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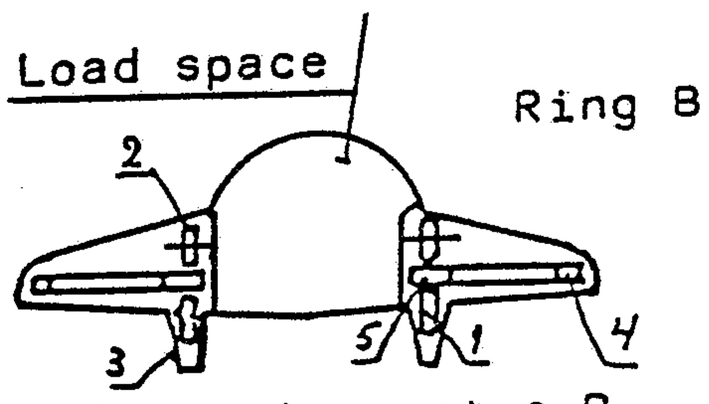

The Flying Apparatus B

(57) Abstract

The flying apparatus consists of a round frame, a ring, a steering and driving mechanism and of the working space. The apparatus is meant to be a new vehicle which is capable of gliding through the air from one place to another using power obtained from the moving masses and convections of the air. The flying apparatus looks like an upside-down saucer with wide edges and a flat bottom. The dome-shaped upper part accommodates the cockpit. The lower part houses the ring turning round its axis or its central point at a high speed. This ring also dominates the appearance of the apparatus (Fig. 1 and 2). The outer shell makes the apparatus very mobile in the lateral direction and prevents it from falling down quickly. The techniques of the flying apparatus are based on the high speed rotating ring which maintains the apparatus in the horizontal plane (gyrating motion) and resists any sudden movement. The ring B (FIG. 2), while rotating at high speed, annuls the weight of the apparatus, and the variations of the rings angular velocity make the apparatus easily steered.

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T H E F L Y I N G A P P A R A T U S

The flying apparatus is composed of a round body, a ring, a control and driving mechanism and a payload space. The apparatus is intended to be a new vehicle by means of which it is possible to move from one place to another by utilizing air masses and flows. The apparatus belongs to the area of aircraft construction.

At present the heavier - than - air vehicles used are aeroplanes, helicopters and autogiros. They are highly advanced vehicles applied to a variety of different uses. The mechanism of the flying apparatus, which will partly replace conventional air vehicles or perform some new duties will be introduced in the following.

The flying apparatus maintains its horizontal position because of the gyroscopic effect. Corresponding patents can be found in class B 64 C. Secondly the sustension of the flying apparatus is based the sentrifugal and centripetal forces produced by the ring. There are no patents in this field. Thirdly, the streamline form of the apparatus is known and calculated from the experimental values of aircraft wing.

The invention is based on the good gliding properties of a round flat object and on the fact that the kinetic energy of a fast-moving ring is able to compensate the potential energy caused by gravitation.

The moment of inertia of the ring

$$J = \frac{1}{2} \times m \times r^2$$

J = moment of inertia
m = mass of ring
r = radius of ring

The kinetic energy of the ring

$$W = \frac{1}{2} \times J \times UU^2$$

W = kinetic energy
J = moment of inertia
UU = angular speed

The drag pfoduced by the shell of the flying apparatus can be calculated from the experimental values of aircraft wings and the formulae of the kinetic energy of the ring can be found in books of physics.

The flying apparatus is a new kind of vehicle. The aircraft for different purposes are highly specialized. The individual advantages have in most cases been obtained by a wasteful use of energy. The flying apparatus uses energy sparingly by utilizing air flows to produce its motion. The present aircrafts are also rather limited in size, the flying apparatus can be built very big. Only very few of the present aircraft

can move easily in the vertical direction. One of the main properties of the flying apparatus is its ability to move in this direction. Staying in its place in the air has only been possible in a few solutions. The flying apparatus is a new alternative in this respect too. Besides, the apparatus combines some of properties of a conventional aeroplane and a satellite.

The apparatus will bring decisive improvementsto the disadvantages mentioned above. To achieve this the apparatus has the characteristics which have been presented in the identification part of the patent claims.

The most important advantage of the flying apparatus is that by utilizing air flows it is possible to hover from one place to another. By using energy the apparatus is kept in the horizontal position and if there is no wind it is sustained at a desired altitude, Whereas in a storm energy is only needed to balance the apparatus. It usually moves along curved paths.

