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(81) **Designated States** *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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Published:
— *with international search report (Art. 21(3))*
— *with amended claims and statement (Art. 19(1))*

(54) **Title:** POWER GENERATION SYSTEM

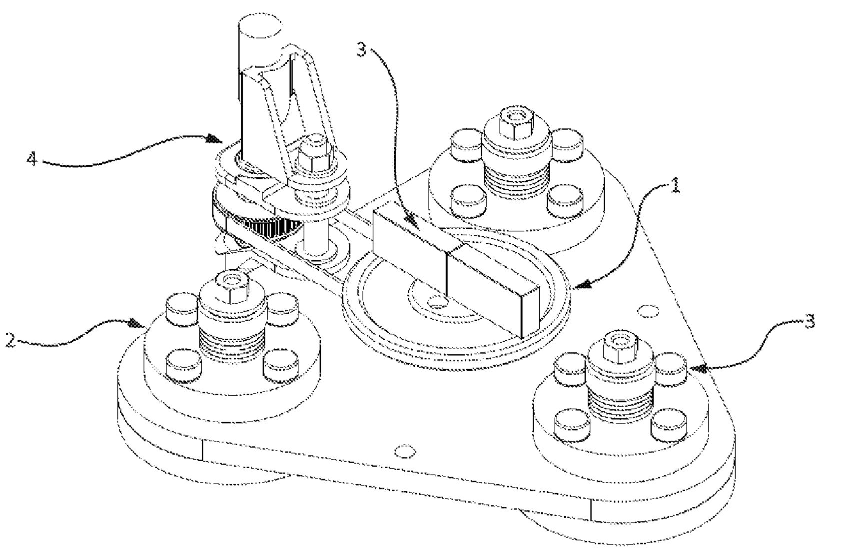

Figure 1

(57) **Abstract:** This application describes a power generation system. This application describes a power generation system which is mounted on at least one triangular shaped horizontal base on which is placed a cylindrical platform at the center, which is called a primary rotor, and a set of three cylindrical platforms, which are called secondary rotors, which surround the first rotor. The primary rotor and secondary rotors comprise a specific set of neodymium magnets and are fixed on vertical axis bearings mounted on the said horizontal base.

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DESCRIPTION

"POWER GENERATION SYSTEM"

Technical Field

This application describes a power generation system.

Background

With the phenomenon of global warming, society has become more receptive to research and development of new power generation systems.

One of the most widely studied interactions is the interaction between kinetic energy and magnetic energy, about which there have been many publications which formulate hypotheses for this phenomenon, without, however, presenting any form of practical realization which would allow for a real and concrete interaction between these two types of power.

The power generated by a magnetic relationship between two magnets happens due to the force of attraction and/or repulsion between their two magnetic poles. This relationship can create a repellent or attracting force, pushing the magnets away or bringing them together. To understand this kind of power generated by a magnetic relationship, it is necessary to understand the behavior of the magnets.

Magnets possess indivisible magnetic fields, in the sense that they all present two regions called the north pole and the south pole. According to current theory, the flow of electrons always passes from the north pole to the south pole. And in the case of neodymium magnets, this energy flow has a constant and unaltering working life, independently of its use, of over 30 years, provided that the magnets operate at a temperature of between 0°C and 50°C.

Summary

This application describes a power generation system comprising at least one triangular shaped horizontal base, on which is placed a primary rotor at the center, connected to a propulsion system, and a set of three secondary rotors, both fixed on vertical axis bearings secured to the said horizontal base, which surround the primary rotor, and whose spacing between the center of the primary rotor and the centers of the secondary rotors is always the same, wherein magnets are mounted on the said rotors.

In one embodiment, the primary rotor of the power generation system is placed in a higher position than the secondary rotors.

In yet another embodiment, the propulsion system of the power generation system is a motor reducer.

In another embodiment, the propulsion system of the energy generation system is connected to the primary rotor through a set of pulleys with a toothed belt.

In one embodiment, the energy generation system comprises at least two horizontal bases with an overlapping triangular shape and a propulsion system installed in the center of the lower triangular base.

