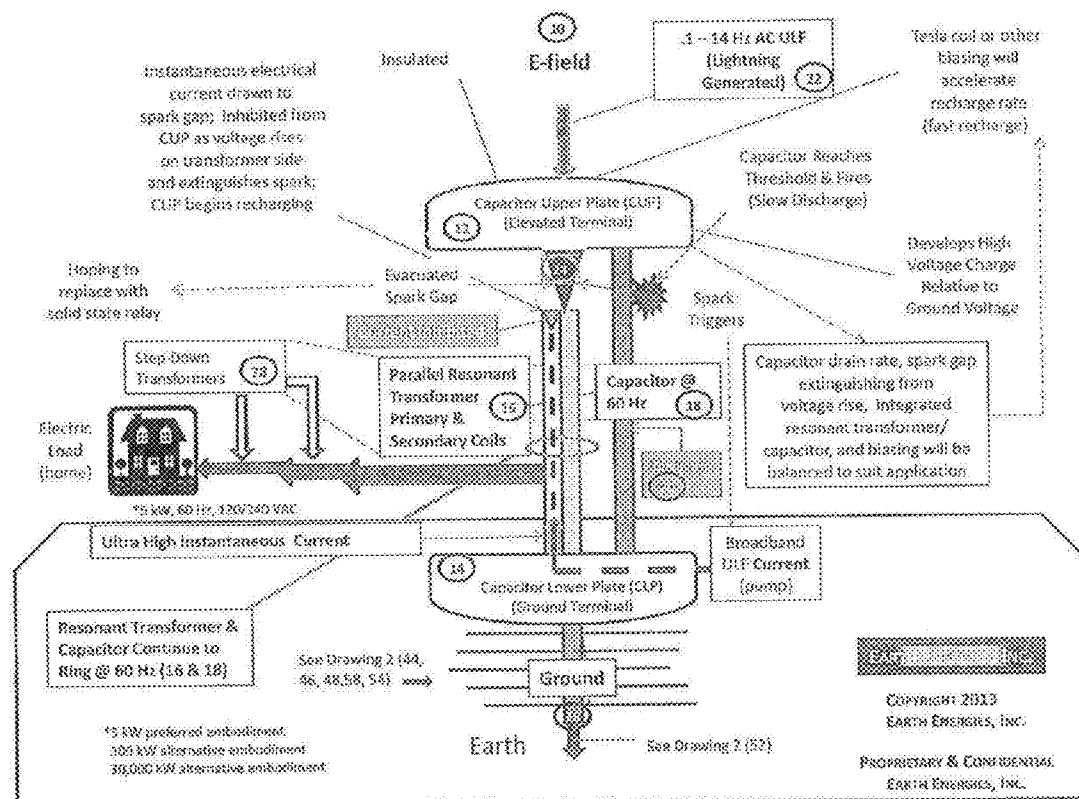




US 20150102676A1

(19) **United States**(12) **Patent Application Publication**
Dinwiddie et al.(10) **Pub. No.: US 2015/0102676 A1**(43) **Pub. Date: Apr. 16, 2015**(54) **METHOD AND APPARATUS FOR
EXTRACTING AND CONVEYING
ELECTRICAL ENERGY FROM THE
EARTH'S IONOSPHERE CAVITY**(71) Applicant: **Earth Energies, Inc.**, Johns Creek, GA
(US)(72) Inventors: **John Dinwiddie**, Cary, NC (US); **Terry
L. Wright**, Suwanee, GA (US)(21) Appl. No.: **14/509,846**(22) Filed: **Oct. 8, 2014****Related U.S. Application Data**(60) Provisional application No. 61/889,894, filed on Oct.
11, 2013.**Publication Classification**(51) **Int. Cl.**
H01F 38/14 (2006.01)(52) **U.S. Cl.**
CPC **H01F 38/14** (2013.01); **H01F 2038/146**
(2013.01)(57) **ABSTRACT**The system and apparatus of one or more embodiments of the
present invention extracts, conditions, and conveys electricpower from the earth ionosphere cavity through the integrated
and collaborative operation of the system and apparatus con-
sisting of a capacitively-coupled insulated elevated terminal
(coupled capacitor upper plate), an evacuated spark gap, an
integrated step-down transformer and resonant capacitor, and
a ground terminal (coupled capacitor lower plate). The archi-
tecture governing exemplary embodiments of the system and
apparatus of the present invention emulates the natural archi-
tecture governing the interaction of living trees with the elec-
trical energy resident in the earth ionosphere cavity. The
implementation of such exemplary embodiments of the
present invention utilizes standard and customized compo-
nents appropriate for their function within the system and
apparatus.The extracted electric power from the earth ionosphere cavity
manifests in the form of broadband electromagnetic waves in
the 0 to 200 Hz frequency range. Electric energy from these
waves produce magnetic fields inside the integrated step-
down transformer which are added together by the primary
coil of the integrated step-down transformer, and delivered as
60 Hz 120/240 VAC to an electric load via the secondary coil
of the integrated step-down transformer resonating at 60 Hz
due to the influence of the integrated resonant capacitor.The system and apparatus of exemplary embodiments of the
present invention extracts, conditions, and conveys iono-
sphere cavity-resident electric power in alternating current
and direct current realms.

