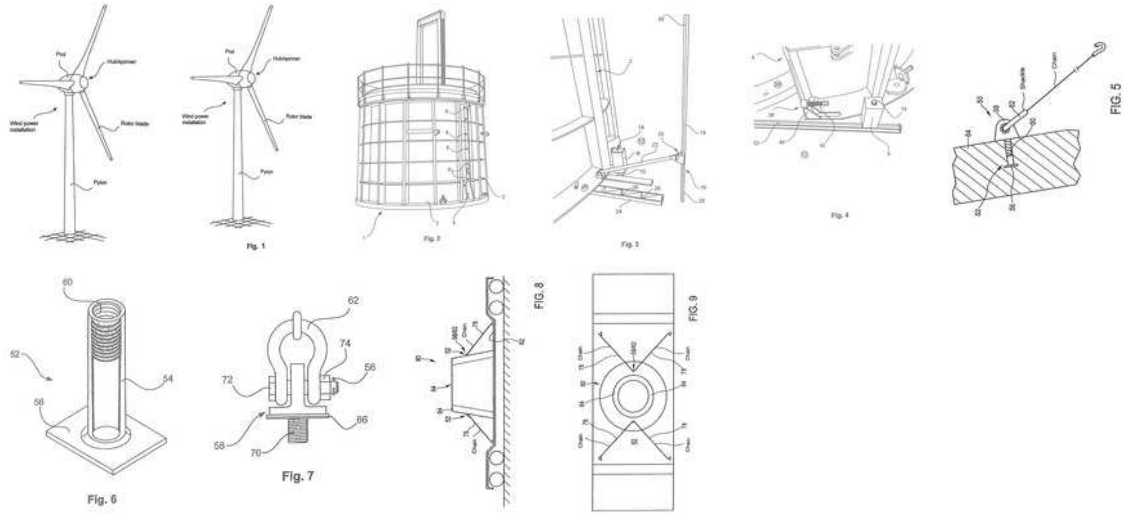




66. Production of a tower CA2967539 **2011-06-22** ALOYS WOBBEN
THIS PROPERTY RIGHT OF CROW
WOBBEN PROPERTIES*
WOBBEN PROPERTIES WOBBEN
PROPERTIES 2012-12-27 2012-12-27

The present invention relates to a method for producing a tower segment of a concrete tower of an wind energy installation, comprising the steps: providing a segment mold (2) having at least one formwork (1) for defining a mold of the tower segment (80) that is to be produced and for filling with concrete; filling the segment mold (2) with concrete in order to form the tower segment (80) by the subsequent hardening of the concrete; measuring the tower segment (80) thus hardened for creating a three-dimensional, virtual actual model of said tower segment (80); producing said three-dimensional actual model; comparing the three-dimensional actual model with a predefined mold, in particular a stored three-dimensional, virtual target model; and determining a deviation between both virtual models and changing the segment mold (2), in particular changing the at least one formwork (1) when the deviation exceeds a first predefined threshold value.



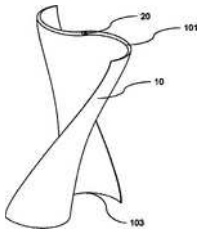


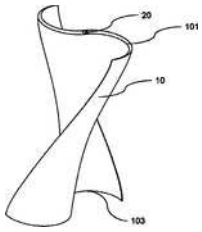
67. Utility model for floating wind **power** dissipation in innovative fixing unit, the center pole and novel water floating foundation system with **power generation** system including a rotor/stator used DE202011005240 **2011-04-13** SCHEDL KONRAD* 2011-10-20 2011-10-20

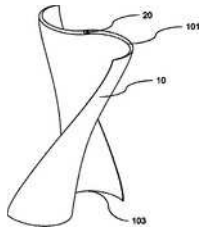
A floating Wind, characterized in, that the Wind **turbine** platform of adjacent a collection, "foundation" stable with, but below the two sides of floating at sea waves and flexibly and automatically rotating the Wind the full platform.

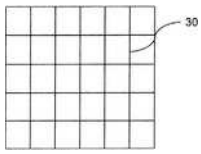
68. Wind driven blade and wind driven **generator** CN202031769 **2011-01-05** JIN KONGFA* 2011-11-09 2011-11-09

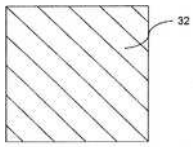
A wind driven blade is made by pouring high polymer material into a die for forming an integrated S-shaped wind driven blade, which comprises an S-shaped columnar body possessing a first end, a second end opposite to the first end, and a center shaft penetrating the S-shaped columnar body from the first end to the second end and being located in the middle of the S-shaped columnar body. The wind driven blade is characterized in that the S-shaped columnar body is formed with the high polymer material in an integrated manner and is gradually twisted into a spiral shape clockwise or counterclockwise from the first end downward to the second end, with the center shaft as the center and with an angle ranging from 60 degrees to **360** degrees. The wind driven blade provided by the utility model has a prolonged service lifetime with the integrated forming, and, with the lightweight design, improves **power generation** efficiency and realizes significantly promoted performance, thereby realizing energy conservation and carbon reduction.

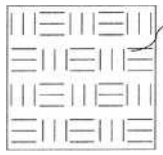


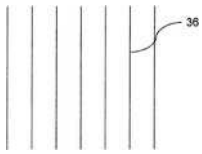



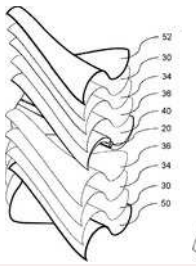



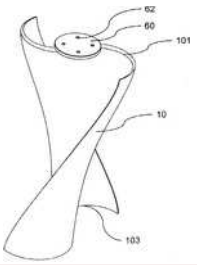



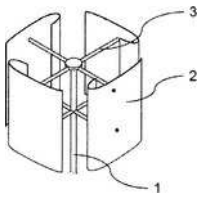



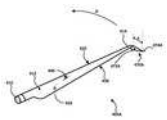



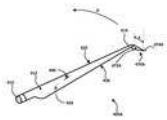

69. Aerogenerator of axis of vertical rotation with aeolian **turbine** of compound blades ES2620927 **2015-12-29** MIKONOS XVIII* UNIVERSITY AUTONOMA DE CIUDAD JUAREZ* 2017-06-30 2017-06-30

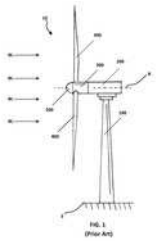
It includes a Aeolian **turbine** (10) that is made up of a plurality of compound blades (5), On guard arranged vertical, that they are formed externally by an obverse with convex surface and a reverse one with concave surface, in order to **generate** a horizontal force of drag that brings about an angular motion of a Aeolian **turbine** (10), and in whose interior each compound blade (5) has a plurality of shovels with aerofoil profile (50), arranged On guard horizontal, located in the central part of a plurality of baffle plates (52), whose purpose is to **generate** a vertical force of drag, opposed to the direction of the gravity, and a force sustenation horizontal that favors the mentioned angular motion.

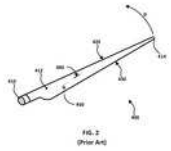
70. Fluid-redirecting structure CA2992865 **2015-08-05** Ryan 2016-02-11 2016-02-11

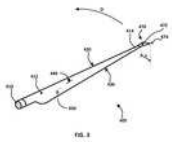
A fluid-redirecting structure includes a rigid body having an upstream end, a downstream end, and an axis of rotation, the rigid body incorporating a plurality of troughs each spiralled from a tip at the upstream end to the downstream end about the axis of rotation, the troughs being splayed with respect to the axis of rotation thereby to, proximate the downstream end, direct incident fluid along the troughs away from the axis of rotation.

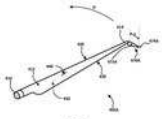


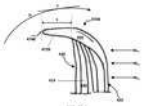


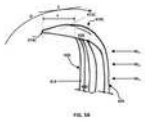


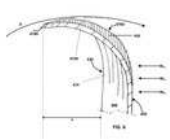


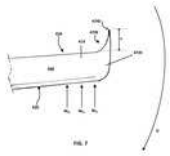


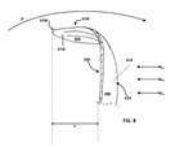


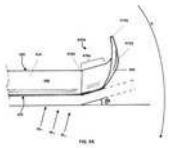






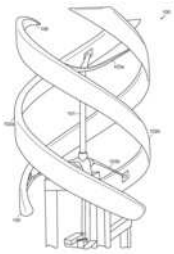


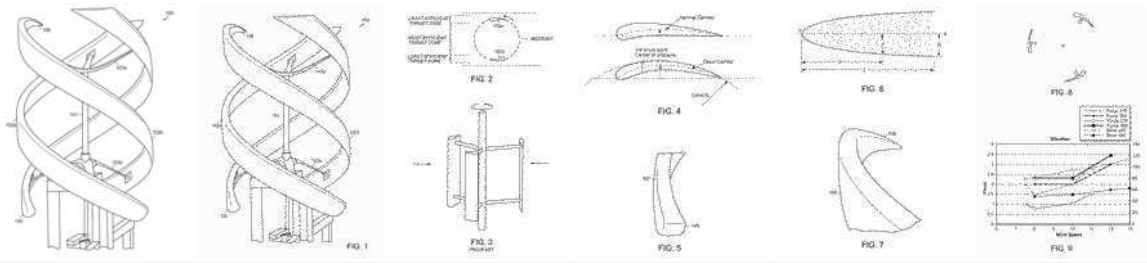




71. Turbines WO2011130391 **2011-04-13** ARCJET HOLDINGS* 2011-10-20 2011-10-20

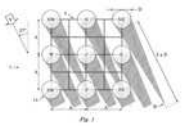
The invention generally relates to turbines that efficiently process air or fluid flow while producing substantially no vibrational effects. In certain embodiments, the invention provides a **turbine** including a rotatable shaft, and at least one blade connected to the rotatable shaft, in which the blade includes a **helical** shape and an angle of about 180° or greater.