In another embodiment, the propulsion system of the energy generation system is directly connected to the axis of the primary rotor through a coupling part.

In yet another embodiment, the north-south division of the magnets used in the secondary rotors of the energy generation system is in the axial direction parallel to the height of each magnet, while in the primary rotor this division is in a direction parallel to the width of each magnet.

In one embodiment, the horizontal base of the energy generation system is made from non-magnetic material with a low expansion coefficient.

In another embodiment, the magnets used in the power generation system are made of a neodymium-iron-boron alloy.

Still in one embodiment, the magnets used in the energy generation system are coated with an Ni-Cu-Ni alloy.

In one embodiment, the capturing of power produced by the power generation system is realized through bobbins positioned appropriately around the primary rotor and the secondary rotors.

In another embodiment, the capturing of the energy of the power generation system is realized through generators installed in the axis of the secondary rotors.

In one embodiment, the power generation system is installed in a sealed area in a vacuum.

The embodiments previously presented may be combined with each other.

Brief Description

This application describes a power generation system.

With this system, it is possible, for the first time, to create kinetic energy through the interaction of magnetic energy, with a system which allows full, constant and uninterrupted rotation of all the rotors which compose the system and which is fully replicable. The system hereby presented is able to produce energy through the magnetic interaction of the magnets existing in its rotors.

The system which is hereby presented at no time violates the law of thermodynamics or conservation of energy. The energy produced does not come from the energy consumed by the Power Generation System to keep itself working. This is why the output energy of the system bears no relation to the input energy of the system. In fact, the energy produced through the Power Generation System originates in the magnetic interaction of the magnets, preferably of neodymium, present in its rotors.

The Power Generation System is mounted on at least one triangular shaped horizontal base on which is placed a cylindrical platform at the center, which is called the primary rotor, and a set of three cylindrical platforms, which are called secondary rotors, which surround the primary rotor. The primary rotor and its secondary rotors comprise a specific set of magnets, which may be of neodymium, and are both fixed on vertical axis bearings mounted on the said horizontal base.

The primary rotor may be placed in a higher position than the secondary rotors. This position may be such that the tops of the magnets installed in the secondary rotors are on the same imaginary line as the base of the magnets installed in the primary rotor.

The propulsion of the Power Generation System is achieved through a motor reducer, which may be connected to the primary rotor through a set of pulleys with a toothed belt or directly to the axis of the primary rotor through a coupling part.

On activating the propulsion system, the primary rotor initiates and maintains a rotational motion at a constant speed and, immediately, the set of secondary rotors, through the magnetic interaction in its rotors, initiates and maintains a rotational motion at a constant speed. This magnetic interaction does not constitute any kind of magnetic coupling.

Through the magnetic interaction existing in its rotors, the Power Generation System generates kinetic energy capable of producing and keeping its secondary set of rotors in rotational motion at a constant speed without there being any physical connecting link between the primary rotor and its set of secondary rotors or any type of external energy physically connected to the set of secondary rotors.

To maintain the correct magnetic interaction between the magnets present in the primary rotor and the magnets present in the set of secondary rotors, a constant speed is imposed on the first rotor through the motor reducer which is directly connected to its axis through a coupling part or through a set of pulleys with a toothed belt. This speed is proportional to the intensity of the magnetic field of the magnets which are present in the set of secondary rotors. Another important relationship is the proportion between the mass and the magnetic intensity of each secondary rotor - just as there must be a correct proportional distance between each rotor, and in the height relationship between the primary rotor and the set of secondary rotors, through the intensity of the magnetic field of each rotor. If all these proportions and measurements are not respected, the capacity for the production of energy is greatly affected and may even prevent its functioning.

The force which the kinetic energy produces, capable of creating and maintaining the rotational motion at a constant speed in its set of secondary rotors, derives from the magnetic energy present in the magnetic elements of the Power Generation System. As a result, we can state that there is no waste.