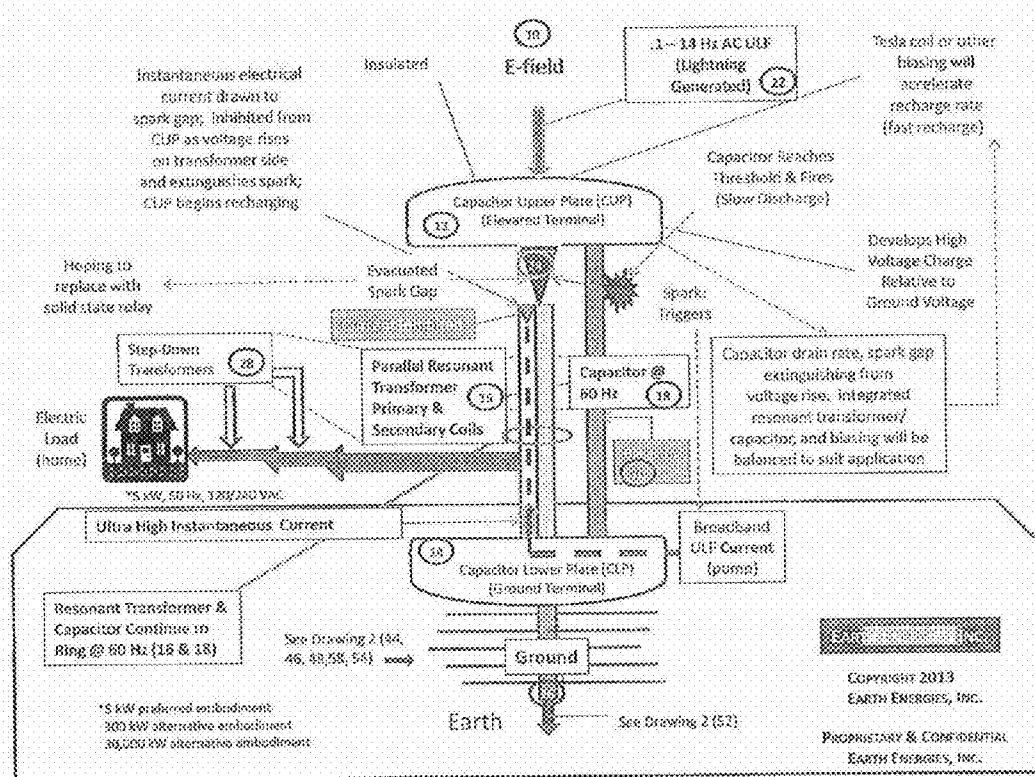


FIG. 1

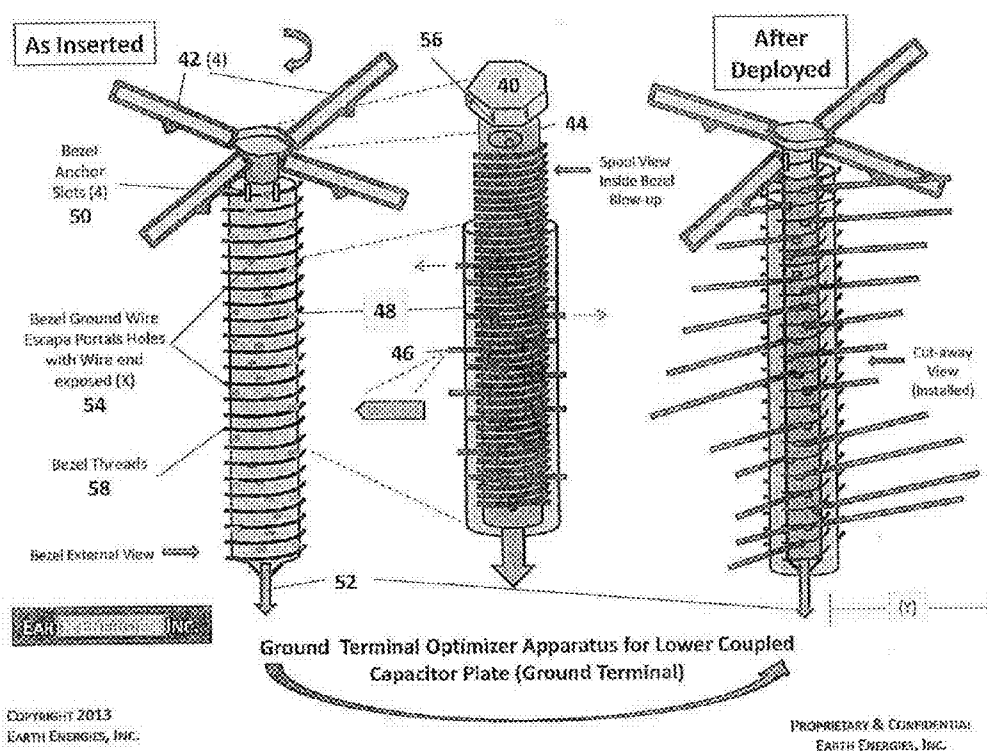


FIG. 2

METHOD AND APPARATUS FOR EXTRACTING AND CONVEYING ELECTRICAL ENERGY FROM THE EARTH'S IONOSPHERE CAVITY

[0001] This application claims benefit of U.S. Provisional Application No. 61/889894, filed 11 Oct. 2013, titled, "Method and Apparatus for Extracting and Conveying Electrical Energy From the Earth's Ionosphere Cavity," the disclosure of which is incorporated herein by reference in its entirety.

BACKGROUND OF THE INVENTION

[0002] A portion of the disclosure of this patent document contains material which is subject to copyright protection. The copyright owner has no objection to the facsimile reproduction by any-one of the patent document or the patent disclosure, as it appears in the Patent and Trademark Office patent file or records, but otherwise reserves all copyright whatsoever.

[0003] The invention is an apparatus and methodology for extracting electric power manifesting as a broadband collection of electric field oscillations in the 0 to 200 Hz frequency range within the Earth's ionosphere cavity, through the use of an elevated biased hemispherical or other curved surface capacitor coupling the ionosphere cavity and Earth, and then conveying this electrical energy at the proper frequency, amperage, and voltage to existing homes and buildings where it is delivered for consumption over existing home or building wiring.

DESCRIPTION OF THE RELATED ART

[0004] The current state of the art in this field is focused on the bending of radio frequency waves in the Earth's ionosphere cavity for the purpose of distorting (through reflection) the resident cavity's magnetic field to physically direct the stimulating electrical energy to targeted locations within the Earth's ionosphere cavity and/or coordinates on the Earth's surface at specific energy levels appropriate to specific applications. The regenerative feedback was done by Sutton's active antenna.

[0005] Nikola Tesla attempted to transmit wireless power in the "natural medium"; however, Tesla had no description of a device to receive natural oscillations as described in the present disclosure.

