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(54) Title: SOLENOID DONUT

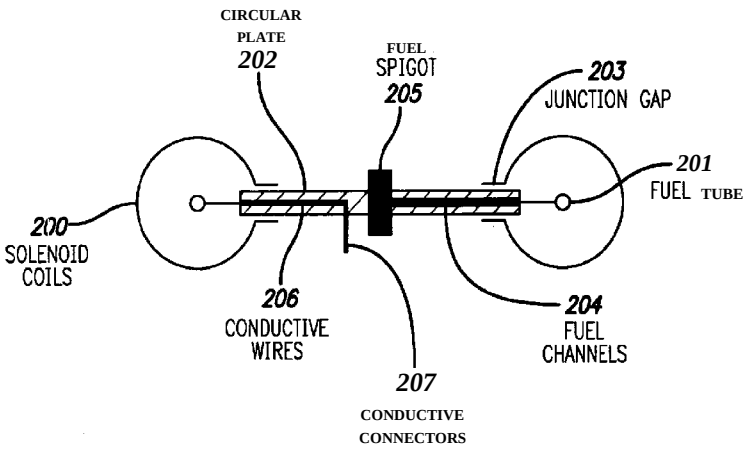

FIG. 2

(57) Abstract: A donut-shaped solenoid surrounds a central plate which spins clockwise or counter-clockwise while holding an object, such as a tube, inside the solenoid coils so that the tube and its contents can be moved through the solenoid's magnetic field. Although the plate interrupts the solenoid coils, the plate is a conductor which can maintain the conductivity of the coils and thus the strength of the magnetic field. The solenoid donut can be of any size, but is especially intended to be at the approximate scale of a microchip, so as to fit inside any kind of handheld or portable device, such as a cell phone, tablet or a laptop computer. Multiple solenoid donuts can be stacked in series to function within larger-scale devices such as air-conditioners, generators, or automobiles.

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SOLENOID DONUT

CROSS-REFERENCES TO RELATED APPLICATIONS

[0001] This application claims priority from U.S. Application No. 61/626,403, filed Sept. 26, 201 1 and which is incorporated by reference in its entirety.

BACKGROUND

[0002] The main object of the present invention is to create a solenoid shaped so that an object, such as a tube, can be held within the solenoid and moved continuously through its magnetic field without having to double-back on its path. One non-limiting purpose of the invention is to function in the context of a Proton Engine which converts matter into energy.

BRIEF SUMMARY OF THE INVENTION

[0003] When current flows through the coils of a solenoid, a magnetic field of proportional strength is generated through the center of the coils. Previous to the present disclosure, in order to pass an object through such a magnetic field, the object would need to be shaped to fit laterally across the coils, as would, for example, a second coil. Another solution would be to plunge the object in a piston- like manner through the center of the coils, that is, push it in and pull it out with a stabbing motion. But by forming a solenoid in the shape of a donut, the present disclosure enables an object - such as a circular tube filled with particles and wrapped in a conducting coil and an RF coil - to be held in place inside the donut-shaped solenoid and rotated clockwise or counter-clockwise at variable rates of speed uninterruptedly through the core of the coils and thus through its magnetic field.

BRIEF DESCRIPTION OF THE DRAWINGS

[0004] FIG. 1 illustrates a top view of the solenoid donut.

[0005] FIG. 2 illustrates a cross-sectional view of the solenoid donut.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0006] The following description is presented to enable any person skilled in the art to make and use the disclosed embodiments, and is provided in the context of a particular application and its requirements. Various modifications of the disclosed embodiments will

be readily apparent to those skilled in the art, and the general principles defined herein may be applied to other embodiments and applications without departing from the spirit and scope of the disclosed embodiments. Thus, the disclosed embodiments are not limited to the embodiments shown, but are to be accorded the widest scope consistent with the principles and features disclosed herein.

[0007] If a slinky toy were attached end-to-end, it would be in the shape of a donut, as are the coils of a solenoid **100** viewed in FIG. 1 from above. In order to move a tube **101** through the center of such a coil, a circular plate **102** can be placed inside the "donut hole," and built into the inner circumference of the coils so that the conductivity of the solenoid is uninterrupted.

