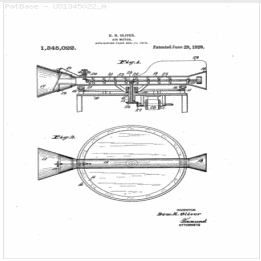
1) Family number: 18302189 (US1345022A)

AIR-MOTOR

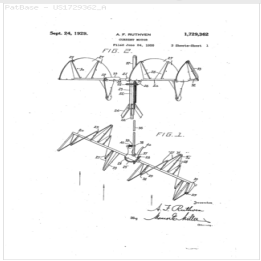


Probable Assignee: OLIVER DEW R

Earliest Publication Date: 19200629

2) Family number: 19764136 (US1729362A)

CURRENT MOTOR



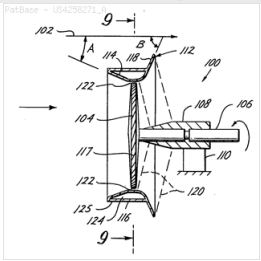
Abstract: Source: US1729362A 1. A enrrent inotor eoinprising a rotor helix having ollset; sections and Llirort (l1`l\'l) portions between them, with saitl ;_gt;oi'tion:5 arranged to lic eiiposetl to the onireot when moving with the current a nil to he ilisposeil hehind saiil sections when moving against the current.

Probable Assignee: RUTHVEN ALBERT F

Earliest Publication Date: 19290924

3) Family number: 8148310 (US4258271A)

POWER CONVERTER AND METHOD



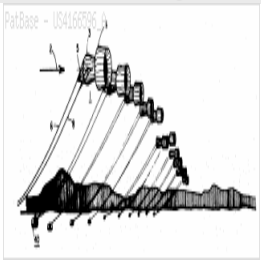
Abstract: Source: US4258271A A method of and apparatus for increasing the power output of an impeller which is mounted in a stream of free flowing fluid, such as water or air. A portion of the free flowing fluid is received by the impeller and some of the portion leaves the impeller and is caused re-enter the free stream at an angle of intersection of not less than 35 DEG but less than 75 DEG. When designed for operation under water, buoyancy chambers are sized and positioned to negate gravitational stresses and distortions when submerged to thereby reduce cost and improve performance.

Probable Assignee: WATTS JOHN DAWSON

Earliest Publication Date: 19771108

4) Family number: 7514140 (US4166596A)

AIRSHIP POWER TURBINE



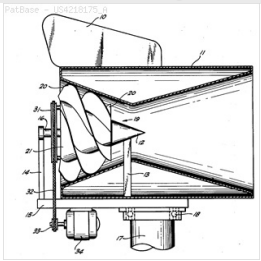
Abstract: Source: US4166596A Power is mechanically transmitted from a tethered airship carrying wind turbines to electrical generators on the ground at the anchor point of the tether, by the use of endless power-transmission cables bridging between drive sheaves at the turbine wheels and driven sheaves at the generators. Tether adjustments, cable tensioning, and wind direction changes are provided for the ground apparatus. A tubular aircraft with recess in the tube wall, carrying bearings on which the rims of the turbine wheels ride, is also claimed.

Probable Assignee: MOUTON WILLIAM J JR

Earliest Publication Date: 19790904

5) Family number: 5245766 (US4218175A)

WIND TURBINE

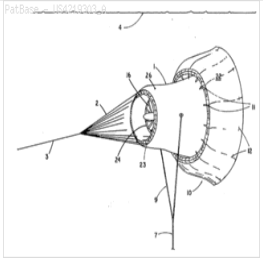


Abstract: Source: US4218175A A wind turbine is provided consisting of a cone or the frustum of a cone, on which are mounted in a more or less helical fashion, a plurality of blades having a varying pitch angle. The blades are arranged in a manner to utilize the initial force of the wind and to continue to utilize the diminishing force of the wind after it passes over the leading end of the vanes. Provided also is a shroud which enhances the wind velocity and provides a suitable diffuser augmenter to dissipate the spent wind force.

Probable Assignee: CARPENTER R

Earliest Publication Date: 19800819

6) Family number: 7859538 (US4219303A)



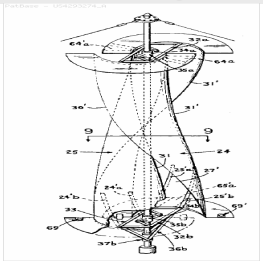
SUBMARINE TURBINE POWER PLANT

Abstract: Source: US4219303A A power plant for the generation of electricity from the flow of water currents uses turbine wheels within nozzles submerged in the water current, anchored to the bottom of the water course, as for example, the ocean, and self-buoyed to a level well below the water surface. Pairs of counter-rotating turbines are supported by their rims, which bear against friction drive wheels, which in turn drive electrical generators contained in water-tight machine rooms within the wall of the nozzle. A structural design is disclosed, providing for the building of modules of the nozzle ashore, which modules may then be barged to the deep-water site for assembly into the whole power plant.

Probable Assignee: MOUTON WILLIAM J JR

Earliest Publication Date: 19800826

7) Family number: 8382863 (US4293274A)



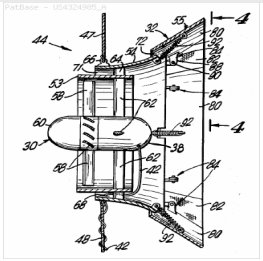
VERTICAL AXIS WIND TURBINE FOR GENERATING USABLE ENERGY

Abstract: Source: US4293274A A wind turbine for converting wind forces into usable energy has a main shaft rotatably mounted in the axis of rotation for the wind turbine, and a pair of coacting complementary longitudinally extending vane members are connected to each other by a plurality of support and transmission assemblies in the form of articulated members and to the main or driven shaft for driving engagement thereof. The coacting vane members may either have straight side edges or preferably have spiralled or helically shaped side edges which in the closed position are aligned and in abutment with each other to define and form a right circular cylinder in side elevation. The vanes are movable between a normally open starting position and a closed position to vary the total vane surface available for contact by the wind forces acting at any given time when the wind turbine is in operation. Articulated members of the support and transmission assemblies are pivoted to permit translational or side wise movement to and fro of the complementary vanes transverse relative to each other and the vertical axis through the main shaft, and pivotal cross members on each of the articulated support and transmission assemblies are vertically linked together to simultaneously alter the articulated members during such movement. The respective complementary and cooperating vanes have their weight so distributed that centrifugal forces will act to move the complementary vanes towards the closed or right circular cylindrical form automatically as high rotational speeds result from excessive wind. Additionally the wind turbine as above described with resilient means to move the coacting cooperating vanes to the normally open starting position.

