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(51) INT CL<sup>7</sup>:  
**B64G 1/40**

(52) UK CL (Edition X ):  
**B7G G44G**  
**B7W WBX**

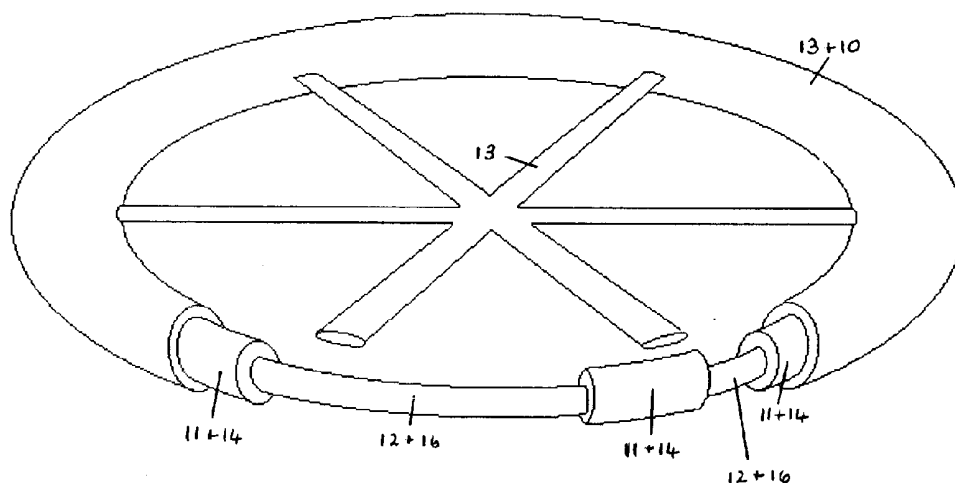
(56) Documents Cited:  
**DE 019713613 A** **DE 003100233 A**  
**JP 050187348 A**

(58) Field of Search:  
UK CL (Edition V ) **B7G, B7W**  
INT CL<sup>7</sup> **B64G**  
Other: **ONLINE: EPODOC, PAJ, WPI**

(54) Abstract Title: **Anti-gravity drive**

(57) A device which develops a force within itself which is in opposition to gravity such that it first becomes weightless and then produces useable, transferable, lift. The device comprises a rotating body 12, supported by a suitable bearing system 11, driven by motors 14, and contained within anti drag components 10 and a chassis 13. The lift produced is transferred to a recipient system by means of suitable mountings attached to the chassis 13.