In the following the apparatus is described in detail with reference to the drawings.

Fig. 1. The Flying Apparatus A is the 1st application, which is fitted with a ring connected to a fixed shaft.

Fig. 2. The Flying Apparatus B, with a double ring.

Fig. 3. Ring A, with a fixed shaft, through which the torque is transmitted.

Fig. 4. Section on L - L of ring A

Fig. 5. Ring B with a hollow shaft. The free - running wheels above the edge support the whole apparatus and when the ring is stationary, the wheels in the lower part of the body support the ring.

Fig. 6. Section on L - L of ring B.

Fig. 7. Ring C is the second application. In it rings of the types A and B, having a high angular acceleration, rotate independently and are fixed to the larger ring.

Fig. 8. Section on L - L of ring C.

The shape of the apparatus is based on the minimum resistance to the air thus improving the gliding properties. The shape of the flying apparatus and the fast - rotating ring together give the apparatus its flying properties. The kinetic energy imparted by the ring has not

so far been utilized. As a space object the ring combines all the three co - ordinate axes and the forces to different directions produce moments in relation to the other axes. These moments are systematically utilized in the flying apparatus.

The flying apparatus looks like a upside - down saucer with wide flat edges Figs 1. and 2 . The alterations in the construktion of the apparatus are caused by the ring used, which may be of type A Figs. 3 and 4., type B Figs 5. and 6. or type C Figs. 7. and 8. The supporting ring C, which is round in figures 7. and 8., can also be some other plane figure.

Ring B Figs 5 and 6 suits all sizes of the apparatus. The part of the ring between outer, item 4 and inner, item5 ring is only ment for the generation of kinetic energy. The inside part of the ring Fig. 2 item 5, is the driving gear and part of the payload space. The door openings can be made either in the upper or lower part of the shell. The weight of the flying apparatus on the ground is supported on telescopic legs Figs. 1. and 2 , item 3, or other supports. While at use, the weight of the ring is partly on the free - running wheels inside the supports Fig. 2 ,item 1. Ring B gets its kinetic energy via the inside of the inner ring, which is fitted with a frictional surface or toothed wheel. Any modern engine can be used as a source of power, in big units even a nuclear reactor. While ring B, Fig. 2 , is in operation, the supporting, wheels item 2 installed radially above the inner ring, item 5, rotate. These wheels support the whole apparatus, when it is in motion. The payload space extends from the bottom structures through the inner part of ring B, Fig. 2 item 5., to the dome of the apparatus, where the steering and control equipment are arranged. The outer part of ring B Fig. 5. item 4., is the so-called mass ring, which is given great angular speeds.

As an application of the ring it is possible to use a ring which has a fixed shaft and is supported to the apparatus from this shaft only. Ring A Fig. 3. and section 4., is supported,to the structures of the apparatus through the shaft. The bending between the periphery and the centre becomes large between the operating and stationary stages, Fig. 1. if the ring is large. Therefore ring A, Fig. 3. is recommended for small apparatuses only. The rotation of the ring is maintained by a motor which is directly coupled to the shaft. Ring A fills up the space

where it operates, Fig. 1. Entry and exit are from above.
The second application of the ring is ring C, Figs 7. and 8. In it, e.g. a 1000 mm diametre plastic pipe forms a supporting frame, where there are e.g. 10 rings of the types A and B with a diametre of 3000 mm. When the angular speed of a ring drops it descends and makes the whole ring system move in that direction. The supporting ring needn't necessarily be circular but it also be some other plane figure. The individual rings can be driven e.g. by means of compressed air. The periphery of the large ring C is surrounded by flaps, like landing flaps of an aircraft wing, by means of which the air masses around the flying apparatus are directed.

C L A I M S

1 The flying apparatus is characterized in that it is a flat and round vehicle, like an upside-down saucer, with wide edges and capable of gliding through the air from one place to another. The external appearance is aerodynamic and the crosscut of the apparatus is symmetrical in relation to the diameter. A ridge is running radially from the centre to the edge of the apparatus. The ridge serves as a side rudder. The lower part of the apparatus houses one or several rings turning round the axis at a high speed. The diameter of the rings is long. The effect of the rings on the size of the apparatus (FIG. 1 and 2) is crudial. The frame of the flying apparatus is self-supporting.

