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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Specification	Energy_Liquid_Non-Provisional_Patent.pdf	1151519 4fa268c5076ab69c1c36939a2b79bce61e3446e3	no	44

Warnings:

Information:

2	Provisional Cover Sheet (SB16)	USPTO_Cover_Sheet_2018-03-19.pdf	4877522 771b25913738558c34ddb6c89afae7e663f3b353	no	3

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3	Certification of Micro Entity (Gross Income Basis)	USPTO-Micro_Entity_2018-03-19.pdf	4058748 82855656f19d3ec54c3c57a404787c33963aa669	no	2

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4	Fee Worksheet (SB06)	fee-info.pdf	29032 d4e6d75800b864c745b240fcf1e6423560caa3ce	no	2

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National Stage of an International Application under 35 U.S.C. 371

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New International Application Filed with the USPTO as a Receiving Office

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SELF-POWERED MOTOR AND GENERATOR

INVENTOR JONATHAN BANNON MAHER

TECHNICAL FIELD

[0001] Embodiments of the invention relate to the fields of motors, generators, physics, engineering, and programming.

ABSTRACT

[0002] Systems, methods, apparatuses, and in some embodiments computer programs encoded on a computer storage medium, provide for clean continuous portable self-powered energy generation and propulsion, consistent with the laws of physics, by in some embodiments, including one complete embodiment, transferring force generated through hydraulics and or pneumatics and or mechanical leverage and or motorized mechanical leverage, to cause the flow of a medium, to spin a turbine, to power an electricity generator, and or rotate an axle to provide the propulsion of a traditional motor, where energy may be captured in excess of that consumed as a result of the differential between input force required and output force provided by certain force providing device configurations, as well as a result of the differential between the linear force used to elevate the medium and the compounding force provided by gravity during medium drop. The invention permanently solves global warming, provides reduced cost of living to alleviate poverty, provides unlimited clean energy for evaporated water purification and atmospheric carbon dioxide splitting, and eliminates the need for every other method of energy production, including nuclear technology – thus reducing nuclear weapons technology proliferation.

REFERENCE TO RELATED DOCUMENTS

[0003] This application is provided the benefit and priority date of United States Patent and Trademark Office provisional patent applications 62/522,646, filed June 20th 2017 by inventor Jonathan Bannon Maher, and 62/596,825, filed December 9th 2017 by inventor Jonathan Bannon Maher, which are incorporated herein in their entirety.

BACKGROUND

[0004] The majority of the proceeds from the licensing of this patent will be going to causes that support the well being of humanity, and your support in ensuring the patent is forever in every way as strong as possible, will be providing a service to all the world.

[0005] This section is intended to introduce the reader to various aspects of the art that may be related to various aspects of the present techniques, which are described and or claimed. This discussion is believed to be helpful in providing the reader with background information to facilitate a better understanding of the various aspects of the present disclosure. Accordingly, it is understood that these statements are to be read in this light, and not a citation of any prior art.

[0006] Patent filings on structurally differentiated and fundamentally deficient disclosures may exist that may attempt to claim any invention that is self-powered, based on previously publicly known failed attempts to build such devices, however any such disclosures do not enable the purported inventions, with overly broad claims not supported by the disclosure that also fail to distinctly claim the invention, and any such patent filings are inherently invalidated by prior public disclosure, the enablement requirement, and the claims support requirement.

[0007] Known and proposed energy production, transmission, and storage systems have some or all of the following deficiencies:

[0008] 1. External fuel source required: an external fuel source is utilized such as oil, gas, coal, wind, sun, water currents, geothermal heat, hydrogen, or uranium, where the cost of providing fuel in the form of electricity or gasoline to a vehicle over its useful life potentially exceeds the cost of the vehicle, and about a quarter of airline costs are from fuel.

[0009] 2. Environmentally unfriendly: nuclear energy production, including fission, fusion, and cold (LENR), results in toxic waste and or materials, geothermal often circulates contaminants from the ground, fracking creates toxic water, hydroelectric dams decompose organic matter producing the potent global warming gas methane, solar panel manufacturing often releases toxic byproducts including greenhouse gases far more potent and long lived than those from fossil fuels, hydrogen takes substantially more energy to produce and transport than it provides, while clean energy sources may utilize slowly degrading flammable toxic batteries to store energy for when the sun is not shining, wind is not blowing, or water is not adequately flowing.

[0010] 3. Intermittent: wind, solar, and traditional water energy systems provide variable output, with average output often found to be around 20% of rated output, as a result of environmental conditions, meaning a 5 kilowatt system typically produces average output of only 1 kilowatt.

[0011] 4. Not portable: solar panels can only function in the sun, wind turbines in wind, water turbines in water currents, nuclear in a stable highly controlled environment, and carbon with the aid of an emissions pipe.

[0012] 5. Extremely expensive transmission costs: power lines are required for all forms of nuclear energy, including fission, fusion and cold, for farms of solar, wind, and water, and for fossil fuels plants, while pipelines are generally required for oil and gas, including natural gas, which is principally methane, a greenhouse gas more than twenty times more potent than carbon dioxide that may be leaked during extraction, transport, and consumption. Power line and fossil fuel pipe line cost of installation per 1 mile (1.6 kilometers) has been found to be up to around 20 times the average annual income in the United States, and lines must be replaced every 30 to 50 years, so in the United States alone, with 300 thousand miles (480 thousand kilometers) of power lines, and 200 thousand miles (320 thousand kilometers) of pipelines, replacement would require an expenditure around 25 times the national debt, passed on to consumers, and dragging down the economy, with every other developed nation in a similar situation. Power lines require environmental destruction during installation, leave visible blight, are forever vulnerable to cyber attacks, transmit power from central sites that are inherently more prone to failure and blackout than a decentralized system, dissipate power during transmission, with high voltage power lines having health consequences for those living nearby.

[0013] 6. High initial costs: in addition to previously cited expense of power lines, fossil fuel pipes, and ongoing fuel costs, clean energy farms require an allocation of land, and degrading batteries requiring periodic replacement, which is why tax credits are often required for clean energy systems to be affordable. In addition to those factors, comparing a 1 kilowatt rated clean energy system to a 1 kilowatt rated traditional system, may require multiplying the cost of the clean energy system by approximately 10 times, 5 times to account for enough electricity generation to be stored for the equivalent continuous output, and 5 times for the battery storage.

[0014] 7. Vulnerable to weather: wind turbines, hydroelectric dams, and solar panels, can be made ineffective by environmental conditions such as freezing temperatures, snow, and rain, and similar to power lines, may be taken down by extreme weather and lightning strikes.

[0015] 8. Vulnerable to black outs: power transmitted over power lines creates vulnerability for critical facilities such as hospitals and data centers.

[0016] 9. Vulnerable to cyber attack: utility scale energy systems often require a hackable computer to operate, and are therefore forever vulnerable to computer viruses able to take down and or destroy nuclear power plants and the electrical grid, even if such systems aren't connected to the Internet, as demonstrated by the Stuxnet virus.

[0017] 10. Causes deaths: plants, rigs, and pipes, for current and proposed forms of nuclear, hydrogen, gas, and oil energy can explode, and coal mines can collapse, while wildlife is killed by wind, ocean, wave, and river turbines, hydroelectric dams, solar condensers, solar panel and battery manufacturing byproducts, and nuclear waste.

[0018] 11. Encourage nuclear weapon proliferation: fission, fusion, and cold (LENR) nuclear energy are or can be one step from weaponizable, while hydrogen can be obtained by a terrorist at a hydrogen fuel station to create a powerful compressed hydrogen explosion, as verified by reviewing a video of a balloon filled with hydrogen being lit on fire. Fusion is particularly disturbing, as a fusion weapon could be created with the power of an exploding star, able to take out the planet, and resulting in an extinction level event for humans, a scenario even more likely when considering increasingly autonomous – and therefore inevitably hackable by individuals – weapons control.

BRIEF DESCRIPTION OF THE DRAWINGS

[0019] Illustrations are presented by way of example, and not by way of limitation, where some embodiments may not contain all components, may contain additional components, and may contain functionally similar components.

[0020] FIG. 1 is an illustration of an example of embodiment of the invention, which utilizes hydraulics and mechanical leverage operating to circulate a medium through piping between two containers on a levered support structure, to rotate a turbine to provide rotational force to an electricity generator axle to generate electricity and or to rotate or function as a motor axle.

[0021] FIG. 2, containing some components in FIG. 1, is an illustration of an example of an embodiment of an automated hydraulic pump and cylinder whose piston operates another hydraulic pump handle to operate its corresponding cylinder piston to improve input output efficiency.

[0022] FIG. 3 is an illustration of an example of an embodiment of a traditional electric hydraulic pump and cylinder which in some embodiments may be used in place of the converted manual to automatic hydraulic pump and cylinder in FIG. 1.

DETAILED DESCRIPTION

[0023] The disclosure is related to the field of clean continuous portable self-powered energy and propulsion. It is understood that any reference to a person skilled in the art, recognizes that at the time of filing, there is no one else skilled in the art of this particular field, or a closely related field. Given the extraordinary nature of the disclosure, regardless of how full, clear, concise and exact the disclosure in enabling the production and use of embodiments of the disclosure, what could be construed to be undue experimentation during production and use, is simply the ordinary effort required in the assembly and use of an embodiment of such a disclosure.