[0006] There is no known prior art in the field of electric energy extraction from the ionosphere cavity and conveyance to other terminals within the cavity for delivery of usable electric power.

SUMMARY OF THE INVENTION

[0007] In one exemplary embodiment of the present invention, a properly-scaled electric power extraction/conveyance apparatus is installed at a typical consumer residential home to deliver 60 Hz 120/240 VAC electric power, sufficient to convey the equivalent of 5 kW of continuous electricity, to the home's existing electric service entry component to power electrical appliances in the home over existing home electric wiring.

[0008] In another exemplary embodiment of the present invention, a properly-scaled electric power extraction/conveyance apparatus is installed at an appropriate location within an industrial park or neighborhood to deliver 60 Hz

120/240 V AC electric power, sufficient to convey the equivalent of 300 kW of continuous electricity, to the service entry components of industrial buildings or neighborhood homes to power electrical devices and appliances over existing building or home electric wiring.

[0009] Alternative exemplary embodiments of the present invention will extract direct current electric power from the Earth ionosphere cavity, generated by the earth's rotating magnetosphere, and convey in the form of conditioned direct current to direct current load sources, or convert to alternating current and convey in the form of conditioned alternating current to alternating current load sources.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] A disclosure embodiments of the present invention, is set forth more particularly in the remainder of the specification, which makes reference to the accompanying figures, in which:

[0011] FIG. 1 provides an example of an electric power extraction and conveyance apparatus for one residential-scale embodiment of the present invention. Certain additional example embodiments of the present invention utilize similar fundamental technologies, but differ in the scale (size) of the components and characteristics of the electricity conveyed for consumption; and

[0012] FIG. 2 is a schematic illustration of ground terminals for use with embodiments of the present invention.

DETAILED DESCRIPTION

[0013] Applicant has discovered that trees extract and use electric power from the Earth ionosphere cavity. The present invention emulates the architecture of electric power extraction and usage methodology inherent in the natural operation of living trees, but uses standard and customized components, common in the field, for its implementation. The natural electric power extraction and use of electric power by trees leverages the shape and physical composition of trees as instances of large electrical capacitors coupled to the ionosphere cavity. The canopy of trees (upper limbs and leaf structures) emulates the upper plates of a coupled capacitor, the trunks of trees emulate a combined dielectric and resonant transformer/capacitor, and the root systems of trees emulate ground terminals (lower coupled capacitor plates). The extraction of electric power from the ionosphere cavity by trees is in the form of ultra-low frequency broadband waves (oscillations) in the frequency range of 0.1 to 14 Hertz (ULF). Inherent tree physical composition and control structure (i.e., DNA/RNA) govern the use of the extracted electric power to accomplish tree growth, seasonal metabolic adjustments, and reproductive processes. Any excess extracted electric power by trees is returned to the ionosphere cavity. The present invention is an exemplary instance of this same natural architecture using standard and customized components that facilitate extraction and conveyance of ionosphere cavity-resident broadband electric power at useful scales sufficient to provide continuous electrical power for electrical devices used by people.

[0014] One preferred exemplary embodiment of the present invention is in the form shown in Drawing 1 above and will deliver continuous 60 Hz 120/240 V AC electric power to consumer residences (and other structures with similar electricity conditioning and consumption requirements) equivalent to electric power capacity of 5 kilowatts.

[0015] A secondary exemplary embodiment of the present invention is also in the form shown in FIG. 1, appropriately scaled for larger electrical power demands and related conveyance capacity, and will deliver continuous 60 Hz 120/240 V AC electric power to larger buildings or electrical distribution facilities for commercial office parks with electric power capacity of 300 kilowatts.

[0016] A third exemplary embodiment of the present invention is also in the form shown in FIG. 1, appropriately scaled for larger electrical power capacity, and will deliver continuous 60 Hz 120/240 VAC electric power to utility substations with electric power capacity of 30,000 kilowatts (or higher).

[0017] The following system, power sources, and component descriptions provide additional details of the present invention in various embodiments.