The ring part of the flying apparatus is characterized in that the ring's diameter is long and that the mass of the ring-shaped cylinder is homogeneous. The ring is rotated at high speeds. It is statically and dynamically balanced.

Ring B (FIG. 5, object 5) The functions of the inner ring are,

to support the entire flying apparatus, while in operation, by virtue of the rotating wheels above, (FIG. 2, object 2), to transfer the kinetic energy to the outer ring (FIG. 5, object 4),

to support the whole ring, while in rest, by virtue of the wheels below (FIG. 2, object 1), and,

to maintain the ring, while rotating, around its theoretic central point. The diameter length of the ring is from one metre to thousand metres and even more, depending on the application.

2 The apparatus according to Claim 1 is characterized in that the ring (FIG. 3 and 4) according to Claim 1 comprises a stationary axis which transfers the kinetic energy to the mass of the ring frame and supports the flying apparatus according to Claim 1.

3 The flying apparatus according to Claim 1 is characterized in that the ring part consists of rings according to Claims 1 and 2 in a stationary frame in the shape of a circle or (FIG. 7 and 8) of any plane figure.

4 The flying apparatus according to the Claim 1 is characterized in that the apparatus is equipped with motors that push in the level of the ring, and with steering oilerons.

AMENDED CLAIMS

[received by the International Bureau on 9 May 1985 (09.05.85);
original claims 1-4 replaced by new claims 1-4 (2 pages)]

1 The flying apparatus is characterized in that it is a flat and round vehicle, like an upside-down saucer, with wide edges and capable of gliding through the air from one place to another. The external appearance is aerodynamic and the crosscut of the apparatus is symmetrical in relation to the diameter. A ridge is running radially from the centre to the edge of the apparatus. The ridge serves as a side rudder. The lower part of the apparatus houses one or several rings turning round the axis at a high speed. The diameter of the rings is long. The effect of the rings on the size of the apparatus (FIG. 1 and 2) is crudial. The frame of the flying apparatus is self-supporting.

The ring part of the flying apparatus is characterized in that the ring's diameter is long and that the mass of the ring-shaped cylinder is homogeneous. The ring is rotated at high speeds. It is statically and dynamically balanced. Ring B (FIG. 5, object 5) The functions of the inner ring are,

to support the entire flying apparatus, while in operation, by virtue of the rotating wheels above,

to transfer the kinetic energy to the outer ring (FIG. 5, object 4),

to support the whole ring, while in rest, by virtue of the wheels below (FIG. 2, object 1), and,

to maintain the ring, while rotating, around its theoretic central point. The diameter length of the ring is from one metre to thousand metres and even more, depending on the application.

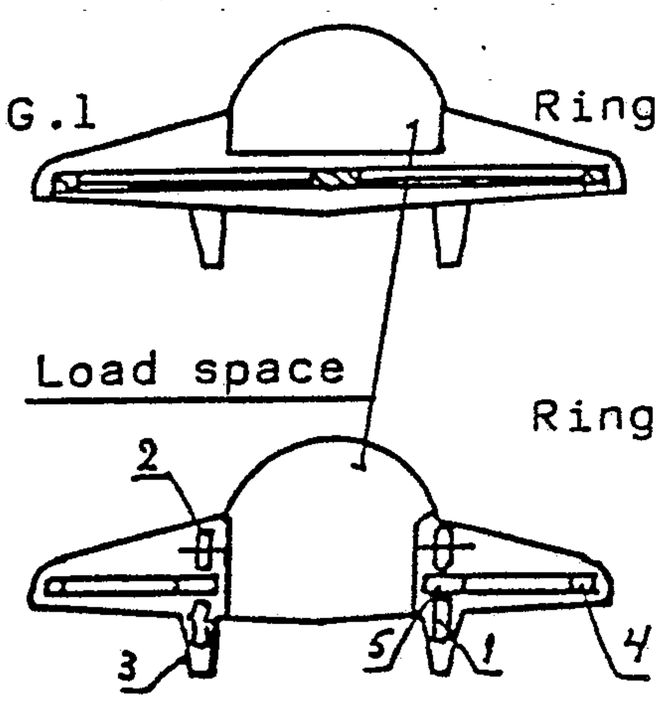
2 The apparatus according to Claim 1 is characterized in that the ring (FIG. 3 and 4) according to Claim 1 comprises a stationary axis which transfers the kinetic energy to the mass of the ring frame and supports the flying apparatus according to Claim 1.

