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(54) **Title:** SPACE BASED MAGNETIC VORTEX ACCELERATOR AND METHODS OF USE THEREOF

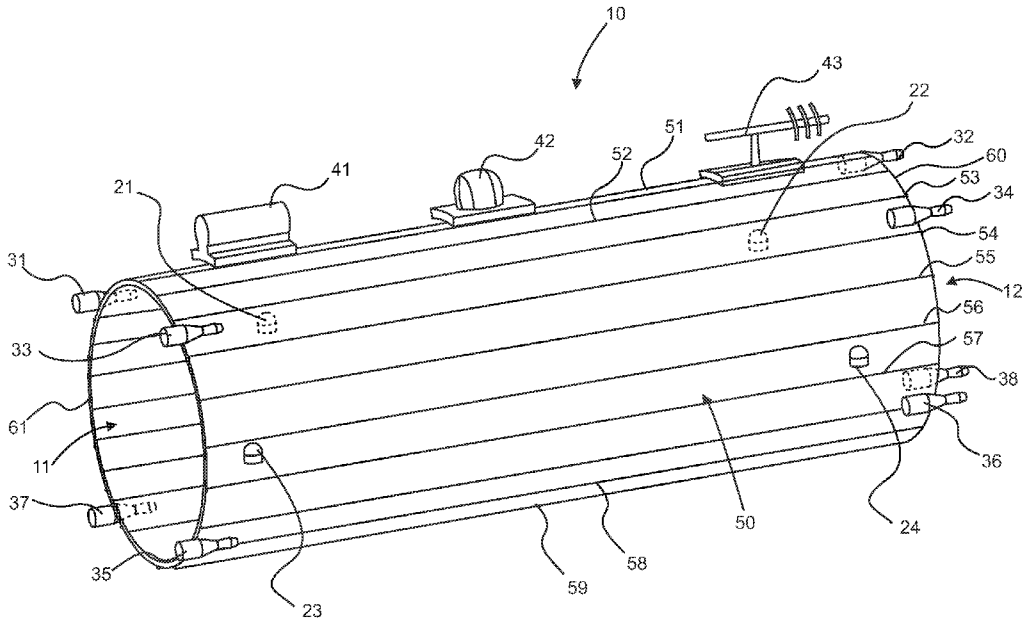



Fig. 1A

(57) **Abstract:** A space based magnetic vortex accelerator and methods of use thereof having one or more sections of magnetic material configured as a conduit with a flightpath therethrough for the spacecraft, a magnetic coil field generator electrically connected to said one or more sections of magnetic material configured to generate a space based magnetic field via said one or more sections of magnetic material, a power plant electrically connected to said magnetic coil field generator, said power plant configured to power said magnetic coil field generator, one or more magnetic field receivers affixed to the spacecraft, said one or more magnetic field receivers configured to magnetically engage said space based magnetic field.

*[Continued on next page]*

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# SPACE BASED MAGNETIC VORTEX ACCELERATOR AND METHODS OF USE THEREOF

## CROSS-REFERENCE TO RELATED APPLICATIONS

To the full extent permitted by law, the present application hereby claims priority to and the full benefit of U.S. Provisional Application No. 62/544,766, filed on August 11, 2017, entitled "SPACE BASED ACCELERATOR AND METHODS OF USE THEREOF," which is incorporated herein by reference in its entirety.

## TECHNICAL FIELD

This disclosure relates to rocketry or spacecraft accelerator system and methods of use thereof. More specifically the disclosure relates to an accelerator to accelerate a spacecraft in zero or low-gravity environment using electromagnetic forces.

## BACKGROUND

The current state of the art in spacecraft propulsion utilizes a variety of chemical fuels, either liquid, gas, or solid fuel. Chemically-fueled rockets require that fuel be brought along, and this limits the performance of the spacecraft.

Moreover, space launches utilize parabolic path and hyperbolic path trajectories around concentrated masses, such as stars, planets, and moons and are determined by the gravitational-attraction properties of concentrated masses a projectile is attempting to launch from. These launches are limited to the timing, position, distance, and final destination of the projectile in relation to the concentrated mass used as a launch. The type of path that will be taken up by a projectile, such as a spacecraft starting at a given location will depend upon its velocity. It will take up an open-ended path if its velocity equals or exceeds escape velocity of the concentrated mass; escape velocity is, by definition, that velocity required at a given location to establish a parabolic orbit and is dependent on the mass of the concentrated mass and the trajectory of the projectile.

Some land based approaches to accelerators, include electromagnetic guns, electromagnetic launchers, and mass drivers, utilize electromagnetic propulsion function via an electric current applied to a series of electromagnetic coils spaced at predetermined intervals therein the land based tube and activated just ahead of the center of the vehicle as it advances there through the tube. A projectile made wholly or in part of a magnetic material such as iron; or other known magnetic material is accelerated through the series of electromagnetic coils. Some disadvantages to this approach include the requirement of extreme velocities necessary to achieve escape velocity of planet earth, and the cooling

requirements to maintain super conductivity of the storage ring and the series of electromagnetic coils.

A simplified approach to a space based accelerator, utilizes electromagnetic propulsion function via an electric current applied to a series of electromagnetic coils spaced at predetermined intervals therein a space based tube. When the projectile (or another magnetic material) enters the magnetic field, a force is applied to the projectile. The magnitude of the force is determined by the current, the number of winds, the area of the coil, and a number of secondary factors. One disadvantage of this approach is that the space craft does not participate in amplifying the magnitude of the force in the electromagnetic propulsion function.

Therefore, it is readily apparent that there is a need for a space based magnetic vortex accelerator and methods of use thereof that functions to enable a combination of features that is designed to address at least some aspects of the problems discussed above. Moreover, providing a space based accelerator, utilizing electromagnetic propulsion function in combination with a space craft electromagnetic propulsion function.

## BRIEF SUMMARY

Briefly described, in an example embodiment, the present disclosure overcomes the above-mentioned disadvantages and meets the recognized need for a space based magnetic vortex accelerator and methods of use thereof, that generally includes one or more sections of magnetic material configured as a conduit with a flightpath therethrough for the spacecraft, a magnetic coil field generator electrically connected to said one or more sections of magnetic material configured to generate a space based magnetic field via said one or more sections of magnetic material, a power plant electrically connected to said magnetic coil field generator, said power plant configured to power said magnetic coil field generator, one or more magnetic field receivers affixed to the spacecraft, said one or more magnetic field receivers configured to magnetically engage said space based magnetic field.

According to its major aspects and broadly stated, the present disclosure in its exemplary form is a space based magnetic vortex accelerator and methods of use thereof, that generally includes one or more sections of magnetic material configured as a conduit with a flightpath therethrough for the spacecraft, a magnetic coil field generator electrically connected to said one or more sections of magnetic material configured to generate a space based magnetic field via said one or more sections of magnetic material, a power plant electrically connected to said magnetic coil field generator, said power plant configured to power said magnetic coil field generator, one or more rotating magnetic vortex devices

affixed to the spacecraft, said one or more rotating magnetic vortex devices configured to magnetically engage said space based magnetic field and thus, to provide space based accelerator, utilizing electromagnetic propulsion function in combination with a space craft electromagnetic propulsion function together as space based magnetic vortex accelerator.

In an exemplary embodiment, the space based accelerator system to accelerate a spacecraft in space, the system includes one or more sections of magnetic coils configured as a conduit with a flightpath therethrough for the spacecraft, a magnetic coil field generator electrically connected to the one or more sections of magnetic coils and configured to generate a space based magnetic field therein the flightpath, and a power plant electrically connected to the magnetic coil field generator, the power plant configured to power the magnetic coil field generator.