[0024] It is understood that, as in any engineering or design project, the development of any actual implementation will include numerous implementation specific decisions made to achieve the developers' specific goals, such as compliance with business related and system related constraints, which may vary from one implementation to another. It is understood that such a development effort might be complex and time consuming, but is nevertheless a routine undertaking of design, fabrication, and manufacture for those skilled in the art having the benefit of this disclosure. The disclosed steps may be read as prefaced by "In some embodiments, including one complete embodiment, ", may be executed or performed in other orders or sequences, and are not limited to the order and sequence shown and described, which are provided to enable ease in constructing an embodiment, and along with each components of each step, may be removed, modified, combined, or rearranged, and other steps and or step components may be added, without departing from the scope of this disclosure and or invention. Although embodiments of the invention have been described and illustrated in the disclosed implementations, it is understood that the present disclosed subject matter, including apparatuses, methods, specification, and illustrations, has been made only by way of example, not by way of limitation, and the methods and apparatuses may be used in other systems, and that numerous changes and optimizations in the details of implementation of the invention and or embodiment are made without such modifications departing from the spirit and scope of this disclosure and or embodiments of the invention. Although the disclosure has been shown and described with respect to one or more embodiments, features of the disclosed embodiments can be combined and rearranged in various ways, and changes including equivalent alterations, substitutions, modifications, and additional efficiencies will of course occur to someone of ordinary skill in the art without departing from the spirit and scope of this disclosure and or invention. In particular regard to the various functions performed by the described components, the terms used to describe such components are intended to correspond, unless otherwise indicated, to any component which performs the specified function of the described component, or is functionally equivalent to the described component, even though not structurally equivalent to the disclosed structure which performs the function in the implementations described in this disclosure. In addition, while a particular feature of the disclosure may have been provided with respect to only one of several embodiments, such feature may be combined with one or more other features of other embodiments as may be desired and advantageous for any given or particular application. In some instances, well-known circuits, structures and techniques have not been shown in detail in order not to obscure the understanding of this disclosure. Articles in this disclosure such as "a" "an" and "the" may allow for both singular and plural forms. Verbs in this disclosure such as "is" may be read as "may be". Conjunctions in this disclosure such as "or" as used herein may be interpreted as inclusive or meaning any one or any combination, where "A, B or C" means "any of the following: A; B; C; A and B; A and C; B and C; A, B and C". Relational terms in this disclosure, for example first and second, top and bottom, left and right, are to distinguish one entity or action from another, and may not necessarily require or imply a relationship, or order between, such entities or actions. The disclosure includes the best mode contemplated by the inventor, a completely described specific embodiment, along with optional components and alternative embodiments to best suit the implementer, measurements in imperial and metric units to support universal understanding, and dramatically exceeds claims support requirements and enablement requirements by allowing for selection and or construction of the required components to be carried out easily, quickly, and routinely by persons of ordinary skill in the art, who are provided the additional benefit of utilizing readily available commodity components whenever possible. The present disclosure includes material protected by copyrights, and the owner of the copyrights hereby reserves all rights, but with authorization for publication as required by government patent offices. Various embodiments of the present invention may provide all, some or none of the disclosed technical advantages.

[0025] The computer code descriptions disclosed, in order to provide comprehensive enabling disclosure, rather than utilizing flow charts, which according to Patent Cooperation Treaty 11.11a are prohibited from containing "text matter, except a single word or words, when absolutely indispensable, such as… a few short catchwords indispensable for understanding", are provided in a text only format where the number of arrows preceding a line indicate logical block level, semicolons indicate a new segment of a logical block, and periods indicate the closure of one or more logical blocks. It is understood that any computer code representations in this disclosure are merely illustrative, rather than restrictive. While code may be written in nearly any computer language, including Java and C++, the illustrative computer code descriptions were derived from code written the Python language, which may be run through the Python interpreter, with appropriate supportive libraries, which at the time of disclosure, may run on nearly any computer, for example one with an Intel or AMD processor, running a current version of Linux, Windows, or Mac OS. All code components may read as if prefaced by "In some embodiments, including one complete embodiment, ". In some embodiments, functionality may be modified, rearranged, excluded, and added. To provide more fundamental computer system details, in some embodiments, the functionality associated with the disclosed computer code descriptions may be referred to as a script, module, software, software application, or code, and can be written in any form of language, including compiled, interpreted, declarative, or procedural, able to be deployed in any form suitable for use in a computing environment, including as an independent or integrated program, module, component, or subroutine, for execution by the computer system, implemented on one or more independent or integrated computers, utilizing a central processing unit in the form of one or more general or special purpose microprocessors, in conjunction with digital electronic circuitry, which may include special purpose logic circuitry such as a field programmable gate array or application specific integrated circuit, with the computer controlled by and operatively coupled to tangibly embodied software and or firmware, which may include code that creates an environment for code execution, including individual or combined use of processor firmware, a protocol stack, a database management system, and an operating system, where such software and or firmware may exist in one or more parts in memory on one or more computers, and is encoded on one or more tangible non transitory software carriers, such as individual or combined use of a random or serial access device or substrate, a semiconductor memory device, transient or persistent random access memory, a magnetic, magnetic optical, or optical disk, or encoded on an artificially generated transmitted signal, for example, optical, electrical, or electromagnetic, transmitted using a sending and a receiving apparatus, where the interaction between the user and the software may be implemented by operatively coupling, to the local implementing computer, or a local computer connected to one or more remote computers through a local or wide area network, a display device which may implement liquid crystals or light emitting diodes, a keyboard, and a pointing device.

[0026] The inventor retains absolutely no liability for any implementation of this invention, and the invention is implemented exclusively at the risk and liability of the implementer.

[0027] In some embodiments, for quality control purposes, all components may be manufactured from scratch.

[0028] Calculations, formulas, and specific units are not in any way restrictive, are not be relied upon, are not required as presented to produce an embodiment of the invention, are provided exclusively as a courtesy to enhance enablement for those resizing components and or constructing alternative embodiments, and may contain inaccurate assumptions easily modified during practice, with all calculations utilized to select and estimate components and unit output being rough estimates that may vary greatly based on factors that include the type and quality of purchased and or manufactured components and embodiment construction, where embodiments may be constructed utilizing an effectively endless range out output and component configurations and selection processes.

[0029] Embodiments of the invention provide some or all of the following benefits over previously discussed predecessors:

[0030] 1. Self-powered for free output: embodiments provide the first energy and motor system in the history of the known universe to not require an external fuel source. Embodiments can produce endless energy, and provide endless transportation range, until there is a system failure, and therefore may potentially produce energy and propulsion until gravity driven orbital drift causes the Earth to be consumed by the Sun in a few billion years – assuming the units and humans are still on Earth. Embodiments reduce transportation costs by allowing implementing vehicles to operate without fuel, allowing for effectively free endless transportation range after purchase, and additionally allow for travel by supersonic jets and flying cars, which have been impractical principally as a result of fuel costs.

[0031] 2. Clean: the manufacture and use of embodiments produces no notable harmful environmental byproducts, nor the potential for deaths associated with predecessors.

[0032] 3. Continuous: embodiments produce electricity and propulsion that is continuous and stable.

[0033] 4. Portable: embodiments are able to function as well in a basement closet as in a car.

[0034] 5. Cyber attack proof: embodiments are self-contained thus require no hackable computer to operate and are therefore immune to computer viruses.

[0035] 6. Blackout proof: embodiments are designed to be kept indoors and on-site, and are thus ideal for critical facilities such as hospitals and data centers that can't afford a blackout from failed power lines or plants.

[0036] 7. Inexpensive: embodiments can be manufactured and operated at the lowest cost total cost possible, because they don't require fuel, installation and maintenance of power lines, an allocation of land, or degrading batteries.

[0037] 8. Weatherproof: embodiments are self-contained for indoor use and therefore aren't vulnerable to environmental factors such as freezing temperatures, snow, rain, lightning strikes, or extreme weather events.

[0038] 9. Eliminates energy output storage: because additional embodiments of this system can be utilized at peak times with limited cost, storage of energy is no longer relevant, for either utilities or homes, even for peak output needs.

[0039] 10. Eliminates expensive power lines and fossil fuel pipe lines: because embodiments are designed to be kept on site, and any number of units can be utilized to meet peak power needs, power and fossil fuel transmission lines and their associated costs are now rendered irrelevant, thus substantially unburdening all economies globally of associated costs. Land currently holding power lines, as well as arrays of solar panels, wind turbines, and hydroelectric turbines, can be reclaimed to reduce visual pollution and make space for a growing population. Roofs of solar panels can be removed to allow for roof tiles that reflect heat to maintain a cool house in summer. No thinking person will ever want, nor could a functional government allow, any type of nuclear reactor – fission, fusion, cold (LENR) – in a car or home, leaving only now irrelevant power lines for transmission, thereby making those sources wholly irrelevant.

[0040] 11. Potentially profitable: in a standard home use scenario, embodiments may be the only way for a unit owner to make a profit from selling energy back to the utility at wholesale rates.

[0041] 12. Alleviates poverty: because energy is effectively free after embodiment purchase, and the purchase price is less per unit of output than other energy systems, embodiments reduce the cost of living and the cost of goods for every person on Earth, thus reducing poverty.

[0042] 13. Powers water purification and pumping: 1 in 10 people live without access to clean water, while climate change driven droughts fuel conflicts. Because embodiments make energy nearly free over their useful lives, the energy intensive nature of evaporated water purification — which removes nearly every contaminant with a higher boiling point than water, and potentially all others can be removed with a standard carbon filter and ultraviolet light – is no longer a barrier, nor is pumping, thus embodiments provide for the global resolution of clean water needs for individual consumption and agriculture.

[0043] 14. Powers reduced water consumption: effectively eliminates the energy cost of operating electricity powered showers that require only a cold water pipe, and recirculate, filter to potentially cleaner than direct from pipe, and heat water, to provide exact continuous temperature and pressure control, as well as powering low voltage electric showerheads that mix air with water to provide the effect of the same output using dramatically less water.

[0044] 15. Powers atmosphere cleaning: because an existing specialized laser can disassociate atmospheric carbon dioxide molecules into carbon molecules and oxygen molecules, and because embodiments can provide effectively unlimited and continuous clean energy, a power source is now available to reduce carbon dioxide in the air, and potentially other greenhouse gasses, if corresponding devices are developed.

[0045] 16. Reduces nuclear and hydrogen weapon proliferation: because embodiments eliminate any need for any type of nuclear energy, including fission, fusion, and cold (LENR), each of which is or may be weaponizable and one step from nuclear weapons technology, and also eliminate the need for hydrogen, which a terrorist can obtain at a hydrogen fuel station to create a powerful compressed hydrogen explosion verifiable by watching a video of a balloon filled with hydrogen being lit on fire, I have provided us all a fundamentally safer world.