Probable Assignee: GILMAN FREDERICK C

Earliest Publication Date: 19811006

8) Family number: 8546773 (US4324985A)



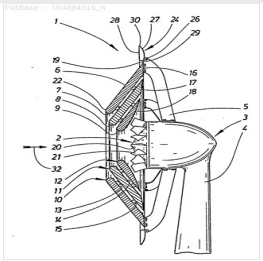
PORTABLE WIND TURBINE FOR CHARGING BATTERIES

Abstract: Source: US4324985A In a wind turbine assembly incorporating a diffuser, the diffuser includes an articulated duct formed of a set of members, such as the sectors of a conic section, which are pivotable about axes in a plane normal to the turbine axis. To permit an enlargement or contraction of the articulated duct, the members are joined by flexible gussets or, alternatively, are configured for overlapping. Springs offset from the pivoting axes are attached to the members to provide a bistable attitude thereto. In response to high winds, the spring forces are overcome by the wind forces on the articulated duct to allow the members to pivot inwardly reducing the effective wind capture area of the diffuser. The diffuser is further fabricated with slots between sections of duct to enlarge the effective area swept by the turbine blades for increased power availability from the turbine.

Probable Assignee: GRUMMAN AEROSPACE CORP

Earliest Publication Date: 19820413

9) Family number: 2078096 (US4684316A)



IMPROVEMENTS IN WIND TURBINE HAVING A WING-PROFILED DIFFUSOR

Abstract: Source: US4684316A PCT No. PCT/SE83/00480 Sec. 371 Date Aug. 29, 1984 Sec. 102(e) Date Aug. 29, 1984 PCT Filed Dec. 27, 1983 PCT Pub. No. WO84/02750 PCT Pub. Date Jul. 19, 1984.Arrangement for wind turbines which comprise not only a rotor (2) which can be caused to rotate about a shaft by a flow of air moving essentially in the direction of the shaft from an inlet side towards an outlet side, but also an annular body (1) enclosing the rotor in a concentric fashion, said body exhibiting on its intended inlet side an inlet having an inner boundary edge in connection with which the rotor is arranged and which makes the transition on the outlet side of the annular body to a front, inner boundary for an outlet which widens out in the direction of the flow and which is terminated by means of a rear, outer boundary edge (19). The transverse profile of the annular body (1) corresponds to a wing profile, of which the rounded leading edge (7-9) forms the inlet, of which the pointed trailing edge (19) forms the outer boundary edge of the outlet, which is situated radially outside said front edge, of which the flatter side (6) forms the inlet face of the ducting and extends from the outer boundary edge (22) of the inlet rearwards and outwards as far as the outer boundary edge (19) of the outlet, and of which the curved side (16-18) forms the outlet.

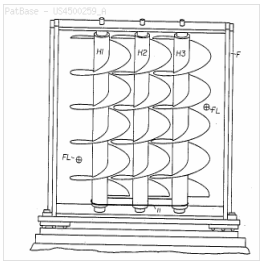
Probable Assignee: VINDKRAFT GOETEBORG KB

Earliest Publication Date: 19831121

10) Family number: 4669614 (US4500259A)

FLUID FLOW ENERGY CONVERTER

Abstract: Source: US4500259A Energy is extracted from a free-stream fluid flow of wind or water by means of a multi-turn helicoid structure with a relatively small pitch angle. The axis of the structure about which the helicoid turns is making an angle with the flow vector in the order of or slightly larger that the pitch angle. Several such helicoid structures are combined with their radii overlapping, for the most effective interception of a certain cross sectional area of the fluid flow. Mile-long helicoid walls may be erected in this fashion. Using groups of helicoids which alternately turn clockwise and counter-clockwise all gyroscopic forces, which appear when the structures are turned to follow changes in the direction of the flow, are internally balanced. An omni-directional structure is also described which need not be turned when the flow direction changes. It is obtained by adding flow-diverters surrounding a helicoid structure with vertical axis. It is shown how various types of light and thin but rigid helicoid surfaces can be constructed from sheet materials without requiring plastic deformation because of the small pitch angles, as here employed.



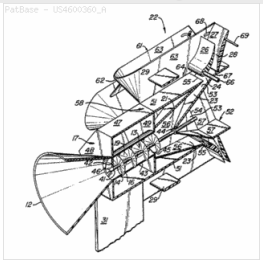
Probable Assignee: SCHUMACHER BERTHOLD W

Earliest Publication Date: 19850219

11) Family number: 5066362 (US4600360A)

WIND DRIVEN TURBINE GENERATOR

Abstract: Source: US4600360A A wind powered turbine augmented by a superstructure which forms a low pressure chamber for receiving turbine exhaust air and which is maintained at below atmospheric pressure by the action of wind directed to flow over adjustable inverted airfoils mounted on the superstructure adjacent exhaust ports from the low pressure chamber.



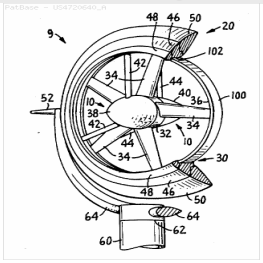
Probable Assignee: EDWARD A QUARTERMAN AND MIRIAM I QUARTERMAN TR OF QUARTERMAN FAMILY TR U DECL OF TR DTD 07 09 1980

Earliest Publication Date: 19860715

12) Family number: 10125033 (US4720640A)

FLUID POWERED ELECTRICAL GENERATOR

Abstract: Source: US4720640A A fluid powered electrical generator having an impellor-rotor rotatively mounted on a central support structure. A toroidal outer support structure surrounds the impellor-rotor, with the impellor-rotor including a plurality of circumferentially spaced-apart fluid dynamic blades. The outward ends of the blades are connected together by a rotor rings which is coaxial with respect to the outer support structure. The central support structure is supported within the outer support structure by stanchions or the like so as to permit a fluid stream to flow therebetween past the fluid dynamic blades. A peripheral electrical generator having a rotor element secured to the rotor ring and a stator element secured to the outer support structure produces electrical energy as the impellor-rotor is driven by the fluid stream.



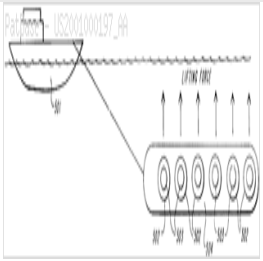
Probable Assignee: TURBOSTAR INC

Earliest Publication Date: 19880119

13) Family number: 28120064 (US2001000197A)

METHOD FOR MAINTAINING FLOTATION USING A HELICAL TURBINE ASSEMBLY

Abstract: Source: US2001000197A A helical turbine assembly capable of providing high speed unidirectional rotation under a multidirectional ultra low-head fluid flow is disclosed. The assembly comprises an array of helical turbine units or modules arranged, vertically or horizontally, to harness, for example, water or wind power. Each turbine unit or module comprises a plurality of helical blades having an airfoil profile. The modules for wind power may be mounted to rotatable shafts supported by lightweight structures anchored by guy wires to the ground. The helical turbine can also provide ship propulsion by utilizing the power of ocean waves. In a further embodiment, a cylindrical distributor is provided in the helical turbine to channel the fluid flow to the blades of the turbine, thereby increasing efficiency and power output. The helical turbine with distributor may be used to lift or lower a body either being submerged into a fast stream or dragged in the fluid. The turbine may also include two or more rings of helical blades to increase torque and power output.