[0018] Earth's ionosphere cavity (10) is a reservoir of continuously-generated electrical energy (E-Field) in both direct current (DC) and alternating current (AC) realms. The DC electric energy is created by the constant rotation of the Earth's magnetosphere exposed to the solar wind. Earth's perpetually moving magnetic fields create the DC electric power in the ionosphere cavity E-Field per the equations in James Clerk Maxwell's fundamental theory of electromagnetism. AC electrical energy in the ionosphere cavity is generated from the persistent E-Field disturbances (i. e., oscillations) caused by lightning discharges. The present invention includes the direct extraction of AC electric power from the ionosphere cavity, and the direct extraction of DC electric power from the ionosphere cavity which is converted to AC electric power before conveyance. Optional operational configurations of the present invention will also enable conveyance of extracted DC electric power for potential scenarios where the conveyance of conditioned DC electricity is required.

[0019] Electric-field oscillations (22) are induced by lightning and encapsulated in the earth-ionosphere cavity, creating a continuous source of renewable electrical energy. The frequency of lightning occurrences in the ionosphere cavity averages thirty (30) strikes per second, with each strike representing approximately one (1) terawatt (TW) of instantaneous energy. Assuming an average energy dissipation rate for each lightning strike of fifteen (15) microseconds (μsec), i. e., the time involved for one (1) terawatt of instantaneous energy to dissipate to zero (0) energy, these lightning-induced electric field oscillations are sufficient to provide 4,500 times the entire electric energy consumption on planet Earth at the projected consumption rate for the year 2100 (55.3 TWh annually). Lightning-induced E-Field oscillations vary between 0.1 and 14 Hertz with wavelengths exceeding the practicality of an electromagnetic antenna for collecting the energy. The present invention utilizes capacitive coupling to overcome this obstacle.

[0020] An insulated upper capacitor plate (terminal) (12) elevated above the influence of the ground floor collects E-Field oscillations from the ionosphere cavity. This insulated elevated terminal, capacitively-coupled to the E-Field bounded by the earth-ionosphere cavity, is arranged in a surface of large radii of curvature, supporting maximum surface connection to the E-Field without leaking the high voltage charge applied to the elevated terminal. The capacitance and resistance of the elevated terminal are responsive to the reception of broadband electric-field frequencies in the 0 to 200 hertz range. The elevated terminal is subject to high voltage

alternating current biasing used to collect electric-field oscillations generated by lightning impulses in the earth-ionosphere cavity.

[0021] An evacuated spark gap (24) connected to the elevated terminal (12) prevents electrical discharge occurring between the elevated terminal and the ionosphere cavity. As the high voltage alternating current approaches peak voltage the spark gap energizes and a large voltage is applied to the step-down transformer primary coil (16). The high voltage pumps high current from the ground terminal (14, 26) converting the electric-field to a magnetic field within the transformer (16). The step-down transformer is connected to a 60 hertz resonant capacitor (18), the secondary side of the transformer resonating at 60 hertz will supply a 60 hertz 120/240 VAC power to the load. Filter circuits will condition the power. The evacuated spark gap function may be accomplished by solid state circuitry in the implementation of the present invention.

[0022] The resonant transformer (16) is integrated with a parallel resonant capacitor across the transformer where the integrated combination resonates at 60 hertz supplying power to the electricity consuming structure (home or business). Various step-down transformers (28) are utilized to condition the conveyed electricity to accommodate the requirements of the receiving station for various embodiments of the present invention.

[0023] Ground (26) is the source of electric current for the present invention. A ground terminal, connected to the soil, is arranged in a surface of large radii of curvature to permit instantaneous sourcing of high currents from earth ground without temperature and voltage rise inhibiting the ground terminal collection of current. The capacitance and resistance of the ground terminal to earth is minimized to promote on demand current sourcing. Drawing 2 illustrates an exemplary apparatus of the present invention that optimizes ground connection quality by maximizing the penetration extent and resulting surface area of the ground terminal's extension into the soil.

[0024] Step-down transformers (28) are scaled to transform the electrical current and voltage into structured and conditioned electricity that is compatible with the electric power needs of the load sources for various embodiments of the present invention.