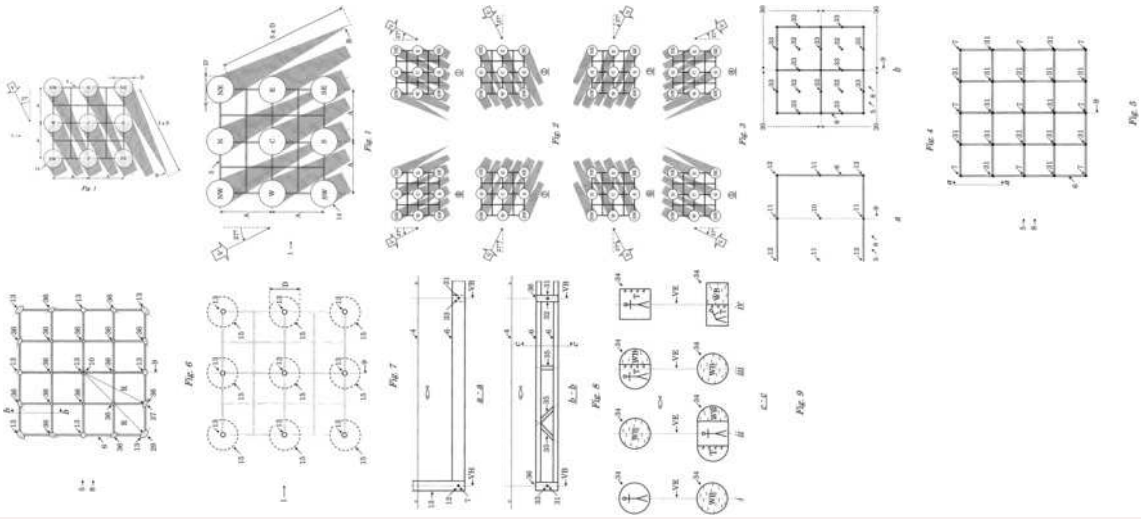




72. Nine-branched wind platform SE1330119 **2013-09-29** GOX* 2015-03-30 2015-03-30

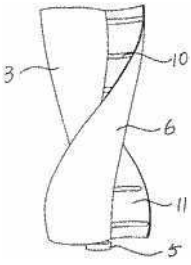
The present invention relates to a floating unit adapted to extract energy from the wind comprising a floater exhibiting a square figure of structural elements permanently attached to nine orthogonal equidistant primary nodes each one of which supporting a wind **power** unit equipped with a rotor exhibiting a substantially vertical axis of **turbine** rotation, wherein the floater exhibits eight different main directions suitable for the efficient passage of the wind through the wind **power** units. The invention also relates a method to control the course of the floating unit at an interval limited by arctangent 0,5 degrees to starboard and to port of the longitudinal centre line, wherein the method comprises the steps to determine the current course, determine the current wind direction, compare each of the eight main directions with the current wind direction, determine the change of course and rotate the floating unit until the determined change of course is obtained. The invention also relates to the use of the unit and accomplishment of the method for course control to transform wind energy into electrical or mechanical or visual effect.

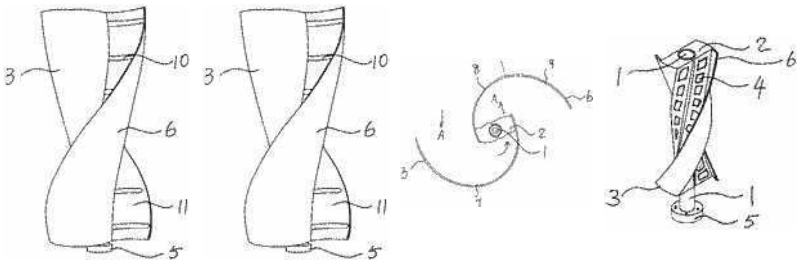




73. Vertical-shaft wind driven **generator** wind blade CN202560460 **2012-04-12** HEBEI YOUHE ENERGY TECHNOLOGY* 2012-11-28 2012-11-28

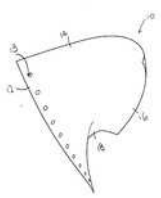
The utility model belongs to the wind **power** equipment accessory technology field and discloses a **generator** wind blade used on a vertical-shaft wind driven **generator** set. A technical scheme of the apparatus comprises that: the blade is formed by a rotating-shaft fixed mount, a fixing mechanism connected with a **generator** rotation shaft and several wind blades, wherein a central section of the rotating-shaft fixed mount is provided with the vertical rotating shaft, a cross section is an arc rotating shaft and the wind blades are in a spiral shape; by using the **generator** wind blade, no matter how the direction of the wind changes, rotation of a wind mill can be guaranteed and the wind mill can be started at a 0.7m/s wind speed. Needed starting wind **power** is greatly reduced so that the wind blade is especially suitable for the small and medium-sized wind field **generator** set.

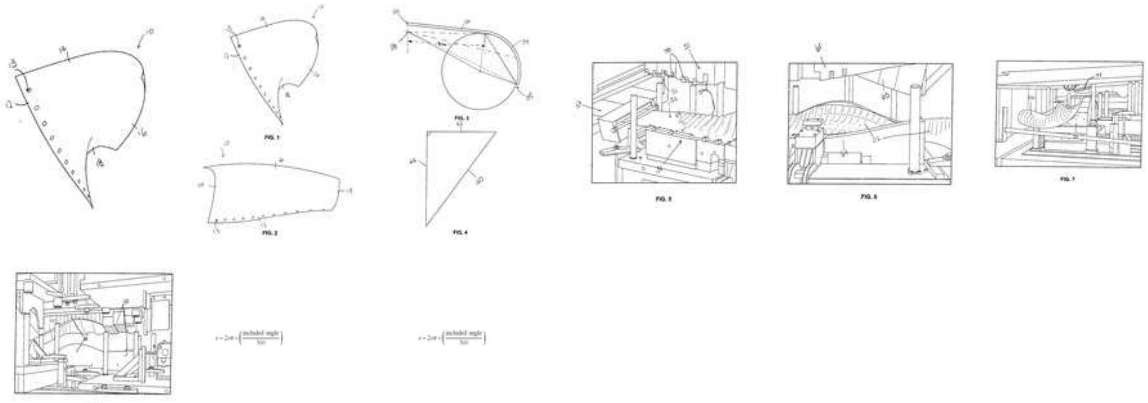


| | | | | | | |
|---|---|---|---|---|---|---|
| 74. | Helix type vertical axis **turbine** blades and method for continuously making same | US20130343897 | **2013-03-04** | COLLINS DAVID A | 2013-12-26 | 2013-12-26 |

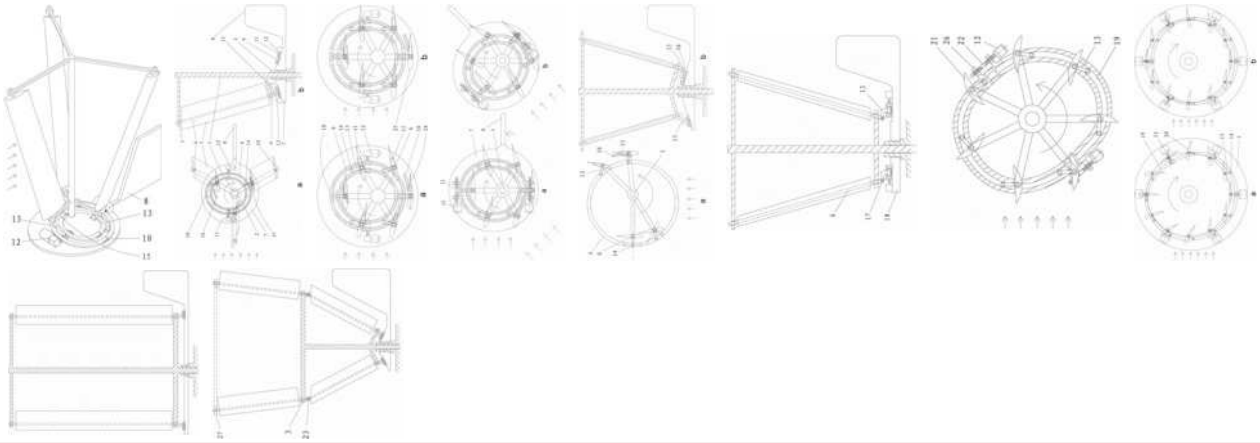
A sheet metal blank is formed into a **helical turbine** blade by stretching an outer portion of the blank by creating indents and detents thereon. Then the stretched side is flattened and the stretched structure is formed into a **helical** shape.