**Fig 3**



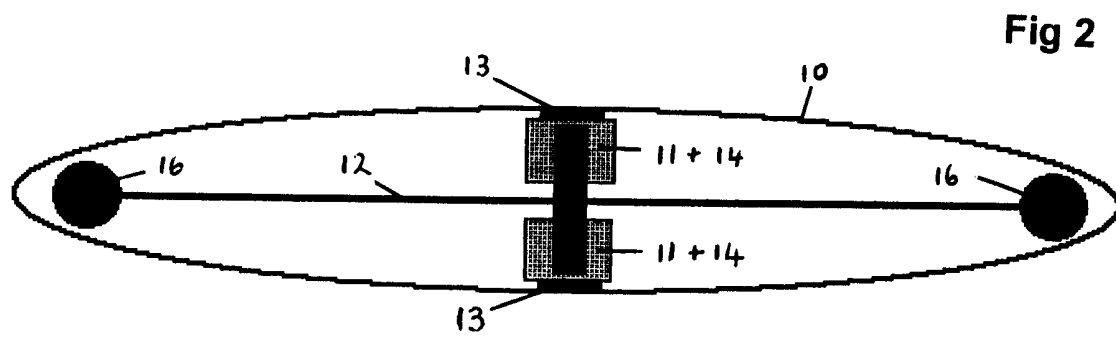
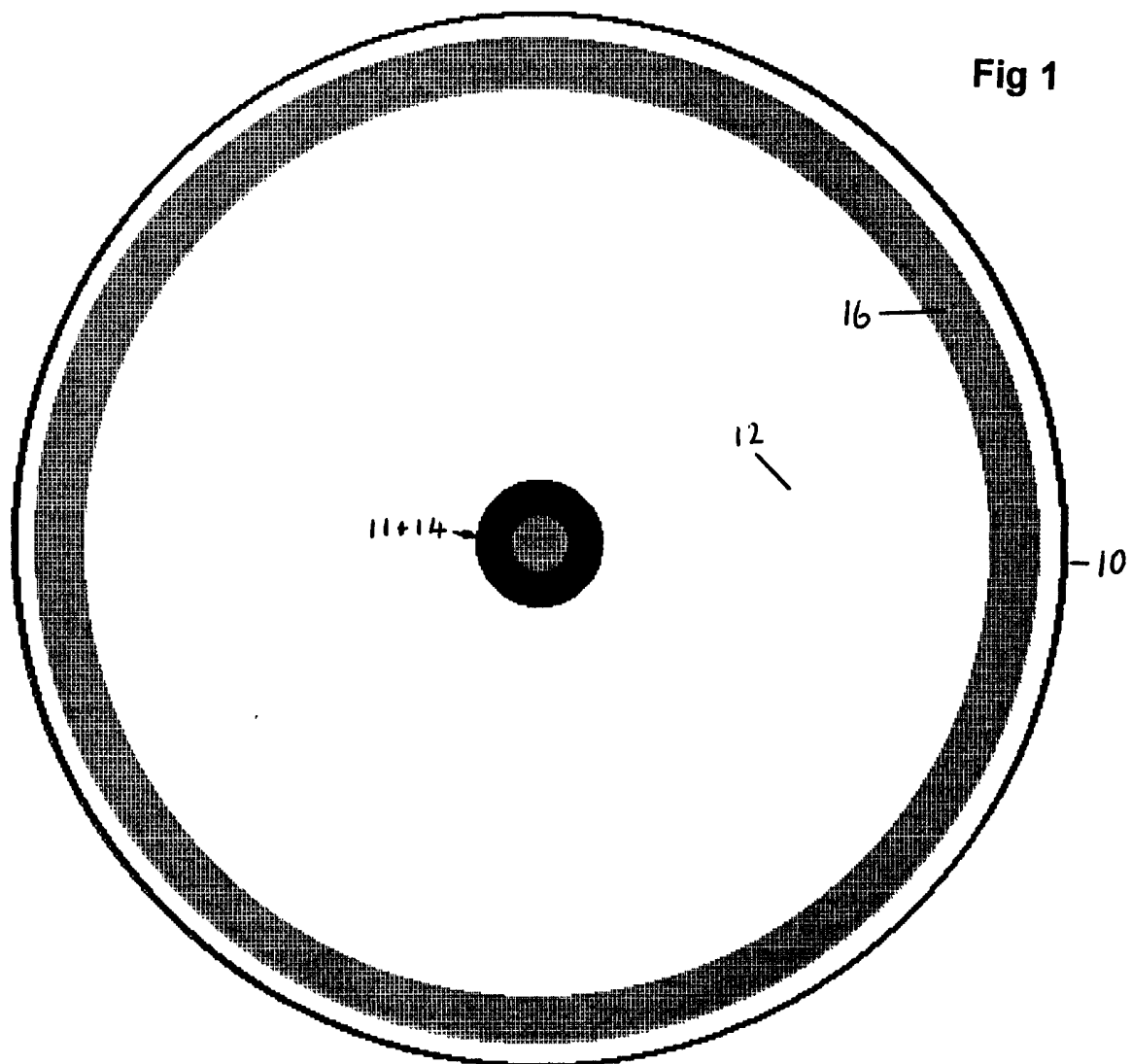


