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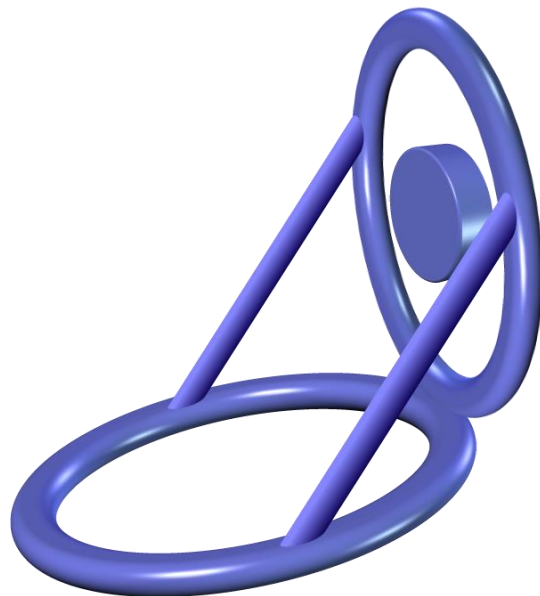
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The Liberty Belt

The liberty belt is a device that uses [impulse drive](#) technology to elevate and propel an individual over the surface of a planet, giving him or her the freedom to travel anywhere and everywhere without the need for a vehicle.

What is it?

The liberty belt comprises two small impulse drives, one horizontal and one vertical that can together propel its wearer in any direction. It is strapped to the back of its wearer's torso and powered by an energy cell mounted inside the vertical impulse drive.



The wearer steps into the horizontal impulse drive and lifts the unit onto his or her back via the two shoulder straps. Its wearer controls movement via a joystick mounted on the armrest (brace). Distance sensors ensure that no two belts can collide in transit, and alighting velocities are safely controlled.

Benefits

When used together with [anti-drag](#), there is sufficient energy in a kilogram of rock to power the belt and its wearer for more than a million kilometres.

Without anti-drag, this distance will be reduced to 100,000km, but given that such use will limit movement (velocity) to the air-pressure a human body can withstand, the kinetic energy requirement will be similarly reduced.

Powered by a [neutron energy cell](#), there is sufficient energy [stored] in a beach pebble to fuel the liberty belt on local journeys ($\approx 100\text{km}$) for more than a decade; and the fuel is free, clean, safe and silent; there is no exhaust.

The Liberty Belt

Abstract:

The present invention relates to a vehicle propelled by impulse drive that can travel under constant acceleration in any direction, by overcoming gravitational acceleration.

Cited Documents:

A: The impulse drive.

B: The minimisation of drag resistance.

C: The safe and controlled release of neutron energy.

References:

The Mathematical Laws of Natural Science; Keith Dixon-Roche; ISBN 979-8-61029-449-0

Definitions:

By definition: **3D** shall mean three dimensional; or any direction.

By definition: **velocity** shall mean the rate of change of distance, for example; metres per second (m/s).

By definition: **acceleration** shall mean the rate of change of velocity, for example; metres per second squared (m/s^2).

By definition: **force** shall mean an accelerating mass; force = mass multiplied by acceleration.

By definition: an **ID** shall mean a fully operational impulse drive system (cited document 'A').

By definition: a **Liberty Belt** shall mean a fully operational ID for personal use.

By definition: **EME** shall mean electro-magnetic energy.

By definition: a **power-supply** shall mean a device for energising an ID.

By definition: a **propulsion-system** shall mean a mechanism for propelling a liberty belt in a safe and controlled manner.

By definition: '**g**' shall mean the acceleration due to gravity at sea-level on the earth's surface (for example; $1g = 9.8066 m/s^2$).

Description:

The invention of the impulse drive (cited document 'A') facilitates the invention of a device that can carry an individual in any direction via two independent IDs (Fig A); the horizontal of which is fixed in its horizontal plane and the vertical of which is fixed in its vertical plane.