[0046] 17. Therefore, a few applications of embodiments include powering: all transportation vehicles including automobiles, trains, jets, spaceships, cargo ships, cruise ships, tugboats, boats, submarines, hover boards, jet packs, including in vertical take off and landing configurations; powering electrical grids as well as homes, offices, factories, hospitals, and data centers that would like to disconnect from external power sources to end their recurring bill, be permanently immune from blackouts, use clean energy, and save money; televisions, washing machines, dishwashers, showers, and water pumps; portable consumer electronics, such as phones and laptops, through an internally installed miniaturized embodiment eliminating the need to recharge; personal rapid transport; home hydroponic production systems, including light, temperature control, and nutrient water circulation; spaceship electro magnetic ion drives using a fraction of the fuel of traditional rockets; high intensity laser powered solar sails, with the laser powered by a large number of these energy units on the surface of any space based body with a limited atmosphere; space tourism; video streaming planetary sampling probes journeying an unlimited number of years into the universe; space colonies; and inter galactic travel.

[0047] **In some embodiments, including one complete embodiment, obtain medium containers.** In some embodiments, including one complete embodiment, the principal limiting factor in providing output is medium flow to rotate the turbine to rotate a generator axle or function as a motor, and therefore the principal limiting factor in providing output is ultimately the physical size of the medium containers, and so they may be selected first, and then supporting components and output determined by working backwards from the size of the medium containers. In some embodiments, including one complete embodiment, the medium to be used is water, which allows the medium containers to be easily filled on site, thus reducing shipping costs while allowing for the medium containers to be emptied at any time without causing environmental harm. In some embodiments, the medium to be used is a liquid metal, for example zinc which is over six times as heavy as water, to allow for faster unit cycles while utilizing smaller containers. In some embodiments, the medium may be any other liquid, though when accounting for safety and durability, a non-corrosive non-toxic medium may be used. In some embodiments, if the unit is to be run outside, in temperatures below freezing, a liquid with a lower freezing point than water may be used, or an anti-freeze agent may be added. In some embodiments, the medium may be a non-liquid, such as metal balls. In some embodiments, any medium that allows for rotational force to be generated may be used. In some embodiments, components including the medium containers are selected to provide optimal flow to the selected turbine.

[0048] In some embodiments, including one complete embodiment, two low profile medium containers are used to hold the transferrable medium, secured to the ends of a support platform, and are raised and lowered on a cycle that allows each to become approximately either full or empty each cycle. In some embodiments, the medium containers may be constructed from scratch, where a material such as sheets of polyethylene or stainless steel may be welded together, with each wall of adequate thickness so as not to deform over time. In some embodiments, where the medium is water, to approximately calculate the dimensions of the containers based on medium volume, utilize calculations accounting for water having a volume of 1 cubic foot per 7.48 gallons (1 cubic meter per 1000 liters), where the total volume of water in cubic feet (meters) may be spread across any combination of tank length, width, and height. In some embodiments, which may include one complete embodiment, the height of the tanks may be reduced while extending the widths and maintaining or reducing the lengths to reduce the raising and lowering distance and cycle time and thus increase output efficiency. In some embodiments, an alternative container or conduit for circulating a medium in the system may be used, including a water wheel.

[0049] In some embodiments, including one complete embodiment, the containers are two 1,000 gallon (3,790 liter) low profile polyethylene tanks, each having a volume of 135 cubic feet (1,000 gallons / 7.48 cubic feet per gallon) (3.83 cubic meters), spread across dimensions of 1.5 feet (0.5 meters) high by 9 feet (2.7 meters) wide by 10 feet (3 meters) long, with each weighing approximately 400 pounds (181 kilograms). In some embodiments, which may include one complete embodiment, to reduce the raising and lowering distance and cycle time, alternative sizes may be used, for example, 1 foot (0.3 meters) high by 1 foot (0.3 meters) long by 134 feet (41 meters) wide. In some embodiments, medium containers may be comprised of countless other dimensions, volumes, and materials.

[0050] In some embodiments, which may include one complete embodiment, in order to maintain continuous output, medium flow interruption is prevented during medium container transition by emptying the elevated outer medium container into a center top medium container before transitioning, therefore providing continuous medium flow to the drop pipe and thus the turbine during outer medium container transition, with a center bottom medium container receiving the medium flow, after it passes the turbine, before it flows into the lowered outer medium container, and where the flow between the center and outer medium containers may be at a higher rate than between the top center medium containers and the turbine, to allow for the outer tanks to quickly exchange the medium with the center medium containers. However, the addition of center medium containers may make self-construction of embodiments in extreme poverty situations prohibitively complex, as well as making the embodiment of greater height, thus consuming more space which may not be readily available indoors, and therefore attaching an uninterruptable power supply to the unit may be the simplest option for continuous output, though utilities may not require continuous output because multiple embodiments operating simultaneously in a staggered manner can provide continuous output.

[0051] In some embodiments, to provide a specific horsepower at a specific number of revolutions per minute, to provide rotational force as required by a generator axle and or to function as a motor, in order to determine the pounds of force required, horsepower is equal to pounds of force multiplied by revolutions per minute with the result divided by the horsepower constant of 5252. In some embodiments, which may include one complete embodiment, to convert pounds of force from the previous calculation to pound feet of force, as used in the standard calculation of horsepower, a gear may be placed on the generator and or motor axle, which is coupled to the force providing gear immediately before it, where each of those gears have a radius of 1 foot (0.3 meters), while maintaining all gear ratios in the system. In some embodiments, to accurately measure the rotational force and speed provided by the turbine, a torque gauge may be used to measure pound feet of force, and a tachometer may be used to determine revolutions per minute, or alternatively a dynamometer may be used which measures pound feet of force as well as revolutions per minute, and then horsepower may be calculated as pound feet of force multiplied by revolutions per minute with the result divided by the horsepower constant 5252.

[0052] The set of factors required to validate the embodiment as providing a self-powered generator, are the speed and power consumption of the medium container raising and lowering force providing devices, the speed and force provided by the medium flow volume and drop to rotate the turbine, the speed and force required by the generator, and that gears increase speed in proportion to reduction of force. In some embodiments, to calculate the approximate embodiment output, water may be used, where water has a weight of 8.34 pounds per gallon (1 kilogram per liter), 1 cubic foot of water is 7.48 gallons (1 cubic meter of water is 1000 liters), water drops as a result of gravity at approximately 20 miles per hour (32 kilometers per hour) or 29.3 feet (8.9 meters) per second, with a force of 0.433 pounds of pressure per square inch per foot of drop (9.81 kilopascals per meter of drop), and the total square inches (centimeters) of water flowing through the pipe calculated as the pipe radius squared times the constant Pi of 3.14, where the rotational speed provided by the turbine may be increased utilizing gears with gear ratios that increase speed in proportion to a reduction in force. In some embodiments, to calculate the approximate cycle time of the specified gallons, where the water flow per second is calculated as the pipe radius in cubic feet (meters) multiplied by the 29.3 feet ((20 miles per hour * 5,280 feet per mile) / (60 minutes * 60 seconds)) per second that water flows multiplied by the gallons of water in the system. In some embodiments, to approximately calculate total output of the system, the generator output is multiplied by the cycle time of the medium flow in seconds, and then subtracted from the total medium container transition height which includes the heights of the tanks and the pipes multiplied by the speed of the medium container raising and lowering force providing devices in inches per second. In some embodiments, energy may be captured in excess of that consumed, as a result of linear force being utilized to elevate the medium, while gravity creates compounding force on the medium as it falls.

[0053] In some embodiments, including one complete embodiment, to approximately calculate the cycle time of the embodiment, 1000 gallons (3,790 liters) of water are used weighing approximately 8,340 pounds (3,783 kilograms), with each tank weighing 400 pounds (181 kilograms), for a total of 9,140 pounds (4,145 kilograms), which is raised then held then lowered on a continuous cycle, utilizing later described force providing devices, which for example may be a hydraulic piston and pump, with the water passing through piping providing a diameter of 10 inches (0.25 meters) to rotate a turbine with a corresponding diameter of almost 10 inches (0.25 meters), where the 10 inch (0.25 meters) diameter pipe providing a drop of 6 feet (1.83 meters), may provide 2.6 pounds of pressure per square inch (6 feet * 0.433 pounds) (17.9 kilopascals), over an area of 78.5 square inches ((5 inch radius ^ 2) * 3.14 constant pi) (32,260 square millimeters), for a total of 204 pounds (93 kilograms) of force at 20 miles (32 kilometers) per hour, with rotations per minute of the turbine axle calculated where water as determined by gravity flows at about 20 miles (32 kilometers) per hour or 21,020 inches (536 meters) per minute, and an 10 inch (0.2 meters) diameter turbine has a circumference of 31.4 inches (10 inch diameter * 3.14), with a turbine therefore providing around 336 revolutions per minute ((21,120 inches of water flow per minute / 31.4 turbine diameter) * 50% efficiency), where a 10,000 watt generator may require 1,800 revolutions per minute and 13.3 horsepower, requiring the turbine rotational force be connected to the generator through a gear pair with a teeth ratio that approximately increases speed 5 times and decreases force by 5 times, therefore providing around 41 pounds (23 kilograms) of force at 1681 revolutions per minute, which is 13.1 horsepower ((41 pounds of force * 1681 revolutions per minute))/5252 horsepower constant), therefore allowing each system cycle to sustain generator output of 10,000 watts, where the cycle time of the specified gallons (liters) can be approximately calculated, utilizing a pipe radius of 10 inches (0.25 meters) providing the previously calculated area of 78.5 square inches or 0.55 square feet (0.05 square meters), results in water flow per second of 16 cubic feet (29.3 feet per second * 0.55 square feet of pipe) (0.45 cubic meters), which is 120 gallons (16 cubic feet * 74.8 gallons per cubic foot) (454 liters) per second, therefore 1,000 gallons (3,785 liters) will flow through system over approximately 8.3 seconds (1,000 gallons / 120 gallons per second) (3,785 liters / 291 liters per second). In some embodiments, including one complete embodiment, to approximately calculate total output of the system, a total transition height may be used of 120 inches (18 inch tank heights x 2 + 72 inch drop pipe + 12 inches of intermediary piping) (3 meters), where the force providing devices may move at 1 inch (2.5 centimeters) per 5 seconds over 120 inches (3 meters) while the motor to operate the force providing device pump handle consumes 55 watts, resulting in a net positive output per cycle of 50,000 watts ((10,000 watts provided * 8.3 seconds) – (55 watts consumed * 5 seconds per inch * 120 inches)). For validation through comparative reference, a wind turbine typically provides optimal rotational force at around 20 revolutions per minute which is then passed through gears to increase speed while reducing force to power a generator, where this is providing approximately 204 pounds (93 kilograms) of rotational force at the same speed. For additional validation, an alternative method for calculating the watts of output able to be provided by water flow is watts of output is equal to water drop in meters multiplied by water flow in liters per second multiplied by gravity of 9.8 meters per second. For example, a drop of 72 inches (1.82 meters) providing flow of 120 gallons (454 liters) per second multiplied 9.8 results in a power output calculation of approximately 8,100 watts (1.82 meter drop * 454 liters per second * 9.8 meters per second of gravity), which is close to the output previously calculated, and would therefore provide net positive output per cycle of approximately 34,200 watts ((8,100 watts provided * 8.3 seconds) – (55 watts consumed * 5 seconds per inch * 120 inches)).