Fig 3

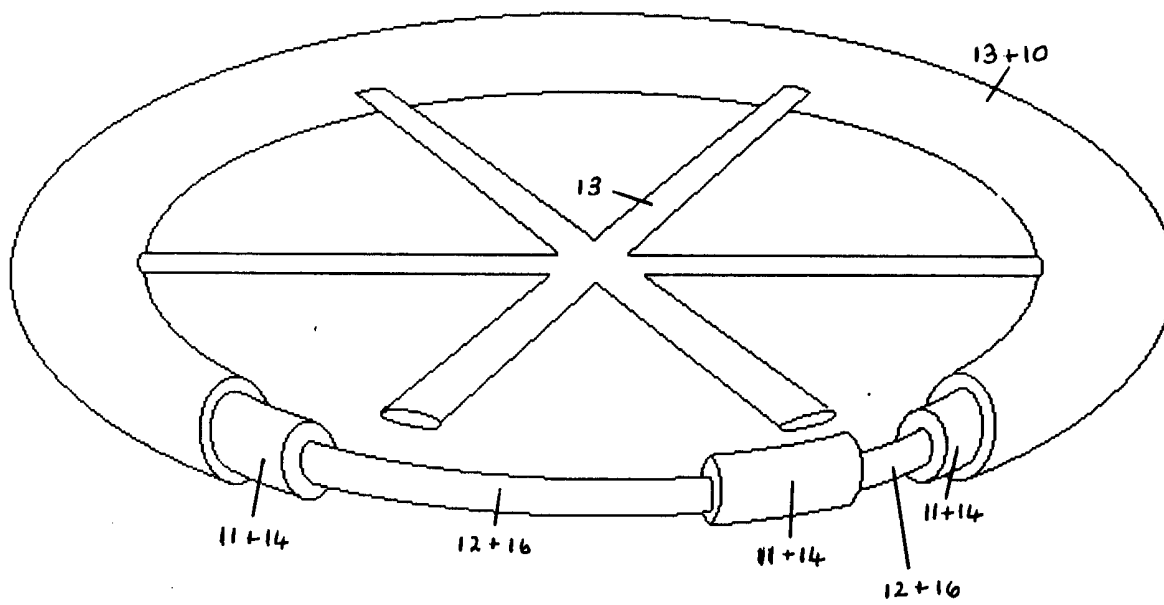


Fig 4

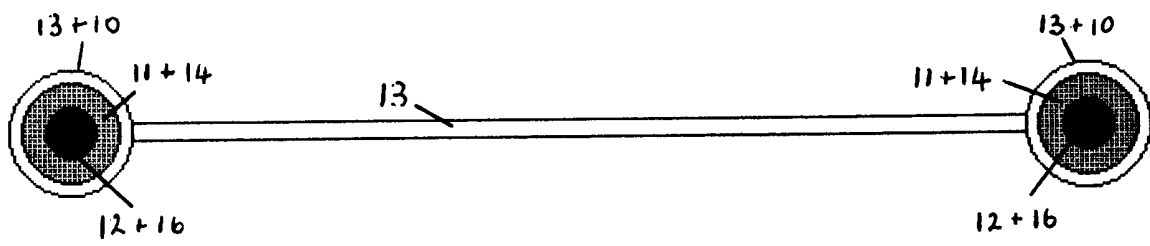
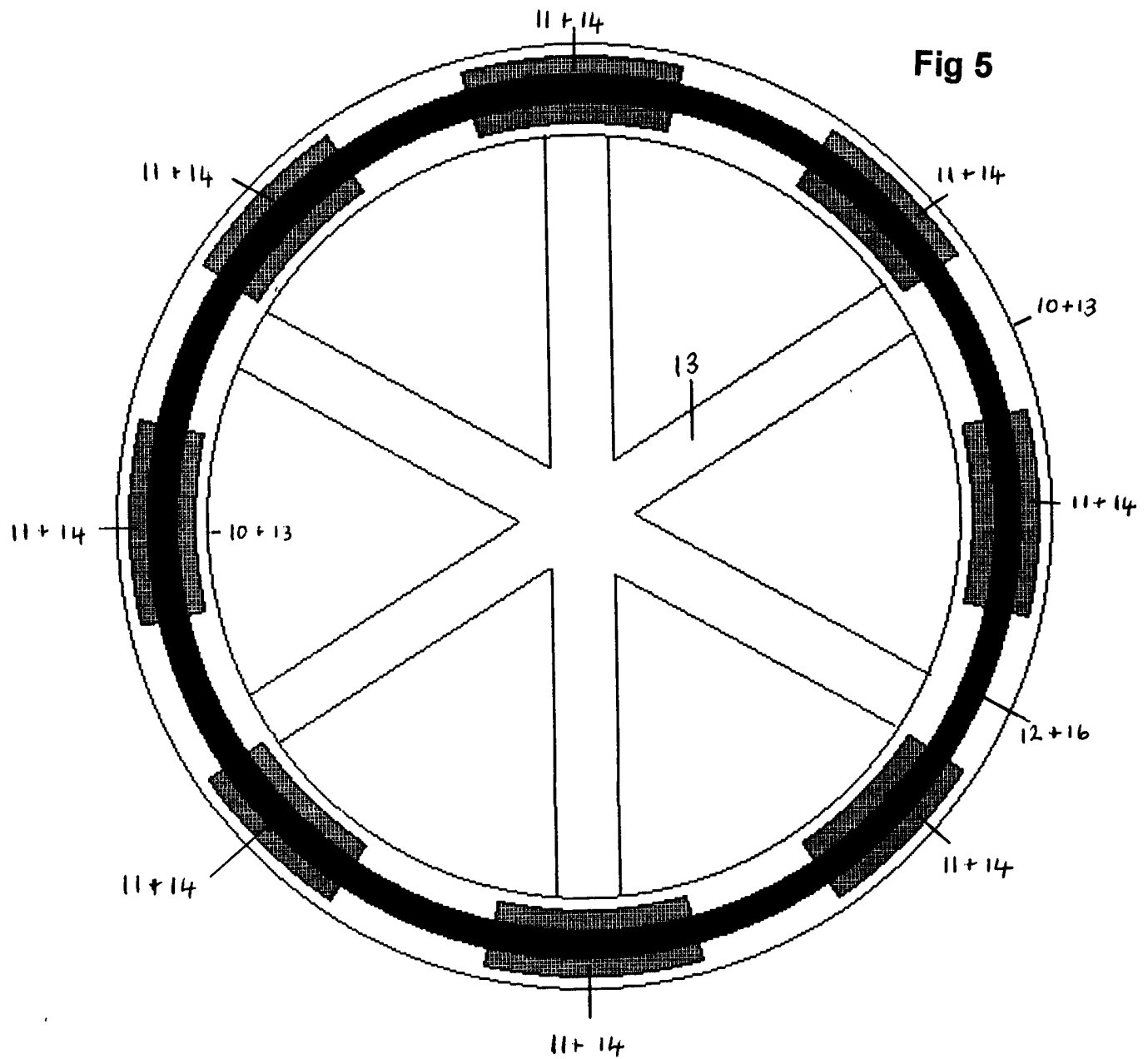


Fig 5



## Anti-Gravity Drive

This invention relates to an engine which develops an anti-gravitational force

**Gravity is a force which has hitherto been resisted by means of mechanical support, flotation, aerodynamic lift and external thrust, all of which have limitations. A self-contained device which can oppose gravity without external thrust or support has not been possible to date. A coherent physical principal by which such a device can act has not previously been established or recognised. If a device can be made which will produce lift entirely within itself and independent of any external influence apart from gravity itself, it will provide a revolution in what is possible in certain motion systems. These systems include flying machines, lifting machines, and vehicles which would give easy access to space beyond the earth's atmosphere. The anti-gravity drive can provide this lift.**

The anti gravity drive operates on sound and simple physical principles. It exploits known force vectors in order to create lift. This lift is variable and can be controlled to achieve the requirements of the system in which it is operating. The lift is produced within any gravity field and acts in direct opposition to the force of that gravity. The device will operate in or out of an atmosphere and would lift a suitable vessel from earth into space.