With this Power Generation System, it is possible to achieve the following results:

- A high degree of efficiency. The system is capable of producing an approximate gain of 1600% on top of the energy which it consumes in order to keep itself working, bearing in mind a capture of only 10% of the energy produced;

- High production capacity;

- Capacity to produce energy 24 hours per day, in a constant and uninterrupted form, in closed environments and independently of the climatic state of the weather, provided that the ambient temperature is between 0°C and 50°C;

- Reduced area of occupation. Due to its physical typology, it occupies a smaller area and possesses great mobility of installation;

- Long working life. The estimated working life of the Power Generation System is over 30 years, providing that the periodic maintenance terms are respected;

- Zero waste production. During its operation, the system does not have any negative impact on nature or human beings, and does not produce any kind of waste.

Brief Description of the Drawings

For easier understanding of this application figures have been attached, which represent realizations which, however, are not intended to limit the technique hereby disclosed.

Figure 1 illustrates a schematic representation of one of the possibilities of the Power Generation System, where the following elements are represented:

1 – Primary rotor;
2 – Secondary rotor;
3 – Magnets;
4 – Propulsion system.

Figure 2 illustrates a schematic representation of one of the possibilities of the Power Generation System, where the following elements are represented:

1 – Primary rotor;
2 – Secondary rotor;

3 – Magnets;
4 – Propulsion system.

Figure 3 illustrates a representation of another view of the possibility of the Power Generation System presented in Figure 2, where the following elements are represented:

1 – Primary rotor;
2 – Secondary rotor;
3 – Magnets;
4 – Propulsion system.

Description of embodiments

With reference to the figures, some embodiments are described here in more detail, which is not intended, however, to limit the scope of the present application.

The present application describes a Power Generation System.

The Power Generation System is mounted on at least one triangular shaped horizontal base on which is placed a cylindrical platform at the center, which is called a primary rotor (1), and a set of three cylindrical platforms, which are called secondary rotors (2), which surround the primary rotor (1). The primary rotor (1) and each of the secondary rotors (2) comprises a set of magnets (3), preferably of neodymium, and they are both fixed on vertical axis bearings mounted on the said horizontal base. The Power Generation System presents a propulsion system (4) which may be executed by a motor reducer (4), which is connected to the primary rotor (1) through a set of pulleys with a toothed belt or directly to the axis of the primary rotor (1) through a coupling part.

On activating the propulsion system (4) the primary rotor enters and maintains a rotational motion at a constant speed (1) and, immediately, through the magnetic interaction in its rotors, the set of secondary rotors enters and maintains a rotational motion at a constant speed (2).

Through the magnetic interaction in its rotors, the Power Generation System generates kinetic energy capable of producing and maintaining its set of secondary rotors in a rotational motion at constant speed (2), which possess a combined mass greater than the mass of the primary rotor (1), at a constant average speed greater than the constant average speed of the primary rotor (1), without there being any connecting physical link between the primary rotor (1) and its set of secondary rotors (2) and without any type of external energy physically connected to its set of secondary rotors(2).

The force which the kinetic energy produces, capable of creating and maintaining the rotational motion of its set of secondary rotors at a constant speed (2), derives from the magnetic energy in the parts of the Power Generation System.

In the secondary rotors (2), the direction of the magnetic field of the magnets (3) used, is in the axial direction parallel to the height of each magnet.

In the primary rotor (1), the direction of the magnetic field of the magnets (3) used, is parallel to the width of each magnet.

The triangular shaped horizontal base used for positioning the rotors must be made from a non-magnetic material with a low expansion coefficient.

The type of magnet used may be a neodymium-iron-boron (NdFeB) magnet, and may also be coated with an Ni-Cu-Ni alloy. Despite the option of choosing the magnet, the weight of the mass of each secondary rotor (2) must be kept proportional to the intensity of the magnetic field of the magnets (3) present in each secondary rotor (2).