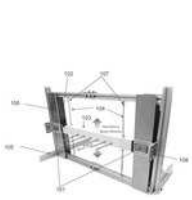
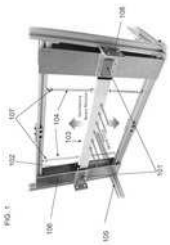
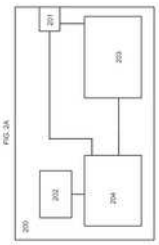
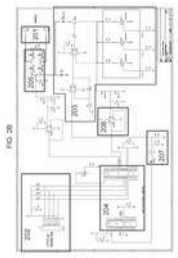
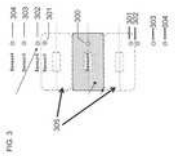
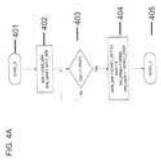
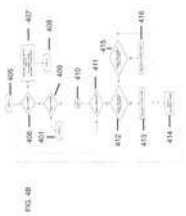
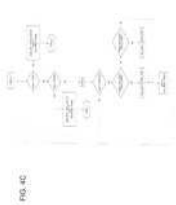
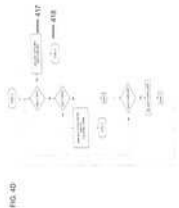
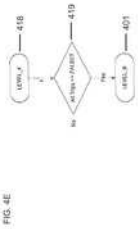
| | | | | | | |
|---|---|---|---|---|---|---|
| 75. | Blade incidence-angle-adjustable type vertical-shaft wind **turbine** | CN103573553 | **2012-08-10** | LI DONGLIN | 2014-02-12 | 2014-02-12 |

The invention relates to a blade incidence-angle-adjustable type vertical-shaft wind **turbine**. The blade incidence-angle-adjustable type vertical-shaft wind **turbine** comprises an output shaft, a supporting frame, a blade, an incidence angle adjusting device and a counter-wind device, wherein the supporting frame is fixedly connected with the output shaft and drives the output shaft to rotate, the blade is installed on the supporting frame through a rotating shaft in a rotating manner and pushes the supporting frame to drive the output shaft to rotate, the incidence angle adjusting device is used for adjusting an incidence angle of the blade, and the counter-wind device is used for driving the incidence angle adjusting device to rotate in a counter-wind direction; the incidence angle adjusting device comprises an oblate incidence angle adjusting groove which is installed on the counter-wind device and an incidence angle adjusting crank; one end of the incidence angle adjusting crank is connected with the rotating shaft of the blade, and the other end is arranged inside the incidence angle adjusting groove in a slide manner; and when one end of the incidence angle adjusting crank slides inside the incidence angle adjusting groove, the other end of the incidence angle adjusting crank drives the rotating shaft to rotate so as to adjust the incidence angle of the blade. Through the guide of the incidence angle adjusting groove, the blade is driven by the incidence angle adjusting crank to rotate, so that the incidence angle of the blade can be adjusted in real time, the front edge of the blade is always maintained on a windward position in operation, and the utilization efficiency of the wind energy can be effectively improved.



76. Improvements for a non-rotating wind energy **generator** | US20160201646 | **2014-07-31** | NORTHEASTERN UNIVERSITY* | 2016-07-14 | 2016-07-14

Aspects of the invention relate to a control system for a non-rotating wind energy **generator**. The control system can comprise a sensor that senses at least one of: an amplitude of oscillation of a bluff body of the non-rotating wind energy **generator**, a **power** output of a linear alternator system of the non-rotating wind energy **generator**, a voltage output of the linear alternator system of the non-rotating wind energy **generator**, and a current output of the linear alternator system of the non-rotating wind energy **generator**. Additionally, the control system can comprise a damper that applies a damping force to the bluff body based in part on at least one of the amplitude, the voltage output, the current output, and the **power** output.

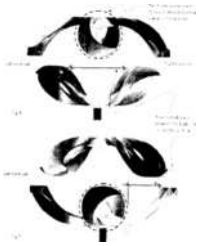











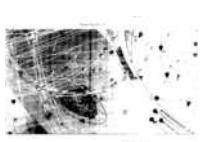
77. Wind **turbine** | IN4159/CHE/2012 | **2012-10-05** | SUBHAN SYED RIZWAN | 2016-04-22 | 2016-04-22

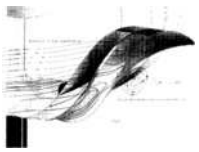
A horizontal axis **turbine** comprising a wind **turbine** having a plurality of leaf type blades arranged about a central shaft defining an axis of rotation to **generate** the maximum **power** from the wind at minimum cost. And the invention is to provide a device in which the blades will be so configured, that it shall freely turn around the shaft axis without support from external directional means. The invention comprises in providing a wind oriented blades with curved leaf formation secured upon a shaft, which is arranged to turn around upon an axis.





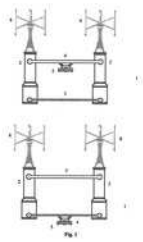



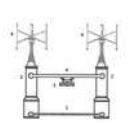
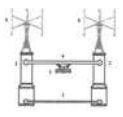
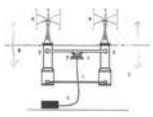
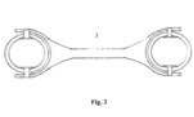
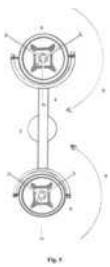
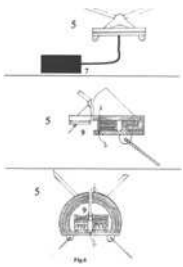
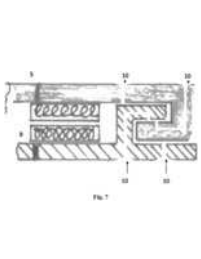
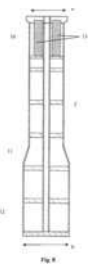
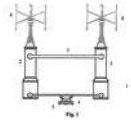
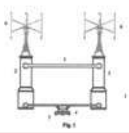
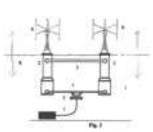
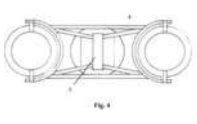




78. Floatable platform for wind **power** turbines | WO2014015998 | **2012-07-26** | COLLING CLAUS;MENGELKAMP PHILIPP;SCHLOEGEL MICHAEL;SCHLÖGEL MICHAEL | 2014-01-30 | 2014-01-30

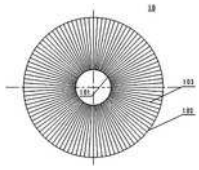
The present invention relates to a floatable platform for wind **power** turbines, comprising at least two elongate float bodies which are floating substantially vertically; at least one first connecting member; and at least one second connecting member having a concentrically disposed anchoring. The at least two float bodies are respectively pivotally connected to each other through the first connecting member. The at least two float bodies are respectively pivotally connected to each other through the second connecting member. The first connecting member and the second member are substantially parallel to each other, such that a parallel swinging of the float bodies relative to each other is possible in a plane that is defined by the vertical longitudinal axis of the respectively connected two float bodies.

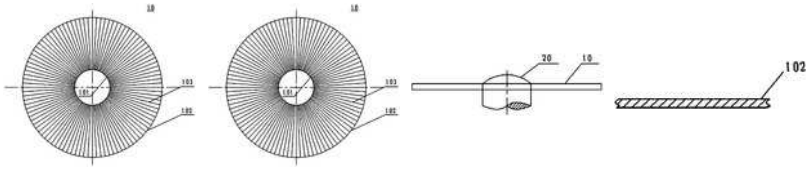


79. Spiral disc type blade structure used for wind driven **generator** CN203822556 **2014-03-21** CHAI GUIJING 2014-09-10 2014-09-10

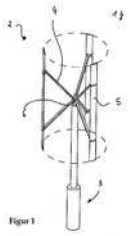
The utility model provides a spiral disc type blade structure (10) used for a wind driven **generator**. The spiral disc type blade structure (10) comprises an inner ring part (101), an outer ring part (102) and blades (103), wherein the inner ring part and the outer ring part are connected together by the blades, the inner ring part is used for being fixedly connected with a **generator** rotating shaft (20), the central axis of the inner ring part and the central axis of the outer ring part coincide with the central axis of the **generator** rotating shaft, and the blades are in radial distribution between the inner ring part and the outer ring part around the central axis of the **generator** rotating shaft. The spiral disc type blade structure is strong in strong wind resistance capability and can effectively convert wind **power** into radial **power** of the blades.

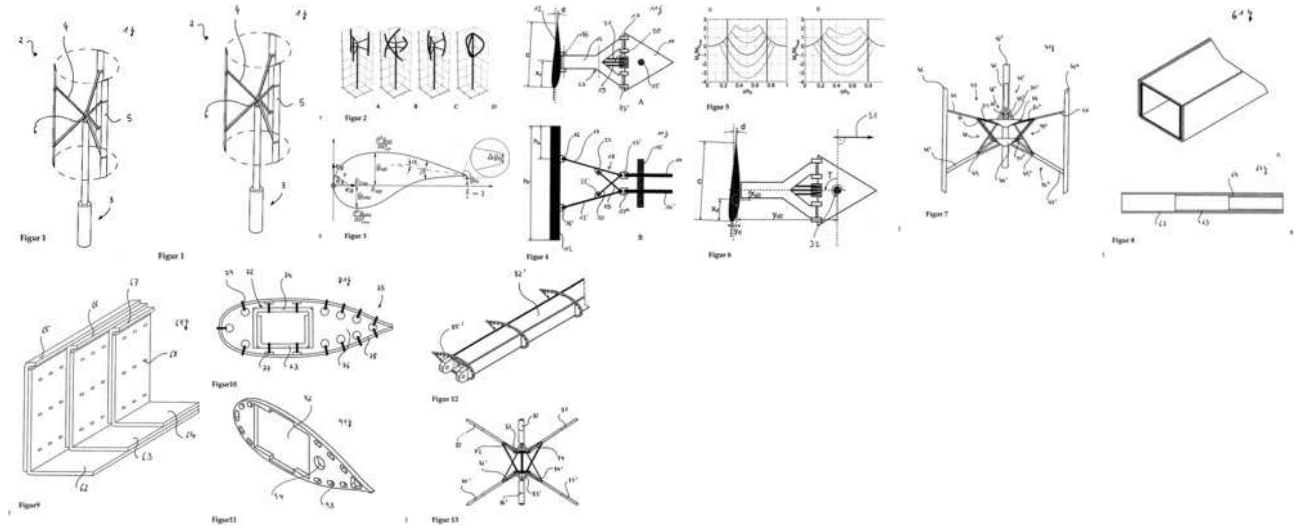





80. Rotor blade, retaining arm and rotor for a vertical-axis wind **turbine**, and production method and vertical-axis wind **turbine** DE102012024119 **2012-12-11** EOVENT* 2014-06-12 2014-06-12

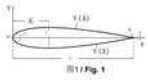
The invention relates to a rotor blade, to a rotor blade adjustment, a retaining arm and a rotor for a vertical-axis wind **turbine** and to a method for producing a retaining arm for a vertical-axis wind **turbine**.