[0008] The plate can then hold a tube around its circumference inside the center of the solenoid coils using attachments **103** and spin clockwise or counter-clockwise, while maintaining the electric current that creates the magnetic field, and while moving the tube uninterruptedly through the field.

[0009] FIG. 2 shows a cross-sectional view of the device. The juncture between the plate **202** and the inner circumference of the coils **200** can have a microscopic gap **203** so that the plate can spin between them without creating any friction, yet still conduct electricity across the separation.

[0010] In one embodiment, the gap between the plate and the coils **203** is crossed by a conducting brush which drags along the plate on either side, facilitating the conduction of electrons with minimal friction. In one embodiment the gap between the plate and the coils **203** is lubricated with a fluid that is conducting or that allows conduction directly between the plate and coils.

[0011] A tube held inside the solenoid **(101 , 201)** can contain particles, either in plasma, gas, liquid or solid form, which spin along with the tube attached to the plate and thereby are driven through the magnetic field of the solenoid. The tube can be wrapped with a conducting coil to create a magnetic field inside the tube in order to hold the particles in place as an RF coil injects a resonant frequency to align the spins of the particles and optimize their collision with the opposing field of the solenoid.

[0012] The magnetic field of the solenoid is controlled by a timing mechanism which turns the current on and off at the appropriate moment to strike the fuel particles within the fuel tube as per the power demands of the system. The coils can be turned on and off

individually so that the fuel in the tube can be struck repeatedly at different positions around the circumference. In one embodiment the solenoid is a single loop which turns on and off as per the power demands of the system.

[0013] The inner surface of the fuel tube is fabricated to collect the output of the destroyed particles, either photons or electrons. In one embodiment, the inner surface is a photoelectric semi-conductor which converts photons to electricity, and in another embodiment the inner surface collects an output of electrons.

[0014] The energy output is conducted from the attached tube **201** back to the plate **202** across conductive wires **206** and out through a connector **207** towards utilization.

[0015] In one embodiment, the plate holding the fuel tube inside the solenoid contains channels **204** , or a single channel, which lead from a spigot **205** at the center, or elsewhere on the plate, to the fuel tube **201,** enabling the fuel tube to be replenished as needed. These channels can be connected by the spigot to a fuel cartridge that is either permanently or detachably connected to the system, or else the fuel tube can be refilled from a fuel source external to the system.

[0016] In one embodiment the solenoid has a semi-circular shape as the plate moves through it, and in another embodiment the solenoid has a traditional linear shape as the plate moves through it.

[0017] In one embodiment the plate is shaped like a triangle, with its apex attached to the center of the circle delineated by its motion, with the fuel tube attached along the base of the triangle, either curved like an arc, or parallel to the foot of the triangle.

[0018] The solenoid donut, integrated into a consumer product or other mechanism, can communicate with the mechanism so as to meet its power generation demands. Such a system involves a bidirectional communication link which communicates information from one or more solenoid donuts to the device, and control information from the device to one or more solenoid donuts.

[0019] In one embodiment, multiple solenoid donuts are attached in series to form stacks which can provide proportionally larger power outputs by combining the output of any number of individual solenoid donuts. Such stacks can be used to power a device or series of devices of any size in replacement of a battery or generator at any scale.

[0020] In one embodiment, multiple solenoid donuts are attached together by their spigots **205,** which combine to form a piping system through which all of the fuel tubes can be

refilled as needed.

[0021] The foregoing descriptions of embodiments have been presented for the purposes of illustration and description only. They are not intended to be exhaustive or to limit the present description to the forms disclosed. Accordingly, many modifications and variations will be apparent to practitioners skilled in the art. Additionally, the above disclosure is not limited to the present description.