Another very important element for the Power Generation System's being able to function correctly, is the matter of spacing and height between the primary rotor (1) and the secondary rotors (2). The spacing and height are essential factors to the perfect functioning of the system. The spacing and height between the primary rotor (1) and the secondary rotors (2) must be proportional to the intensity of the magnetic field of the magnets (3) contained in the rotors, so that there is correct magnetic interaction between them.

The spacing and height must always be equal between the axis of the primary rotor (1) and the axis of the secondary rotors (2), and the measurement of this height and the spacing between the rotors must always be proportional to the intensity of the magnetic field of the magnets (3) present in each rotor.

In one form of the realization, the Power Generation System presents secondary rotors (2) which may comprise eight magnets for each rotor and in the case of the primary rotor may comprise two magnets. However, the number of magnets is related to the intensity and arrangement of the magnetic fields present in each rotor and the energy which can be produced.

The Power Generation System hereby disclosed may be integrated into a system of a larger size composed of at least two overlapping power generation systems, one on top of the other, using a single propulsion system dimensioned in accordance with the number of power generation systems placed in the said system of the largest size. The power generation systems may be stacked without the occurrence of magnetic interference in the functioning of the different layers of the system.

The primary rotor (1) is set in motion by part of the propulsion system (4), which achieves a rotational speed between 100 and 300 rpm. In one form of more specific realization, the rotational speed achieved is between 180 and 200 rpm.

For an ideal interaction between the magnets of the primary rotor (1) and the magnets of the secondary rotors (2), the centers of the secondary rotors (2) are the same distance from each other, at a distance of between 200 and 300 mm. The centers of the secondary rotors (2) are also equidistance from the center of the primary rotor (1), at a distance of between 100 and 200 mm.

To increase the efficiency of the Power Generation System, the elements may be introduced in an area sealed in a vacuum.

In any of the forms of possible realizations, one of the ways of capturing the energy produced by the system or by the set of various systems is through a set of bobbins designed and positioned appropriately around each rotor of the system or set of power generation systems. Another option is the installation of generators in the axis of the secondary rotors (2) which may execute the said capture of energy.

Possible embodiment

Through the magnetic interaction between its rotors, the Power Generation System generates kinetic energy capable of producing and keeping in rotational motion its set of secondary rotors, at constant speed, (2).

In one embodiment, secondary rotors were executed (2) which possess a joint mass comprising 1899.80g (154.48% greater than the mass of the primary rotor (1)), at an average constant speed of 356.93 rpm (77.29% greater than the average constant speed of the primary rotor (1)), without there being any physical connecting link between the primary rotor (1) and its set of secondary rotors (2) and without any kind of external energy physically connected to the set of secondary rotors (2).

One practical study conducted employed as its basis the following technical characteristics of the neodymium magnets used in the Power Generation System:

Primary rotor magnets	**Quant.**	**Minimum energy value / m^3**	**Volume in m^3 of the magnet**	**Energy in Joules**	**Total energy in Joules**
Rectangular Nd	2	303000 J/m^3	0.00002700	8.181	16.362

Secondary rotor magnets	**Quant.**	**Minimum energy value / m^3**	**Volume in m^3 of the magnet**	**Energy in Joules**	**Total energy in Joules**
Cylindrical Nd	24	318000 J/m^3	0.00000314	0.998	23.952

As can be seen, the total energy of the different magnets which comprise the Power Generation System is 40.314 J. The average speed of the four rotors, one primary rotor and three secondary rotors, is 318.03 rpm, or 5.300 rps. So, we can conclude that the energy of the magnets which comprise the prototype of the Power Generation System, through their rotational speed, is capable of producing approximately 213.664 J/s of energy which represents power of 213.644 W.

With the current technology, there is no bobbin circuit which allows for the capture of 100% of this energy produced. Nevertheless, if we consider only the harnessing of 10% of the energy produced, the energy used is 21.366 Wh. If we consider that the system consumes approximately 1.273 W/h, then we will have a net energy production of 20.093 Wh, which means utilization of 1578.39%.

The present description is clearly in no way limited to the realizations presented in this document and a person skilled in the art would be able to foresee many possibilities for modifications thereof without moving away from the general idea, as defined in the claims. The preferential realizations described above are clearly combinable with each other. The following claims also define preferential realizations.