[0054] In some embodiments, to extend power generation output and or cycle time, a greater volume of medium is circulated each time, where the extra force and power consumption required of the motor to operate the hand operable hydraulics is minimal relative to the increase in embodiment output. In some embodiments, which may include one complete embodiment, to reduce unit cycle time, more powerful force providing devices may be used, which may be additionally moved inward to reduce transition time, but may require greater force as they don't receive the full benefit of the levered platform. In some embodiments, any amount of the rotational output force may be instead directed to function as a motor.

[0055] In some embodiments, the tops of medium containers 1200 1201 are open, and are filled with a medium when lowered into a medium reservoir, with all electronic components maintained safely away from exposure to the medium, where when the medium containers are elevated after being filled, and then the medium flows from the elevated medium container, either to an elevated reservoir, or through drop pipe 1305, where pressure can then be created using gravity, for the medium to be provided to pipes for delivery to endpoints, eliminating the need for a pump. For example, a water utility, rather than incurring the costs of pumping, can elevate the water from a reservoir and deliver it to customers by using gravity provided water pressure.

[0056] **In some embodiments, including one complete embodiment, obtain the desired turbine and generator.** In some embodiments, including one complete embodiment, a generator is added. In some embodiments, which may include one complete embodiment, the generator selected outputs the volts, amperes, and hertz of the desired final output, with a converter utilized of the appropriate specifications to power internal embodiment components. In some embodiments, including one complete embodiment, a turbine is added. In some embodiments, including one complete embodiment, the turbine utilized is a low head high flow turbine. In some embodiments, any turbine may be used that provides adequate rotational force to the generator axle and or motor axle in conjunction with the provided medium flow. In some embodiments, when used as a motor, a generator may be left out, with the power for the unit components provided by an external source.

[0057] In some embodiments, including one complete embodiment, in reference to FIG. 1, turbine 1300 is a Kaplan turbine, which roughly resembles a fan blade on an axle, and is designed to provide rotational force with 6 feet (1.82 meters) of water drop, which may be purchased in a self-enclosed unit that accepts piping, or may have a blade of a diameter just less than the interior diameter of the previously determined pipe diameter of 10 inches (0.25 meters), where the turbine blade edges may be sanded so as to not touch the pipe, and the turbine is appropriately oriented in the pipe to support optimal output.

[0058] In some embodiments, including one complete embodiment, in reference to FIG. 1, generator 1500 has a rated output of 10,000 watts when provided 1,800 revolutions per minute and 13.3 horsepower. In some embodiments, where a motor is principally desired, a generator may be used with a rated output providing only that required to provide power to the unit components, while allowing the rest of the rotational force to be provided to rotate the axle to function as a motor.

[0059] In some embodiments, including one complete embodiment, where the speed of the axle rotated by the turbine is not adequate to rotate the generator at or near optimal speed, or rotate the motor axle to achieve the desired speed, gears may be attached to connect the force from the turbine axle to the generator axle selected utilizing gear ratios, which increase the speed of rotation while proportionately reducing the force based on the ratio of teeth on interconnected gears. In some embodiments, including one complete embodiment, to achieve the previously determined requirement of a 5 times speed increase, gear 1401 with 25 teeth may be attached to the axle of turbine 1400 that interconnects with gear 1501 with 5 teeth on generator 1500. In some embodiments, a gear box may be purchased that provides the desired increase in speed. In some embodiments, other means of controlling speed may be used.

[0060] **In some embodiments, including one complete embodiment, construct a support structure.** In some embodiments, including one complete embodiment, a support structure for unit components is made of a material able to support the weight of the filled medium tanks and forces enacted by the raising and lowering force providing devices, for example, utilizing high grade steel. In some embodiments, including one complete embodiment, the medium containers are positioned to provide optimal flow to the turbine, where the height of the support structure center beam, allows medium containers to become full and empty on each trip, and is therefore approximately half of the combined height of each medium container, plus the water drop pipe, and intermediary pipes, while the width of the structure is approximately the width of a medium container, plus the width of the both steel beams, while the length of the support structure is approximately the length of each end tank, plus if center tanks are used, the length of one center tank since the center tanks are vertically on top of each other, plus the length of the pipes, from the end tanks to the center medium containers, which may be of a length that minimizes the height the tanks need to be raised. To optimize component fit, the exact sizes of the support structure may be determined at the time of construction, after available components have been purchased and or assembled. In some embodiments, many of the embodiment components may be 3D printed, which may include the support structure, tanks, pipes, enclosure, and force providing devices.

[0061] In some embodiments, including one complete embodiment, in reference to FIG. 1, the support structure consists of 12 beams, connected together by means which may include welding, or bolting together through bolt holes drilled in appropriate locations, where 4 base beams 1000 1001 1002 1003 are assembled in a rectangle, with beams 1004 1005 extending from either side of the center of the width of the base, in order to support the liquid container see saw platform beams 1006 1007 1008 assembled in a rectangular formation, with beams 1005 1006 having holes drilled through the top center, which may contain bearings, and beams 1007 1008 having holes drilled through the middle center, to allow beam 1005 to be connected to beam 1006 with bolt 1009, and beam 1008 to be connected to beam 1006 with bolt 1010, with bolts of adequate thickness and strength to support the weight of the medium filled containers, to allow the see saw formation to operate back and forth, which provides the efficiency benefit of partial leverage, and with one side providing an optional extended lever, and with beams 1011 1012 1013 1014 extending vertically from beams 1006 1008 in a formation that prevents the left medium container from shifting forward and backward, and beams 1015 1016 positioned to prevent the left medium container from shifting laterally, and beams 1017 1018 1019 1020 extending vertically from beams 1006 1008 in a formation that holds right medium container in place, and beams 1021 1022 extending vertically from support beam 1006 1008 in a formation that prevents the right medium container from shifting laterally.

[0062] In some embodiments, including one complete embodiment, in reference to FIG. 1, the force from the force providing device piston is connected to a control arm, which operates the platform back and forth through the full required range of motion, where the control arm is constructed of 4 high strength beams 1023 1024 1025 1026, where beam 1023 is coupled to piston of cylinder 1100 by means which may include welding or having a hole drilled through it to be bolted to the piston's bolt port, beam 1024 bolted to beam 1023 and extending down to beam 1025, having a length of approximately the height of the piston, with beam 1025 bolted to the bottom of beam 1024 and welded to the bottom of beam 1007, with components connected and of adequate dimensions and spacing to allow the piston to control the platform through its full range of motion. In some embodiments, a force providing device and associated control arm may be included on each side of the embodiment. In some embodiments, which may include one complete embodiment, the control arm may be omitted and the medium containers are instead directly raised and lowered by the force providing devices. In some embodiments, the force providing devices may be mounted horizontally from the base to the platform, and extend outward and upward. In some embodiments, one or more force providing devices operate, instead of or in addition to tanks, a traditional water wheel structure to circulate a substance.

[0063] In some embodiments, which may include one complete embodiment, where a see saw formation is not used, tanks may each be mounted on top of a raising and lowering force providing device, which is automated as provided for in this disclosure. In some embodiments, where space constraints are less important and increased system efficiency is desired, an extended lever may be used, and or may be on each side of the structure, with each side of the support platform operated by its own additional set of force devices and controllers.

[0064] In embodiments where the tanks and or support platform transition height exceeds the height of an available force providing device, or accelerated cycle time is desired, force providing devices may be stacked, where corresponding control components as explained in this disclosure are repeated as needed, and where hydraulics or pneumatics are utilized, manual pump handles may be connected by a metal bar in a manner that allows them to be operable by one motor, where stacked force providing devices, if they utilize single acting cylinders, are stacked on each side of the tank support platform, operating in opposition, where when one set of cylinder pistons is raising the medium containers, the other set of cylinders has their release valves held by timer operated motors as provided for in this disclosure.

[0065] In some embodiments, the tanks may be raised and lowered by extended levers on one or both sides that are powered by one or more electric motor(s), with the efficiency provided by the levers, reducing the energy required by the electric motor(s). In some embodiments, the see saw platform formation may rotate to allow for the top tank to move vertically above the bottom tank.