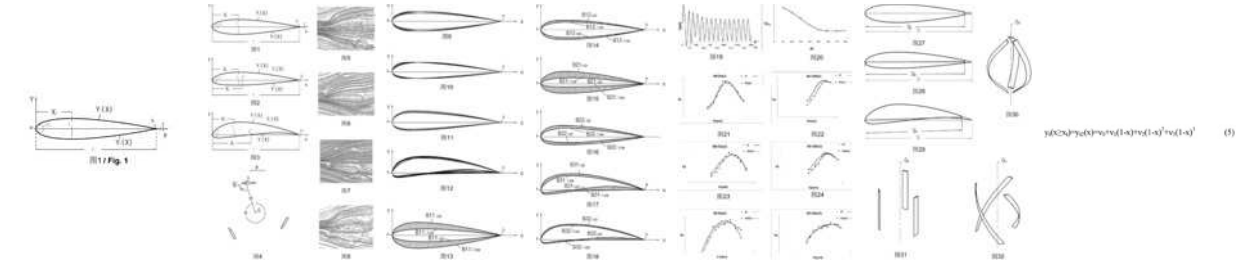




81. Vertical-axis wind **turbine**-dedicated high-efficiency blade CN103939283 **2014-04-29** FLY RENEWABLE ENERGY TECHNOLOGY*
SUZHOU FLY RENEWABLE ENERGY TECHNOLOGY 2014-07-23 2014-07-23

A vertical-axis wind **turbine**-dedicated high-efficiency blade. The blade is provided with a streamline shaped cross section. The edge of the cross section is constituted by a front edge point (a), a rear edge point (b), an upper airfoil edge (y + (x)), and a lower airfoil edge (y - (x)). One end of the upper airfoil edge is joined with one end of the lower airfoil edge at the front edge point. The other end of the upper airfoil edge is joined with the other end of the lower airfoil edge at the rear edge point. A straight line connecting the front edge point and the rear edge point is a chord. The upper airfoil edge is located above the chord and the lower airfoil edge. With the direction perpendicular to the chord serving as the vertical direction, at where the cross-section thickness is greatest in the vertical direction, the distance between the perpendicular foot on the chord and the front edge point is 0.12 to 0.29 times of the length of the chord. The vertical-axis **turbine** blade has great wind energy utilization performance.

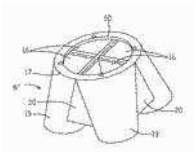


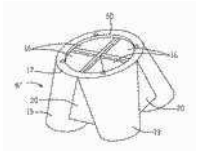


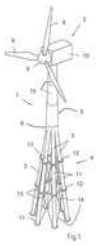
$$\gamma=dy_t(x)/dx \mid_{x\to 1}=v_1,\quad x=xf=dy_{c2}(x)/dx \mid_{x=xf}=0 \qquad y_{c1}(x)=\kappa_0+\kappa_1 x+\kappa_2 x^2$$

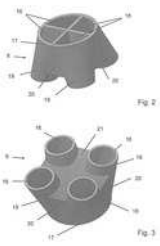
| | | | | | | |
|---|---|---|---|---|---|---|
| 82. | Transition body between tower sections of a wind **turbine**, and tower of a wind **turbine** comprising a transition body | CA2924257 | **2013-09-23** | THYSSENKRUPP STEEL EUROPE* | 2015-03-26 | 2015-03-26 |

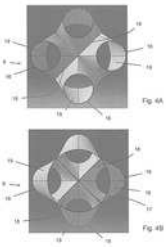
What is represented and described is a transition body (6, 6') for arranging between an upper tower section (5) and a lower tower section (4) of a tower (1) for a wind **turbine** (2), with a substantially annular upper attachment flange for connecting the transition body (6) to an upper tower section (5) and with at least three substantially annular lower attachment flanges in each case for connecting to a corner leg (3) of a lower tower section (4), wherein the transition body (6, 6') has a plurality of segments (16, 16') arranged around a central tower axis, wherein the number of the segments (16, 16') corresponds to the number of the corner legs (3), wherein the upper sections of the segments (16, 16') form, on the outer side of the transition body (6, 6'), an annularly encircling connection shell (17) which bears the upper attachment flange, and wherein the lower sections of the segments (16, 16') in each case form annularly encircling segment shells (19) which bear a lower attachment flange. In order to be able to reduce assembly effort and to improve the flow of forces without this resulting in a disproportionate increase in the outlay on transportation, it is provided in the transition body that the segment shells (19) merge into one another at an acute angle in the upper region at inwardly directed sections.

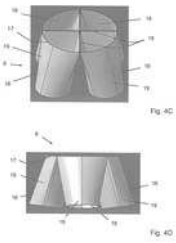


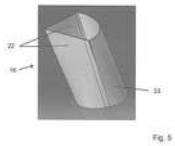




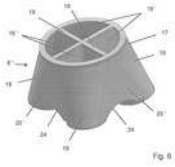


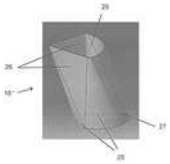


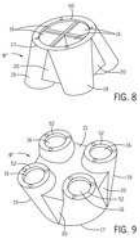






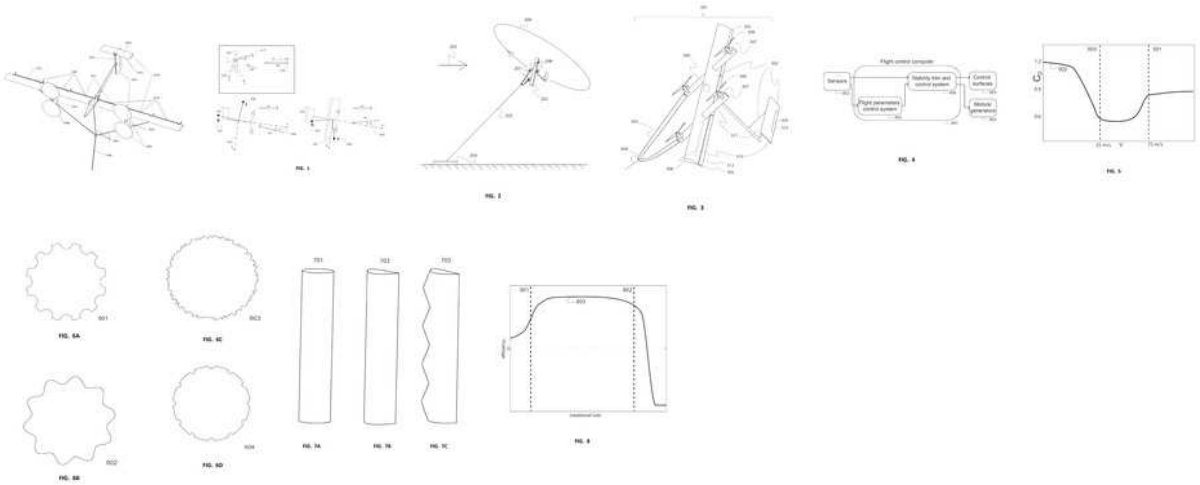






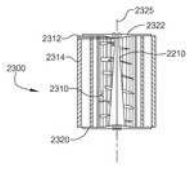
| | | | | | | |
|---|---|---|---|---|---|---|
| 83. | Flight configuration and flight strategy for flight wind speeds | US20120104763 | **2011-11-03** | GOOGLE*<br>MAKANI POWER<br>X DEVELOPMENT* | 2012-05-03 | 2012-05-03 |

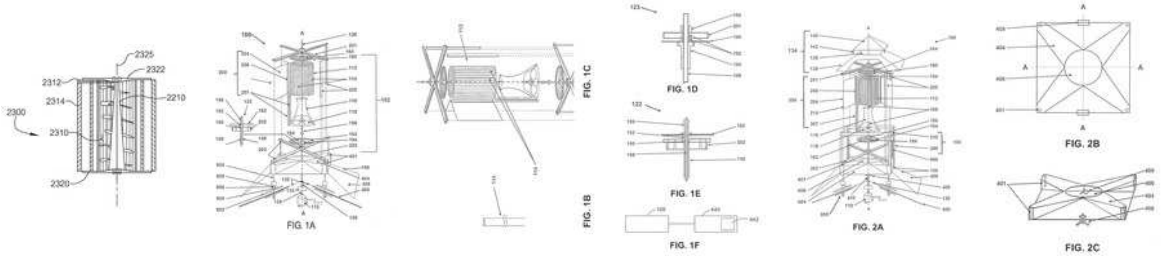
A crosswind kite system adapted to operate in an alternate mode in high winds. The system may operate at reduced efficiency in high winds in order to moderate loading on the system during those high winds. The system may use multi-element airfoils which are actuated to reduce the coefficient of lift of the airfoils in order to moderate loading in high wind conditions. Other flight aspects may be controlled, including flying the crosswind kite in side slip to induce drag which may lower loading on the system.