CLAIMS

1. Power Generation System comprising at least one triangular shaped horizontal base, on which is placed a primary rotor (1) at the center, connected to a propulsion system (4), and a set of three secondary rotors (2), both fixed to vertical axis bearings mounted on the said horizontal base, which surround the primary rotor (1) and whose spacing between the center of the primary rotor (1) and the centers of the secondary rotors (2) is always the same, wherein magnets are mounted on the said rotors.

2. Power Generation System of any of the previous claims, wherein the primary rotor (1) is placed in a higher position than the secondary rotors (2).

3. Power Generation System of any of the previous claims, wherein the propulsion system (4) is a motor reducer.

4. Power Generation System of any of the previous claims, wherein the propulsion system (4) is connected to the primary rotor (1) through a series of pulleys with a toothed belt.

5. Power Generation System of claim 1, characterized by the fact that it comprises at least two overlapping triangular shaped horizontal bases and a propulsion system (4) installed at the center of the lower triangular base.

6. Power Generation System of claim 5, wherein the propulsion system (4) is directly connected to the axis of the primary rotor (1) through a coupling part.

7. Power Generation System of any of the previous claims,

wherein the north-south division of the magnets (3) used in the secondary rotors (2) is in the axial direction parallel to the height of each magnet (3), being that in the primary rotor (1) this division is in a direction parallel to the width of each magnet (3).

8. Power Generation System of any of the previous claims, wherein the horizontal base is made of non-magnetic material with a low expansion coefficient.

9. Power Generation System of any of the previous claims, wherein the magnets (3) are made of a neodymium-iron-boron alloy.

10. Power Generation System of any of the previous claims, wherein the magnets (3) are coated with a Ni-Cu-Ni alloy.

11. Power Generation System of any of the previous claims, wherein the energy is captured through bobbins positioned appropriately around the primary rotor (1) and the secondary rotors (2).

12. Power Generation System of any one of claims 1 to 10, wherein the energy is captured through the generators installed in the axis of the secondary rotors (2).

13. Power Generation System of any of the previous claims, wherein the said system is installed in a vacuum sealed area.

AMENDED CLAIMS
received by the International Bureau on 27 April 2020 (27.04.2020)

CLAIMS

1. Power Generation System comprising

at least one triangular shaped horizontal base, on which is placed a primary rotor (1) at the center, connected to a propulsion system (4), and

a set of three secondary rotors (2), fixed to vertical axis bearings mounted on the said horizontal base, which surround the primary rotor (1) and whose spacing between the center of the primary rotor (1) and the centers of the secondary rotors (2) is always the same,

wherein magnets are mounted on the said rotors, being the tops of the magnets installed in the secondary rotors (2) on the same imaginary line as the base of the magnets installed in the primary rotor (1).

2. Power Generation System of any of the previous claims, wherein the primary rotor (1) is placed in a higher position than the secondary rotors (2).

3. Power Generation System of any of the previous claims, wherein the propulsion system (4) is a motor reducer.

4. Power Generation System of any of the previous claims, wherein the propulsion system (4) is connected to the primary rotor (1) through a series of pulleys with a toothed belt.

5. Power Generation System of claim 1, characterized by the fact that it comprises at least two overlapping triangular shaped horizontal bases and a single propulsion system (4) installed at the center of the lower triangular base.

6. Power Generation System of claim 5, wherein the propulsion

system (4) is directly connected to the axis of the primary rotor (1) through a coupling part.

7. Power Generation System of any of the previous claims, wherein the direction of the magnetic field of the magnets (3) used in the secondary rotors (2) is in the axial direction, parallel to the height of each magnet (3), and in the primary rotor (1) the magnetic field direction is parallel to the width of each magnet (3).

8. Power Generation System of any of the previous claims, wherein the horizontal base is made of non-magnetic material with a low expansion coefficient.

9. Power Generation System of any of the previous claims, wherein the magnets (3) are made of a neodymium-iron-boron alloy.