The liberty belt's power-supply may be any electrical storage or electrical generation facility, including but not limited to; neutron-energy, EME storage, batteries or mechanical engine fuelled by fossil fuels, hydrogen, helium, etc.

Its propulsion system (ID) induces in a liberty belt, a constant accelerative force; for example, the ID described in cited document 'A' induces a smooth 20-millisecond impulse every 84 milliseconds, which to all intent and purpose, may be deemed continuous; thereby endlessly increasing its velocity. This offers two key benefits;

- 1) Infinite potential velocity, and;
- 2) The ability to overcome a planet's gravitational acceleration;

enabling a liberty belt to carry its wearer in any direction; horizontal or vertical or any combination thereof.

A liberty belt's ability to overcome gravitational acceleration means that individual transit is no longer confined to road, rail, sea or space. In fact, if powered by neutron-energy (cited document 'C'), a kilogram of rock-fuel will carry its wearer on local ($\approx 100\text{km}$) journeys for more than a decade with no need to refuel. Moreover, a liberty belt need only carry sufficient fuel for a one-way journey to any destination, as it may be refuelled using the surface rock at that location. And the fuel it uses (anything containing neutrons), is free and universally available.

Given the minimal time required for an ID to cover great distances, when provided with an artificial source of oxygen and suitable protective clothing, a liberty-belt's wearer can travel at any altitude to minimise atmospheric drag.

A liberty belt's entire external surface may be fitted with copious proximity and velocity sensors covering all three degrees of freedom. When considered together with; its multi-directional potential, the instant response of an ID together with the simplicity of computer-controlled navigation, accidental (or even deliberate) impact in a liberty belt may be, to all intent and purpose, eliminated.

The external surface of the liberty belt and/or its wearer may be supplied with 'anti-drag' (cited document 'B') to minimise or eliminate drag resistance when travelling through an atmosphere.

Design Options:

The liberty belt is primarily a pair of IDs mounted at 90° to each other giving its wearer the ability to travel in any direction by inducing a combination of vertical and horizontal forces. However, there are a number of options that may be applied to the basic design to optimise performance and efficiency:

- 1; the liberty belt may be propelled by a single ID (impulse drive system) that can be rotated about a central pivot (Fig C);
- 2; the conventional ID configuration (Fig A) may be mounted on its wearer at any angle ($\neq 90^\circ$), but would require more complex ID control when hovering or in transit;
- 3; the individual IDs may be mounted on its wearer at any angle (relatively or otherwise), but would require even more complex ID control when hovering or in transit;
- 4; the IDs may be powered by any electrical storage or electrical generation facility including neutron-energy (cited document 'C');
- 5; the ID's outer surface may be fully or partially covered with 'anti-drag' (cited document 'B').
- 6; the ID's outer surface may be fully or partially covered with distance sensors to alter direction and movement thereby minimising the potential for accidental (or deliberate) impact.

Benefits:

The unique features of this appliance are that it;

