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(71) Applicant (for all designated States except US): **G. VILANAKIS & CO OE** [GR/GR]; 46 Dimitros Str., GR-192 00 Elefsina Attikis (GR).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **VILANAKIS, Georgios** [GR/GR]; EMM. Matzapetaki, Agios Ioannis, Gr-714 09 Iraklio Crete (GR).

(74) Agent: **ZACHARAKI, Chrysanthi**; 24 Em. Benaki Str., GR-106 78 Athens (GR).

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(54) Title: SELF CONTAINED ELECTRIC POWER PRODUCTION SYSTEM ACTIVATED AND OPERATING WITH WATER

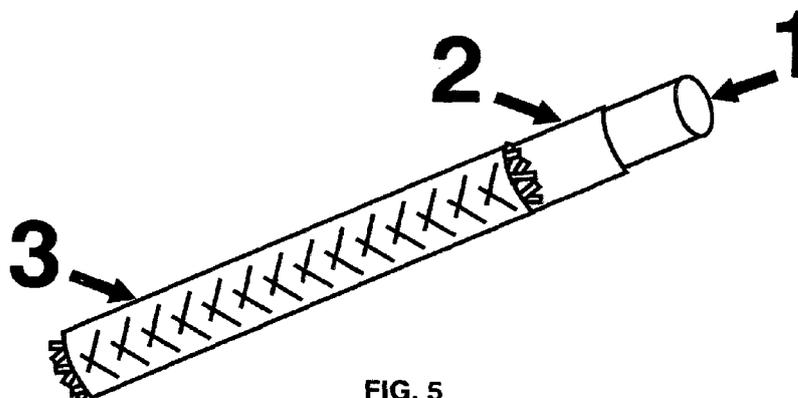


FIG. 5

(57) Abstract: The electric power generation system of the invention consists of a main inner metal element-rod (1), made of a mixture of eight different metals, an outer metal casing-sleeve (3), made of copper in a grid form and a water absorption and retention means (2) being interposed between them and is characterized by the fact that it uses water as a means of initiating and maintaining of the electric power production process-said water means being absorbed and held by said water absorption and retention means (2), following immersion of the system in water.



SELF CONTAINED ELECTRIC POWER PRODUCTION SYSTEM ACTIVATED AND OPERATING WITH WATER

The present invention relates to a self contained electric power production system capable of being activated and operating by the use of water only, that is being invented, designed, manufactured and marketed for first by exclusively us.

5 It is known that the alternative sources of energy such as the wind and the solar energy, being included in the "clean" energy sources, so called the energy sources that do not emit, or cause pollutants constitute today's attractive solution to the electric power generation problem and are widely used for this purpose.

10 The production, however and the efficiency of these systems, -wind generators and photovoltaic systems-, being related to electric power generation through the exploitation of these energy sources depend on the prevailing weather conditions on one hand, the latitude and the area climate in which are being installed, on the other.

15 The present invention intends to provide a self contained electric power production system, easy to use, embodying all the advantages of the systems mentioned above, since it does not either emit or cause pollutants and eliminating at the same time the disadvantages of known electricity power generation systems for the reason that it is being capable of ensuring uninterrupted electric power generation twenty four hours a day, anywhere and under any weather conditions, requiring either no additional installation whatsoever, or the addition of a disposable power source that may increase costs, lead to destruction of the whole system if left unused for a long period of time and its rejection may cause harm to the environment. Additionally, it is being characterized by the fact that it uses water as a means of initiating and maintaining the electric power production process, as well as that it undergoes no deterioration for as long as it remains inactive, prior to its activation for the first time.

20 The electric power generation system of the invention consists of a main inner metal element-rod, an outer metal casing-sleeve, in combination with a water absorption and retention means, interposed between them and is being characterized by the fact that it uses water as a means of initiating and maintaining of the electric power production process: said water means being absorbed and held by said water absorption and retention means, following the immersion of the system in water, so that the moisture required for its activation and operation to be provided and in order to remain in a continuous operational condition until full evaporation of the liquid element-water takes place that is being realized by a drop of the system performance, when re-immersion in water should be carried out in case the system is required to remain activated.