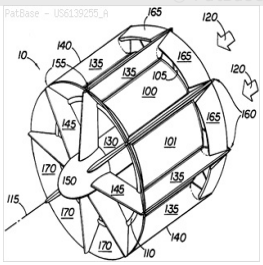
Probable Assignee: NORTHEASTERN UNIV

Earliest Publication Date: 19950713

14) Family number: 23429550 (US6139255A)

BI-DIRECTIONAL HYDROTURBINE ASSEMBLY FOR TIDAL DEPLOYMENT

Abstract: Source: US6139255A A bidirectional hydroturbine assembly for tidal deployment. A hydroturbine is carried by a cylindrical shroud. Rotation of the hydroturbine blades by tidal currents drives rotation of the shaft, thereby converting kinetic energy into electrical energy. Stabilizer fins extend radially outwardly from the shroud along substantially the entire length of the shroud. Each corner of each stabilizer fin carries a pivot point for connection of pivoting deflectors between adjacent pivot points of adjacent stabilizer fins at the same end of the shroud. Pivoting deflectors are positioned between pivot points about the periphery of each end of the shroud and are biased such that tidal current flow in a first direction urges pivoting deflectors at the first end of the shroud into a non-deflective position, while urging pivoting deflectors at the second end of the shroud into a deflective position, and vice versa for tidal current flow in the opposite direction.



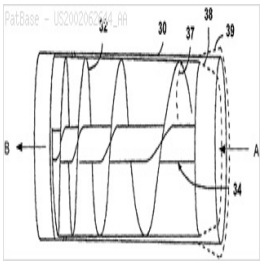
Probable Assignee: VAUTHIER PHILIPPE

Earliest Publication Date: 20001031

15) Family number: 28316266 (US2002062644A)

RIBBON DRIVE POWER GENERATION FOR VARIABLE FLOW CONDITIONS

Abstract: Source: US2002062644A The ribbon drive generation apparatus is comprised of a ribbon-like curved shape, composed either of metal or other suitable material, attached to a central axle with the complete apparatus being contained in a tube having a constant diameter for the length of the tube. A front portion of the tube has a pivot or tether and the rear portion of the tube has a drag means, such as fins, so as to cause rotation of the tube until it is oriented parallel to the flow. In another embodiment of the present invention, the electrical output of the ribbon drive generation apparatus is connected to a storage battery so as to store energy in times of high flow and make up for generating deficiencies during times of lesser flow. In yet another embodiment of the present invention, plural generating stages are serially arranged to adapt to flow variation and provide smooth start-up. Bypass vents and coupling means are located between each stage. Flow operates a first stage and exits via the bypass until a sufficient rotation is achieved. The coupling is then engaged and the bypass closed in order to operate the subsequent stage. In this manner, the generator of the present invention can be operated in stages.



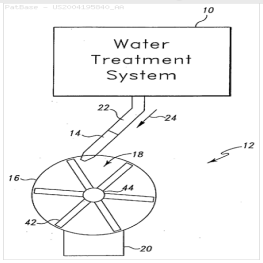
Probable Assignee: HYDROCOIL POWER INC

Earliest Publication Date: 20010208

16) Family number: 30498177 (US2004195840A)

MINIATURE HYDRO-POWER GENERATION SYSTEM

Abstract: Source: US2004195840A A miniature hydro-power generation system may produce electric power from a flow of liquid. The miniature hydro-power generation system may include a housing that includes a plurality of paddles positioned to extend outwardly from an outer surface of the housing. The system may also include a nozzle and a centering rod extending through the housing. The housing may rotate around the centering rod when a stream of liquid from the nozzle is directed at the paddles. A generator that includes a rotor and a stator may be positioned within a cavity of the housing. The rotor may be coupled with the housing and the stator may be coupled with the centering rod. The rotor may rotate around the stator at high RPM to generate electric power when the housing rotates. The electric power may supply a load and/or may be stored in an energy storage device.



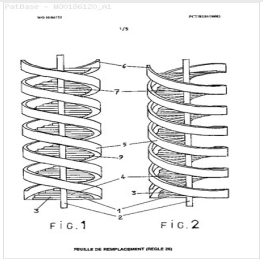
Probable Assignee: ERCHONIA CORP

Earliest Publication Date: 20010412

17) Family number: 15774422 (WO0186120A1)

DOUBLE-HELICAL ENERGY CONVERTER WITH PERIPHERAL CHANNELS

Abstract: The invention concerns a converter (1), consisting of two (or more) helical surfaces (3, 4), arranged symmetrically relative to a revolving shaft (2), comprising helical surfaces whereof one surface at least (upper or lower) consists of steps/risers, that is undulations, forming channels (7) flaring outwards, and bordered with a peripheral channel (5). Said converter can operate as mixed air and/or hydraulic and/or heat turbine. The revolving shaft (2) can be placed vertically (fig. 1), obliquely (fig. 2) or horizontally.



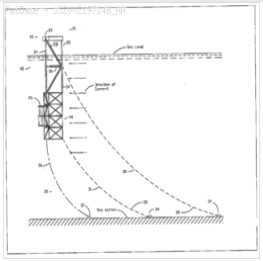
Probable Assignee: DE VRIENDT MARIE CLAIRE

Earliest Publication Date: 20011115

18) Family number: 28265725 (US2002197148A)

INSTALLATION FOR HARVESTING OCEAN CURRENTS (IHOC)

Abstract: Source: US2002197148A Installation for harvesting kinetic energy of ocean currents in deepwaters is based on utilization of a semisubmersible platform and the multiple of vertically oriented Darrieus type hydraulic turbines with funnels. The turbines are located bellow sea level on distance sufficient to exclude them from being affected by wave actions. The electric power generators are located on a structure above water and transmit electric power to the shore utilizing flexible cable from semisubmersible to the sea bottom and underwater cable going to the shore, where it connected to the power distributing network. One of the Embodiments of this invention is designed to harvest energy of tides in deepwaters.



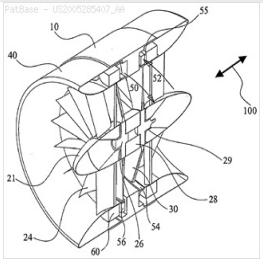
Probable Assignee: BELINSKY SIDNEY IRVING

Earliest Publication Date: 20021226

19) Family number: 28439624 (US2005285407A)

HYDRO TURBINE GENERATOR

Abstract: Source: US2005285407A An apparatus is disclosed for a turbine for generating electrical power from water or air flow comprising at least one rotor disk having a plurality of hydrofoil blades, a guide vanes, a cylindrical housing, and a generator means. A rim generator comprising a magnet race rotor rim and fixed stator coils in the housing is used. The apparatus is fitted with a screen to stop the ingress of debris and marine life, and a skirt augmenter device to reduce the Betz effect. The apparatus is preferably for sub-sea deployment and driven by tidal currents, but may be powered by river current or wave driven air or by wind. The apparatus may be deployed on at least one telescoping pole, tethered to the sea-bed and kept buoyant by buoyant concrete in the housing, inserted in a dam, under a barge or in a tidal power array.