[0025] A mechanical nut (40) solidly attached to shaft 44 to facilitate extension, when turned, of large gauge copper wire extrusions (46).

[0026] A downward pointed anchor flat shaft (42) attached to the bezel 50 via a T-slot in bezel.

[0027] A copper (or other highly-conductive metal) spool base (44) sourcing "X" independently attached large gauge pointed copper wires (46) of length "Y", where "X" is equal to the number of escape portals in bezel (50), and "Y" is the length determined to yield optimum surface area of wires of type 46 for high quality connectivity to soil. The spool can freely rotate inside the bezel (48) and emulates the primary root structure of a living tree.

[0028] Sharpened large gauge (reinforced) copper wires (46), quantity "X", of length "Y" emulating the root structure of living trees.

[0029] Threaded bezel (spool-housing sleeve) (48) with drilled escape portal holes with end of copper wires (46) protruding through holes $\frac{1}{2}$ inch.

[0030] Bezel anchor slots (50) of twice the height of anchor flat shafts (42) and T-slotted to accommodate anchor flat shafts.

[0031] Extended pointed end (52) of inner spool base shaft.

[0032] Escape portals (54) in bezel to allow for large gauge copper wire (46) extension into soil.

[0033] Connector port (56) for connection to ground terminal (14) in Drawing 1.

[0034] Bezel threads (58).

[0035] Various embodiments of the present invention will include one or more of the following characteristics in various combinations. These descriptions are provided for purposes of example. Not all of the following characteristics will be required for any given exemplary embodiment.

[0036] Characteristic 1, The form (shape), physical composition, size, insulation, location altitude, discharge capacitive threshold and discharge rate, and the strength of AC or DC biasing applied to the (CUP) upper coupled capacitor plate (12: elevated terminal) all form an integrated whole, the purpose of which is to extract and temporarily store DC or AC electric power from the Earth's ionosphere cavity (10) at high voltage, and to trigger the energizing of the evacuated spark gap (24).

[0037] Characteristic 2, The elevated terminal (12) is capacitively coupled to the E-Field (10) bounded by the earth ionosphere cavity, and arranged in a surface of large radii of curvature, supporting maximum surface connection to the E-Field without leaking the high voltage charge applied to the elevated terminal (12).

[0038] Characteristic 3, The capacitance and resistance of the elevated terminal (12) are responsive to the reception of broadband electric-field frequencies in the 0 to 200 hertz range.

[0039] Characteristic 4, The elevated terminal (12) is subject to high voltage alternating current biasing used to collect E-Field oscillations generated by lightning impulses in the earth-ionosphere cavity.

[0040] Characteristic 5, An alternative instantiation of elevated terminal (12) is subject to high voltage direct current biasing used to collect E-Field direct current generated by the Earth's rotating magnetosphere.

[0041] Characteristic 6, The evacuated spark gap (24) may be in the form of a cohesive physical spark ignition or an operational emulation of this function through solid state circuitry.

[0042] Characteristic 7, The evacuated spark gap (24) connected to the elevated terminal (12) prevents electrical discharge occurring between the elevated terminal and the ionosphere cavity.

[0043] Characteristic 8, The high voltage alternating current from the E-Field, induced into the elevated terminal (12), approaches peak voltage and causes the evacuated spark gap (24) to energize and a large voltage is applied to the step-down transformer primary coil (16).

[0044] Characteristic 9, The high voltage alternating current impulse from the elevated terminal (12), which causes the evacuated spark gap (24) to energize, manifests as alternating current on broadband frequencies between 0.1 and 200 Hz.

[0045] Characteristic 10, In an alternative instantiation of the elevated terminal (12) the stored high voltage direct current, which causes the evacuated spark gap (24) to energize, manifests as direct current on broadband frequencies between 0 and 200 Hz.

[0046] Characteristic 11, The high voltage applied to the step-down transformer primary coil (16) pumps high current from the ground terminal (14), converting the electric-field to a magnetic field within the transformer (16).