What is claimed is:

1. A donut-shaped solenoid surrounding a plate which spins in a clockwise or counter-clockwise direction while holding an attached object within the solenoid without interrupting the current running through the solenoid coils, comprising :

a solenoid attached end-to-end and shaped circumferentially around a central plate holding an object such as a tube filled with protium or other particles inside the coil;

a central plate of conducting or semi-conducting material built into the coils of a solenoid, which can spin at variable rates of speed and also be controlled to conduct electricity through the coils or interrupt the current through all of the coils or some of the coils;

2. The device of claim **1,** wherein the attached object is a tube containing particles in plasma, gas, liquid or solid form, which is additionally wrapped in a conducting coil and an RF coil.

3. The device of claim **1,** in which the tube and/or the interior of the tube held within the solenoid by the plate, is made of a semi-conducting photoelectric material designed to collect and convert an output of photons from inside the tube after particles have been destroyed.

4. The device of claim **1,** in which the tube and/or the interior of the tube held within the solenoid by the plate, is made of conducting or semi-conducting material designed to collect an output of electrons from inside the tube after particles have been destroyed, and deliver them to the associated mechanism, either through the plate or through one or more connectors attached directly to the tube or its supports.

5. The device of claim **1,** in which the spinning plate contains one or several channels designed to refill the tube through a spigot on the plate, from a fuel source that is either a cartridge permanently or detachably connected to the system, or one external to the system.

6. The device of claim 1, in which a timing mechanism controls the solenoid coils, the current, the magnetic field and the movement of the plate and/or the coils in order to coordinate power output with power demand.

7. The device of claim **1,** in which a bidirectional communication link relays information from the solenoid donut to its associated mechanism, and control information from the

associated mechanism to the solenoid donut.

8. The device of claim **1,** in which a small gap between the spinning plate and the cross-section of the coils it transects is bridged by a brush made of conducting bristles which allows the plate to spin with minimal friction while conducting electrons across the gap on either face of the plate.

9. The device of claim **1,** in which a small gap between the spinning plate and the cross-section of the coils it transects is lubricated with a conducting fluid which allows the plate to spin with minimal friction while conducting electrons across the gap on either face of the plate, or which is non-conducting but permits direct contact with minimal friction between the plate and the coils.

10. The device of claim **1,** in which a small gap between the spinning plate and the cross-section of the coils it transects is such that it allows the conduction of electrons across the gap unaided.

11. The device of claim **1,** in which the solenoid has a semi-circular shape as the plate moves through it, or a traditional linear shape as the plate moves through it.

12. The device of claim **1**, in which the plate is shaped like a triangle, with its apex attached at the center of the circle delineated by its motion, with the connected fuel tube formed along the base of the triangle, either curved like an arc, or parallel to the foot of the triangle.

13. A method of moving an object continuously through the center of a solenoid without interrupting the current that generates its magnetic field.

14. The method of claim **13,** in which a small gap between the spinning plate and the cross-section of the coils it transects is bridged by a brush made of conducting bristles which allows the plate to spin with minimal friction while conducting electrons across the gap on either face of the plate.

15. The method of claim **13,** in which a small gap between the spinning plate and the cross-section of the coils it transects is lubricated with a conducting fluid which allows the plate to spin with minimal friction while conducting electrons across the gap on either face of the plate, or which is non-conducting but permits direct contact with minimal friction between the plate and the coils.

16. The method of claim **13,** in which a small gap between the spinning plate and the cross-section of the coils it transects is such that it allows the conduction of electrons across

the gap unaided.

17. The method of claim **13,** in which a bidirectional communication link relays information from the solenoid donut to its associated mechanism, and control information from the associated mechanism to the solenoid donut.

18. The method of claim **13,** in which the spinning plate contains one or several channels designed to refill the tube through a spigot on the plate from a fuel source that is either a cartridge permanently or detachably connected to the system, or one external to the system.

19. A method of connecting multiple solenoid donuts in series to form stacks which can yield a proportionally larger power output by combining the output of the individual solenoid donuts.

20. A method of connecting multiple solenoid donuts by attaching together their individual spigots which thereby combine to form piping through which all of the fuel tubes can be refilled as needed.