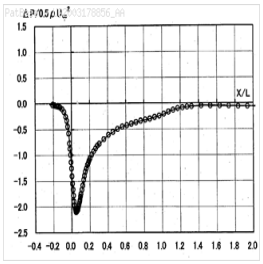
Probable Assignee: CLEAN CURRENT PARTNERSHIP LTD

Earliest Publication Date: 20030327

20) Family number: 30313079 (US2003178856A)

WIND POWER GENERATOR

Abstract: Source: US2003178856A A wind power generator provided with a wind turbine rotating in a wind tunnel body, capable of generating high output power by efficiently accelerating a wind flow. The wind power generator comprises a cylindrical wind tunnel body (1) expanding toward a flowing direction of wind and a wind turbine (3) for generating electricity disposed at a position adjacent to an inlet (2a) for wind of the wind tunnel body (1), wherein an angle of inclination phi of a side wall portion of the wind tunnel body (1) against an axis of the wind tunnel body (1) is in a range from 5 to 25 degrees, the inlet (2a) of the wind tunnel body (1) has a curved surface (5) smoothly expanding toward an outside of the wind tunnel body (1), and a collar-shaped brim having a width B is formed on an outside of an opening edge of an outlet (2b) for wind of the wind tunnel body (1). Wind flowing in from the inlet (2a) for wind of the wind tunnel body (1) sharply accelerates immediately after passing through the inlet (2a) and efficiently rotates the wind turbine (3) disposed at a position adjacent to the inlet (2a), thereby generate high output power.



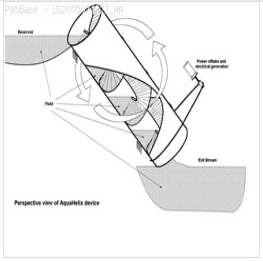
Probable Assignee: KYUSHU TLO CO LTD

Earliest Publication Date: 20030925

21) Family number: 31798577 (US2005074322A)

HELICAL DEVICE FOR CONVERSION OF FLUID POTENTIAL ENERGY TO MECHANICAL ENERGY

Abstract: Source: US2005074322A This device utilizes a helical baffle inside of generally cylindrical housing to convert potential energy of a fluid to Kinetic and/or mechanical energy that can be captured for productive use. The housing's axis is positioned at an angle from horizontal and the fluid is entered into the high end of the device. The helical baffles convert the gravity-induced pressure of the water into a torque moment around the axis of the cylinder causing the helix to rotate. Mechanical energy is then extracted from this rotation and utilized in a productive manner, typically by driving an electrical generator. The implementation of this concept in hydroelectric applications provides substantial benefits over traditional turbine generation in efficiency and reducing environmental concerns.



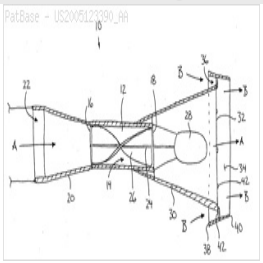
Probable Assignee: DUNCAN JR FLOYED JEFFRIES

Earliest Publication Date: 20050407

22) Family number: 31977437 (US2005123390A)

HYDRO TURBINE

Abstract: Source: US2005123390A A water driven turbine has a divergent cone coupled to the exit end of the housing in which diameter of the cone increases with increasing distance from the exit end of the housing. A diverter formed of rigid material surrounds the free end of the cone and defines an annular space therebetween through which a flow of water passes to accelerate the flow exiting the turbine housing. The diverter is shorter in the length than the divergent cone and longitudinally overlaps the divergent cone. The diverter also has straight walls which are sloped to extend in the longitudinal direction away from the exit end of the housing at an inward incline between the leading end and the trailing end thereof.



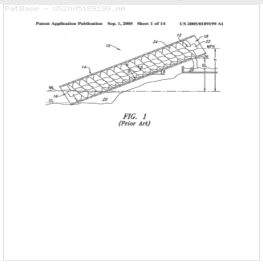
Probable Assignee: LAMONT JOHN S

Earliest Publication Date: 20050609

23) Family number: 32198495 (US2005189199A)

ARCHIMEDEAN CONVEYORS AND COMBUSTION ENGINES

Abstract: Source: US2005189199A A helical screw conveyor having a helical screw rotatably mounted within a casing and cooperating with a chain of platens to convey objects from one end of the casing to the other end or to selected locations therebetween. A thermodynamic combustion engine is provided having a helical screw rotatably mounted within a casing and cooperating with a platen chain to draw a combustible mixture into the casing, compress the mixture for ignition, and exhaust the burned mixture therefrom.



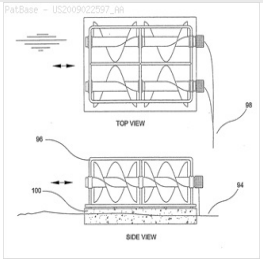
Probable Assignee: HENRY JAMES D

Earliest Publication Date: 20050901

24) Family number: 31491085 (US2009022597A)

APPARATUS FOR THE GENERATION OF POWER FROM A FLOWING FLUID

Abstract: Source: US2009022597A Apparatus for the generation of electrical or mechanical energy from a flowing fluid. The apparatus includes at least one blade of substantially helical configuration. The blade has a plurality of blade sections. Action of the flowing fluid on the blade causes it to rotate around its axis. The rotational motion is used to generate electrical or mechanical energy. Also disclosed is a helical blade wherein the pitch length and/or radii varies along the length of the helical blade profile.



Probable Assignee: BOWIE MALCOLM M

Earliest Publication Date: 20060608

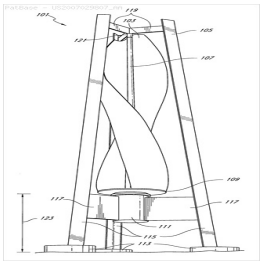
25) Family number: 34195510 (US2007029807A)

METHODS AND SYSTEMS FOR GENERATING WIND ENERGY

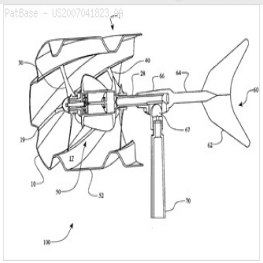
Abstract: Source: US2007029807A The present disclosure disclosures methods and systems for harnessing wind to create electricity. The present disclosure discloses a helical blade vertical axis wind generator. One or more blades are spun by the force of wind which in turn spins a generator and produces electricity.