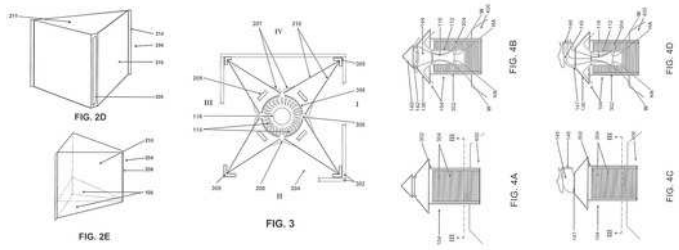


84. Nozzle assembly for use with a wind lens system for the **generation** of electric **power** US20140105743 **2013-12-18** BASSETT CLIFFORD E 2014-04-17 2014-04-17

A fluid flow nozzle including an elongated first wall and an opposing spaced elongated second wall defining an elongated nozzle volume therebetween, wherein the elongated first wall has a first proximal edge and a first distal edge and wherein the elongated second wall has a second proximal edge and a second distal edge. The nozzle inlet is defined by the first and second proximal edges and an opposing nozzle outlet is defined by first and second distal edges. The elongated nozzle has a cross-sectional shape configured to accelerate a fluid flowing from the nozzle inlet to the nozzle outlet without materially increasing fluid turbulence within the flow.

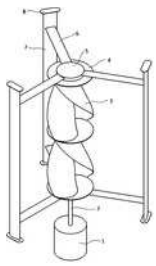


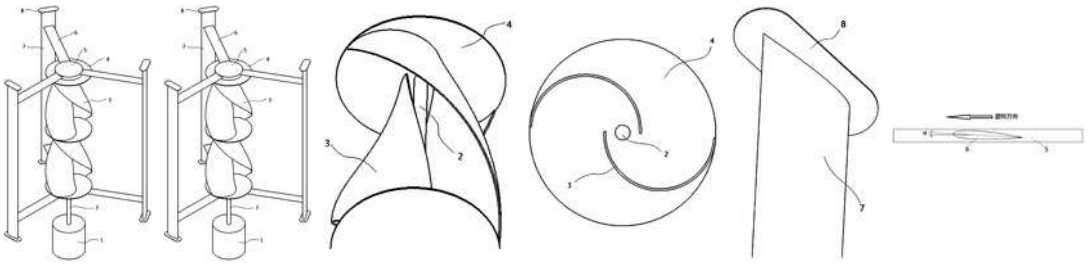




85. Small combined vertical axis wind **turbine** CN203476602 **2013-07-08** GUANGZHOU HKUST FOK YING TUNG RESEARCH INSTITUTE* 2014-03-12 2014-03-12

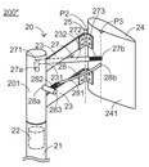
The utility model discloses a small combined vertical axis wind **turbine**. The small combined vertical axis wind **turbine** comprises a rotating shaft, a spiral S-shaped wind wheel, which is spirally coiled on the rotating shaft, and three cover boards, which are respectively arranged on the upper part, the middle part and the lower part of the rotating shaft and are used for fixing the spiral S-shaped wind wheel, wherein transverse supporting fixing seats are respectively arranged on the cover board on the upper part of the rotating shaft and the cover board on the lower part of the rotating shaft, multiple pairs of transverse support rods, which are parallel to each other, are arranged on the two transverse supporting fixing seats, the tail ends of the pair of transverse support rods are connected to a straight blade, and wing tip end plates are respectively arranged on two ends of the straight blade. The small combined vertical axis wind **turbine** has the characteristics of simple structure, reliable operation, high space utilization rate, high rotor **power** coefficient, small running resistance and good self-starting performance.

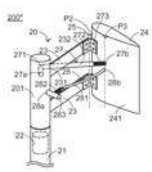




86. Vertical axis wind **turbine** US20150001850 **2013-06-28** NATIONAL TAIWAN OCEAN UNIVERSITY* 2015-01-01 2015-01-01

A vertical axis wind **turbine** includes a support axis and a wind wheel. The wind wheel includes a rotation base, plural rotation stand sets, plural deflection structures, plural blades, and plural deflection-limiting structures corresponding to the plural blades. The rotation base is rotatably disposed on the support axis. The plural rotation stand sets may define a rotation plane. A first end of each rotation stand set is fixedly disposed on the rotation base. Each blade is pivotally coupled to a second end of the corresponding rotation stand set through the corresponding deflection structure. Consequently, an angle of attack of the blade in an airflow is correspondingly adjusted. When one of the plural blades is deflected, the corresponding deflection-limiting structure **generates** a first rotational torque in a first rotating direction or a second rotational torque in a second rotating direction so as to rotate the rotation base.





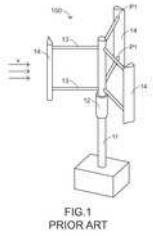


FIG.1
PRIOR ART

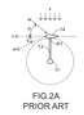


FIG.2A
PRIOR ART

FIG.2B
PRIOR ART

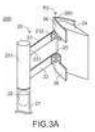


FIG.3A

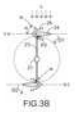


FIG.3B

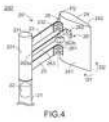


FIG.4

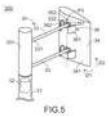


FIG.5

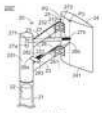


FIG.6A

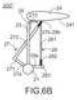


FIG.6B

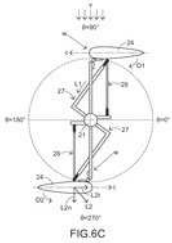


FIG.6C

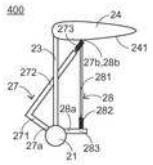
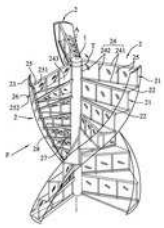
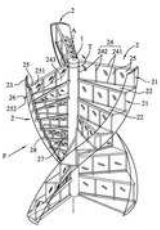



FIG.7

87. **Turbine** blade apparatus JP3205043 **2015-04-22** HUANG KUO-CHANG 2016-06-30 2016-06-30

A **turbine** blade apparatus is adapted to be pushed by a fluid to rotate. The **turbine** blade apparatus includes a rotary shaft and at least one blade assembly. The rotary shaft extends along an axis, and is rotatable in a rotation direction about the axis. The blade assembly is co-rotatably connected to the rotary shaft, helically extends around the rotary shaft, and includes a plurality of blade units that are helically arranged around the rotary shaft. Each of the blade units includes a grid frame co-rotatably connected to the rotary shaft, and a plurality of blade panels connected to the grid frame. The blade panels of one of the blade units face in a direction different from that of the blade panels of another one of the blade units.





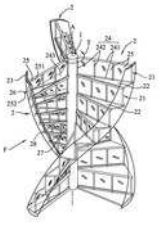


FIG.1

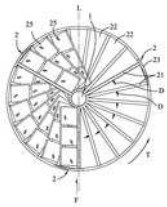


FIG.2

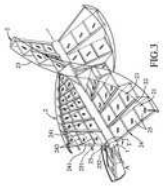


FIG.3

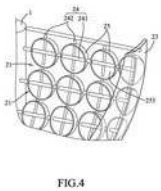
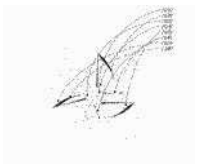
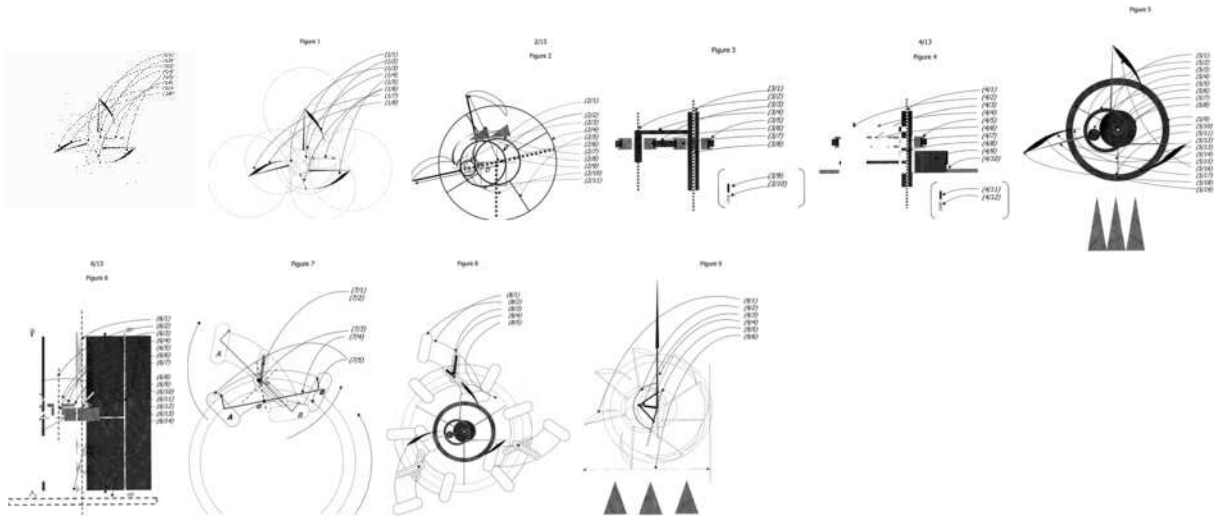


FIG.4

| | | | | | | |
|---|---|---|---|---|---|---|
| 88. | Device e.g. vertical axis wind **turbine**, for deploying blades according to thrust of wind and folding blades during upwind, for transmitting **power** to electric **generator**, has gear rims whose simultaneous revolution create variable dis... | FR2970047 | **2011-01-05** | COURGEON OLIVIER | 2012-07-06 | 2012-07-06 |

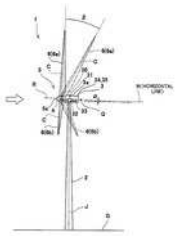
The device has an internal gear rim (4) provided near an external gear rim (2), where simultaneous revolution of the external and internal gear rims is established by using a circular element e.g. secondary roller, so as to create variable distance (6) between arbitrarily points fixed on the gear rims. A self-aligning linking arm modifies leading angle and trailing angle of a blade (5) that is orientable around a vertical axis on a central fiber of the external gear rim. A primary roller is centered on a central axle (1) of a structure maintained by the external gear rim.