10. Power Generation System of any of the previous claims, wherein the magnets (3) are coated with a Ni-Cu-Ni alloy.

11. Power Generation System of any of the previous claims, wherein the energy is captured through bobbins positioned appropriately around the primary rotor (1) and the secondary rotors (2).

12. Power Generation System of any one of claims 1 to 10, wherein the energy is captured through the generators installed in the axis of the secondary rotors (2).

13. Power Generation System of any of the previous claims, wherein the said system is installed in a vacuum sealed area.

STATEMENT UNDER ARTICLE 19 (1)

Inventive step (Art. 33(3) PCT)

Regarding the inventive step objections, the applicant hereby submits the necessary amendments so that Claim 1 now meets the requirements of Art. 33(3) PCT.

Accordingly, with the ISR and WO, documents D1 to D5 are considered the closest prior art, and that the combining features from referenced documents disclose similar subject matter as presented in Claim 1, and hence said claim does not present an inventive step.

However, the Applicant considers that the developed system is not obvious in the light of D1 – D5, because the displacement of the magnets on both primary and secondary rotors, and the electromagnetic effect caused by their positioning on said rotors was not mentioned, nor even suggested by the cited prior art. The technical effect produced by the fact that the *tops of the magnets installed in the secondary rotors (2)* are aligned *on the same imaginary line as the base of the magnet installed in the primary rotor (1)* is not the same as if they were aligned in the same horizontal plane. This higher positioning of the primary rotor, allows to overcome the magnetic repulsion effects caused by the balance and equilibrium of the magnetic fields in this system arrangement, allowing the secondary rotors to achieve higher rotation speeds than the primary rotor. This positioning is not obvious, nor the effect produced by it in a similar developed system. If they were fully aligned in the same horizontal plane, once the propulsion system was turned off, the system would reach to a full stop more quicker, given the balance between the magnetic fields. It is evident that this horizontal plane magnetic field misalignment ensures that the attraction and repulsion fields have no negative impact on the free movement of the rotors, promoting their rotation. None of this matter has been suggested, disclosed or expected in previous mentioned state of the art documents.

With regard to document D1, there are significative differences that influence the core functional results of this system. The more obvious are the shape, magnetic field orientation and the propulsion system. Considering the above explanation, the applicant ensures on an experimental basis, that with D1 it is not possible to achieve the same effect and results that the now disclosed system, not in a obvious way.

The applicant also wants to reinforce that the proposed system, at no time violates the laws of thermodynamics or conservation of energy. This resides in the fact that if the propulsion system is removed or stopped, the primary and secondary rotor system will stop after some time. By that fact, it cannot be considered as a perpetual motion machine. The fact that the magnetic field of the magnets (essential to the system) presents finite lifespan, also unables the system to operate perpetually.

The applicant respectfully requests that the examiner considers the argumentation used above when examining the pending patent application during the regional phases.