In an exemplary embodiment, the method of utilizing a space based accelerator system to accelerate a spacecraft in space, the method comprising the steps of providing one or more sections of magnetic coils configured as a conduit with a flightpath therethrough for the spacecraft, a magnetic coil field generator electrically connected to the one or more sections of magnetic coils and configured to generate a space based magnetic field therein the flightpath, a power plant electrically connected to the magnetic coil field generator, the power plant configured to power the magnetic coil field generator, positioning the space based accelerator system in the flightpath of the spacecraft, positioning the spacecraft on a trajectory to enter the space based accelerator system, generating an electromagnetic vortex field therein the space based accelerator, and propelling the spacecraft therefrom the space based accelerator system.

A feature of the space based magnetic vortex accelerator and methods of use is the ability to provide a space based accelerator to accelerate a spacecraft in space. The accelerator would have one or more sections of magnetic material configured as a conduit with a flightpath therethrough for the spacecraft. A magnetic coil field generator would be connected to one or more sections of the magnetic material to generate a space based magnetic field. One or more magnetic field receivers would be attached to the spacecraft and upon entering the magnetic field the spacecraft would be accelerated through space.

Another feature of the space based magnetic vortex accelerator and methods of use is the ability to provide two or more directional thrusters to position the conduit of magnetic material for ingress and egress of the spacecraft and configured to accelerate the spacecraft on a designated trajectory calculated and communicated via navigation guidance system.

Yet another feature of the space based magnetic vortex accelerator and methods of use is the ability to provide two or more space based magnetic vortex accelerators in series to add additional acceleration to the spacecraft.

Yet another feature of the space based magnetic vortex accelerator and methods of use is the ability to provide two or more space based magnetic vortex accelerators in series at a start position and receiving position a far distance apart.

Yet another feature of the space based magnetic vortex accelerator and methods of use is the ability to provide one or more rotating magnetic vortex devices affixed to the spacecraft. The one or more rotating magnetic vortex devices are configured to magnetically engage the space based magnetic field of the one or more sections of magnetic material configured as a conduit to add additional acceleration to the spacecraft.

Yet another feature of the space based magnetic vortex accelerator and methods of use is the ability to provide space based acceleration to a spacecraft rather than planet based.

Yet another feature of the space based magnetic vortex accelerator and methods of use is the ability to provide electromagnetic energy to maneuver a spacecraft, such as accelerate, slow, and/or stop, a spacecraft in low and zero-gravity environments.

Yet another feature of the space based magnetic vortex accelerator and methods of use is the ability to generate a magnetic field in the zero or low-gravity environment.

Yet another feature of the space based magnetic vortex accelerator and methods of use is the ability to change speed and/or trajectory of a spacecraft when moving in proximity to the magnetic-field.

Yet another feature of the space based magnetic vortex accelerator and methods of use is the ability to maneuver or propel a spacecraft exclusively by using electromagnetic forces.

Yet another feature of the space based magnetic vortex accelerator and methods of use is the ability to provide efficient injection and ejection on a designated trajectory.

Yet another feature of the space based magnetic vortex accelerator and methods of use is the ability to provide inexhaustible solar energy, nuclear energy and/or harvest or captured energy from decelerating spacecraft.

Yet another feature of the space based magnetic vortex accelerator and methods of use is the ability to decelerate or accelerate spacecraft.

Yet another feature of the space based magnetic vortex accelerator and methods of use is the ability to force a spacecraft into or out of an orbital path.

Yet another feature of the space based magnetic vortex accelerator and methods of use is the ability to operate in the vacuum of space.

These and other features of the space based magnetic vortex accelerator and methods of use will become more apparent to one skilled in the art from the prior Summary and following Brief Description of the Drawings, Detailed Description of exemplary embodiments thereof, and Claims when read in light of the accompanying Drawings or Figures.

## BRIEF DESCRIPTION OF THE DRAWINGS

The present space based magnetic vortex accelerator and methods of use will be better understood by reading the Detailed Description of the Preferred and Selected Alternate Embodiments with reference to the accompanying drawing Figures, in which like reference numerals denote similar structure and refer to like elements throughout, and in which:

**FIG. 1A** is a side view of an exemplary embodiment of the space based magnetic vortex accelerator system;

**FIG. 1B** is a side view of an exemplary embodiment of the space based magnetic vortex accelerator system showing lines of force of its magnetic field, according to **FIG. 1**;

**FIG. 1C** is a side view of an exemplary embodiment of the space based magnetic vortex accelerator system showing rotational lines of force of its magnetic field, according to **FIG. 1**;

**FIG. 2A** is a rear perspective view of an exemplary embodiment of a dual direction space based magnetic vortex accelerator system, according to **FIG. 1**;

**FIG. 2B** is a rear perspective view of an exemplary embodiment of the dual direction space based magnetic vortex accelerator system showing lines of force of its magnetic field, according to **FIG. 2**;

**FIG. 3** is a cross sectional side view of an exemplary embodiment of tower interior exposing motorized cable lift and attachment device, according to **FIG. 1** or **2**;

**FIG. 4A** is a side view of an exemplary embodiment of spacecraft generating a spacecraft's electromagnetic field;

**FIG. 4B** is a side view of an exemplary embodiment of spacecraft generating a spacecraft's electromagnetic field and under the combinational influence space based magnetic vortex accelerator electromagnetic field; and

**FIG. 5** is a flow diagram of a method of propelling spacecraft therethrough space based magnetic vortex accelerator.

## DETAILED DESCRIPTION

In describing the exemplary embodiments of the present disclosure, as illustrated in **FIGS. 1A, 1B, 1C, 2A, 2B**, **3**, **4A**, **4B**, and **5** specific terminology is employed for the sake of clarity. The present disclosure, however, is not intended to be limited to the specific terminology so selected, and it is to be understood that each specific element includes all technical equivalents that operate in a similar manner to accomplish similar functions. Embodiments of the claims may, however, be embodied in many different forms and should not be construed to be limited to the embodiments set forth herein. The examples set forth herein are non-limiting examples, and are merely examples among other possible examples.

Referring now to **FIG. 1A, 1B** and **1C**, by way of example, and not limitation, there is illustrated an example embodiment space based magnetic vortex accelerator system **10**. Space based magnetic vortex accelerator system **10** may be configured having one or more magnetic coils, or one or more rotational support sections with electromagnetic drive coils or pulse coils of the electromagnetic accelerator mounted around the internal circumferential periphery of space based magnetic vortex accelerator system **10** as one or more magnetic coils **50** configured substantially as a conduit with end supports, such as first end support **61** and spaced there apart second end support **62** and mounted around its external circumferential periphery. One or more rows of coils or one or more sections of magnetic coils **50** may run or connect or electrically connect there between first end support **61** and spaced there apart second end support **62,** such as first magnetic coil section **51,** second magnetic coil section **52,** third magnetic coil section **53,** fourth magnetic coil section **54,** fifth magnetic coil section **55,** sixth magnetic coil section **56,** sixth magnetic coil section **56,** seventh magnetic coil section **57,** eighth magnetic coil section **58,** and ninth magnetic coil section **59.**

Space based magnetic vortex accelerator system **10** may further include magnetic coil field generator **42** having electric cables, control circuitry, processors, capacitor bank, roll control system, sensors, vehicle position sensors, and other electrical subsystems that are well known in the art of automatic control systems, and electrically connected to one or more magnetic coils **50,** including magnetic coil sections **51-59** to electrify (electrifies) the coils and generate a space based magnetic field therein one or more magnetic coils **50** configured substantially as a conduit. Moreover, space based magnetic vortex accelerator system **10** may further include power plant **41**, such as a nuclear reactor, solar collection/panel system or other developed power supply electrically connected to magnetic coil field generator **42** and to power magnetic coil field generator **42.** Moreover, power plant **41** may include electric

cables, control circuitry, switch gear, sensors, and other electrical subsystems that are well known in the art of power control systems.