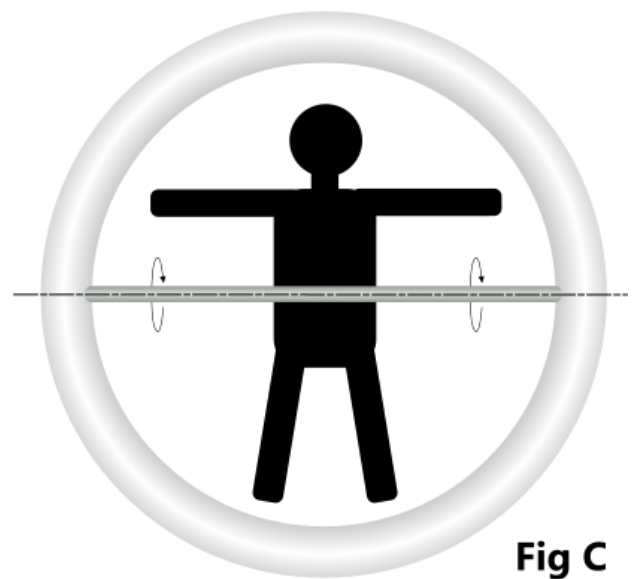
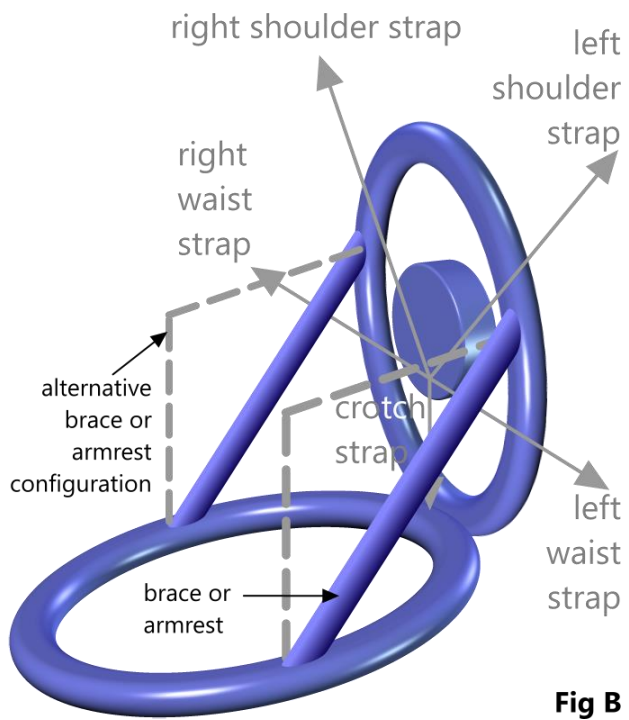
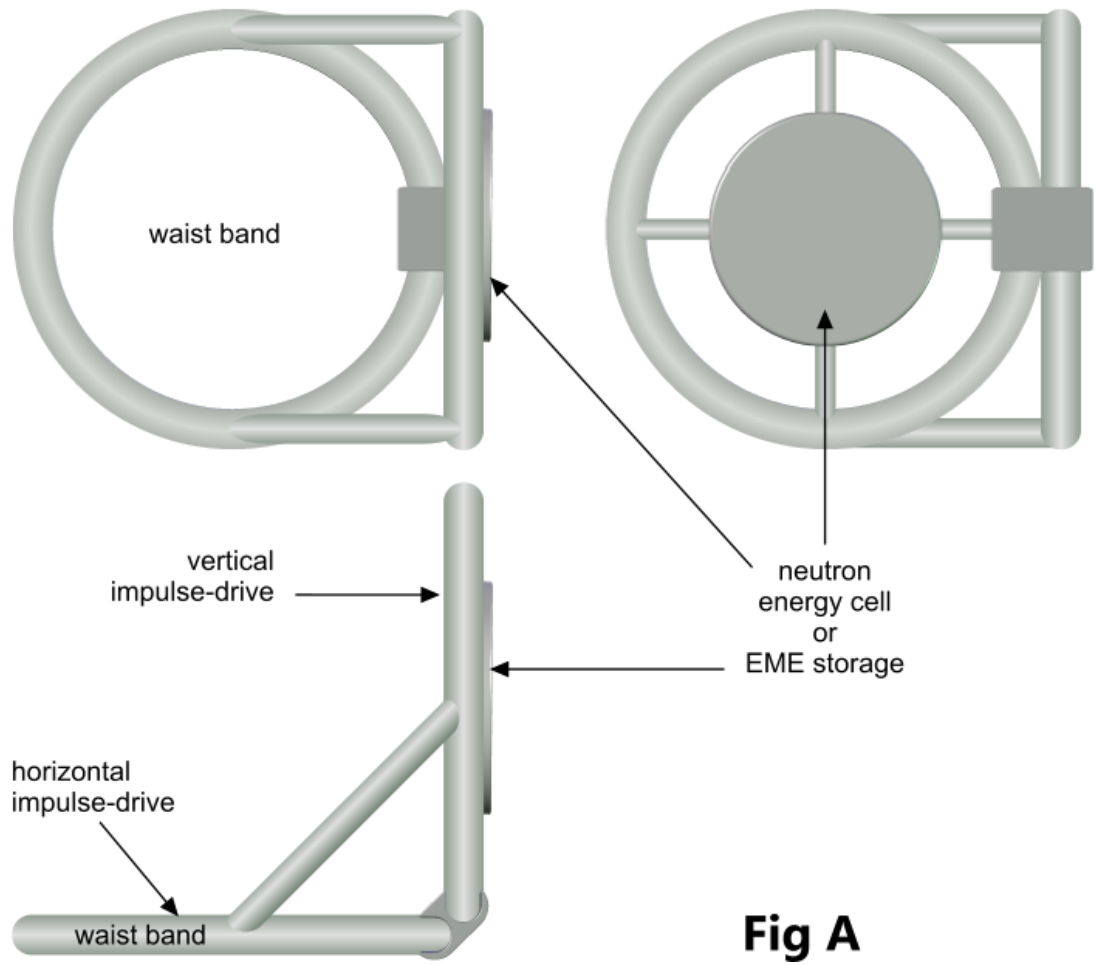
- 1a. replaces all other forms of transport and transit;
- 1b. allows travel in a 3D environment;
- 1c. renders accidental impact virtually impossible;
- 1d. can travel between origin and destination entirely under acceleration/deceleration;
- 1e. can travel through an atmosphere with negligible drag resistance when fitted with anti-drag capability;
- 1f. renders redundant all roads, railways, ports, airports, bridges and associated infrastructures;
- 1g. can be manufactured any size ...