Probable Assignee: SPIRA INT

Earliest Publication Date: 20070208



26) Family number: 34230714 (US2007041823A)



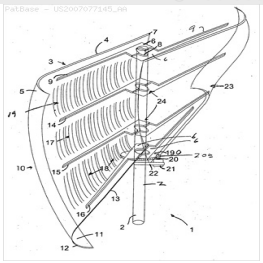
FLUID ENERGY CONVERTER

Abstract: Source: US2007041823A Embodiments include apparatus and methods of fluid energy conversion. One embodiment relates to a tube for a fluid energy converter. The tube may include a generally cylindrical and hollow body having an interior surface, an exterior surface, and a longitudinal axis. Another embodiment includes a fluid energy converter having a longitudinal axis and a rotatable tube coaxial about the longitudinal axis. In some embodiments, the rotatable tube converts kinetic energy in a fluid into rotating mechanical energy, or converts rotating mechanical energy into kinetic energy in a fluid.

Probable Assignee: VIRYD TECHNOLOGIES INC

Earliest Publication Date: 20070222

27) Family number: 34364317 (US2007077145A)



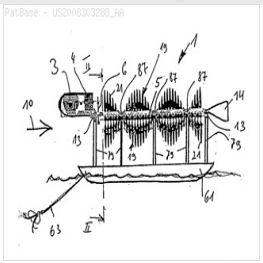
OMNI DIRECTIONAL BAFFLED WIND ENERGY POWER CONVERTER APPARATUS AND METHOD

Abstract: Source: US2007077145A A wind turbine apparatus, comprising an upright shaft defining an upright axis, at least two blades operatively connected to the shaft to rotate about the shaft axis as the blades are wind driven about the axis, the lowermost portion of each blade being offset, azimuthally, relative to the uppermost portion of each blade, baffles carried by the blades to project directionally to receive impingement of wind for creating torque transmitted to the blade to effect blade rotation about the axis.

Probable Assignee: CALIFORNIA ENERGY AND POWER

Earliest Publication Date: 20070405

28) Family number: 34912818 (US2008303288A)



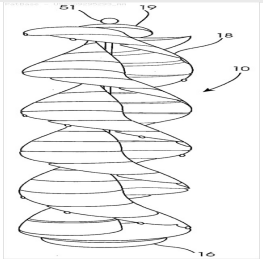
DEVICE AND SYSTEM FOR PRODUCING REGENERATIVE AND RENEWABLE ENERGY FROM WIND

Abstract: Source: US2008303288A The invention relates to a device for producing regenerative and renewable from wind, comprising at least one generator for producing electric energy, and a drive shaft which is connected to the generator and which comprises a plurality of blades which are set rotating by the passing air. The blades are arranged offset in relation to each other and along the drive shaft. The invention also relates to a system which consists of a plurality of said inventive devices.

Probable Assignee: HAMANN GEORG

Earliest Publication Date: 20070719

29) Family number: 33061678 (US2009295293A)



FLUID DRIVEN ROTOR WITH LIGHTS

Abstract: Source: US2009295293A A light comprises at least one electrically powered light source and provided on at least one rotatable blade twisted around a central elongate section so as to form at least one partial or full helix shaped section. A generator is coupled to the blade such that upon rotation of the blade, electricity is generated which powers the light source.

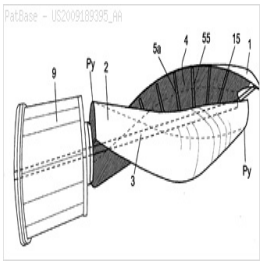
Probable Assignee: FIREWINDER CO LTD

Earliest Publication Date: 20071003

30) Family number: 40918281 (US2009189395A)

METHOD AND APPARATUS FOR CONVERTING MARINE WAVE ENERGY BY MEANS OF A DIFFERENCE IN FLOW RESISTANCE FORM FACTORS INTO ELECTRICITY

Abstract: Source: US2009189395A The invention relates to a method and apparatus for gradually converting marine wave energy into electricity. The energy reserve provided by wind power holds enough energy for the needs of the entire mankind. The invention provides an efficient means of putting this energy reserve to practical use. Mounted on a rotating power shaft is a pair of form parts, the convex and concave shape, especially the round-pointed open V-shape of which reverses its orientation by 180 degrees, i.e. turns from convex to concave, whenever the power shaft makes a rotation of 180 degrees. The circular motion of water occurring in a wave drives such a turbine effectively while the wave dies out. The pair of convex and concave form parts extends helically around the power shaft, whereby water currents in all directions, which come to contact with the pair of form parts, produce a rotative moment.



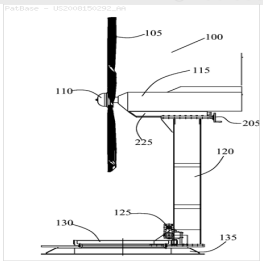
Probable Assignee: SABRE RENEERNAIN

Earliest Publication Date: 20071213

31) Family number: 41951164 (US2008150292A)

SHROUDED WIND TURBINE SYSTEM WITH YAW CONTROL

Abstract: Source: US2008150292A A wind energy systems includes a shroud for each turbine. The shroud is adapted to direct and accelerate wind towards the turbine. A strong adaptable support assembly is provided for securing turbines to a structure. An air glide yaw assembly facilitates rotational movement of the structure allowing the turbines to face oncoming wind. The turbine blades are optimized for use with a shroud.



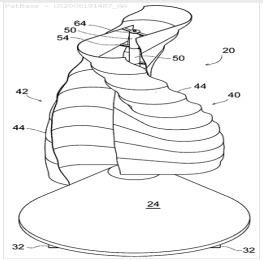
Probable Assignee: WIND ENERGY TECHNOLOGIES LLC

Earliest Publication Date: 20080626

32) Family number: 42101807 (US2008191487A)

WIND-DRIVEN ELECTRICITY GENERATION DEVICE WITH SAVONIUS ROTOR

Abstract: Source: US2008191487A A vertical wind-driven electricity generation device is described, which utilizes a unique segmented Savonius rotor and which is easily handled, transported, assembled and maintained, even by a single person. The blades of the rotor are segmented into a plurality of modest size blade pair segments, each of which comprises two (or optionally, three or four) low height, helically curved blade portions. The blade pair segments are preferably of the same height and diameter. The rotor is mounted on a central vertical shaft connected to a generator. When the plurality of blade portions are installed on the device's central shaft, the overall blade configuration functions as an unitary Savonius rotor. Flow of gas (normally air in the form of wind) causes the segmented Savonius rotor to move, turning the shaft and rotating member of the generator to rotate, causing the generator to generate electricity.