[0066] **In some embodiments, including one complete embodiment, select and mount force providing devices, including but not limited to hydraulic, pneumatic, mechanical leverage, motorized mechanical leverage, and or functionally equivalent device(s), where such a force providing device may be in the form of a unified unit or connected components.** Commodity hydraulics and pneumatics are available at the time of disclosure that may each provide force of up to 2,000,000 pounds (907,000 kilograms), and may be powered by means including an electric motor, which may be in the unit or in an external pump, which compresses a substance such as a liquid, gas, or air, to provide force to the hydraulics, pneumatics, or functional equivalents. Commodity hand operable hydraulic bottle jacks are available at the time of disclosure with a 14 inch (35.6 millimeters) piston extension length and are rated to provide 100,000 pounds (45,360 kilograms) of force at roughly 1 inch (2.5 centimeters) every 5 seconds. Commodity hand operable hydraulic pumps and cylinders are available at the time of disclosure that may provide force of up to 190,000 pounds (86,180 kilograms), where the piston may extend and retract at a rate of around 1 inch (2.5 centimeters) per 5 seconds. A double acting cylinder in conjunction with a corresponding double acting pump provides both push and pull force. Commodity mechanical leverage devices such as a screw jack are simply constructed and easily scalable devices, that at the time of disclosure may provide up to approximately 8,000 pounds (3,630 kilograms) of force each. In some embodiments, electric motors may operate in conjunction with some means of leverage, including the leverage provided by the see saw platform with optional extended levers. In some embodiments, a hydraulic motor is powered by a hydraulic pump, or interconnected hydraulic pumps, which raises and lowers the medium containers by means which may include rotating a chain suspended above and below while being connected to the support platform, or circulates the medium by means which may include being the motor in a medium pump. In some embodiments, including one complete embodiment, force providing devices are targeted for utilization that along with other system components consume less energy than is produced by the generator.

[0067] In some embodiments, including one complete embodiment, in reference to FIG. 1, double acting hand operable hydraulic pump 1101 operates rear flange mounted double acting hydraulic cylinder 1100, whose piston is bolted to a platform control handle 1023, with the directional valve of pump 1101 connected to and operated by linear actuator 1102, and motor 1105 supported by support beam 1106, with axle of motor 1105 welded to one end of extension rod 1104, with extension rod 1104 bolted through a drilled hole on the other end to rotatable steel cuff 1103, created by slicing a piece of metal pipe of sufficient diameter and strength to allow the handle of pump 1101 to move a full cycle and bolted to rod 1104 in such a position that extension rod 1104 has little or no friction when completing full cycles of the handle of pump 1101, with directional valve linear actuator 1102 operated by repeat cycle timers or equivalents, as described in a later step, where if more appropriate the directional valves may be instead operated directly with electric motors. In some embodiments, including one complete embodiment, the force providing devices selected provide a minimum of the force required to raise and lower the tanks and platform, and to support each tank becoming either full or empty each cycle, provide a total piston extension length adequate to move the containers fully up and down, which may be approximately calculated by adding together the heights of the tanks plus the height of the water drop pipe plus the height of intermediary pipes. In some embodiments, including one complete embodiment, the force providing devices selected provide approximately 10,000 pounds (4,535 kilograms) of force and a piston extension length of approximately 120 inches (3 meters). In some embodiments, which may include one complete embodiment, the motor to operate the handle of the hand operable force providing device pump may provide force of 225 pounds (102 kilograms) while consuming a peak of 55 watts (12 volts at 4.6 amperes), which is dramatically more force than required to operate the pump handle to power the embodiment. In some embodiments, cylinder 1100 and manual pump 1101 are replaced with ones that provide 100,000 pounds (45,360 kilograms) of force, while using the same handle motor to operate the hydraulic pump, where the tanks may hold the corresponding volume of water of up to approximately 11,990 gallons (100,000 pounds of lift / 8.34 pounds per gallon)

(82,718 liters), thus nearly eliminating power consumption in the system relative to output. In some embodiments, which may include one complete embodiment, handle motor 1105 is replaced by a linear actuator connected to the handle, operated with an additional repeat cycle timer, connected in a manner similar to the later described repeat cycle timers, for the linear actuator to operate the handle in continuous back and forth cycles. In some embodiments, force providing devices may be used on either side of the platform. In some embodiments, to provide additional force, force providing devices may operate in parallel.

[0068] In some embodiments, including one complete embodiment when reduced embodiment power consumption is desired, rather than directly using an electric motor to operate pump handle(s), instead force providing device(s) including but not limited to hydraulic, pneumatic, mechanical leverage, motorized mechanical leverage, and or functional equivalents, instead provide the force required to operate the pump handle. In some embodiments, including one complete embodiment when reduced embodiment power consumption is desired, in reference to FIG. 2, which utilizes some components previously labeled in FIG. 1, hydraulic cylinder 2000 is powered by hydraulic pump 2001 with directional valve of pump 2001 controlled by linear actuator 2100 powered by and wired to repeat cycle timers 2200 2201 or relay board 1801 in a similar manner as disclosed for other pump directional valve linear actuators, and timed to ensure back and forth motion of the piston of cylinder 2000, with repeat cycle timers 2200 2201 or relay board 1801 wired to battery 1602 through power switch 1600, with the handle of pump 2001 operated by motor 1105, for piston of cylinder 2000 to operate the handle of pump 1101, where when such a force providing device is providing the amount of force to operate one or more other force providing device(s), and that force providing device is in turn operated by a motor providing the amount of force required to operate it, energy consumption in the system is further reduced, where either elevating supports are added under the pumps and cylinders operated by piston of hydraulic cylinder 2000 with appropriate adjustments to impacted components, or cylinder 2000 may be mounted with additional appropriate supports in an inverted position above the handles it will operate, so that the cylinders corresponding to the operated handles rest on the existing support structure. In some embodiments, including one complete embodiment, the speed of the force providing device operating the handles may be n times slower than the speed of the motor previously operating the handles, thus the output calculations may utilize cycle power consumption increased n times to compensate, and or embodiment components including medium container sizes and corresponding force providing devices may be adjusted to compensate for the speed reduction, where n may be best obtained by timing the force providing device operating cycle once implemented. For example, in reference to FIG. 2, if hydraulic cylinder 2000 and corresponding hydraulic pump 2001 are provide 10 pounds (4.5 kilograms) of force, and pump 2001 has its handle powered by motor 1105 providing 1 pounds (0.45 kilograms) of force while consuming 10 watts, with the hydraulics in turn providing the 10 pounds (4.5 kilograms) of force to operate the handle of the primary pump, the energy consumption if running continuously, would be per day approximately 864,000 watts (10 watts per second * 86,400 seconds per day), while the output per day of the generator is 5,975,000 watts (10,000 watts per second * 86,400 seconds per day * (8.3 second cycle run time / (120 second force providing device transition * 10 times slower))), or if center medium tanks are used that prevent medium transference interruption, the output per day of the generator is 864,000,000 watts (10,000 watts per second * 86,400 seconds per day), thus operating with a near perfect input output efficiency ratio. In some embodiments, which may include one complete embodiment, to reduce the force required to power the force providing device pump handle, a more powerful force providing device than is required to circulate the medium may be used. In some embodiments, which may include one complete embodiment, in reference to FIG. 2, containing some components in FIG. 1, hydraulic cylinder 2000 or hydraulic motor with a corresponding automated manual hydraulic pump 2001 or a bottle jack providing 100,000 pounds (45,360 kilograms) of force, automated through wiring of corresponding linear actuators or motors wired to repeat cycle timers and or relay boards in the manner provided in this disclosure, provides force to operate the handles of not only pump 1101 but also the handles of up to roughly 10,000 additional force providing pumps (100,000 pounds of output force / 10 pounds of input force required) with corresponding cylinders or hydraulic or pneumatic motors, or bottle jacks, providing 100,000 pounds (45,360 kilograms) of force each, with the force from the pistons interconnected by means which may include metal bars, with appropriately added and adjusted supporting components, with those pumps directional valves also operated by linear actuators and repeat cycle timers wired in a manner similar to that described in this disclosure, or where all directional valves are interconnected and operated by another automated piston operated on an appropriately timed cycle, providing roughly 1,000,000,000 pounds (10,000 hydraulics * 100,000 pounds of output force each) (454,000,000 kilograms) of force to lift a container holding 119,904,000 gallons of water (1,000,000,000 pounds of lift / 8.34 pounds per gallon), using the energy consumed by a single relatively small electric motor consuming 10 watts and supporting directional valve linear actuators and repeat cycle timers, utilizing roughly 12,000 watts (10 watts consumed per second * 120 lift cycle seconds * 10 times slow down when operating hydraulics with hydraulics) to lift the water which will flow for 11.5 days (119,904,000 gallons / 120 gallons per second) providing 9,992,000,000 watts (10,000 watts per second * 999,200 seconds), thus operating with a near perfect input output efficiency ratio. In another example of input output efficiency, hydraulics provided 10 pounds (4.5 kilograms) of input force, to provide 100,000 pounds (45,360 kilograms) of output force, over a pump handle cycle time of 25 seconds when using hydraulics and 1 second when using an electric motor, layered 3 times, where the pistons of a layer operate the handles of the following layer until the last layer provides output force, not including the first hydraulics as a layer, provides for a total of 100 million output providing units ((100,000 pounds of output force / 10 pounds of input force) ^ layers) which provide 10 trillion pounds of output force (100,000,000 units providing output force * 100,000 pounds of output force per unit), completing a cycle in a little over 10 minutes ((25 seconds ^ layers) + 1 second), all while utilizing only 10 pounds (4.5 kilograms) of input force. Archimedes is recorded as having stated "Give me a lever and a place to stand and I will move Earth." Utilizing this system, braced against a celestial body of appropriate mass and trajectory, Archimedes could have moved Earth with the force of his hand. Such an embodiment may be made possible by an additional law of physics discovered by the inventor, where layered leverage provides efficiency gains as a result of gains in layer output force (total output = (unit output force / unit input force) ^ layers) exceeding gains in layer cycle time (total cycle time = unit cycle time ^ layers). In some embodiments, including one complete embodiment, if any utilized commodity component, such as the force providing devices and or operating motors, doesn't perform with the force or speed expected, units of that component may simply be added. In some embodiments, such layered force providing device arrangements may be built directly into other force providing devices. Therefore, embodiments can provide for a self-powered generator and motor that can easily be brought up to any level of output, allowing for clean continuous self-powered electricity generation and fuel free propulsion, all at a cost that is effectively zero when amortized over time.