... and if fuelled with neutron energy (cited document 'C');

- 2a. costs nothing to run;
- 2b. rarely needs refuelling;
- 2c. can be refuelled anywhere on the planet (e.g. rock);
- 2d. eliminates the risk of fire in an accident (see 1c above);
- 2e. renders redundant all refuelling stations and associated infrastructure;
- 2f. requires no inlet for fuel ignition;
- 2g. issues no exhaust;
- 2h. is totally silent.

To summarise; the liberty belt is quiet, safe, fast, clean, reliable, offers a long operational life and its fuel is free and globally available if energised by neutron energy.

Figures:



Claims:

Refer to **Definitions** for a definition of the terms used in these claims.

1. A liberty belt propelled by two impulse drives fixed at 90° to each other; one of which is mounted in the vertical plane and one in the horizontal plane.
2. A liberty belt propelled by two impulse drives fixed at 90° to each other; neither of which is mounted in the vertical plane or the horizontal plane.
3. A liberty belt propelled by two impulse drives fixed at any relative angle other than 90° ; neither of which is mounted in the vertical plane or the horizontal plane.
4. A liberty belt propelled by two impulse drives fixed at any relative angle other than 90° ; one of which is mounted in the vertical plane.
5. A liberty belt propelled by two impulse drives fixed at any relative angle other than 90° ; one of which is mounted in the horizontal plane.
6. A liberty belt propelled by two impulse drives; one vertical and one horizontal, either or both of which rotate about their central axes.
7. A liberty belt propelled by a single impulse drive mounted vertically on a central pivot about which the impulse drive may rotate about its vertical central axis through $\pm 90^\circ$.
8. A liberty belt propelled by a single impulse drive mounted horizontally on a central pivot about which the impulse drive may rotate about its horizontal central axis through $\pm 90^\circ$.
9. A liberty belt that energises its impulse drive(s) using a neutron energy cell.
10. A liberty belt that energises its impulse drive(s) using electrical batteries.
11. A liberty belt that energises its impulse drive(s) using a fuel-burning mechanical engine.