It is contemplated herein that the electromagnetism principle of the physics of a current passing through (electrifies) one or more magnetic coils **50** produces a space based magnetic field therein a flightpath for forward vehicle thrust or deceleration. The lines of electromagnetic force **MF1** generated by one or more magnetic coils **50,** including magnetic coil sections **51-59** of space based magnetic vortex accelerator system **10** in this manner are depicted as dashed lines in **FIG. 1B.** The magnitude of the force of a magnetic field generated by one or more magnetic coils **50** is determined by the current, the number of winds of one or more magnetic coils **50,** the area of one or more magnetic coil sections **51-59,** and a number of other factors.

It is further contemplated herein that magnetic coil field generator **42** may electrically activate magnetic coils **50,** including magnetic coil sections **51-59** in a timed rotation or sequence to generate a rotating space based electromagnetic vortex field **MF2** therein space based magnetic vortex accelerator system **10** as depicted as dashed lines in **FIG. 1C.**

It is still further contemplated herein that magnetic coil field generator **42** may electrically activate magnetic coils **50,** including magnetic coil sections **51-59** mechanically rotating **R** (rotates, rotational direction around end supports, such as first end support **61** and spaced there apart second end support **62**) circularly therearound circumference **C** of space based magnetic vortex accelerator system **10** to generate rotating electromagnetic vortex field **MF2** therein space based magnetic vortex accelerator system **10** as depicted as dashed lines in **FIG. 1C.**

It is further contemplated herein that magnetic coil field generator **42** and one or more magnetic coils **50** may be utilized to generate a positive or negative rotating or roll torque superimposed on the basic magnetic field that produces forward vehicle thrust for dynamic roll stability along longitudinal central axis to guided spacecraft **200** along the precise center line **CL** of one or more magnetic coils **50** configured substantially as a conduit.

Space based magnetic vortex accelerator system **10** may further include communication and navigation guidance system **43** having control circuitry with communication devices**.** Communication and navigation guidance system **43** may be configured having one or more lights (alignment beacons), such as beacons **20** including first beacon **21**, second beacon **22,** third beacon **23**, and fourth beacon **24** for identifying ingress and egress thereto space based magnetic vortex accelerator system **10,** such as first open end **11** and second open end **12.** Moreover, communication and navigation guidance system **43**

further includes one or more communication systems, such as antenna, dish or like systems to enable communication with space based magnetic vortex accelerator system **10**. Furthermore, communication and navigation guidance system **43** further includes one or more accelerator positioning devices, such as thrusters **30** positioned thereabout space based magnetic vortex accelerator system **10** and more specifically proximate first open end **11** and second open end **12.** One or more thrusters **30** may include first set, such as first thrusters **31,** third thrusters **33,** fifth thrusters **35,** and seventh thrusters **37** positioned proximate first open end **11** to position first open end **11** and second set, such as second thrusters **32,** fourth thrusters **34,** sixth thrusters **36,** and eighth thrusters **38** positioned proximate second open end **12** to position second open end **12.**

It is contemplated herein that two or more directional thrusters **30,** rotatable thereabout space based magnetic vortex accelerator system **10,** may be utilized to position one or more magnetic coils **50** configured substantially as conduit for ingress and egress of a spacecraft and align one or more magnetic coils **50** configured substantially as conduit on a designated trajectory calculated and communicated thereto a spacecraft via communication and navigation guidance system **43**.

Referring now to **FIG. 1B**, by way of example, and not limitation, there is illustrated an example space based magnetic vortex accelerator system **10** shown with spacecraft **200** travelling therethrough. Spacecraft **200** may be equipped with a plurality of magnetic propulsion devices, such as one or more booster coils **210** configured to generate spacecraft electromagnetic field and mounted proximate the circumferential periphery of spacecraft **200** fuselage with opposite magnetic orientation spacecraft electromagnetic force **SMF** (shown in **FIG. 4**), as to one or more magnetic coils **50** of space based magnetic vortex accelerator system **10** to magnetically engage or couple electromagnetic force **MF1** or vortex electromagnetic force **MF2** generated by one or more magnetic coils **50.** Spacecraft **200** may be traveling in direction and velocity **DV1** prior to entering space based magnetic vortex accelerator system **10** and when spacecraft **200** enters electromagnetic force **MF1** or vortex electromagnetic force **MF2,** a force is applied to spacecraft **200** be electromagnetically propelled therethrough space by magnetic vortex accelerator system **10** via spacecraft electromagnetic force **SMF**, electromagnetic force **MF1,** and/or vortex electromagnetic force **MF2** acting thereon spacecraft electromagnetic force **SMF** of booster coils **210** of spacecraft **200** and spacecraft **200** may be propelled and exit space based magnetic vortex accelerator system **10** accelerated and traveling in direction and velocity **DV2.** The magnitude of spacecraft electromagnetic force **SMF**, electromagnetic force **MF1,** or vortex

electromagnetic force **MF2** is derived from a calculation including the mass of spacecraft **200** and its starting direction and velocity **DV1** and desired direction and velocity **DV2** vectors.

It is contemplated herein that spacecraft **200** may approach space based magnetic vortex accelerator system **10**, after long-distant confirmation, and pass through one or more magnetic coils **50**, which will accelerate spacecraft **200** greatly due to magnitude of electromagnetic force **MF1** or vortex electromagnetic force **MF2** rotating fast circular motion, creating a magnetic vortex, pushing spacecraft **200** forward, in desired direction and accelerated velocity **DV3** vectors.

Referring now to **FIG. 2A** and **2B**, by way of example, and not limitation, there is illustrated an example embodiment dual or two or more space based accelerator system **100**. Dual space based accelerator system **100** may be configured as a dockable craft having structural components **150** utilized to support dual space based accelerator system **100,** one or more body parts, such as exterior surfaces **140** to form exterior of dual space based accelerator system **100,** one or more bays or modules, such as equipment/reactor module/coil generator **110** utilized for storage, transportation bays, and power and control system for dual space based accelerator system **100,** habitat module **120** utilized for passenger living and housing station crew, workers quarters of dual space based accelerator system **100**, and operations/bridge **130** utilized for command, operation, control, and communication operations of dual space based accelerator system **100.**

It is contemplated herein that dual space based accelerator system **100** may include any and all parts, features, systems referenced above in space based accelerator system **10.**

Moreover**,** structural components **150** and one or more body parts, such as exterior surfaces **140** may be equipped with dual or one or more rotational magnetic coils **50,** such as first rotating magnetic coils **50A,** and second rotating magnetic coils **50B,** configured substantially as two or more conduits therethrough dual space based accelerator system **100.**

Furthermore, structural components **150** and one or more body parts, such as exterior surfaces **140** may be equipped with thrust mechanisms **160** configured to position and move dual space based accelerator system **100** in space.

Referring now to **FIG. 2B**, by way of example, and not limitation, there is illustrated an example dual space based accelerator system **100** shown with spacecraft **200** travelling therethrough in opposite directions. For example, spacecraft **200** may be equipped with a plurality of magnetic devices, such as booster coils **210** mounted proximate circumferential periphery of spacecraft **200** fuselage with opposite, as in ninety degree configuration to generate spacecraft electromagnetic force **SMF** and to engage electromagnetic force **MF2A**

generated by one or more rotating magnetic coils **50A.** Spacecraft **100** may be traveling in direction and velocity **DV1A** prior to entering dual space based accelerator system **100** and be electromagnetically propelled therethrough dual space based accelerator system **100** via spacecraft electromagnetic force **SMF** and/or electromagnetic force **MF2A** acting thereon booster coils **210** of spacecraft **200** and spacecraft **200** may exit dual space based accelerator system **100** accelerated and traveling in direction and velocity **DV2A.** The magnitude of electromagnetic force **MF2A** is derived from a calculation including the mass of spacecraft **200** and its starting direction and velocity **DV1A** and desired direction and velocity **DV2A** vectors.