According to the present invention there is provided an anti-gravity drive. The anti-gravity drive comprises a rotating body with a vertical axis supported by a suitable bearing system, a motor or motive force to induce and control rotation, a support structure or chassis, anti-friction components, and mountings to secure the drive to whatever vessel or system it is to provide lift for. The rotating body and bearing structure have adequate provision to overcome frictional drag and to achieve and maintain specified very high rotational velocities. These velocities are in excess of 8000m/sec\* measured at the radius of gyration of the rotating body for an anti-gravity drive operating at the earth's surface.

The most efficient shape for the rotating body within the anti-gravity drive will depend upon the exact scale and use to which it is to be put, however the lift produced is dependent upon the rotational velocity of the effective mass of the rotating body. This is the rotational velocity measured at the radius of gyration of the rotating body and will hereinafter be described as the effective rotational velocity. This is maximised by concentrating the mass of the rotating body away from the centre of rotation and thereby increasing the

radius of gyration for that body. This has the effect of producing a higher effective rotational velocity for any given rate of rotation.

The actual size, weight and diameter of the rotating body of the anti-gravity drive can be varied. It is determined for any particular anti-gravity drive by engineering constraints and its required performance.

Two specific embodiments of the invention will now be described by way of the two examples with reference to the accompanying drawings.

Figure 1 shows a plan view of a rotating wheel type anti gravity drive with the weight concentrated toward the rim, and supported by axle bearings.

Figure 2 shows a cross section of the rotating wheel type drive

Figure 3 shows a cut away perspective of a rotating ring type anti gravity drive in which all its weight is automatically near the rim. This is supported by a system of motors and bearings through which it can pass as it rotates.

Figure 4 shows a cross section of the rotating ring type anti gravity drive.

Figure 5 shows a plan view of the rotating ring type anti gravity drive

Reference the drawings, to achieve the very high rotational velocities necessary and in an efficient manor the drive must be made to produce extremely low levels of friction within its mechanical parts and as a consequence of drag on the rotating body. A practical terrestrial drive would therefore run in a vacuum chamber 10. The bearings 11 are of the highest specification to maintain the motion of the rotating body 12 and to transfer the lift produced to the frame or chassis 13.

In both examples and all five figures the bearings and motors are integrated and shown as a combined structure, i.e. 11 + 14. However their exact configuration, and possible separation would depend upon the scale and the engineering qualities of a particular anti-gravity drive.

In the case of example 2 where the rotating body is a ring, the bearings and motors - 11 + 14, must be mounted in the chassis in such a way as to move outward and inward as the ring expands and contracts due

to the centrifugal forces developed at various rotational velocities. The actual number and placement of the motors and bearings in this example will vary according to scale and engineering design.

The motor or motors 14 must be capable of accelerating the rotating body up to very high velocities. To produce actual lift the Drive's rotating component must achieve a specific effective rotational velocity.

Effective rotational velocity can be expressed as 
$$= \frac{2\pi r}{t}$$
 where  $r$  = radius of gyration and  $t$  = time period for 1 revolution.

Therefore in order to maximise the effective rotational velocity, the value of  $r$  needs to be at a practical maximum. This is achieved by concentrating the weight of the rotating body in the rim 16. In the case of Figures 3 & 4 where the rotating body is a ring, the rotating body 12 and the rim 16 are one and the same.

Lift is produced by the rotating body when its effective rotational velocity exceeds the value of the orbital velocity for any mass travelling in a standard circular orbit around the earth (or any other planet the drive is to operate on) at the altitude the drive is operating at. For a Drive on the earth's surface this is approximately 8000m/sec \* from which the value of  $t$  can be readily calculated for any rotating body where the radius of gyration is known.

When this velocity is achieved the rotating body of the Drive becomes weightless. When this velocity is exceeded the rotating body begins to accelerate upward. This upward acceleration multiplied by its mass gives the value of the lifting force of the rotating body. When this lifting force exceeds the opposing weight of the Drive's non-rotating components it will produce a net anti-gravitational force which is transferable to any device to which it is fixed by a system of mounting points adequately attached to the chassis 13

\*The approximate figure for orbital velocity given here as 8000m/sec is based on values for planetary properties such as its radius and gravitational force. This number can be calculated with a high degree of accuracy, but it is shown as approximate here to describe an order of magnitude only. The one absolute which will enable exact design and manufacture of an anti-gravity drive is given as stated by:-

Effective rotational velocity to produce weightlessness in the rotating body = Orbital velocity for a circular orbit passing through the position of the anti gravity drive.