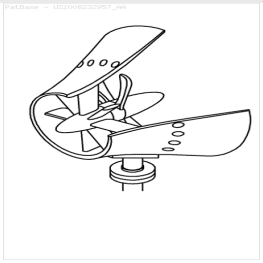
Probable Assignee: SAUER ENERGY INC

Earliest Publication Date: 20080814

33) Family number: 42180762 (US2008232957A)

WIND TURBINE WITH MIXERS AND EJECTORS

Abstract: Source: US2008232957A A Mixer/Ejector Wind Turbine ("MEWT") system is disclosed which routinely exceeds the efficiencies of prior wind turbines. In the preferred embodiment, Applicants' MEWT incorporates advanced flow mixing technology, single and multi-stage ejector technology, aircraft and propulsion aerodynamics and noise abatement technologies in a unique manner to fluid-dynamically improve the operational effectiveness and efficiency of wind turbines, so that its operating efficiency routinely exceeds the Betz limit. Applicants' preferred MEWT embodiment comprises: an aerodynamically contoured turbine shroud with an inlet; a ring of stator vanes; a ring of rotating blades (i.e., an impeller) in line with the stator vanes; and a mixer/ejector pump to increase the flow volume through the turbine while rapidly mixing the low energy turbine exit flow with high energy bypass wind flow. The MEWT can produce three or more time the power of its un-shrouded counterparts for the same frontal area, and can increase the productivity of wind farms by a factor of two or more. The same MEWT is safer and quieter providing improved wind turbine options for populated areas.



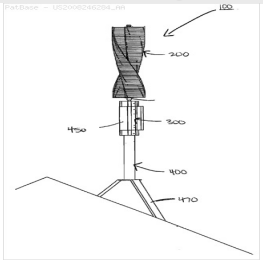
Probable Assignee: FLODESIGN WIND TURBINE CORP

Earliest Publication Date: 20080925

34) Family number: 42270135 (US2008246284A)

EASILY ADAPTABLE AND CONFIGURABLE WIND-BASED POWER GENERATION SYSTEM WITH SCALED TURBINE SYSTEM

Abstract: Source: US2008246284A In one embodiment, a turbine for use in a wind-based power generation system includes a plurality of separate blade parts that contain locating and coupling structures to permit the separate parts to be coupled to one another in a stacked manner to form a shaped blade of the turbine.



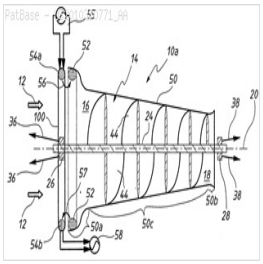
Probable Assignee: BLUE GREEN PACIFIC INC

Earliest Publication Date: 20081009

35) Family number: 43272348 (US2010320771A)

POWER GENERATOR

Abstract: Source: US2010320771A An electrical power generator assembly (10a) for using kinetic energy from a flowing fluid (12) to generate electrical power. The electrical power generator (10a) includes a blade assembly (14) and at least one primary coil (52). The blade assembly (14) having a head end (16) for facing incoming flowing fluid (12), a tail end (18) spaced from the head end (16) for facing in the direction of the flowing fluid (12), and a rotational axis (20) extending between the head end (16) and the tail end (18). The blade assembly (14) includes a blade arrangement (44) which is arranged in generally helical fashion about the rotational axis (20), and at least one mounting formation (26, 36) connected to the blade arrangement (44). Each mounting formation (26, 36) is adapted to permit mounting of the blade assembly (14) for rotation about its rotational axis (20), so that in use fluid flowing past the electrical power generator assembly (10a) interacts with the blade arrangement (44) to rotate the blade assembly (14) about its rotational axis (20). The at least one primary coil (52) is connected to the blade arrangement (44) for rotation with the blade arrangement (44). The at least one primary coil (52) is energizable and being arranged in use to interact with at least one stationary secondary coil (54b) to generate electrical power in response to rotation of the blade assembly (14).



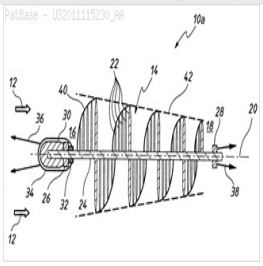
Probable Assignee: ELEMENTAL ENERGY TECHNOLOGIES LTD

Earliest Publication Date: 20090522

36) Family number: 43272349 (US2011115230A)

POWER GENERATOR

Abstract: Source: US2011115230A A power generator assembly (10a) for using kinetic energy from a flowing fluid (12) to generate power. The power generator assembly (10a) includes a blade assembly (14) and a generator (30). The blade assembly (14) has a head end (16) for facing oncoming flowing fluid (12), a tail end (18) spaced from the head end (16) for facing in the direction of flow of the fluid (12), and a rotational axis (20) extending between the head end (16) and the tail end (18). The blade assembly (14) includes a blade arrangement (22) which is arranged in generally helical fashion about the rotational axis (20), and at least one mounting formation (24) connected to the blade arrangement (22). Each mounting formation (24) is adapted to permit mounting of the blade assembly (22) for rotation about its rotational axis (20), so that in use fluid (12) flowing past the power generator assembly (10a) interacts with the blade arrangement (22) to rotate the blade assembly (24) about its rotational axis (20). The generator (30) is drivingly connected to the blade assembly (22) for generating power in response to rotation of the blade assembly (22).



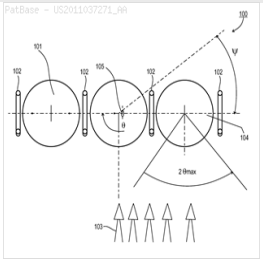
Probable Assignee: ELEMENTAL ENERGY TECHNOLOGIES LTD

Earliest Publication Date: 20090522

37) Family number: 43940525 (US2011037271A)

WIND TURBINE SYSTEM AND MODULAR WIND TURBINE UNIT THEREFOR

Abstract: Source: US2011037271A A wind turbine system includes a two-dimensional array of a plurality of modular wind turbine units arranged in a plurality of horizontal rows and vertical columns. The two-dimensional array of modular wind turbine units are carried by a frame structure including a plurality of parallel beams extending along a first orthogonal axis and spaced from each other along a second orthogonal axis, with the plurality of modular wind turbine units mounted between each pair of the parallel beams extending along the first orthogonal axis. Also described is a modular wind turbine unit particularly useful in such a system.



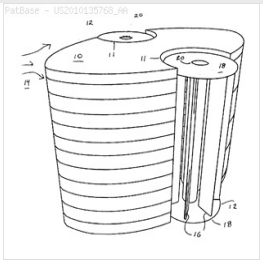
Probable Assignee: CORIOLIS WIND INC

Earliest Publication Date: 20091029

38) Family number: 44434735 (US2010135768A)

COLUMN STRUCTURE WITH PROTECTED TURBINE

Abstract: Source: US2010135768A A turbine system includes a turbine positioned so that its blades are exposed during at least part of their rotation to a region of fluid flow accelerated by a columnar structure, such as a building or a bridge pylon. A protective casing moves to isolate the turbine blades from the fluid flow, thereby protecting the turbine from overpowering conditions. Upwind and downwind fairings may be used when retrofitting pre-existing buildings. Turbines may be positioned on opposing sides of a building. Multiple turbine modules may be positioned in line along peripheries of a building. Turbines may be mounted on in-water structures, such as buoys.