Alternatively, spacecraft **200** may be equipped with a plurality of booster coils **210** extending along its fuselage to generate spacecraft electromagnetic force **SMF** to engage electromagnetic force **MF2B** generated by one or more rotating magnetic coils **50B.** Spacecraft **200** may be traveling in direction and velocity **DV3A** prior to entering dual space based accelerator system **100** and be electromagnetically propelled therethrough dual space based accelerator system **100** via spacecraft electromagnetic force **SMF** and/or electromagnetic force **MF2B** acting thereon booster coils **210** of spacecraft **200B** and spacecraft **200B** may exit dual space based accelerator system **100** accelerated and traveling in direction and velocity **DV4A.** The magnitude and direction of electromagnetic force **MF2B** is derived from a calculation including the mass of spacecraft **200B** and its starting direction and velocity **DV3A** and desired direction and velocity **DV4A** vectors.

One turning clockwise, electromagnetic force **MF2A** for the Y+ direction, the other turning counter-clockwise, electromagnetic force **MF2B** for the Y- opposite direction of travel.

It is further contemplated herein that magnetic coil field generator **42** may electrically activate magnetic coils **50,** including magnetic coil sections **51-59** in a timed rotational or sequence to generate rotating electromagnetic vortex field **MF2A/MF2B** therein space based magnetic vortex accelerator system **10** as depicted as dashed lines in **FIG. 1C.**

It is still further contemplated herein that magnetic coil field generator **42** may electrically activate magnetic coils **50,** including magnetic coil sections **51-59** mechanically rotating **R** (rotational direction around end supports, such as first end support **61** and spaced there apart second end support **62**) circularly therearound circumference **C** of space based magnetic vortex accelerator system **10** to generate rotating electromagnetic vortex field **MF2A/MF2B** therein space based magnetic vortex accelerator system **10** as depicted as dashed lines in **FIG. 1C.**

It is further contemplated herein that magnetic coil field generator **42** and one or more magnetic coils **50** may be utilized to generate a positive or negative roll or rotating torque superimposed on the basic magnetic field that produces forward vehicle thrust for dynamic roll stability along longitudinal central axis is guided along the precise center line **CL** of one or more magnetic coils **50** configured substantially as a conduit.

Referring now to **FIG. 3**, by way of example, and not limitation, there is illustrated an example schematic transverse cross section view of space based magnetic vortex accelerator system **10/10A/10B,** such as rotating magnetic vortex device **300.** Rotating magnetic vortex device **300** may include inner support structure **312** supported thereby outer support structure **310.** Preferably, inner structure **312** may be utilized to support rotating magnetic structure **314.** Rotating magnetic structure **314** may be configured with one of one or more magnetic coils **50** positioned therearound circumference **C** or mounted around its external circumferential periphery **C** of rotating magnetic structure **314** inducing a directional magnetic field, such as rotating electromagnetic force **MF2A** and electromagnetic force **MF2B** therein space based magnetic vortex accelerator system **10A/10B** as depicted as dashed lines in **FIG. 1C**.

It is further contemplated herein that magnetic coil field generator **42** may electrically activate rotating magnetic coils **50A/50B,** including magnetic coil sections **51-59** mechanically rotating **R** (rotational direction around end supports), in a rotational circumference manner to generate rotating electromagnetic vortex field **MF2A/MF2B** therein space based magnetic vortex accelerator system **10A/10B** as depicted as dashed lines in **FIG. 1C.** Likewise for spacecraft electromagnetic force **SMF** thereon spacecraft **200**.

Referring now to **FIG. 4A** and **4B**, by way of example, and not limitation, there is illustrated an example side view of spacecraft **200.** Spacecraft **200** may include booster coils **210** formed as opposite configured (rotating) magnetic coils **250A/250B** to generate rotating spacecraft based electromagnetic vortex field **SMF** therearound spacecraft **200** approximately ninety (90) degrees opposed or otherwise opposing electromagnetic field configured opposite electromagnetic vortex field **MF2A/MF2B.** Electromagnetic vortex field **MF2A/MF2B** in combination with spacecraft's **200** electromagnetic field **SMF** (one pushing against the other, adding to the other, or magnetically couples, coupled one to the other)**,** while traveling through space based magnetic vortex accelerator system **10A/10B,** will accelerate spacecraft **200** pushing spacecraft **200** forward or with extremely faster velocities via additional force of spacecraft's **200** electromagnetic field **SMF**.

It is contemplated herein that spacecraft **200** may have similar systems as set forth in **FIGs. 1-3** on board to generate a spacecraft's **200** electromagnetic vortex field as spacecraft's **200** electromagnetic field **SMF**.

Referring now to **FIG. 5,** there is illustrated a flow diagram **500** of a method of use of space based magnetic vortex accelerator system **10** to propel spacecraft **200B** in space as shown in **FIGS. 1-4**. In block or step **510**, providing one or more space based magnetic vortex accelerator system **10** configured to propel spacecraft **200B** in space via electromagnetic vortex field, electromagnetic vortex field **MF2A/MF2B**. In block or step **515**, positioning one or more space based magnetic vortex accelerator system **10.** In block or step **520**, providing spacecraft **200** with spacecraft's **200** electromagnetic field **SMF** generator or accelerator**.** In block or step **525**, positioning spacecraft **200** on a trajectory to enter space based magnetic vortex accelerator system **10** proximate end supports, such as first end support **61** and spaced there apart second end support **62**. In block or step **530**, generating electromagnetic vortex field **MF2A/MF2B** therein space based magnetic vortex accelerator system **10A/10B.** In block or step **535**, generating spacecraft's **200** electromagnetic field **SMF.** In block or step **540**, propelling spacecraft **200** therefrom space based magnetic vortex accelerator system **10A/10B** in a desired direction and accelerated velocity **DV** vector.

It is contemplated herein that one or more space based magnetic vortex accelerator system **10** may be utilized to accelerate or decelerate spacecraft **200.**

It is further contemplated herein that two or more space based magnetic vortex accelerator system **10** may be configured to synchronize and tune to each other and combine electromagnetic vortex fields **MF2A/MF2B** and positioned in series together for generating additional force or combined electromagnetic forces from multiple electromagnetic vortex field **MF2A/MF2B** to accelerate or decelerate spacecraft **200** and propel spacecraft **200** faster.

The foregoing description and drawings comprise illustrative embodiments of the present disclosure. Having thus described exemplary embodiments, it should be noted by those ordinarily skilled in the art that the within disclosures are exemplary only, and that various other alternatives, adaptations, and modifications may be made within the scope of the present disclosure. Merely listing or numbering the steps of a method in a certain order does not constitute any limitation on the order of the steps of that method. Many modifications and other embodiments of the disclosure will come to mind to one ordinarily skilled in the art to which this disclosure pertains having the benefit of the teachings presented in the foregoing descriptions and the associated drawings. Although specific terms

may be employed herein, they are used in a generic and descriptive sense only and not for purposes of limitation. Moreover, the present disclosure has been described in detail, it should be understood that various changes, substitutions and alterations can be made thereto without departing from the spirit and scope of the disclosure as defined by the appended claims. Accordingly, the present disclosure is not limited to the specific embodiments illustrated herein, but is limited only by the following claims.

**WHAT IS CLAIMED IS:**

1. A space based accelerator system to accelerate a spacecraft in space, said system comprising:

one or more sections of magnetic coils configured as a conduit with a flightpath therethrough for the spacecraft;

a magnetic coil field generator electrically connected to said one or more sections of magnetic coils and configured to generate a space based magnetic field therein said flightpath; and

a power plant electrically connected to said magnetic coil field generator, said power plant configured to power said magnetic coil field generator.