Important design criteria.

1 The total anti-gravitational force produced by the anti gravity drive is proportional to the square of the effective rotational velocity.

2 The rate of rotation of the rotating body is inversely proportional to its radius of gyration for any given value of effective rotational velocity.

Criterion 1 gives the following;

An anti-gravitational force equal to 1g (gravity) is produced when  $v$  = orbital velocity as described earlier.

This means that the rotating body generates an upward force of  $mg$  - i.e. its own weight, at this velocity.

Gravity generates a downward force of  $mg$ . These cancel out and the rotating body becomes weightless.

If  $v$  is increased by 10%, for example, then since the anti-gravitational force is increased in proportion to the square of this velocity then the new anti-gravitational force is  $mg \times (1 + 10\%)^2$  or  $mg \times 121\%$

This means that  $mg \times 21\%$  is now surplus to the  $mg \times 1$  required to oppose the weight of the rotating body and is available as a lifting force. The weight of the non rotating components of the anti-gravity drive expressed as a percentage of the weight of the rotating body will readily show the value of the effective rotational velocity required to cancel this out and begin to produce a net anti-gravitational force. The value of this net anti-gravitational force can also be readily calculated in terms of the effective rotational velocity.

Criterion 2.

Whatever effective rotational velocity is required will be achieved with a lower rate of revolution for a rotating body which has a larger radius of gyration. As an approximate guide, a rotating body with a radius of gyration of 1m will require a rate of revolution of approximately 1,270 c.p.s.\* to become weightless. A rotating body with a radius of gyration of 10m. will require a rate of revolution of approximately 127c.p.s.\*



## Claims

- 1     An anti-gravity drive comprising a rotating body with a vertical axis supported by a suitable bearing system, a motor or motive force to induce and control rotation, a support structure or chassis, anti-friction components, and mountings to secure the drive to a vessel or system it is to provide lift for. The rotating body and bearing structure has adequate provision to overcome frictional drag and to achieve and maintain specified very high rotational velocities.
- 2     An anti gravity drive as in claim 1 where the rotating body has an axis which is not vertical
- 3     An anti gravity drive as in claim 1 or claim 2 with a rotating body in the shape of a ring contained by bearing structures, motors and vacuum chamber as in Figures 3 , 4 & 5
- 4     An anti gravity drive as in claim1 or claim 2 with a rotating body in the form of a wheel with weighted rim, contained by a structure and vacuum chamber as in figures 1 & 2
- 5     An anti-gravity drive as claimed in any preceding claim with more than one rotating body configured to control and overcome induced rotation in the non-rotating parts.

- 6 An anti gravity drive as claimed in any preceding claim which has an on board power supply for the motors as well as a the facility to accelerate the rotating bodies to their required rotational velocities using an external power supply.
- 7 An anti-gravity drive as claimed in any preceding claim which has no vacuum chamber as it is designed to operate only in space.
- 8 An anti-gravity drive as claimed in claims 1 to 6 inclusive, which has no vacuum chamber but overcomes frictional drag by good design and the input of sufficient energy, and has adequate means of cooling.



INVESTOR IN PEOPLE

**Application No:** GB 0316166.8  
**Claims searched:** 1-8

**Examiner:** Tom Roberts  
**Date of search:** 17 December 2003

## Patents Act 1977 : Search Report under Section 17

### Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance	
X	1 at least	DE3100233	(BERNECKER STEFAN) See abstract
X	1 at least	JP5187348	(TETSUO HATTORI) See abs, figs
X	1 at least	DE19713613	(KAEHLER KAI) See abs, fig

### Categories:

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

### Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC<sup>v</sup>:

B7G, B7W

Worldwide search of patent documents classified in the following areas of the IPC<sup>7</sup>:

B64G

The following online and other databases have been used in the preparation of this search report:

EPODOC, PAJ, WPI