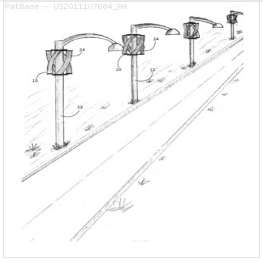
Probable Assignee: NATURAL POWER CONCEPTS INC

Earliest Publication Date: 20100225

39) Family number: 48874067 (US2011107684A)

POLE MOUNTED ROTATION PLATFORM AND WIND POWER GENERATOR

Abstract: Source: US2011107684A A pole mounted rotation platform and wind power generator that is secured to an existing structure, which may or may not be vertical, to augment an existing power grid. The pole mounted rotation platform and wind power generator includes a wind sail assembly and a platform capable of rotating about the existing structure. The pole mounted rotation platform and wind power generator may be assembled, secured, leveled and aligned to the existing structure as component parts and in such a manner that any existing equipment on the existing structure does not need to be repositioned or relocated. During usage, the wind sail assembly rotates about the existing structure via the rotation platform, the resulting rotational energy is converted to electrical power, and the electrical power is output to a suitable power-using, -storing or -converting system.



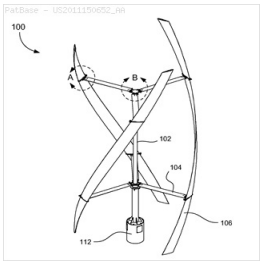
Probable Assignee: IDEA LABS INC

Earliest Publication Date: 20110512

40) Family number: 49124998 (US2011150652A)

TURBINE ASSEMBLIES

Abstract: Source: US2011150652A A turbine is described. The turbine includes: (i) a shaft capable of rotation along its longitudinal axis and capable of connecting to an electrical generator, and the shaft having disposed thereon at least one shaft hinge; (ii) a radial arm including a first end having disposed thereon at least one first hinge; and a hinge pin that fits inside a cavity formed when at least one the shaft hinge of the shaft is in an engaged position with at least one first hinge of the radial arm, and in the engaged position the hinge pin capable of connecting the radial arm to the shaft.



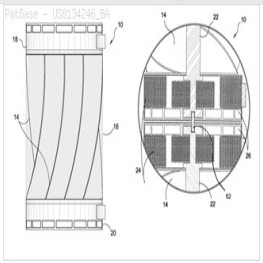
Probable Assignee: LUCID ENERGY INC

Earliest Publication Date: 20110623

41) Family number: 50770598 (US8134246B)

FLUID DRIVEN GENERATOR

Abstract: Source: US8134246B A power generation system utilizes a wind driven turbine to energize a pair of generator disposed on opposing ends of drive shaft having helical propeller fin attached thereto. The units may be installed on the roof a structure in parapet fashion and stacked to increase power output. Furthermore, the wind driven turbine could be incorporated into a ram air drive to recharge the battery of an electric or hybrid vehicle.



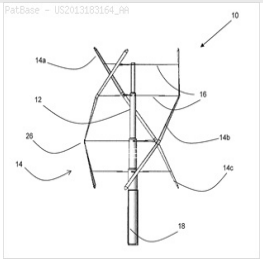
Probable Assignee: LOIS WILLIAM A

Earliest Publication Date: 20120313

42) Family number: 47782973 (US2013183164A)

VERTICAL AXIS WIND TURBINE HAVING ONE OR MORE MODULAR BLADES

Abstract: Source: US2013183164A A vertical axis wind turbine includes a substantially vertical, central mast; one or more blades, each blade having an upper tip end and a lower tip end and including two or more connected blade segments, each defined by a longitudinal axis and a transverse airfoil cross section, wherein the ends of adjacent blade segments are connected together by means of a connection arrangement provided between the adjacent blade segments; and at least one support arm extending outwardly from the central mast, wherein the peripheral end of each support arm is connected to one of the blades through the connection arrangement of that blade. Each blade extends around the central mast such that the upper and lower tip ends are angularly displaced from each other about the central mast.



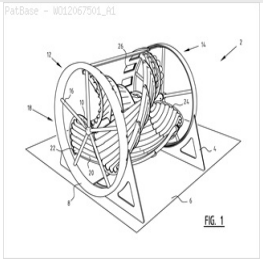
Probable Assignee: NENUPHAR

Earliest Publication Date: 20120404

43) Family number: 51134528 (WO12067501A1)

DEVICE FOR AN ENERGY EXCHANGE WITH A FLUID

Abstract: The present invention relates to a device for exchanging energy with a fluid, wind turbine provided with a device and method for exchanging energy with a fluid, comprising: - a shaft; - a housing arranged around the shaft; - a number of spiral-shaped blades rotatable around the shaft and arranged inside the housing.



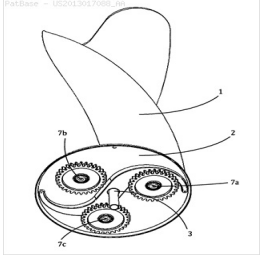
Probable Assignee: STICHTING S AND O PATENTEN

Earliest Publication Date: 20120419

44) Family number: 52815921 (US2013017088A)

VERTICAL AXIS MICRO WIND GENERATOR

Abstract: Source: US2013017088A A vertical axis micro wind generator is described, as comprising a Savonius type helical wing 1, (Fig. 1), two bearings 10a and 10b on each side of the the wing, a base 2 joined to wing 1 with shafts 7a, 7b and 7c protruding from the bottom side of base 2 where 3 bearings 9a, 9b and 9c, and planets 8a, 8b and 8c are located, a crown gear fixed to base plate 6 and a sun gear 12 rotating around shaft 3. Sun gear 12, joined to the magnets plate 4, rotates in the same direction as helical wing 1 and at a resultant speed as determined by the planetary gear system (Fig. 2).



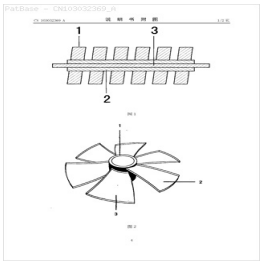
Probable Assignee: ARIZNABARRETA JOSEBA

Earliest Publication Date: 20130117

45) Family number: 53508743 (CN103032369A)

STEPPED THREADED FAN BLADE FOR AIR COMPRESSOR, LIQUID PUMP, BLOWER, FAN, TURBOFAN AND BLADE FAN

Abstract: Source: CN103032369A The invention discloses a stepped threaded fan blade device for an air compressor, a water pump, an oil pump, a blower, a fan, a turbofan and a wind-driven generator propeller, and aims to provide an efficient energy-saving fan blade device for the human society. Single-stage fan blades and multi-stage fan blades are arranged in a stepped threaded way for manufacturing rotor fan blades of a centrifugal air compressor, rotor fan blades of a centrifugal water pump, rotor fan blades of an oil pump, all-purpose blower fan blades, all-purpose fan blades, all-purpose turbofan blades, and fan blades for a wind-driven generator propeller. The manufactured single-stage fan blades and multi-stage fan blades are spirally wound on a hub disk by one or more circles in a stepped way instead of being positioned on the same plane. The stepped threaded fan blade device has spiral energy, so that the working efficiency can be increased by over 15 percent, and energy is saved by over 15 percent.