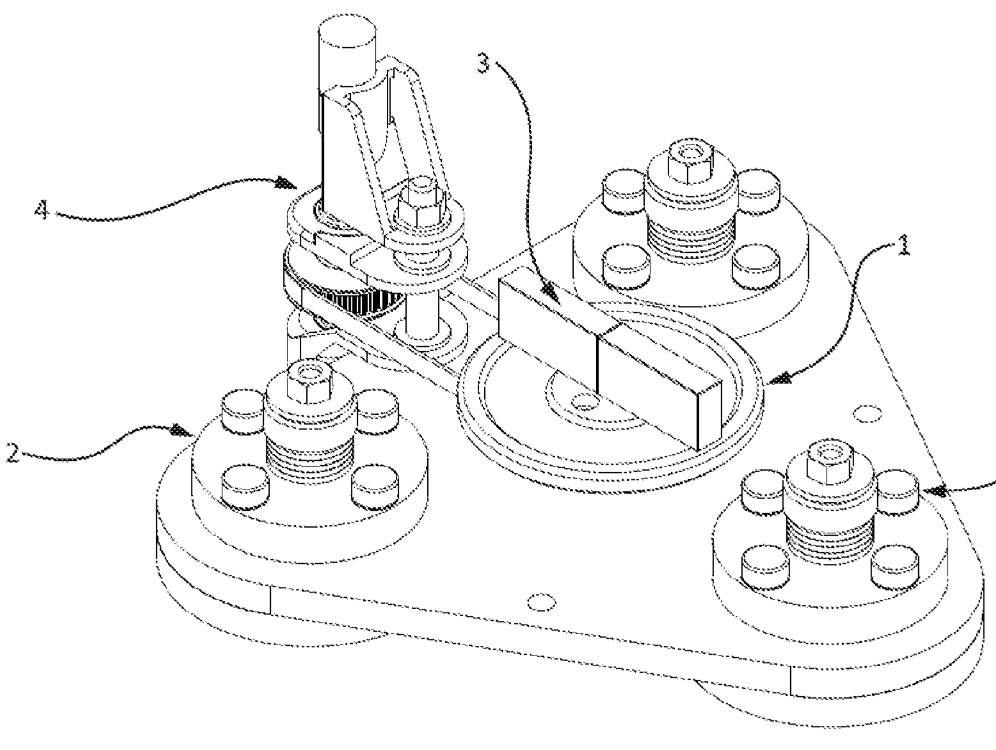

Figure 1

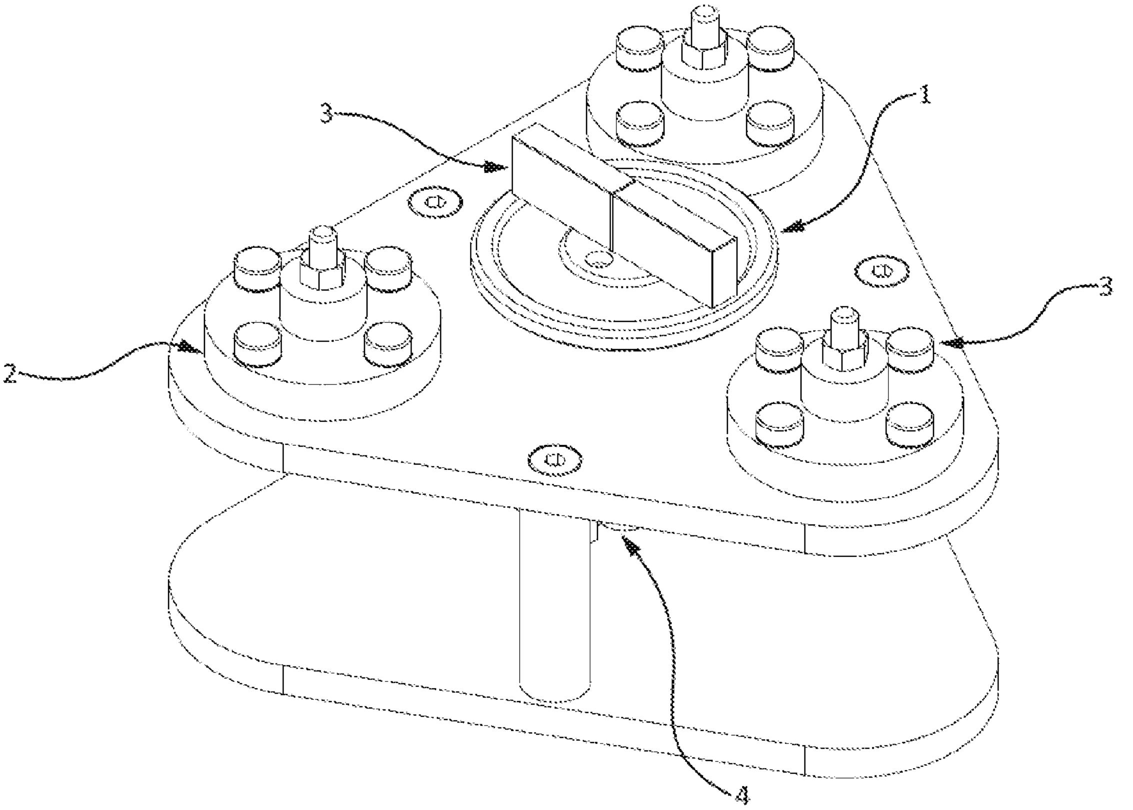

Figure 2

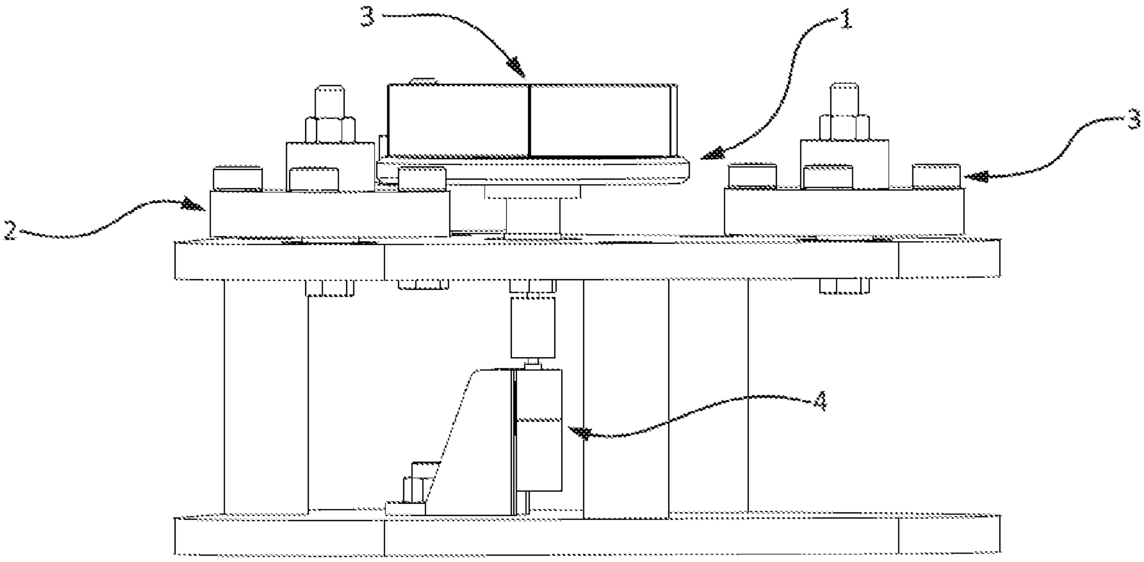

Figure 3

INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2019/051906

A. CLASSIFICATION OF SUBJECT MATTER
INV. H02K49/10 H02K53/00
ADD.

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)
H02K

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)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2010/156223 A1 (TKADLEC MIKE [US]) 24 June 2010 (2010-06-24) paragraph [0078] - paragraph [0085]; figure 11 -----	1-13
A	US 2010/187930 A1 (MARQUIS GUILLAUME [CA]) 29 July 2010 (2010-07-29) paragraph [0032]; figure 1b -----	1-13
A	US 5 925 958 A (PIRC ANTON [US]) 20 July 1999 (1999-07-20) column 13, line 27 - column 14, line 20; figure 9 -----	1-13
A	WO 02/03530 A1 (ROUNDS DONALD E [US]) 10 January 2002 (2002-01-10) abstract; figure 3 page 11, line 13 - page 12, line 3 -----	1-13
	-/--	

[X] Further documents are listed in the continuation of Box C. [X] See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"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
23 October 2019	30/10/2019

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Contreras Sampayo, J

INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2019/051906

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	ES 2 316 274 A1 (MOTAS VALLS JAUME [ES]) 1 April 2009 (2009-04-01) page 2, line 50 - page 3, line 64; figures 3-5 -----	1-13

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/IB2019/051906

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2010156223 A1	24-06-2010	US 2010156223 A1	24-06-2010
		US 2012187786 A1	26-07-2012
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