2. The system of Claim 1, wherein said magnetic coil field generator electrifies said one or more sections of magnetic coils in a rotation to generate a rotating space based electromagnetic vortex field therein said flightpath.

3. The system of Claim 1, wherein said one or more sections of magnetic coils rotates in a circumference therein said conduit to generate a rotating space based electromagnetic vortex field therein said flightpath.

4. The system of Claim 1, further comprises an alignment beacon.

5. The system of Claim 1, further comprises a navigation guidance system.

6. The system of Claim 1, further comprises one or more thrusters configured to position said one or more sections of magnetic coils in in said flightpath.

7. The system of Claim 3, further comprises two or more space based accelerator systems are positioned in series.

8. The system of Claim 7, wherein said two or more space based accelerator systems are configured to tune to each other to generate combined electromagnetic forces.

9. The system of Claim 3, further comprises a rotating torque superimposed on said rotating space based electromagnetic vortex field for a dynamic roll stability of the spacecraft.

10. The system of Claim 3, further comprises one or more booster coils affixed to the spacecraft, said one or more booster coils configured to generate a rotating spacecraft based electromagnetic vortex field therearound the spacecraft.

11. The system of Claim 10, wherein said rotating space based electromagnetic vortex field magnetically couples with said rotating spacecraft based electromagnetic vortex field.

12. The system of Claim 1, further comprises two or more conduits, each said two or more conduits with a flightpath therethrough for the spacecraft.

13. The method of utilizing a space based accelerator system to accelerate a spacecraft in space, said method comprising the steps of:

providing one or more sections of magnetic coils configured as a conduit with a flightpath therethrough for the spacecraft, a magnetic coil field generator electrically connected to said one or more sections of magnetic coils and configured to generate a space based magnetic field therein said flightpath, a power plant electrically connected to said magnetic coil field generator, said power plant configured to power said magnetic coil field generator;

positioning the space based accelerator system in said flightpath of the spacecraft;

positioning the spacecraft on a trajectory to enter the space based accelerator system;

generating an electromagnetic vortex field therein the space based accelerator; and

propelling the spacecraft therefrom the space based accelerator system.

14. The method of Claim 13, further comprises the step of providing the spacecraft with one or more booster coils.

15. The method of Claim 14, further comprises the step of generating the spacecraft electromagnetic force via said one or more booster coils.

16. The method of Claim 15, further comprises the step of propelling the spacecraft therefrom the space based accelerator system.