[0047] Characteristic 12, The high current pumped from the ground terminal (14), caused by high voltage applied to the step-down transformer primary coil (16), will attempt to normalize the field and extinguish the evacuated spark gap (24).

[0048] Characteristic 13, The transformer's (16) magnetic field expands in response to the high current electric-field inrush from the ground terminal (14).

[0049] Characteristic 14, The primary winding inside the step-down transformer (16) will add the energy from each broadband frequency together into a single magnetic field, where it will become a 60 Hz frequency at the secondary winding of the transformer (16).

[0050] Characteristic 15, The step-down transformer (16) is connected to a 60 Hertz resonant capacitor (18).

[0051] Characteristic 16, The secondary (coil) side of the step-down transformer (16), resonating at 60 hertz, will supply a 60 hertz 120/240 VAC power to the electric load.

[0052] Characteristic 17, Filter circuits within the step-down transformer will condition the power according to the electric power needs of the electric load.

[0053] Characteristic 18, Electric-field lines exist (within the Earth's ionosphere cavity) that are horizontal to the surface of the Earth and extend to heights above 30,000 feet, with voltage gradients typically 100 Volts per vertical meter.

[0054] Characteristic 19, Lightning impulses create global broadband oscillations in the Earth ionosphere cavity electric-field between 0.1 and 14 Hertz.

[0055] Characteristic 20, Rotation of the Earth's magnetosphere creates global electric field oscillations in the Earth ionosphere cavity that manifest as electromagnetic waves in the 0 to 200 Hertz frequency range.

[0056] Characteristic 21, Global broadband oscillations in the Earth ionosphere cavity electric-field can be used for wireless energy transmission without harm to people, plants, or trees.

[0057] Characteristic 22, A maximum quality ground connection is achieved by expanding the surface area of the ground connection (48 and 44) through extension of high-conductor large gauge copper wires (46) horizontally through bezel (48) escape portals (54) along depth of source spool (44) and bezel (48).

[0058] Characteristic 23, The technique described in Characteristic 22 effectively expands the diameter of the ground source spool (44) with regard to quality of ground connection.

[0059] Characteristic 24, Bezel threads (58) expand surface area of bezel (48) touching earth, enhancing ground connection quality.

[0060] Characteristic 25, Bezel threads (58) enhance ground connection quality of bezel (48), source spool (44), and high conductor large gauge copper wires (46) through rotational insertion and resulting friction hold v. other (direct drive) insertion methods which can result in corruption of ground hole integrity caused by imprecise angle and/or vibration during insertion.

[0061] While one or more embodiments of the present invention have been described above, it should be understood that any and all equivalent realizations of the present invention are included within the scope and spirit thereof. Thus, the embodiments presented herein are by way of example only

and are not intended as limitations of the present invention. Therefore, it is contemplated that any and all such embodiments are included in the present invention.

What is claimed is:

1. A power receiver for extracting electrical energy from the earth's electric field, said power receiver comprising:

a resonant transformer connected between a ground terminal disposed below the surface of the earth and an elevated terminal;

impulse generator for generating and applying a high voltage electrical impulse to a primary winding of the resonant transformer to induce current flow from the ground terminal through the primary winding of the transformer; and

a power conversion circuit connected to a secondary winding of the resonant transformer to convert electrical current flowing through the secondary winding to a desired form.

2. The power receiver of claim 1 wherein a resonant frequency of the resonant transformer is below 200 Hz.

3. The power receiver of claim 1 wherein the elevated terminal comprises an upper capacitive plate coupled to the earth's ionosphere cavity.

4. The power receiver of claim 3 wherein the impulse generator comprises:

the upper capacitive plate;

a pair of electrodes separated by a spark gap, said electrodes connected between the upper capacitive plate and the primary winding of the resonant transformer and configured to generate a spark when a voltage difference between the electrodes reaches a predetermined level.

5. The power receiver of claim 1 further comprising a lower capacitive plate coupled to the ground terminal.

6. The power receiver of claim 1 wherein the resonant transformer comprises a capacitor connected in parallel with a primary winding of the resonant transformer.

* * * * *