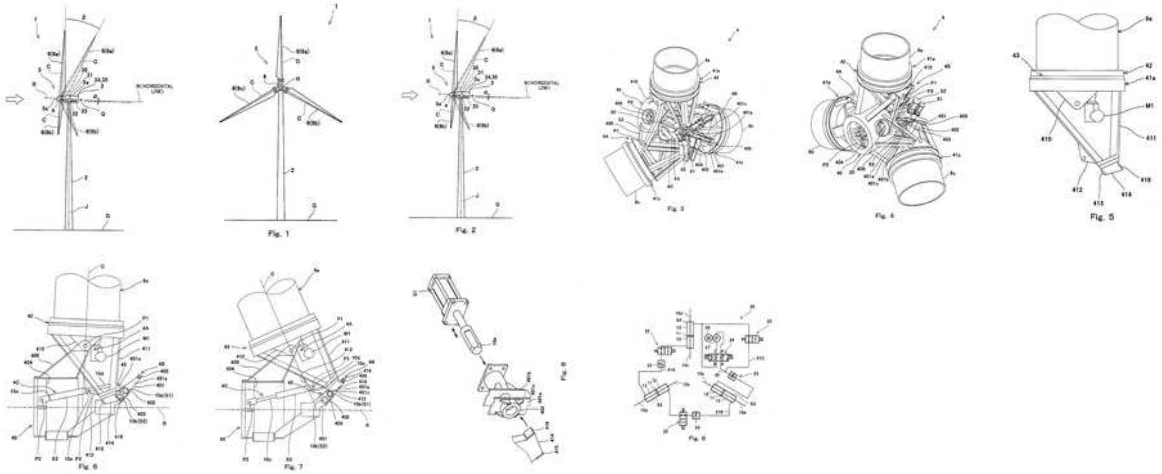




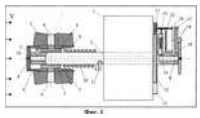
| | | | | | | |
|---|---|---|---|---|---|---|
| 89. | Upwind wind **turbine** | WO2015166521 | **2014-05-01** | KAWASAKI HEAVY INDUSTRIES* | 2015-11-05 | 2015-11-05 |

Provided is an upwind wind **turbine** (1) equipped with a hub (40) disposed rotatably around a rotation axis line (R), a plurality of blades (6) that rotates with the hub (40), a tilting mechanism (4A) that connects the hub (40) with the blades (6) in such a manner that the blades (6) can be tilted with respect to a rotation plane around the rotation axis line (R), a drive device (4C) that drives the tilting mechanism (4A) so as to switch between an upright condition in which the blades (6) are caused to stand and a tilt condition in which the blades (6) are tilted, and a fixedly-supporting mechanism (4B) that is disposed independently of the tilting mechanism (4A) and the drive device (4C) and is switched between a lock condition in which tilting of the blades (6) from the upright condition is prevented and an unlock condition in which the blades (6) can be tilted into the tilt condition.

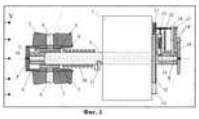




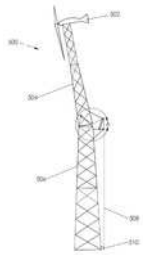
90. Wind **turbine** torque and speed controller RU2592699 **2015-04-08** FEDERALNOE G BYUDZHETNOE OBRAZOVATELNOE UCHREZHDENIE VYSSHEGO PROFESSIONALNOGO OBRAZOVANIYA ORENBURG* 2016-07-27 2016-07-27



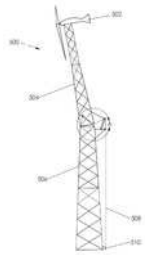
FIELD: energy.SUBSTANCE: wind **turbine** torque and speed controller with blades installed with possibility of rotation on axles arranged on shaft of wind **turbine**, installed horizontally in head of wind-driven unit. Blades are articulated with output shaft of regulator containing spring-loaded weight movably installed on shaft of wind **turbine** as rotation frequency sensor and kinematic spring-loaded weight movement transmission system on controller output shaft coaxially installed to shaft of wind **turbine**. Axes are attached to carriage installed on shaft, which rotation is limited by first stopper on wind **turbine** shaft and stopper on carriage, and between second stopper on wind **turbine** shaft and stopper on carriage spiral spring wound on wind **turbine** shaft is installed. Spring-loaded weight is made in form of spring-loaded friction roller, kinematically connected with input gear of gearbox mounted on wind **turbine** shaft, which output gear is rigidly fixed on controller output shaft. Friction roller is located in space between external and internal friction rings fitted on head coaxially to wind **turbine** shaft in plane perpendicular to its axis.EFFECT: higher accuracy of wind **turbine** speed adjustment at minimum controller dimensions and weight, as well as enlarging its functional capabilities.1 cl, 2 dwg

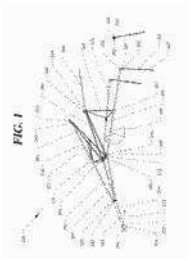


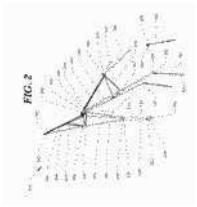
91. Folding wind **turbine** tower WO2011146773 **2011-05-19** CATADON SYSTEMS* 2011-11-24 2011-11-24

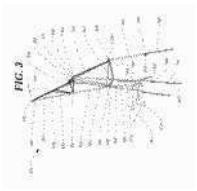


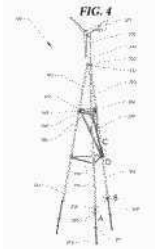
A multi-section folding tower for supporting wind turbines, windmills, **power generation**, communication, lighting, and measurement machines comprises an upper tower section and a lower tower section pivotally connected at an upper hinge, a lever, and a lower hinge attaching the lower tower section to an anchor foundation not requiring concrete wherein equipment mounted to the top of the tower is accessible by lowering a portion of the tower. The two tower sections and lever are assembled on the ground by connecting the upper and lower sections with a hinge, and the lower tower section is hinged to the tower foundation. The hinged tower sections are raised by first pulling the lower tower section to a vertical position, and a removable installation wheel attached to the tower top enables the lower section to be raised to a vertical position. The upper section is raised to a vertical position' by pulling the lever.

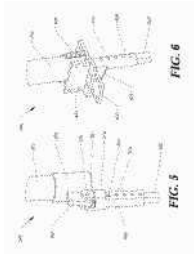


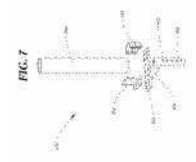


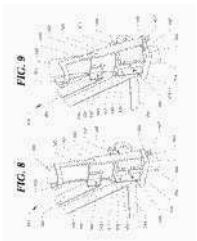



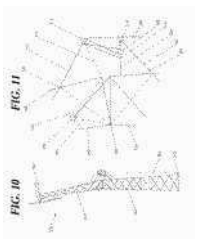



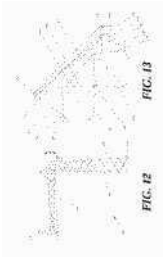



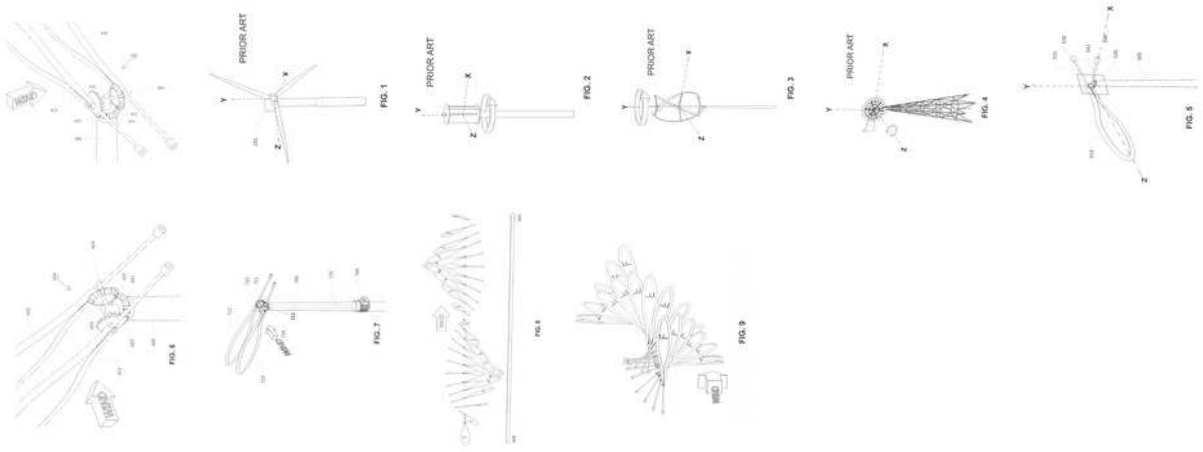



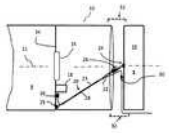
92. Spinning horizontal axis wind **turbine** US20120014795 **2011-07-12** BLONDER GREG E 2012-01-19 2012-01-19