25 The subject of the invention will be better understood by reference to the accompanying drawings, which show an illustrative and not at all restrictive application example, as a whole and in partial details constituting it, where

30 Fig.1 shows the main inner metal element-rod of the invention.

35 Fig.2 shows the second element, water absorption and retention means of the invention.

40 Fig. 3 shows the third element, the outer metal casing-sleeve of the invention.

45 Fig. 4 shows the combination of first and second element of the invention, and

50 Fig. 5 shows the combination of all three elements of the invention.

5 In particular, the electricity production system of the invention consists of a main inner metal element-rod (1), made of a mixture of eight different metals, namely aluminum (Al), zinc (Zn), manganese (Mn), silicon (Si), copper (Cu), nickel (Ni), iron (Fe) and magnesium (Mg) and has the form of a cylindrical rod. an outer metal casing-sleeve (3), made of copper in a grid form and a water absorption and retention means (2) being interposed between them that can be a fabric, a sponge and/or any other material suitable and convenient for this purpose.

10 At this point it should be emphasized that the description of the subject of the invention was made by reference to a first indicative and not at all restrictive embodiment of the invention and that alternatively, the main inner metal element-rod (1) can also be constructed in the form of any other geometrical shape other than cylindrical, as well as in any dimension, while said outer metal casing-sleeve (3) can be constructed of copper of any form.

15 According to a second embodiment of the invention, the system may also bear an integrated water supply storage-tank, by opening of which the water absorption and retention means (2) is supplied with water, so as the electric energy generation process to be activated directly.

20 According to a third embodiment of the invention, systems designed to facilitate greater energy requirements, can operate in combination with an automated moisture system, where in this case the initiation of electric energy generation process is carried out by immersion in water as above and thereafter is carried out automatically when required.

OPERATION

30 Following immersing of the system in water, chemical reactions are created between the main inner metal element-rod (1), the water stored in the absorption and retention means (2) and the outer metal casing-sleeve (3). These chemical reactions result to the concentration of negative charges (-negative pole) in the main inner the metal-rod (1) and positive charges (+ positive pole) in the outer metal casing-sleeve (3) and it is because of the existence of this difference that a voltage is created
35 between the main inner metallic element-rod (1) and the outer metal casing-sleeve (3) leading to the initiation of the erosion-corrosion process of the inner metal element-rod (1), which begins to lose electrons from its nucleus, so that by connecting of a consumption source - a led source for example - an electron flow is created from said inner metal element-rod (1), to the outer metal casing-sleeve (3)
40 which electron flow is electricity. The oxidation of inner metal element-rod (1) is due to the difference in positive oxidation potential, since said possesses a bigger positive potential than the outer metal casing-sleeve (3).

45 Finally, at this point it should be stressed that the system of the invention is capable of being manufactured in any size in order that any electric energy generation requirements are served. Thus the modification of the subject of the invention as regards any of the details mentioned above, will aim at copying and unfair competition, acts that are subject to punishment provided by Law.

CLAIMS

- 1.- An electric power production system consisting of a main inner metal element-rod (1), an outer metal casing-sleeve (3) and a water absorption and retention means (2) being interposed between them, characterized in that it uses water as a means of initiating and activation of the electric power production process.
- 2.- An electric power production system, as in claim 1, characterized in that the main inner metal element-rod (1), according to a first embodiment is made of a mixture of eight different metals, namely aluminum (Al), zinc (Zn), manganese (Mn), silicon (Si), copper (Cu), nickel (Ni), iron (Fe) and magnesium (Mg) and has the form of a cylindrical rod and said outer metal casing-sleeve (3) is made of copper in a grid form.
- 3.- An electric power production system, as in claims 1 & 2, characterized in that said main inner metal element-rod (1), can also be constructed in the form of any other geometrical shape other than cylindrical, as well as in any other dimension.
- 4.- An electric power production system, as in claims 1,2 & 3, characterized in that said outer metal casing-sleeve (3) can be constructed of copper of any form.
- 5.- An electric power production system, as in claims 1,2,3 & 4, characterized in that said water absorption and retention means (2) can be a fabric, a sponge and/or any other material suitable and convenient for this purpose.
- 6.- An electric power production system, as in claims 1,2,3, 4 & 5, characterized in that according to a second embodiment, may also bear an integrated water supply storage-tank, by opening of which the water absorption and retention means (2) is supplied with water, so as the electric energy generation process to be activated directly.
- 7.- An electric power production system, as in claims 1,2,3,4,5 & 6, characterized in that according to a third embodiment, large systems designed to facilitate greater energy requirements, can operate in combination with an automated moisture system, where in this case the initiation of electric energy generation process is carried out by immersion in water and thereafter is carried out automatically when required.
- 8.- An electric power production system, as in claims 1,2,3,4,5,6 & 7, characterized in that following immersing of the system in water, chemical reactions are created between the main inner metal element-rod (1), the water stored in the absorption and retention means (2) and the outer metal casing-sleeve (3). These chemical reactions result to the concentration of negative charges (-negative pole) in the main inner the metal-rod (1) and positive charges (+ positive pole) in the outer metal casing-sleeve (3) and it is because of the existence of this difference that a voltage is created between the main inner metallic element-rod (1) and the outer metal casing-sleeve (3) leading to the initiation of the erosion-corrosion process of the inner metal element-rod (1), which begins to lose electrons from its nucleus, so that by connecting of a consumption source - a led source for example - an electron flow is created from said inner metal element-rod (1), to the outer metal casing-sleeve (3) which electron flow is electricity.