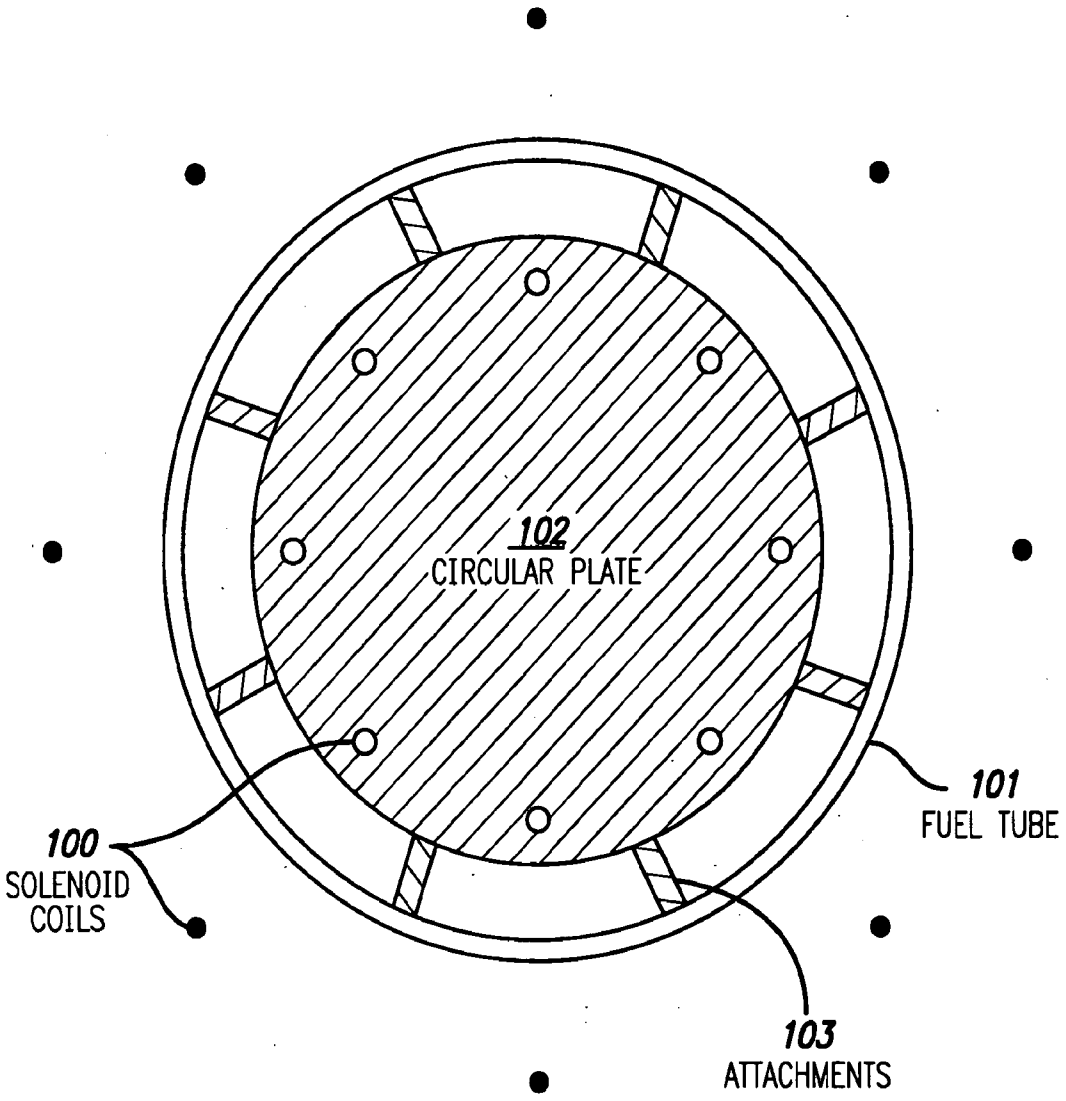
102
CIRCULAR PLATE
101
FUEL TUBE
100
SOLENOID
COILS
103
ATTACHMENTS

FIG. 1

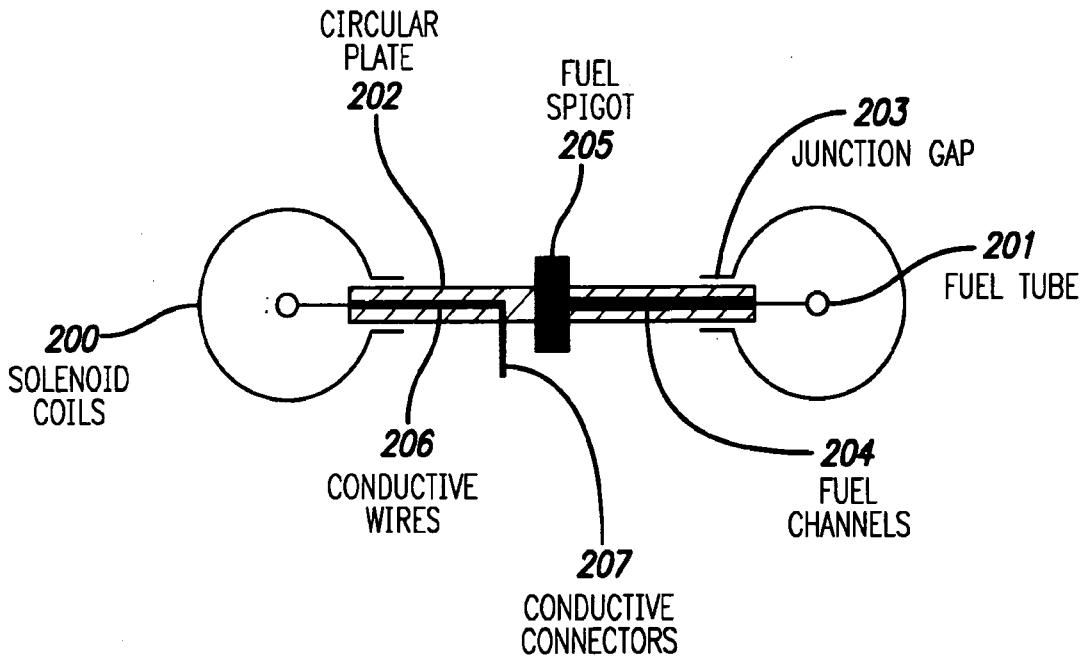
CIRCULAR PLATE
202
FUEL SPIGOT
205
203
JUNCTION GAP
201
FUEL TUBE
200
SOLENOID COILS
206
CONDUCTIVE WIRES
204
FUEL CHANNELS
207
CONDUCTIVE CONNECTORS

FIG. 2

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US201 2/057377

A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - H01 F 7/06 (201 2.01)
USPC - 29/602.1
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC(8) - F16K 11/24, F16K 31/00, F16K 31/02, F16K 31/06; H01F 5/00, H01F 7/06 (2012.01)
USPC - 29/602.1, 29/605, 29/606, 29/607; 251/129.09, 251/129.1, 251/129.15, 251/129.16

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
MicroPatent, Google Patents, Google Scholar

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0,465,186 A1 (ZAMMIT) 08 January 1992 (08.01.1992) entire document	19
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A		1-18,20
A	US 5,952,978 A (VANVOORHIES) 14 September 1999 (14.09.1999) entire document	1-18,20
A	US 2010/0231215 A1 (MA et al) 16 September 2010 (16.09.2010) entire document	1-18,20
A	US 2004/0251902 A1 (TAKAGI et al) 16 December 2004 (16.12.2004) entire document	1-18,20
A	WO 98/26168 A1 (UPHAM et al) 18 June 1998 (18.06.1998) entire document	1-18,20

☐ Further documents are listed in the continuation of Box C. ☐

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
07 December 2012	2 3 JAN 2013

Name and mailing address of the ISA/US	Authorized officer:
Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Blaine R. Copenheaver PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

Form PCT/ISA/2 l0 (second sheet) (July 2009)