[0069] In some embodiments, including one complete embodiment, to determine the force providing cylinders(s) and pump(s) to select corresponding to the determined specifications, the manufacturer's product guide is used. In some embodiments, to determine the force providing cylinders(s) and pump(s) to select corresponding to the determined specifications, calculations may be made, where a cylinder may be selected based on factors including the previously determined piston extension length and being rated to support the previously determined force, while a corresponding pump may be selected based on its output of pounds (kilograms) of pressure per square inch (centimeter) which provides force, flow in gallons (liters) per minute which provides speed, and reservoir gallons (liters) which must adequately fill the cylinder, where the internal area of the cylinder to determine pump gallons (liters) required may be calculated as the constant Pi of 3.14 multiplied by the diameter of the piston multiplied by the extension length of the piston, while the speed of the piston in inches (centimeters) per minute may be calculated as the internal area of the piston divided by the gallons (liters) per minute provided by the pump, and pounds (kilograms) of pressure per square inch (centimeter) required of the pump may be determined by setting the pounds of output force required equal to piston diameter multiplied by the constant Pi 3.14 multiplied by pounds (kilograms) of pressure per square inch (centimeter), where if such calculations call for more powerful pumps and cylinders than can be operated in a net positive energy system, pumps and cylinders may instead be used that provide required force but at a slower transition speed so as to consume less energy than produced in the system. For example, to provide 10,000 pounds (4,535 kilograms) of force moving at 1 inch per second over 12 inches (30 centimeters), using a cylinder with a piston of the corresponding extension length of 12 inches (30 centimeters) with a 2 inch (5 centimeter) diameter and thus an internal area of 0.33 gallons (2 inch diameter * 3.14 Pi * 12 inches) (1.23 liters), requires a pump with a corresponding tank size of 0.33 gallons (1.23 liters) that provides flow of 3.96 gallons per minute (0.33 gallons * (1 inch piston extension per second * 12 inches)) (15 liters) at 1,592 pounds of pressure per square inch (10,000 pounds of required output force = (3.14 Pi * 2 inch piston diameter) * pounds of pressure per square inch)) (722 kilograms of pressure per 6.54 square centimeters). In another example, to provide 100,000 pounds (45,350 kilograms) of force otherwise utilizing the same specifications requires 15,923 (7,220 kilograms) pounds of pressure per square inch (100,000 pounds of required output force = (3.14 pi * 2 inch piston diameter) * pounds of pressure per square inch)). However, in another example, to reduce the pounds (kilograms) of input pressure per square inch (centimeter) required in the previous example by 10 times, the diameter of the piston is increased 10 times, resulting in a requirement of 1,592 pounds of pressure per square inch (100,000 pounds of required output force = (3.14 pi * 20 inch piston diameter) * pounds of pressure per square inch)) (722 kilograms of pressure per 6.45 square centimeters). In some embodiments, which may include one complete embodiment, the gain in efficiency provided by certain force providing device configurations, which may include reducing input force required relative to output force, may contribute to energy being captured in an embodiment in excess of that consumed by the embodiment.

[0070] In some embodiments, which may include one complete embodiment, double acting hydraulic cylinder 1100 is instead, in reference to FIG. 3, double acting hydraulic cylinder 3000, operated by electric double acting hydraulic pump 3100, which is operated by pump switch 3101, operated by motor 3200 which has welded to its axle rod 3201 to press the buttons on pump switch 3200, with the switch operating motor secured to the switch by metal clamp 3202, with motor 3200 operated by repeat cycle timers disclosed in a later step, or with the pump switch cut off and the operating wires connected to repeat cycle timers in a similar manner, to raise and lower the liquid container support platforms on a cycle that allows each tank to become approximately full and empty on each cycle.

[0071] In some embodiments, other means of leverage, including hydraulic, pneumatic, or mechanical, controlled electronically or manually, may be used. In some embodiments, commodity hydraulic jacks, which may be operated electronically, may operate the medium container platform and corresponding tanks. In some embodiments, the force providing devices rest on the steel support beams of the support structure. In some embodiments, a screw jack may be used. In some embodiments, a hydraulic or pneumatic screw jack may be used, where the motor on the traditional screw jack is replaced with a hydraulic or pneumatic device operating in its place. In some embodiments, a hydraulic motor may operate the platform by means which may include a linked chain providing force to the platform handle through a pulley system. In some embodiments, a hydraulic motor powered medium pump may provide force to circulate a medium past the turbine.

[0072] **In some embodiments, including one complete embodiment, secure medium containers to the support platform and connect piping between medium containers and around turbine.** In some embodiments, including one complete embodiment, the pipes may be made of the same material as the tanks, and connected and secured in place through means which may include welding or industrial sealant. In some embodiments, including one complete embodiment, in reference to FIG. 1, tanks 1200 1201 are placed on platform beams 1006 1008, pipe 1300 is connected from the top of the tank 1200 to the bottom of pipe connector 1308, and pipe 1301 is connected from the bottom of tank 1200 to the top of pipe connector 1302, and pipe 1303 is connected to the top of tank 1201 and the bottom of pipe connector 1308, pipe 1303 is connected from the bottom of tank 1201 to the top of pipe 1302, where drop pipe 1305 provides the medium drop to create pressure to elbow joint 1306, which connects to pipe 1307, which encloses the turbine, with pipe 1307 connected to base support 1014, with pipe 1307 connected to tee joint pipe connector 1308, to drop a medium into the medium tanks, with pipe connector 1308 having a hole drilled through, sealed by elastomer seal 1318, through which the axle of turbine 1400 passes through and has mounted to it gear 1401, which may be a worm gear if the turbine axle is perpendicular to the generator axle, which is connects with complimentary gear 1501, with a teeth ratio to provide the previously determined increase in speed and proportional reduction of force, with gear 5015 coupled by means which may include welding to the axle of generator 1500, where because a Kaplan turbine is oriented to have a vertically extending axle, generator 1500 may mounted to the support structure vertically above the turbine, ensuring that the generator axle rotates in the designed direction for electricity generation, and if not the generator and or other relevant components are repositioned accordingly, with corresponding changes to pipe positions. In some embodiments, which may include one complete embodiment, the center pipes and generator are fixed in place to the support structure, with flexible hoses between the pipe connectors 1302 and 1308, allowing the center components to remain fixed in place as the outer pipes move. In some embodiments, which may include one complete embodiment, to provide greater efficiency by removing the friction of an elbow joint, turbine 1400 is oriented vertically in pipe 1305 rather than horizontally, with a corresponding adjustment to positioning of generator 1500. In some embodiments, which may include one complete embodiment, water pipe 1305 provides a greater drop height to increase pressure on the turbine and thus increase output, with supporting components adjusted accordingly.

[0073] **In some embodiments, including one complete embodiment, connect a battery and power switch.** In some embodiments, including one complete embodiment, a battery which may be in the form of uninterruptable power supply, allows the unit to start and provide output and power components during tank transitions, where the battery receives power from the generator. In some embodiments, including one complete embodiment, in reference to FIG. 1, battery 1600 allows the unit to turn on when a medium isn't flowing through the system, where the battery provides the current type, voltage, amperes, and hertz required to provide power to repeat cycle timers 1700 1701, the pump handle motor 1105, and pump directional valve linear actuator 1102, where the output wires of generator 1500 are connected to the battery to recharge it, and may be connected through an overcharge controller, and or an electrical converter, and or a resistor, if there is a mismatch of current type, voltage, amperes, or hertz, or the strength of the electrical output from the generator would damage the embodiment components, where the battery is attached to support structure by means which provide for replaceability, such as metal brackets coupled through mounting holes with corresponding holes drilled in the support structure, where power switch 1600 turns the unit on or off, by opening and closing the circuit between the battery 1602, the electronically controlled pump motor 1105, and the repeat cycle timers 1700 1701 which power pump valve linear actuator 1102, where the power switch is externally accessible to the operator, and may be attached to the unit, by means including bolts or screws.

[0074] **In some embodiments, including one complete embodiment, implement a timer based control system.** A repeat cycle timer is a commodity component that's used to operate electronics, such as a sprinkler system, by turning the system on at a fixed interval, running it for a fixed interval, turning the system off for a fixed interval, and looping the cycle. The instructions for configuring the timers, when purchased from a quality supplier, will be in the manual accompanying the timers. For example, some timers may have positive and negative terminals for each the power source and the device, along with a knob to set the seconds on per cycle, and a knob to set the seconds off per cycle. In some embodiments, the functional equivalent of a repeat cycle timer may be used, including a computer controlled relay board operated by computer commands to open and close the circuits to produce the same effect, and or to turn the units on and off to meet peak demand at specific times or based on current consumption. In some embodiments, including one complete embodiment, motors including those driving linear actuators may be utilized that have two wires and are operable in both directions, driven by for example a reversible brushed direct current motor, though other types of motors may be utilized which may have additional wires to be wired in the manner corresponding to their accompanying instructions.

[0075] In some embodiments, including one complete embodiment, the timers are set to operate the hydraulics to raise for the previously determined cycle, hold for previously determined medium container emptying time, then lower for the previously determined cycle time, hold for the previously determined medium container emptying time, and repeat, but are to be adjusted based on the performance of the purchased components by observing embodiment operation.

[0076] In some embodiments, including one complete embodiment, in reference to FIG. 1, repeat cycle timers 1700 1701 are selected to support powered components and operate pump directional valve linear actuator 1102, in a timed back and forth cycle timed to allow the medium containers to fully empty and fill each transition, thereby ensuring continuous motion is provided in the system, where repeat cycle timers 1700 1701 open and close circuits that cause the pump directional valve to raise and lower the piston of cylinder 1100, on the previously determined interval, and for the previously determined interval, with positive wire of linear actuator 1102 attached to both repeat cycle timer 1700 positive terminal, and repeat cycle timer 1701 negative terminal, and negative wire of linear actuator 1102 attached to repeat cycle timer 1700 negative terminal and repeat cycle timer 1701 positive terminal, with repeat cycle timers 1700 and 1701 each connected to the corresponding positive and negative terminals of battery 1602. In some embodiments, where an electronic hydraulic pump is used, the pump switch is either operated by linear actuator 1102, or the switch is removed and its operating wires are directly connected to repeat cycle timers in the manner previously described to allow the medium tanks to empty and fill during each transition. The repeat cycle timers may be attached to a support structure beam 1000 using bolts or straps, which makes them replaceable, or any other method as long as it doesn't damage the timers. In some embodiments, wiring to repeat cycle timers or functional equivalents may be done in any manner that achieves the desired effect.