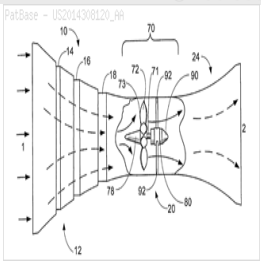
Probable Assignee: LUO SHIWU

Earliest Publication Date: 20130410

46) Family number: 57229177 (US2014308120A)

AIR-CHANNELED WIND TURBINE FOR LOW-WIND ENVIRONMENTS

Abstract: Source: US2014308120A An inventive wind turbine configuration including a means for increasing wind speed through the body of the turbine and means for directing the fluid air into a discrete portion of the turbine generator is provided. Such a device allows for the capture of wind from any environment, low speed or otherwise, in order to subsequently efficiently increase the overall wind speed thereof for further introduction within the turbine portion. The overall device thus includes a properly configured air intake component portion with a conical component to direct the captured wind directly to a portion of the turbine as well as suitable means to reduce back pressures of the introduced fluid stream.



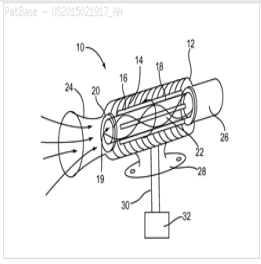
Probable Assignee: KOMP WILLIAM JOSEPH

Earliest Publication Date: 20140826

47) Family number: 58338044 (US2015021917A)

POWER GENERATING APPARATUS

Abstract: Source: US2015021917A A power generating apparatus is provided. The power generating apparatus includes a body portion having an inner volume, the body portion having an intake on one end of the body portion and an outlet on an opposing end. The power generating device also includes a rotor operatively coupled within the body portion, wherein the rotor comprises an aperture extending from one end to an opposing end. Further included is a coiled wire coupled within the body portion and around the rotor, wherein the rotor rotates with respect to the coiled wire. The power generating apparatus also includes magnets coupled to the rotor proximate the coiled wire and a fan blade coupled within the rotor. As air is moved through the power generating apparatus, the fan blades turn the rotor and the magnets. This rotation changes the magnetic field induced on the coiled wire and creates electricity in the coiled wire.



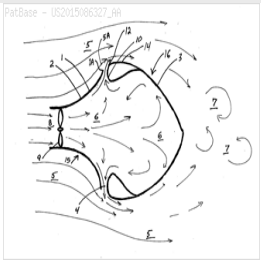
Probable Assignee: KADRI ZYAD

Earliest Publication Date: 20150122

48) Family number: 58773798 (US2015086327A)

SPENT FLOW DISCHARGE APPARATUS FOR AN INSTREAM FLUID POWER-EXTRACTION MACHINE

Abstract: Source: US2015086327A A fluid power-extraction machine is immersed in an ambient flow of a fluid, captures (and extracts energy from) a portion of the fluid, and discharges it back into the ambient flow. The machine includes a housing bounding a fluid intake inlet and including an ambient flow deflector, a downstream body arranged rearwardly from the deflector and forming a discharge outlet between the deflector and the downstream body, and a power extraction device in a fluid flow channel communicating from the fluid intake inlet to the discharge outlet. The deflector outwardly deflects and accelerates a portion of the ambient flow adjacent to the discharge outlet. A mixing surface of the downstream body extends outwardly and rearwardly from the discharge outlet, mixing the accelerated flow, the discharged flow and the ambient flow together along the mixing surface. A backflow preventer of the downstream body prevents wake backflow from impeding discharge of spent flow at the discharge outlet.



Probable Assignee: MCBRIDE GEORGE F

Earliest Publication Date: 20150326

49) Family number: 65532611 (CN106593959A)

EFFICIENCY-INCREASING, ENERGY-SAVING AND EMISSION-REDUCING METHOD FOR PROPELLERS, RUSTON TURBINES, FANS AND TURBOFANS FOR VARIOUS USES

Abstract: Source: CN106593959A The invention discloses an efficiency-increasing, energy-saving and emission-reducing method for propellers, ruston turbines, fans and turbofans for various uses for the society. The efficiency-increasing, energy-saving and emission-reducing method is innovated on the basis of the prior art, and blades of the propellers, the ruston turbines, the fans and the turbofans which are used are disassembled and reassembled to enable all the blades on each wheel hud to be arranged for a circle in the mode that one blade is a bit lower than the next one and enable all the blades not to be located on one plane but in a spiral shape on the whole. Original design and production lines of manufactures of the propellers, the ruston turbines, the fans and the turbofans are unchanged, and only in a finished product assembling link, the manufacturers conduct installation according to the efficiency-increasing, energy-saving and emission-reducing method. New incorporations manufacture products of the propellers, the ruston turbines, the fans and the turbofans according to the efficiency-increasing, energy-saving and emission-reducing method. The physical law of the energy-saving and emission-reducing method is that efficiency increasing is in direct proportion with the vertical distance between the blades from zero to an optimal vertical distance value, and efficiency increasing is in inverse proportion and is finally ended after the optimal vertical distance value is exceeded.

Probable Assignee: LUO SHIWU

Earliest Publication Date: 20170426

50) Family number: 65564456 (EP3163072A1)

SYSTEM ZUR ENERGIEERZEUGUNG POWER GENERATING SYSTEM

Abstract: Source: EP3163072A1 The present invention relates to an energy generating system comprising a Venturi tube (1) formed from a plurality of conical, hollow filiform modules (1a, 1b, 1c) fitted to one another such that they form said tube (1) with the dimensions required for each specific installation, increasing and optimizing the resources required for the correct operation thereof; and wherein the first module (1a) of the Venturi tube (1) serves as a base and will have therein a rotor of a turbine (2); and wherein the remaining modules (1b, 1c) have therein laminar and/or helical blades (3) radially distributed with respect to the axis of the module in which they are located, such that they form a spiral advancing from the largest part to the smallest part.

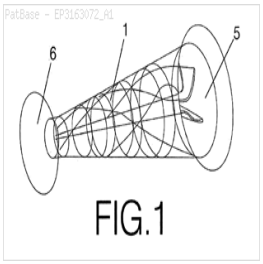


FIG.1

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Earliest Publication Date: 20170503