3 The flying apparatus according to Claim 1 is characterized in that the ring part consists of rings according to Claims 1 and 2 in a stationary frame in the shape of a circle or (FIG. 7 and 8) of any plane figure.

4 The flying apparatus according to the Claim 1 is characterized in that the apparatus is equipped with motors that push in the level of the ring, and with steering oilerons.

The Flying Apparatus A

FIG.1



The Flying Apparatus B

FIG.2

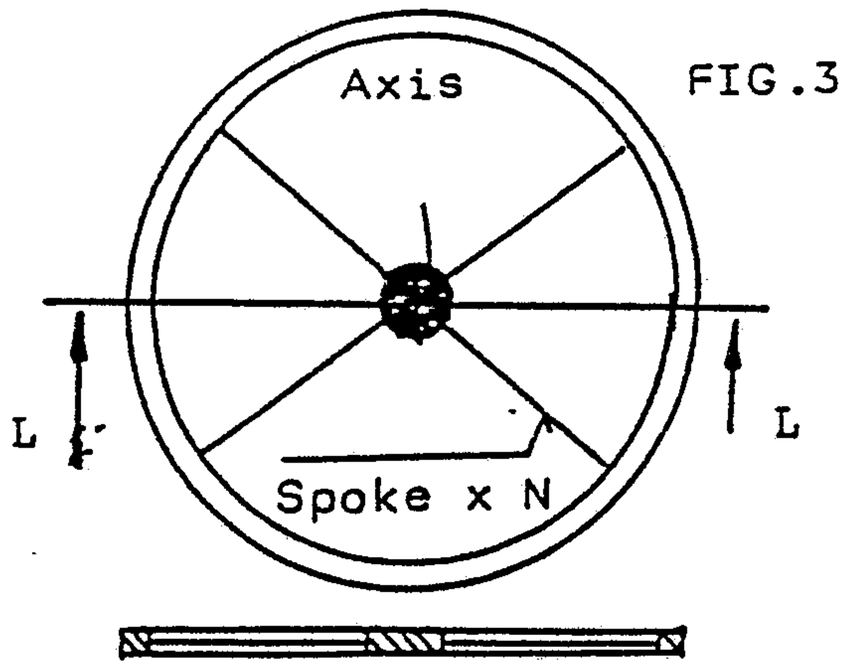
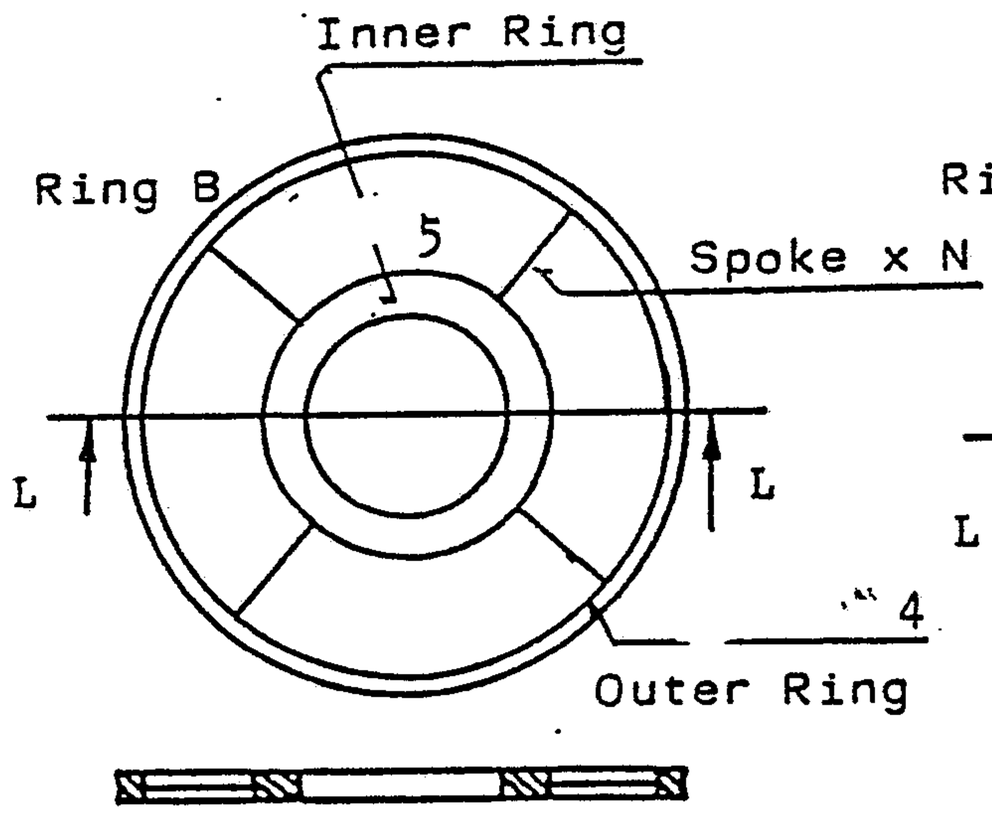