[0077] In some embodiments, the equivalent of a repeat cycle timer may be used, where a computer controlled relay board 1801 is wired in the same manner as the commodity repeat cycle timers, and a computer 1800 is embedded in the unit which uses software to operate a computer controlled relay board, with a connected motor, to perform the functions of a repeat cycle timer, with the code to operate the computer controlled relay board later disclosed to write operating software.

[0078] In some embodiments, the force providing devices may be manually operated, and repeat cycle timer(s) or equivalent may be excluded.

[0079] **In some embodiments, including one complete embodiment, connect an electrical power output connector and converter if required.** In some embodiments, including one complete embodiment, in reference to FIG. 1, a commodity power connector 1601 may be added between the generator and be externally accessible to the user, which may be in the form of an outlet or positive and negative terminals. In some embodiments, where the generator does not provide output as desired including current type, amperes, voltage, and hertz, a commodity power converter providing appropriate adjustments may be wired between the generator and the power output connector 1601.

[0080] **In some embodiments, which may include one complete embodiment, when implementing a motor, optionally attach a valve and optionally attach a linear actuator to control flow rate to control motor output.** In some embodiments, which may include one complete embodiment, in reference to FIG. 1, to modify flow control for motor output, the valve on the input flow pipe of the turbine may be controlled by a linear actuator 1802 wired to relay board 1801 to allow it to be reversible, where linear actuator positive wire is wired to first relay positive terminal and second relay negative terminal, and linear actuator negative wire is wired to first relay negative terminal and second relay negative terminal, where the motor may not be allowed to restrict flow beyond the level required to power the generator, and where a motor may be most applicable when the embodiment is stationary and its weight is unimportant.

[0081] **In some embodiments, which may include one complete embodiment, create software for unit operation and or to control an array of units.** In embodiments where a computer is embedded in the unit, a computer may be used that runs custom software on startup, and may be connected to a network accessible relay board. The software code to operate the computer connected relay board, may resemble that described below. In some embodiments, the computer may be a Raspberry Pi, connected to an Ethernet controlled relay board through and Ethernet crossover cable, with the computer set on startup to run software developed in the Python language from the disclosed description, where the software is installed by connecting to the computer through telnet or secure shell, then at the command prompt typing "nano run.py" and adding and saving the software code, then at the command prompt typing "nano /etc/rc.local" and adding and saving the line "python /$location/run.py", where $location is the path to the directory containing the previously created software file.

[0082] The software code to operate the computer connected relay board, in some embodiments, which may include one complete embodiment, provides functionality comprising:

> import the library for connecting to the relay;

> import the library for accessing system resources;

> create variables holding values for relay on off values;

> create variables to hold the state of each relay including those controlling motors for the force providing devices(s) and the flow valve;

> create a variable holding the system cycle seconds;

> create variables to hold the relay board connection, IP address, username, and password.

> create a function to update the relay board;

>> establish a connection to the relay, if it has not been initialized, or has been dropped

>> creating a string sequence of relay states;

>> send the states to the relay board.

> create a function to listen for user input;

>> read the current key pressed;

>> if the key pressed is the forward arrow, set the flow valve backward state to off and forward state to on;
>> if the key pressed is the backward arrow, set the flow valve forward state to off and backward state to on;
>> if the key pressed is the spacebar, set the flow valve backward state to off.
> define a function to run on script execution;
>> retrieve the current system time;
>> perform a continuous loop;
>>> create a variable holding seconds elapsed as the time initialized minus the current system time;
>>> if the remainder is zero, when seconds elapsed are divided by force providing device cycle seconds, transition the force providing device(s) by changing corresponding relay state(s);
>>> call the function to see if the user has provided any commands to the unit;
>>> call the function to update the relay with current changes.

[0083] In some embodiments, where a large number of generator units are being operated concurrently, to turn the units on and off at specific times and or based on current power consumption, network accessible relay boards may be installed in the units, and wired in place of or in addition to the power switch to be able turn the units on and off, and may be controlled by a computer running software provide functionality comprising:
> import a library for accessing the relays;
> import a library for system resource access;
> initialize and set variables holding relay on and off values;
> create an array of IP addresses of unit on off relay boards;
> initialize an array of unit relay board connections;
> create an array of unit output watts;
> create an array of unit on off states;
> create variables holding the unit relay boards username(s) and password(s);
> create variables to hold the total watts available across all units, the current watts being consumed, and whether or not time based watts are to be used;
> create an array of pairs of times and time desired watts;

> create a variable indicating whether or not unit power consumption meters are to be used;
> create and array of power consumption meter IP addresses;
> create variables holding the power consumption meters username(s) and password(s);
> create variables holding the minimum and maximum power consumption to be allowed before switching units on or off.
> create a function to send a command to a unit at a specified index in the unit IP address array;
>> create a connection to the unit on off relay board, at the IP address at the provided index in the unit IP address array, if the connection has not been initialized, or had been dropped;
>> create a variable holding the command string to be sent to the unit based on whether the unit is to be turned on or off;
>> send the command the unit relay;
>> wait for the command to go through, then disengage all on off relays.
> define a function to run on script execution;
>> iterate through each unit IP address and call the function to switch the unit on;
>> run a continuous loop;
>>> create variables to hold a unit index iterator, an output display message, and the current action;
>>> proceed if power consumption meters are being used;
>>>> create variables to hold average and total consumption of unit power, and add up total possible power output;
>>>> loop through each power consumption meter IP address;
>>>>> retrieve the current power consumption number;
>>>>> calculate the average consumption;
>>>>> add the current consumption to the total;
>>>>> add the unit maximum capacity to the total consumption capacity;
>>>>> increment the index.
>>>> calculate the consumption percentage as the consumption total divided by the total unit capacities;
>>>> create a message to display the states the currently consumed watts and the current watt capacity;

>>>> if the average consumption is greater than the maximum consumption level before more unit should be turned on, then set the unit action equal to on;
>>>> if the average consumption is less than the minimum consumption level before more unit should be turned off, then set the unit action equal to off;
>>>> iterate through unit states until one is found that is either off, if looking to turn a unit on, or on if looking to turn a unit off, then send the command to switch the unit state.
>>> proceed if power consumption meters are not used, and instead the total watts to be provided by the units are determined by the current time;
>>>> iterate through each time watts pair, and if the current time is equal to the specified time, send commands to turn units on or off, until the desired level of output is produced, and display each action on the command line.
>>> sleep for a moment before looping again.

[0084] **In some embodiments, including one complete embodiment, construct and attach a protective enclosure.** In some embodiments, including one complete embodiment, in reference to FIG. 1, a protective enclosure 1900 houses all of the components, to protect the electronic components from external elements, to protect the operator from the force providing devices, tank weights, and the extraordinarily rare event of a cylinder explosion, and may be shaped to fit around the support structure, and may be made of a material such as sheets of steel, plastic, or carbon fiber, formed by means which may include fabrication or welding in the dimensions of the unit and may allow power connector 1601 and the power switch 1600 to be externally accessible to the operator.

[0085] **In some embodiments, including one complete embodiment, enjoy clean continuous self-powered energy and or propulsion.** In some embodiments, set the embodiments power switch 1600 to on, to allow the unit to run briefly to validate construction, then turn it off. In some embodiments, including one complete embodiment, if implemented as a generator, the embodiment is then ready to have an experienced licensed electrician connect it to a power grid, and turn on the unit's power switch to on, or if implemented as a motor, be appropriately connected in an engine compartment.

CLAIMS

What is claimed is:

1. A medium circulator able to function as a motor and or power an electricity generator, with the invention comprising:
a means for holding a transferrable medium;
a turbine or functional equivalent;
force providing device(s) including but not limited to hydraulic, pneumatic, mechanical leverage, motorized mechanical leverage, and or functional equivalents;
said force providing device(s) able to be powered or operated, directly or indirectly, by a generator and or by another source;
said force providing device(s) able to provide for the flow of a medium past said turbine which in turn is able to provide rotational force to either or both an electricity generator axle and or an axle to function as a motor.
2. Further comprising claim 1, said force providing device(s) operated by force providing device(s) including but not limited to hydraulic, pneumatic, motorized mechanical leverage, and or functional equivalents to optimize the input output efficiency.
3. A method performed by an apparatus comprising:
providing electricity which directly or indirectly powers force providing device(s) including hydraulic, pneumatic, mechanical leverage, motorized mechanical leverage, and functional equivalents;
transferring a transferrable medium to rotate a turbine;
said turbine directly or indirectly transferring rotational force to rotate a generator axle and or function as a motor;
said generator providing electricity directly or indirectly to power or operate directly or indirectly force providing devices or additional force providing devices operating said force providing devices;
4. Further comprising claim 1, said force providing device(s) operated by force providing device(s) including but not limited to hydraulic, pneumatic, mechanical leverage, motorized mechanical leverage, and or functional equivalents to optimize the input output efficiency.

5. A method for constructing an apparatus comprising:

obtaining medium container(s) and or conduit(s), a turbine or functional equivalent, and force providing devices including but not limited to hydraulic, pneumatic, mechanical leverage, motorized mechanical leverage, and functional equivalents;

ensuring the attachment to a support structure of said force providing device(s), medium container(s) and or conduit(s), and a turbine;

6. Further comprising claim 1, force providing device(s) including but not limited to hydraulic, pneumatic, motorized mechanical leverage, and or functional equivalents, operatively coupled to said force providing device(s), to optimize the input output efficiency.

7. A medium delivery system, with the invention comprising:

a means for holding a medium;

force providing device(s) including but not limited to hydraulic, pneumatics, mechanical leverage, motorized mechanical leverage, and or functional equivalents;

said force providing device(s) able to provide for the flow of said medium.

8. Further comprising claim 5, said force providing device(s) operated by force providing device(s) including but not limited to hydraulic, pneumatic, or motorized mechanical leverage, to optimize the input output efficiency.