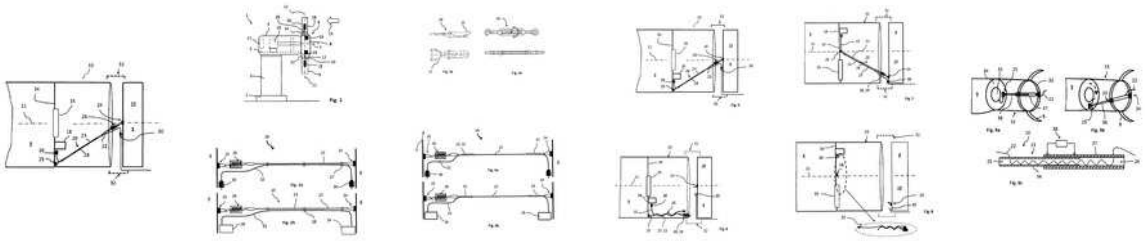
A spinning horizontal axis wind **turbine** is disclosed. The blades of the wind **turbine** are configured to allow the blades to simultaneously rotate in a vertical axis and a horizontal axis when acted upon by an external force such as a wind current. The tip of each blade travels along a **helical** “figure 8” pattern as the blade rotates through a complete cycle, moving from nearly vertical to nearly horizontal in a complete cycle.



93. Rotor of a wind **turbine** DE102013011952 **2013-07-18** SSB WIND SYSTEMS* 2015-01-22 2015-01-22

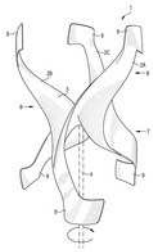
The invention relates to a rotor of a wind **turbine**, comprising a rotor hub (8), which has at least one rotor blade (9, 10) protruding perpendicularly to the rotor axis (7), which at least one rotor blade can be adjusted in an angular range about the blade axis (11, 12) of the rotor blade with respect to the the blade bearing point (32) of the blade in the hub (8), and at least one senor (18), which is connected to at least one evaluating unit (19) arranged in the hub (8) by means of a rotatable cable connection (20) suitable for energy transmission and/or communication. The cable connection (20) has at least one or more guiding elements (23). The guiding element (23) has one fastening point (24, 25) each in the rotor hub and in the rotor blade and comprises at least one element (26, 29) that is elastic in tension. The invention is characterized in that the guiding element (23) can be stressed and relaxed and can be detached at at least one fastening point (24, 25), and means (38) are provided for registering a malfunction of the cable connection (20) in the event of a fault.

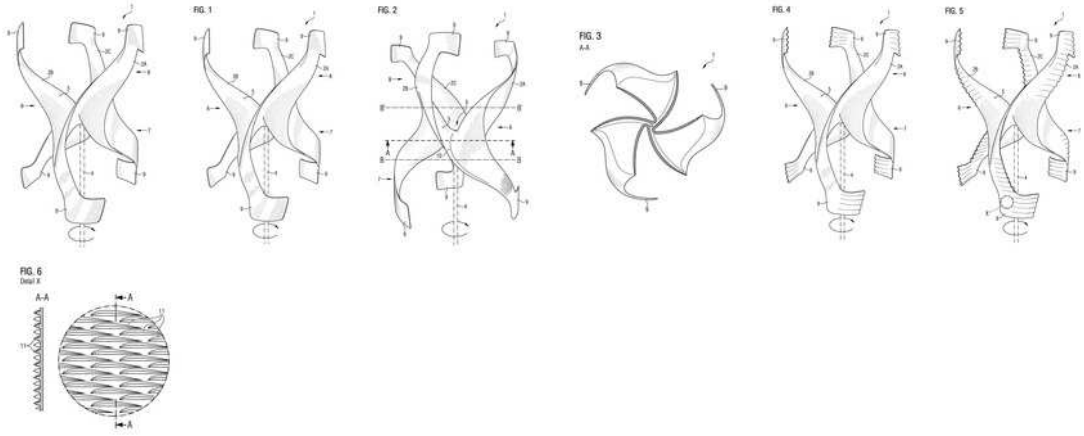




94. Rotor for vertical wind **power** station US20130224039 **2012-02-29** MOSER JOSEF 2013-08-29 2013-08-29

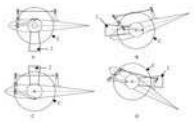
The present invention relates to a rotor for a vertical wind **power** station comprising a plurality of planar rotor elements (2A, 2B, 2C) that are arranged around a hub region (3), wherein the rotor elements (2A, 2B, 2C) have a **helical** axis which is parallel or inclined relative to an axis of rotation (4) of the rotor (1) and around which the rotor elements (2A, 2B, 2C) are twisted in a spiraling manner, the rotor elements (2A, 2B, 2C) having concave and convex surface regions smoothly merging into each other and having different radii of curvature along the **helical** axis.

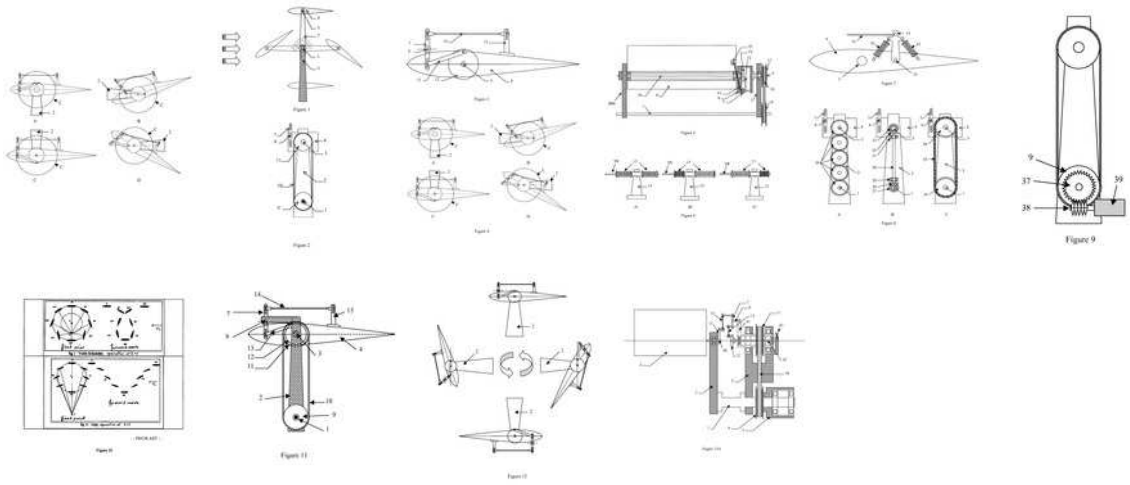




| | | | | | | |
|---|---|---|---|---|---|---|
| 95. | Rotary machine comprising a rotor placed in a fluid and equipped with orientable blades | WO2014006603 | **2012-07-05** | ADEVE TECHNOLOGY<br>ADV TECHNOLOGY* | 2014-01-09 | 2014-01-09 |

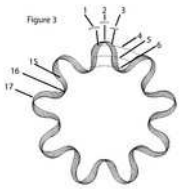
The invention relates to a rotary machine comprising a rotor placed in a fluid and equipped with at least one blade (4) mounted on an arm (2) that rotates about a main shaft (1) of the rotor. The rotor is held in place by a supporting structure (5) and oriented such that the shaft (1) is essentially perpendicular to the direction of flow of the fluid. The blade (4) is mounted such that it can pivot about a rotation shaft (3) parallel to the main shaft (1). The machine is characterised in that it comprises means for rotating the blade (4) relative to the arm (2) at the rotation shaft (3) in order to vary the inclination of the blade, said means comprising an eccentric mechanism that rotates about the rotation shaft of the blade. The invention is particularly suitable for propellers and **generators** operating according to Lipp or Voith-Schneider kinematic principles, optionally switching between modes.

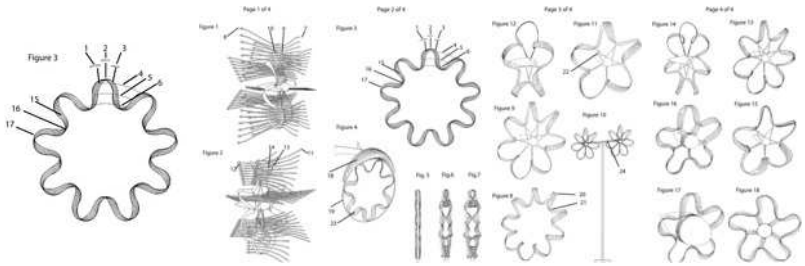




| | | | | | | |
|---|---|---|---|---|---|---|
| 96. | Continuous band propeller | GB201220183 | **2012-11-09** | QUANTADA* | 2012-12-26 | 2012-12-26 |

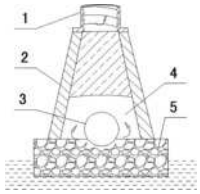
A band with an airfoil profile that follows a continuous path like a wave substantially in the plane of a virtual disc moving around the circumference between it and a common radial offset such that when the band rotates about the disc's axis the airfoil presents a largely common angle of attack to the fluid flow when moving between it's amplitude peaks and troughs made possible by the fact that at both the peaks and the troughs the upper surface and lower surfaces of the airfoil morph through a largely symmetrical transition to swap sides on the band. Or a band with an airfoil profile that follows a continuous path like a garter spring with it's axis moving around the circumference of a virtual disc such when the band rotates about the disc's axis the airfoil presents a largely common angle of attack to the fluid flow even as it moves around it's path between it's radial maxima and minima made possible by the fact that at both the maxima and minima the upper surface and lower surfaces of the airfoil morph through a largely symmetrical transition to swap sides on the band. Modifications to the chord, band path, airfoil section and angle around the path of the band can enhance it's ability to entrain more fluid and expel it more judiciously in order to increase it's effectiveness as a **generator** or propeller. The band can be retained about a central hub by spokes or cables or pylons or the tops of the waves can be connected to an external ring.