AMENDED CLAIMS

received by the International Bureau on 19 September 2012 (19.09.2012)

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1.- An electric power production system-generator consisting of a main inner element-rod (1), an outer metal casing-sleeve (3) and a water absorption and retention means (2) being interposed between them, being characterized in that it is of an open type and uses water as a means of initiating and activation of the electric power production process: capable of being activated to generate electricity within a few seconds after being immersed in water and operates continuously for as long as said main inner element-rod (1) is being kept moist: it requires no addition of electrolyte and or metals bearing a layer of hydrogen catalyst quantities and is indented for household lighting and for lighting of other places.

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2.- An electric power production system-generator, as in claim 1, characterized in that said main inner element-rod (1), is made of an eight metal polymer alloy, namely aluminum (Al), zinc (Zn), manganese (Mn), silicon (Si), copper (Cu), nickel (Ni), iron (Fe) and magnesium (Mg) in the form of a cylindrical rod: said outer metal casing-sleeve (3) is made of 99% pure copper in a grid form of a 48 x 54 x 0,07 knitting: said water absorption and retention means (2) being a high density and absorbency synthetic fabric available in the market, preferably made of cotton and cellulose in combination with a very thin layer of sodium polyacrylate, said being capable of absorbing up to 300 times its own weight and said system is being enclosed in a perforated frame.

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3.- An electric power production system-generator, as in claims 1 & 2, characterized in that it is by means of said outer metal casing-sleeve (3) of pure copper 99%, having a grid form and the specific knitting of 48 X 54 X 0,07, a more efficient respiration of said main inner metal element-rod (1) is provided, for minor additional amounts of hydrogen are absorbed from the surrounding air, which in combination with said water absorption and retention means (2) being made of cotton and cellulose in combination with a very thin layer of sodium polyacrylate, contribute to device life duration being increased and to output and power duration being stable.

30

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4.- An electric power production system-generator, as in claims 1, 2 & 3, characterized in that, deterioration of said main internal element-rod (1) is being minimized, due to non use of additional electrolytes and or metals bearing a layer of hydrogen catalyst quantities, this contributing to device life duration and performance being increased.

40

5.- An electric power production system, as in claims 1,2,3 & 4, characterized in that is capable of having a repeated life cycle for many uses,- given that each system immersion in water and then its drying out constitutes a cycle, then its life may last to up one thousand such cycles-, its efficiency depending on its resting time, with the optimal performance result being achieved when its relaxation time equals its operating time.

45

6.- An electric power production system, as in claims 1, 2, 3, 4 & 5, characterized in that is not at a deterioration risk for as long as is not wetted and remains brand new for the reason that said inner element-rod (1), is being fully protected from the ambient moisture by means of said water absorption and retention means (2) made of said high density and absorbency synthetic fabric.

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7.- An electric power production system, as in claims 1,2,3,4,5 & 6, characterized in

5 that the large applications are completely autonomous, for they bear two water feeding containers, said circular supply container system operating by means of energy being generated by the application itself and not by some simple water system. The application startup is carried out by means of water being placed in a first container and said being filled with water when required (usually every 30-50 days), which is done and by any individual without any technical knowledge.

10 8.- An electric power production system, as in claims 1,2,3,4,5,6 & 7, characterized in that is capable of being stored after use for as long as required, - up to 20 years, provided that it has been thoroughly dried prior to storing - and when reused providing the same output without having undergone even the slightest additional deterioration, thus having a long lasting life duration and therefore is being suitable and capable of serving numerous continuous and or even occasional uses.

15 9.- An electric power production system, as in claims 1,2,3,4,5,6,7 & 9 characterized in that alternatively, said inner element-rod (1) has different geometrical shapes, said outer metal casing-sleeve (3) is made of copper of any kind of knitting and or different chemical composition and said water absorption and retention means (2) is being a cloth, a sponge and or any other material suitable for this purpose.