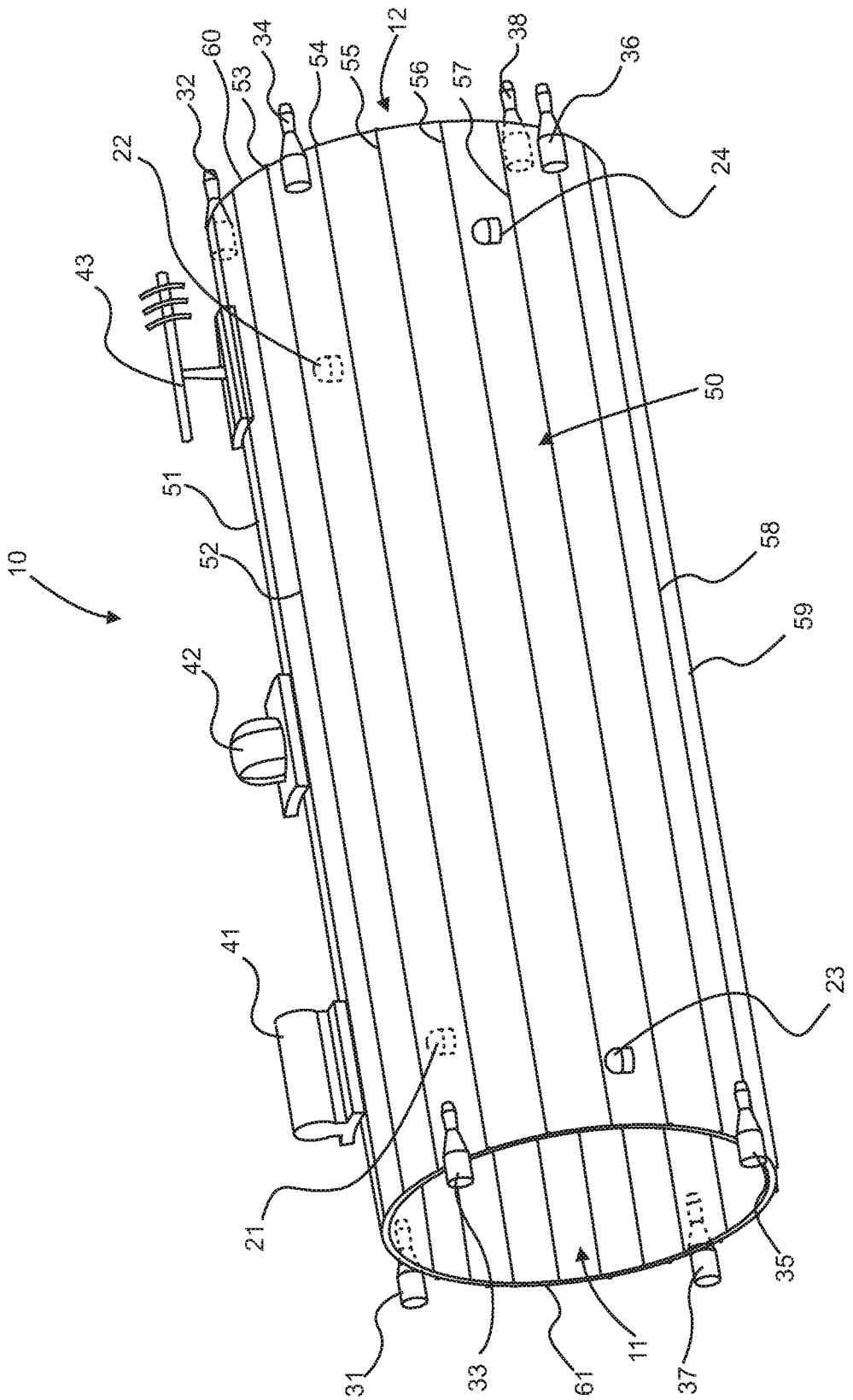

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Fig. 1A

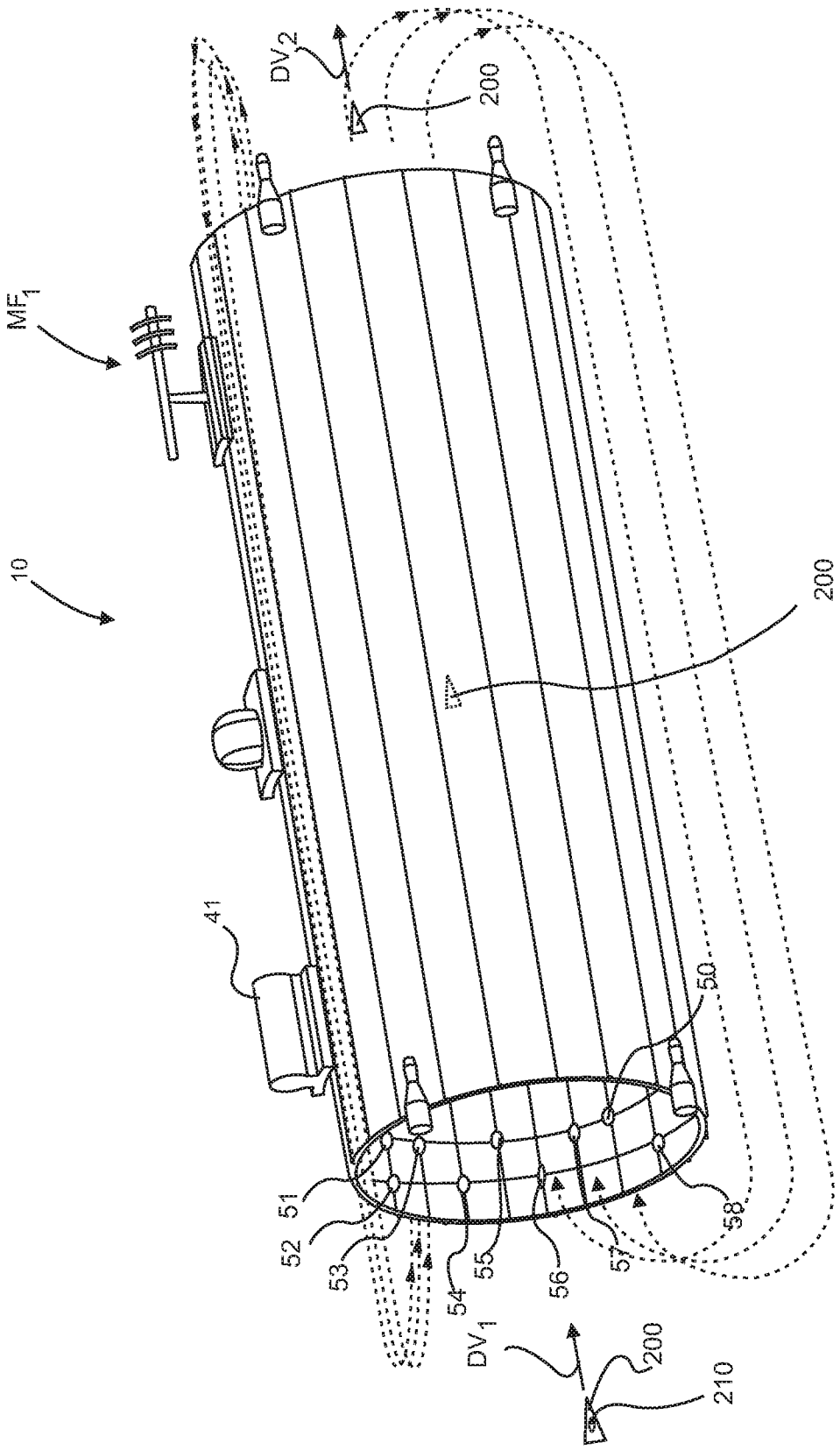



Fig. 1B

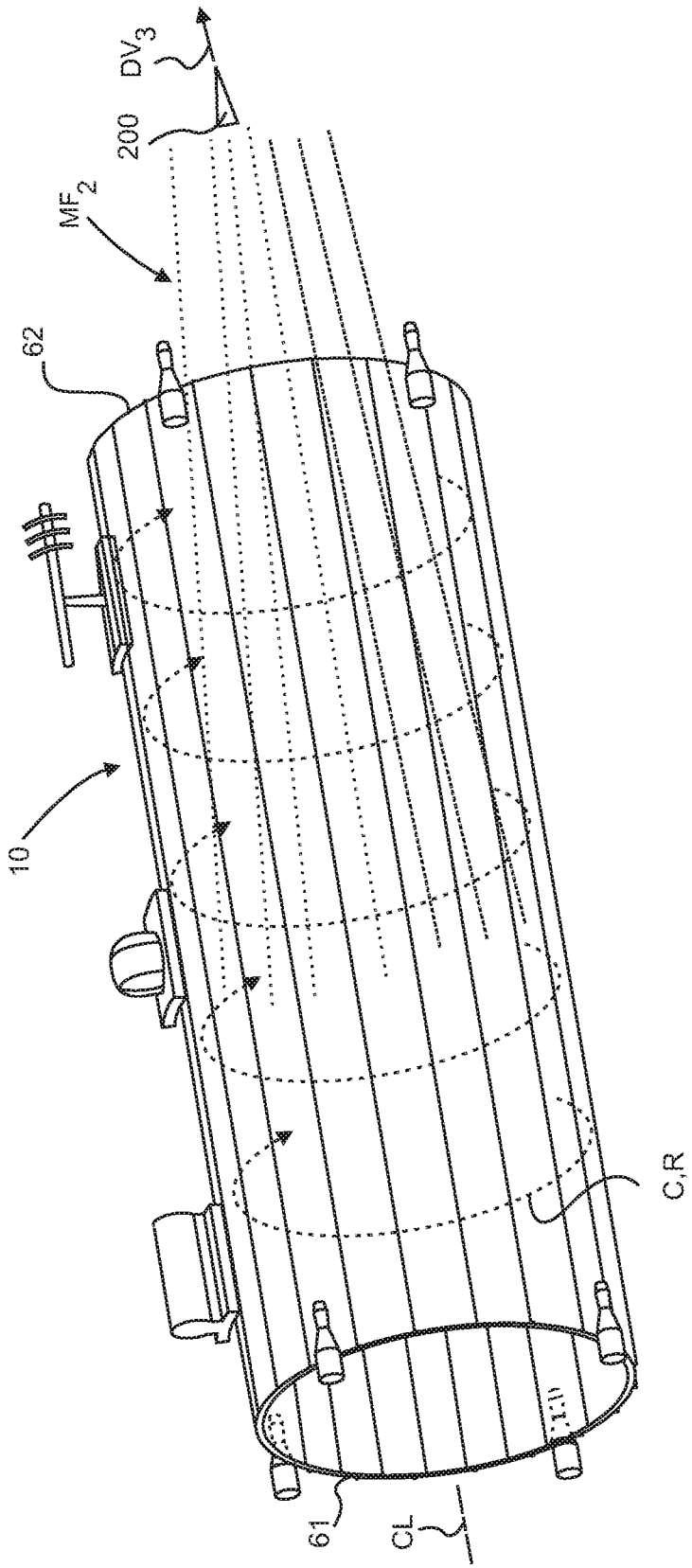



Fig. 1C

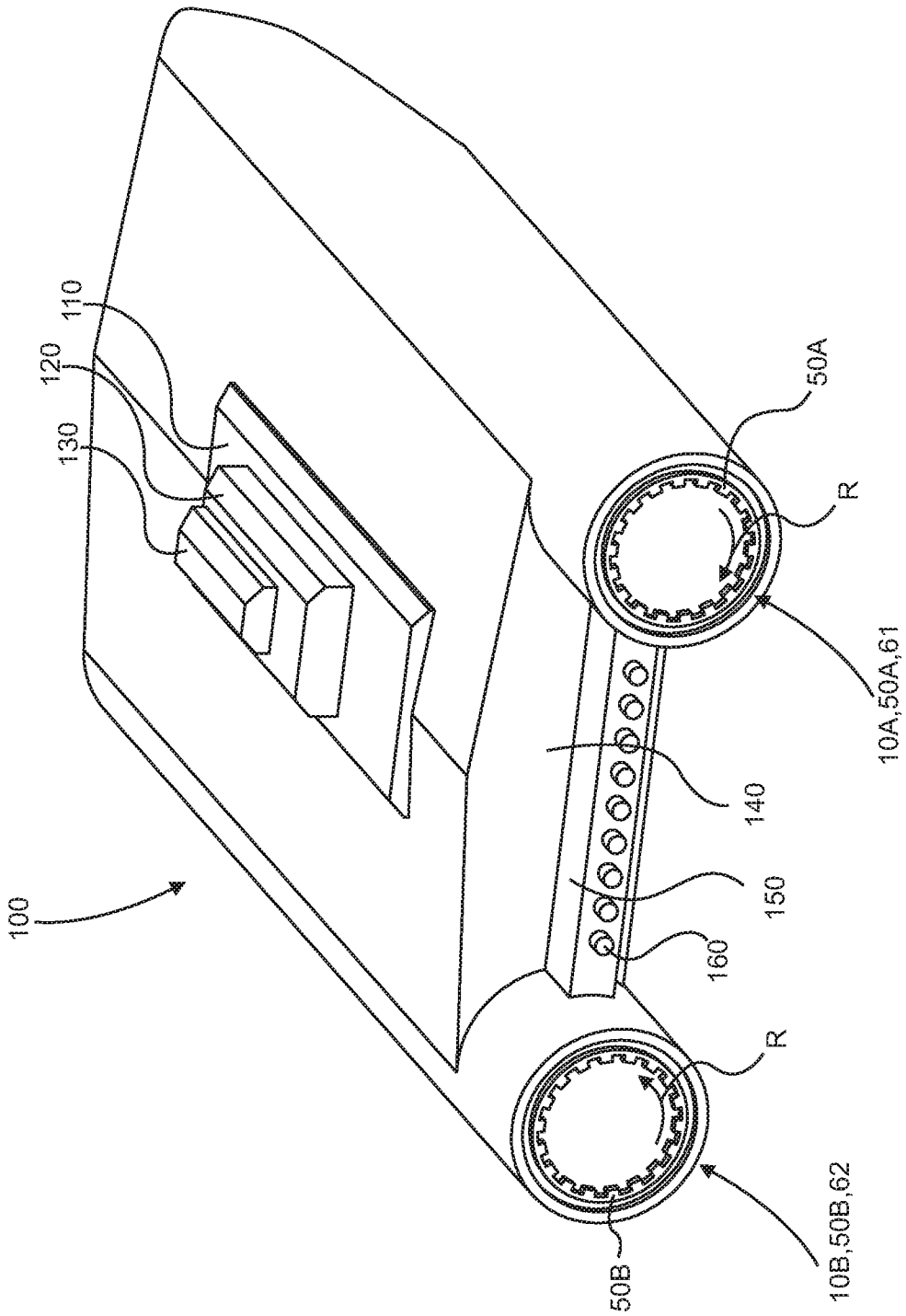



Fig. 2A

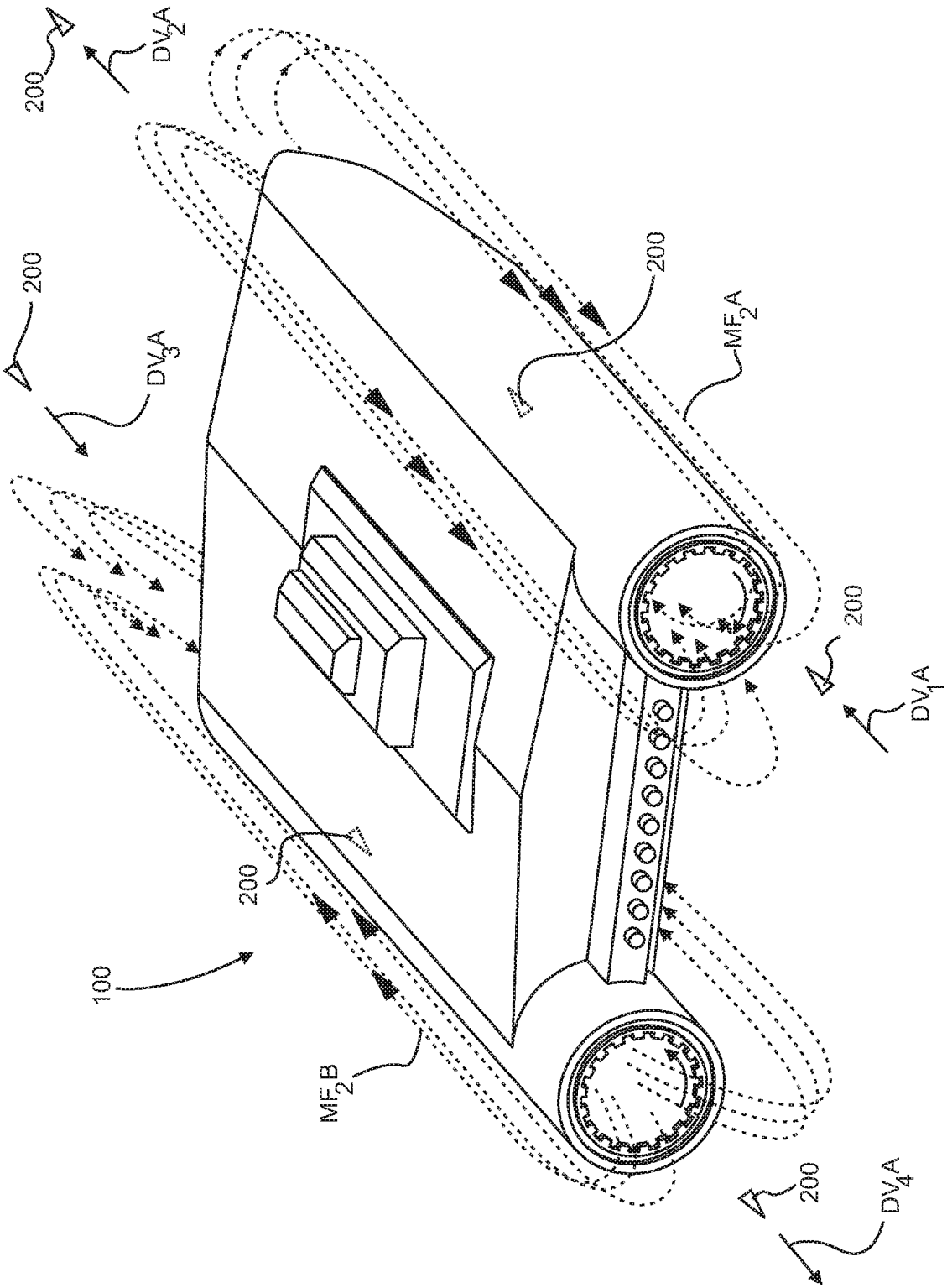



Fig. 2B

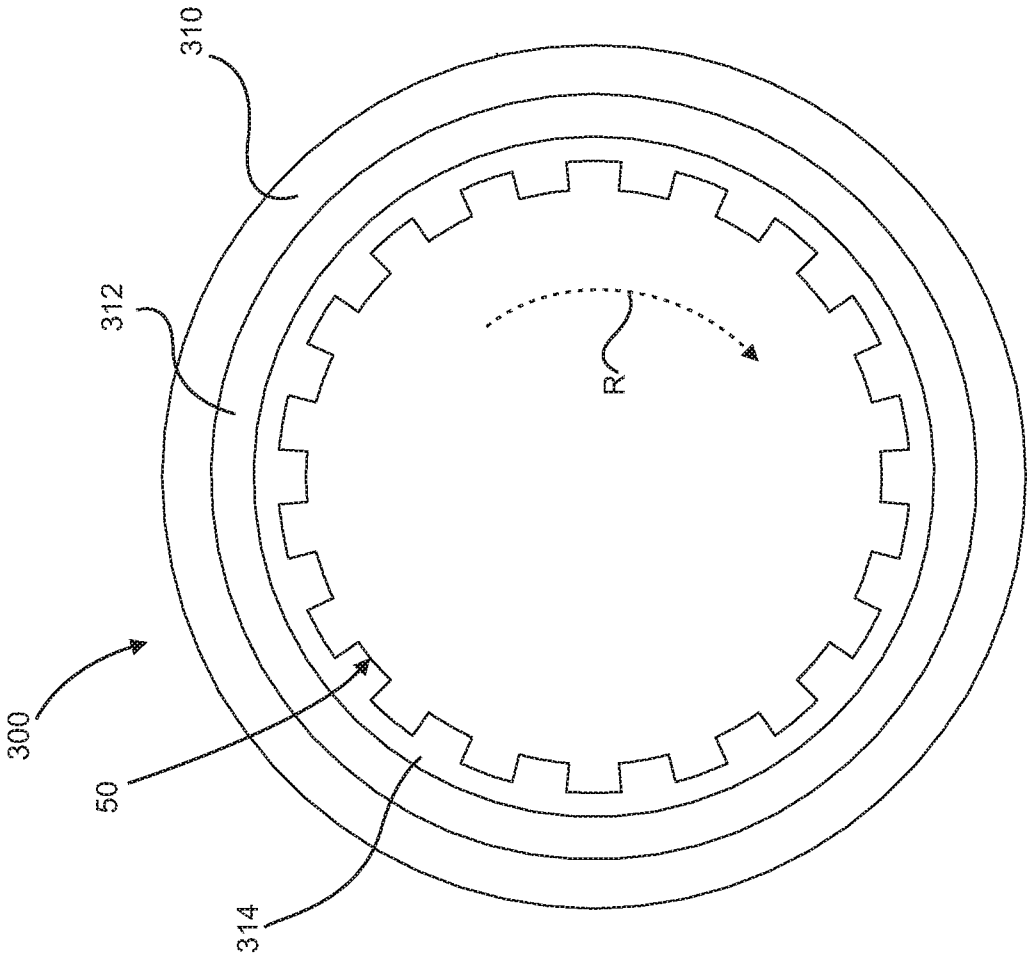



Fig. 3

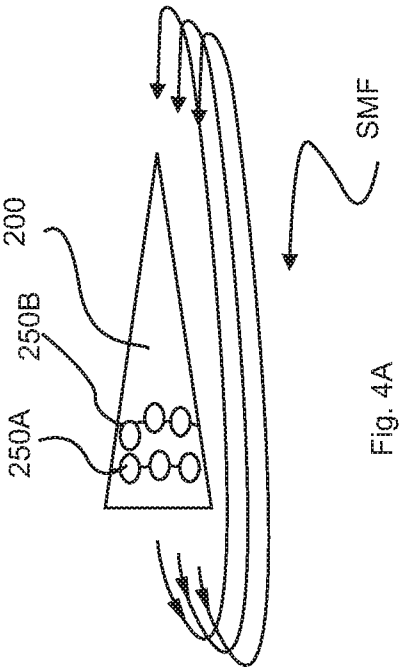



Fig. 4A