9. A manually operable force providing device including hydraulic, pneumatic, mechanical leverage, motorized mechanical leverage, and or functional equivalents, converted to an automatic force providing device, with the invention comprising:

a motor or motorized device able to provide the input force required by a force providing device;

a motor or motorized device able to control the force providing device direction;

a connection between said force providing device input force receiver and corresponding motor able to take said input force receiver through a cycle;

a power source;

one or more repeat cycle timer(s) or functional equivalents;

said repeat cycle timer(s) able to be powered by said power source able to control said motor(s) to control said input force receiver and or said valve.

10. An apparatus comprising:

force providing device(s) including but not limited to hydraulic, pneumatic, mechanical leverage, motorized mechanical leverage, and or functional equivalents able to operate one or more force providing device(s) including but not limited to hydraulic, pneumatic, mechanical leverage, motorized mechanical leverage, and or functional equivalents to improve input output efficiency.

11. A non-transitory computer-readable recording medium holding stored instructions, which when executed by one or more processing devices, cause the one or more processing devices to implement a method comprising:

turning power producing units on and off to meet desired power output, either or both at specific times, or by reading the power consumption meter of one or more units, and if the average power being consumed is above a certain threshold, additional units are turned on, and if power being consumed is below a certain threshold, units are turned off.

FIG. 1

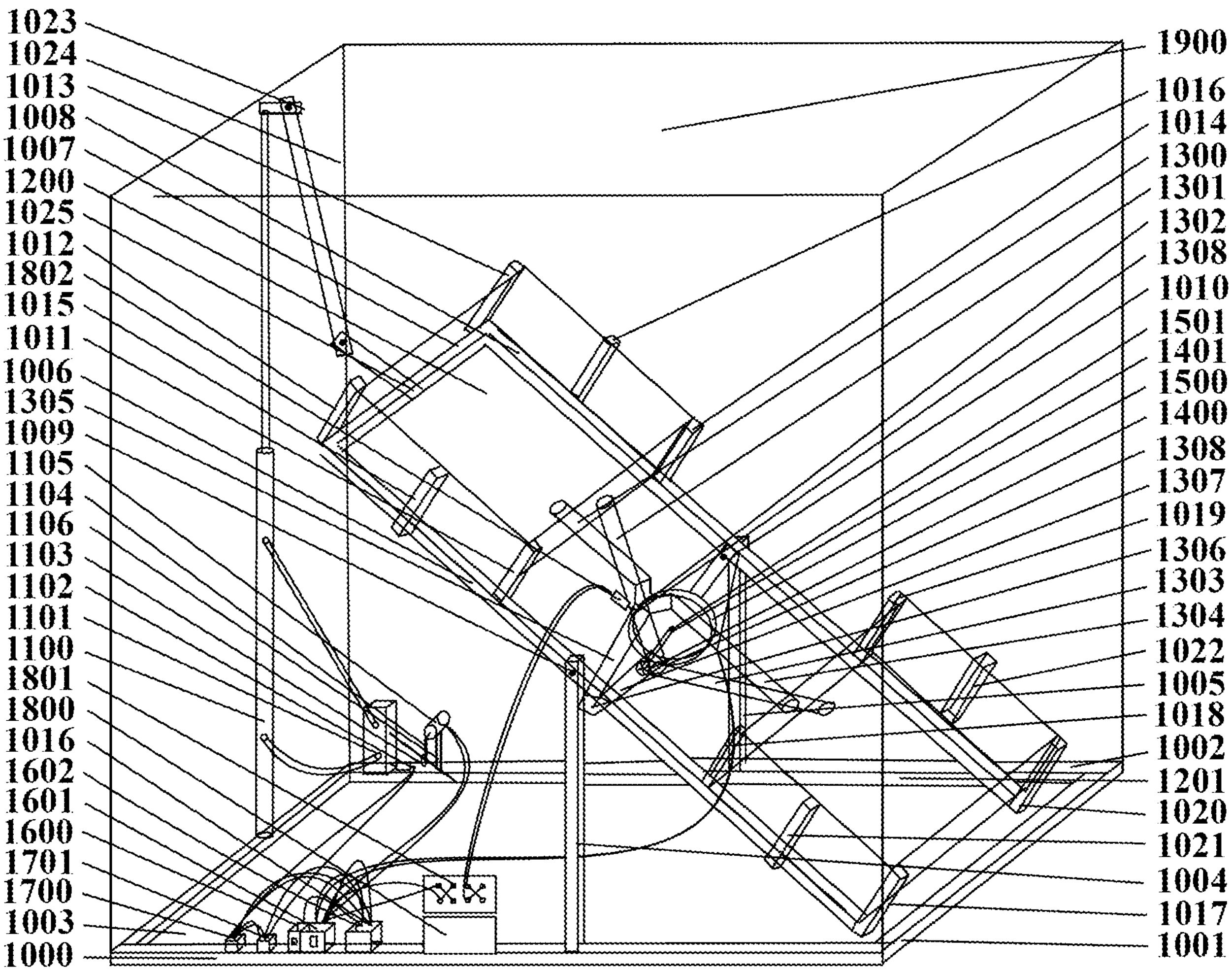

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FIG. 2

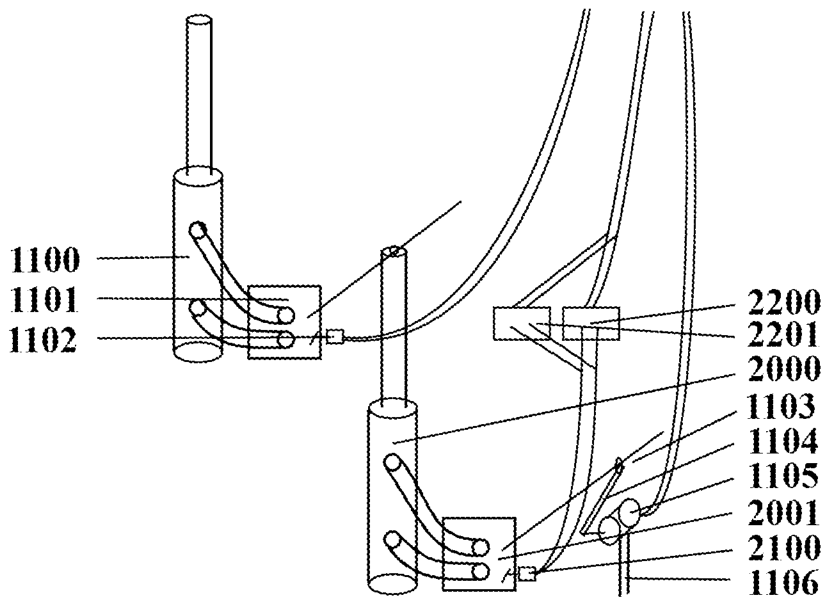

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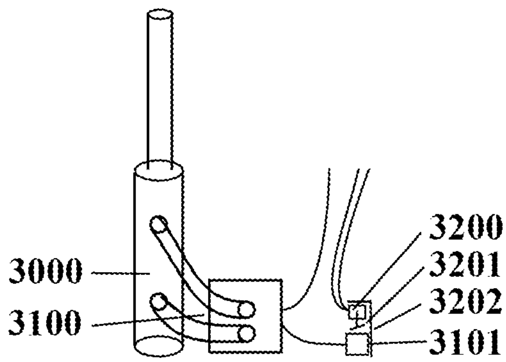
FIG. 3



Jonathan Bannon Maher

PTO/SB/16 (03-13)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

PROVISIONAL APPLICATION FOR PATENT COVER SHEET – Page 1 of 2

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c).

Express Mail Label No. ______________________

INVENTOR(S)

Given Name (first and middle (if any))	Family Name or Surname	Residence (City and either State or Foreign Country)
Jonathan Bannon	Maher	Ridgewood, N.J.

Additional inventors are being named on the ______________ separately numbered sheets attached hereto.

TITLE OF THE INVENTION (500 characters max):

SELF-POWERED MOTOR AND GENERATOR

Direct all correspondence to: **CORRESPONDENCE ADDRESS**

☐ The address corresponding to Customer Number: [ ]

OR

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ENCLOSED APPLICATION PARTS (*check all that apply*)

☐ Application Data Sheet. See 37 CFR 1.76.
☐ CD(s), Number of CDs ______________
☑ Drawing(s) *Number of Sheets* ______________
☐ Other (specify) ______________
☑ Specification (e.g., description of the invention) *Number of Pages* ______________

Fees Due: Filing Fee of $260 ($130 for small entity) ($65 for micro entity). If the specification and drawings exceed 100 sheets of paper, an application size fee is also due, which is $400 ($200 for small entity) ($100 for micro entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

METHOD OF PAYMENT OF THE FILING FEE AND APPLICATION SIZE FEE FOR THIS PROVISIONAL APPLICATION FOR PATENT

☐ Applicant asserts small entity status. See 37 CFR 1.27.
☑ Applicant certifies micro entity status. See 37 CFR 1.29.
Applicant must attach form PTO/SB/15A or B or equivalent.
☐ A check or money order made payable to the *Director of the United States Patent and Trademark Office* is enclosed to cover the filing fee and application size fee (if applicable).
☑ Payment by credit card. Form PTO-2038 is attached.
☐ The Director is hereby authorized to charge the filing fee and application size fee (if applicable) or credit any overpayment to Deposit Account Number: ______________

TOTAL FEE AMOUNT ($) [ ]

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PROVISIONAL APPLICATION FOR PATENT COVER SHEET – Page 2 of 2

The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.

- [x] No.
- [ ] Yes, the invention was made by an agency of the U.S. Government. The U.S. Government agency name is: ______
- [ ] Yes, the invention was made under a contract with an agency of the U.S. Government. The name of the U.S. Government agency and Government contract number are: ______

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SIGNATURE Jonathan Bannon Maher DATE 03/19/2018

TYPED OR PRINTED NAME Jonathan Bannon Maher REGISTRATION NO. ______
(if appropriate)

TELEPHONE 212-399-9146 DOCKET NUMBER ______

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