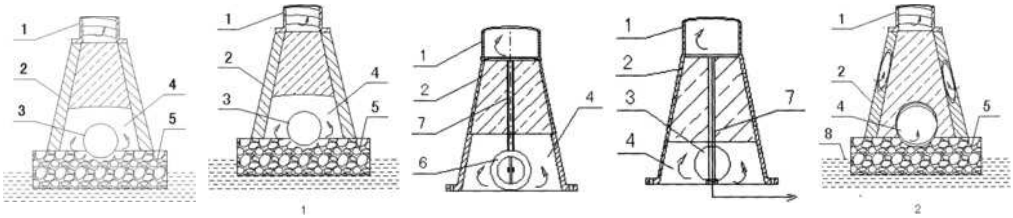




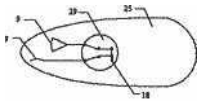
| | | | | | | |
|---|---|---|---|---|---|---|
| 97. | Engine base guiding airflow to rotate upwards in spiral shape | CN103321858 | **2013-07-08** | HANGZHOU AIVISI ELECTRONICS* | 2013-09-25 | 2013-09-25 |

The invention discloses an engine base guiding airflow to rotate upwards in a spiral shape. The engine base comprises a port 1 fixed with engine base feet 2 in a three-foot standing mode, and the engine base feet in the three-foot standing mode comprise a metal sheet or a circular pagoda type engine base made of reinforced concrete structures, wherein a hollow inner hole directly communicated with the port 1 in an upward mode is formed in the circular pagoda type engine base which is big-end-down, and a gap is reserved in the lower side of the engine base and serves as an air inlet 4. The engine base guiding the airflow to rotate upwards in the spiral shape is characterized in that a wind stabilizing ball 3 is arranged on a central point of the bottom inside the engine base or a ventilating groove in a spiral-line shape or in a spiral shape is formed in the wall face of the inner hole of the port 1 or N inclined hole air inlets 4 distributed according to angles are reserved in the lower side of the circular wall face of the engine base of the reinforced concrete structures. According to the engine base guiding the airflow to rotate upwards in the spiral shape, air inlet air flows can be guided to rotate upwards in the spiral shape to pass through the port 1, internal ventilating air flow can be facilitated to **generate** rotation torque, therefore, a wind wheel can be pushed to rotate further, potential wind energy can be developed to a greater degree, **power generating** efficiency can be improved, and application ranges can be enlarged.

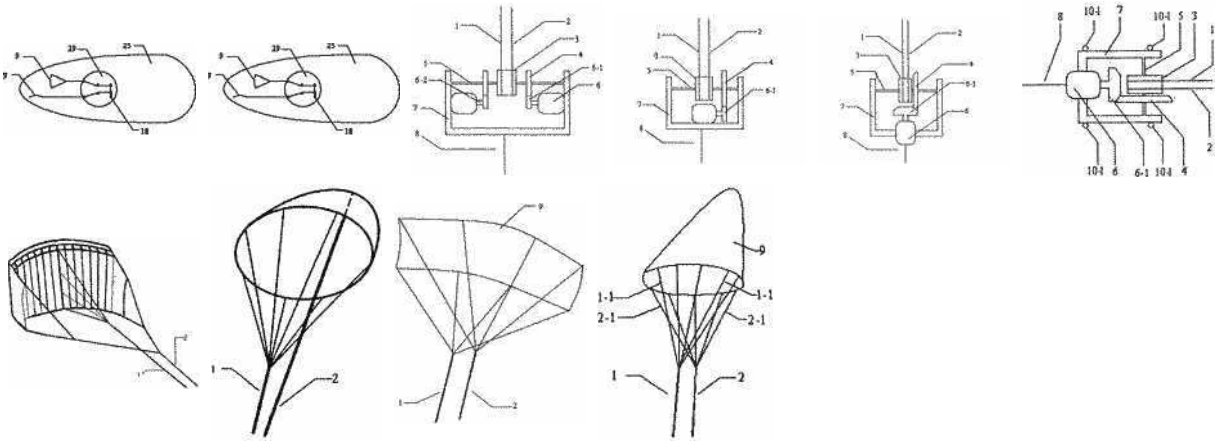




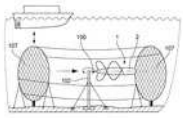
98. Cable control machine, two types of kites, three types of wind **power**, water flow **generator**, and kite electric ship — CN102275779 — **2011-04-24** — LUO CONGGUI* — 2011-12-14 — 2011-12-14



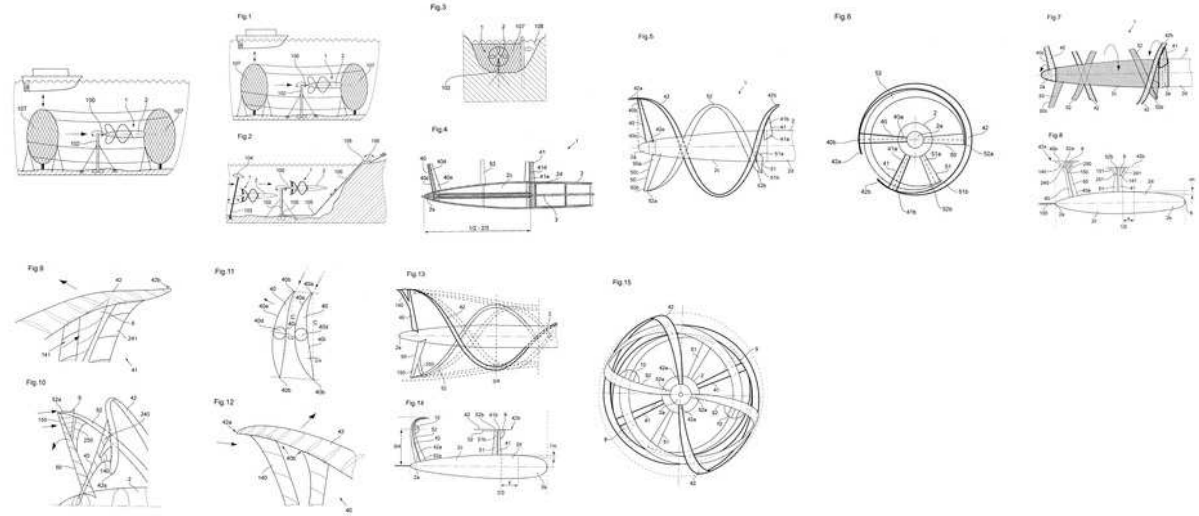
The patent refers to the field of 'handling thin or filamentary material'. A reciprocating flying energy discharging and receiving kite is formed by combination of a cable control machine and a double-cable kite, and is the foundation of high-level and low-level **generating** mechanisms and the water flow **generator** of the series. The single machine **generating** capacity of the high-level **generating** mechanism and the water flow **generator** of the series can reach the world highest single machine **generating** capacity; the low-level **generating** mechanism, compared with a current wind wheel **generator**, can improve high-efficient wind-collecting wing panel by ten times to hundred times, and reduce investment; the water flow **generator** is suitable for non-drop water flow **generating** of rivers, ocean currents, tides, etc., and compared with a high-level reservoir **power** station, is advantaged by short construction period, low investment, high benefit, and complete elimination of destructive hidden trouble of dam collapse of high-level reservoir.



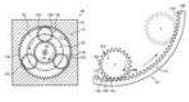
99. **Turbine** with **helical** blades — WO2014106765 — **2013-01-04** — YVAN PERRENOUD* — 2014-07-10 — 2014-07-10



The invention relates to a **turbine** for **generating** electricity from a fluid current, comprising: a central bulb (2); first and second groups of blades each mounted on the bulb (2); the first group of blades being arranged to rotate in a first direction under the action of the current, and the second group of blades being arranged to rotate in a second direction opposite the first under the action of the current, the blades of said second group also being arranged to rotate in the space delimited by the blades of the first group. The first and second groups each comprise at least two **helical** blades (42, 52) and at least two maintaining blades (41, 51). In each of the first and second groups, the number of **helical** blades (42, 52) is equal to the number of maintaining blades (41, 51): the bases (41a, 51a) of the maintaining blades (41, 51) are fastened to the bulb (2) and extend essentially perpendicularly relative to the bulb (2). Each **helical** blade (42, 52) is fastened at a first end (42a, 52a) to the front end (2a) of the bulb (2), and at or near a second end (42b, 52b) to the apex (41b, 51b) of a maintaining blade (41, 51).



100. A gearbox comprising a stationary gear component formed on the basis of variable flank profiles of gear teeth — EP2554841 — **2011-08-03** — VESTAS WIND SYSTEMS* — 2013-02-06 — 2013-02-06



In a gearbox, a stationary gear component such as a ring gear of a planetary gear comprises a tooth trace correction that varies along the tooth trace so as to provide for superior load distribution in the gearbox. In some illustrative embodiments, the gearbox is a component of a wind **power** plant wherein the circumferentially varying tooth trace correction of the stationary ring gear results in superior durability and performance.