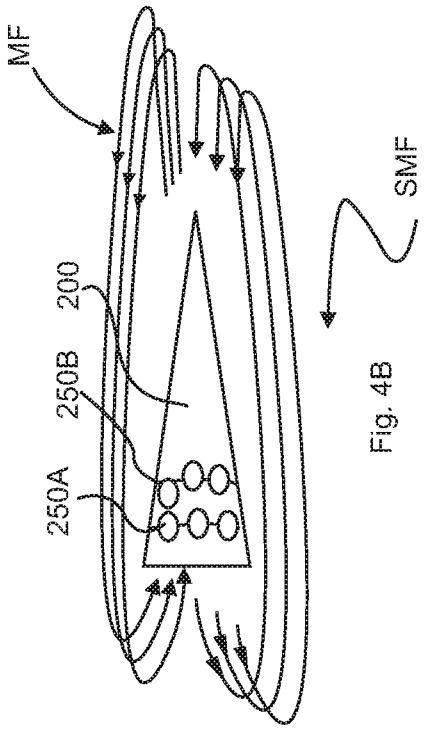



Fig. 4B

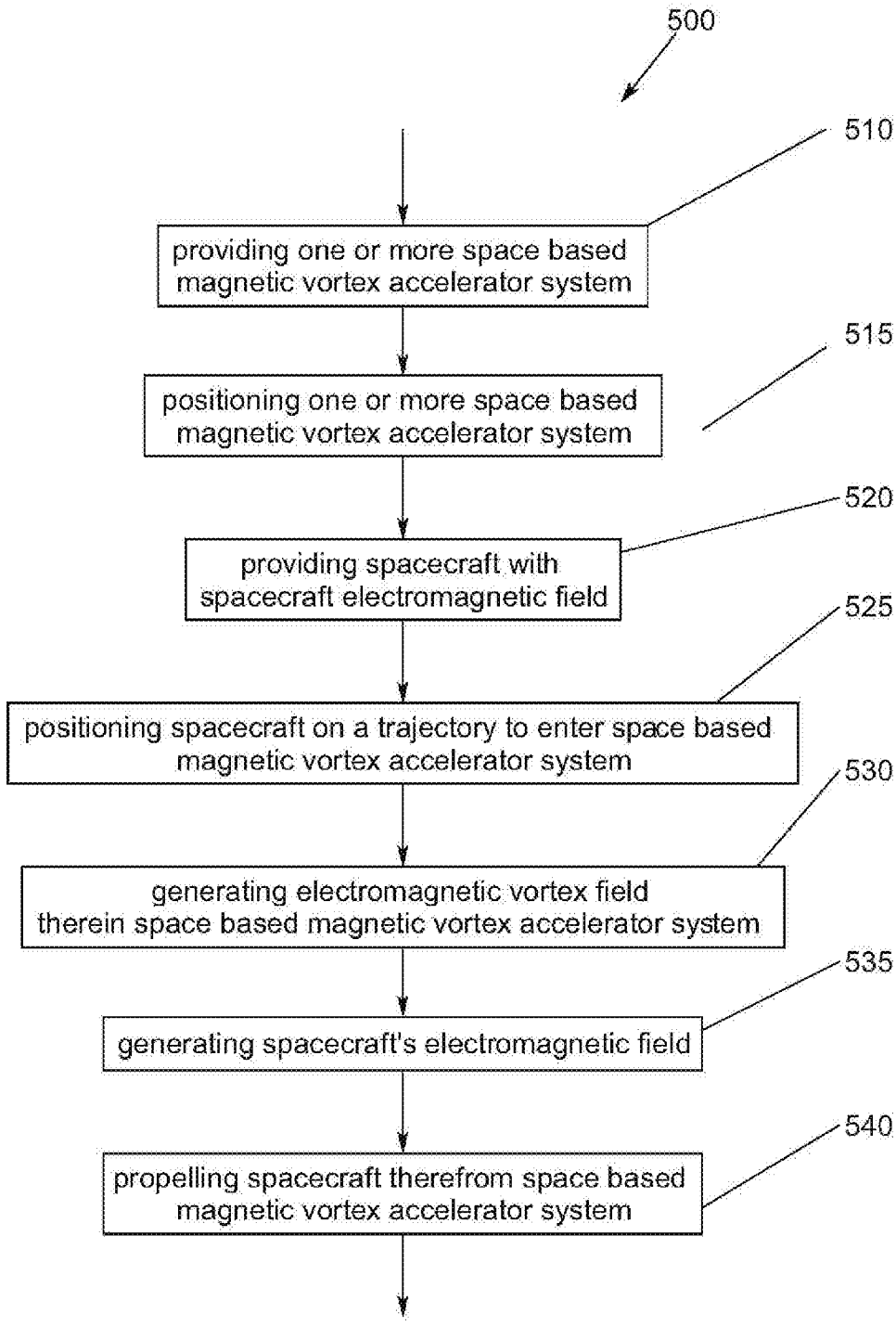

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providing one or more space based magnetic vortex accelerator system
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positioning one or more space based magnetic vortex accelerator system
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providing spacecraft with spacecraft electromagnetic field
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positioning spacecraft on a trajectory to enter space based magnetic vortex accelerator system
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generating electromagnetic vortex field therein space based magnetic vortex accelerator system
535
generating spacecraft's electromagnetic field
540
propelling spacecraft therefrom space based magnetic vortex accelerator system

Fig. 5