FIG.3

Section on L-L

FIG.4

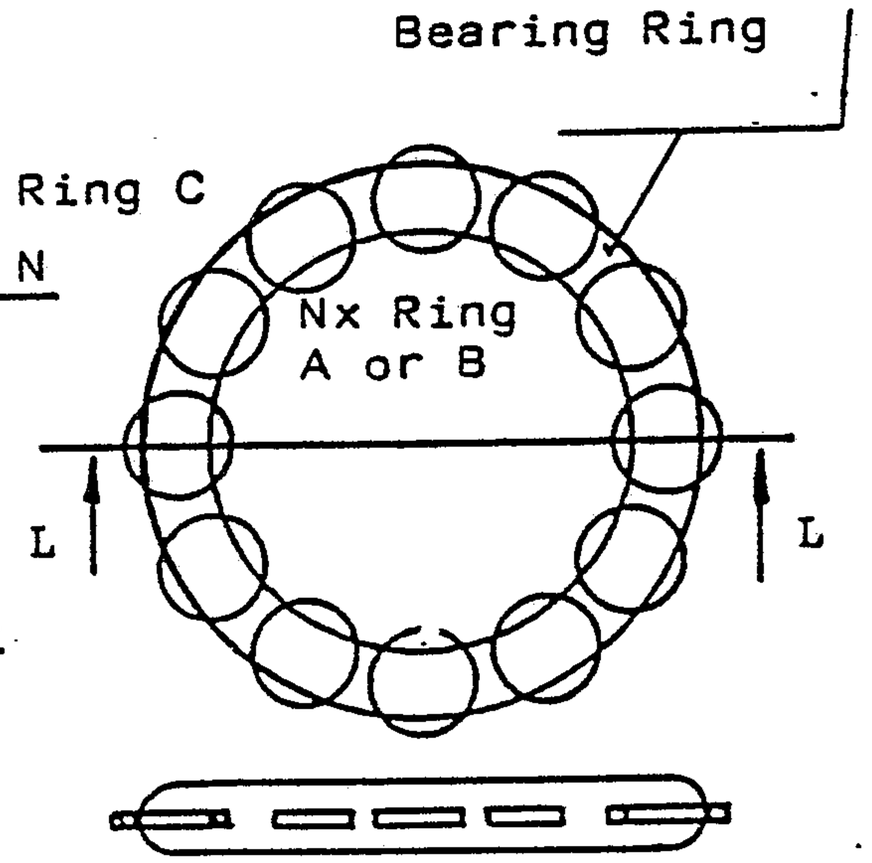
FIG.5



Section on L-L

FIG.6

FIG.7



Section on L-L

FIG.8

INTERNATIONAL SEARCH REPORT

International Application No PCT/FI84/00104

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) [6]

According to International Patent Classification (IPC) or to both National Classification and IPC 4

B 64 C 39/06

II. FIELDS SEARCHED

Minimum Documentation Searched [7]

Classification System	Classification Symbols
IPC	B 64 C 39/00,02,06,08,10; B 64 C 27/00

Documentation Searched other than Minimum Documentation to the Extent that such Documents are included in the Fields Searched [8]

SE, NO, DK, FI classes as above

III. DOCUMENTS CONSIDERED TO BE RELEVANT [9]

Category *	Citation of Document, [11] with indication, where appropriate, of the relevant passages [12]	Relevant to Claim No. [13]
Y	FI, A, 803 544 (KOUHIA NIILO) 13 May 1982	1-4
Y	FR, A1, 2 263 152 (FULGEANU SILVIU) 3 October 1975	1
A	DE, A, 1 940 047 (KLING ALBERTO) 18 February 1971	1

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