20 10.- An electric power production system, as in claims 1,2,3,4,5,6,7,8 & 9, characterized in that through said open type perforated frame, a further small hydrogen uptake from the surrounding air is facilitated, contributing to chemical reactions being further enhanced on one hand and to drying out of said main inner element-rod (1) being significantly accelerated on the other,- when required following an operating cycle-, thereby any further deterioration being prevented, this resulting to device life duration being increased and steady performance and increased output duration being achieved.

STATEMENT UNDER PCT ARTICLE 19(1)

International application No.
PCT/GR2011/000051

1.- The term generator is added to the preamble of claims 1-10 and of an open type added in claim 1, in order that the invention subject is being precisely defined, therefore its technical characteristics being distinguished from those of cited prior art documents, all disclosing closed type batteries and or generators, either being capable of only storing energy, this being the case of prior art cited document US 2011/151320, being in fact a reloadable battery by use of some special device, that does not whatsoever employ water as a power generation initiation process medium and bears no water absorption means and of document US 5 424 147 A, referring to a closed type deferred action battery for use in emergency situations only characterized in that it bears no water absorption means and requires the use of additional electrolytic means apart from water. The rest of cited documents are only capable of generating low power electricity, this being the case of document US 4 522 897 disclosing a closed type battery, having a flexible rope shape, only being suitable for application in marine devices. document WO 2007/116872 disclosing a small-sized generator capable of generating electricity by contact with water, also requiring additional hydrogen catalyst and bearing no water absorption means and document US 3 674 564 A revealing a galvanic battery or cell of a closed type activated by use of salt water, intended for use only in emergency situations at sea. Additionally, the anode of all cited subjects is constructed of an alloy consisting of magnesium, in combination with aluminum, zinc or other metals and their cathodes being differentiated to one another, for they are constructed of various metals in combination with a hydrogen catalyst, while they involve complex and expensive construction methods.

2.- Claim 2 is amended in order that the characteristics of casing-sleeve (3) and water absorption and retention means (2) are specifically defined.

3.- Claim 3 is added in order that the matter for which protection is sought is clearly defined, by showing the impact on the invention subject, of the specific characteristics of said casing-sleeve (3) and water retention means (2).

4.- Claims 4, 5, 6, 8, 9, 10 added in order that the matter for which protection is sought is clearly defined, by showing the further impact of the specific characteristics of said casing-sleeve (3) and water retention means (2), and

5.- Claim 7 is amended in order that the matter for which protection is sought is clearly defined.

Summarizing, claim amendments and additions thereof aim to invention subject better being defined, this being a self contained electric power production system-generator of an open type, being energised by employing water, capable of only generating energy, requiring no additional hydrogen catalyst and or metals bearing a hydrogen catalyst layer, having long repeated life duration for many years and is intended for household lighting purposes and of other places.

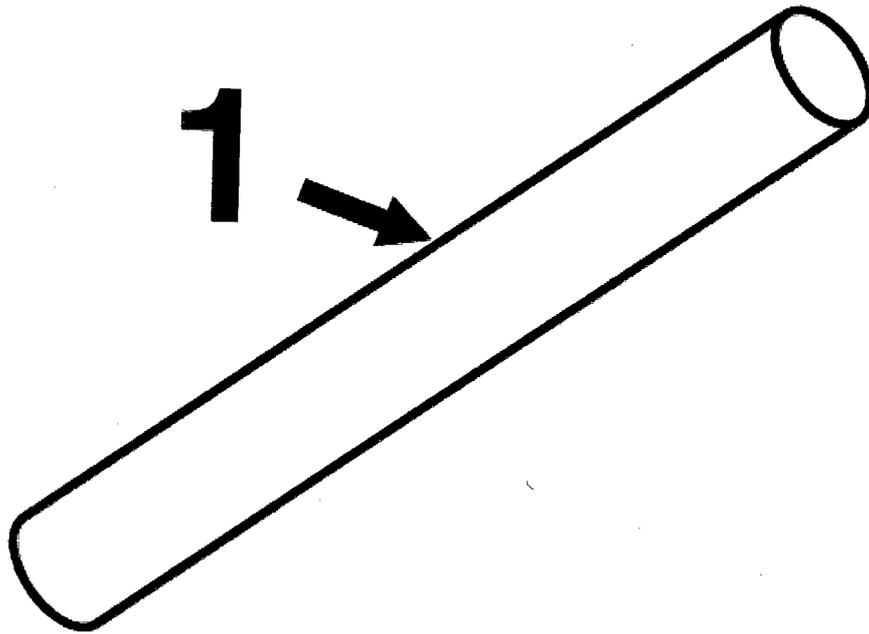


FIG. 1

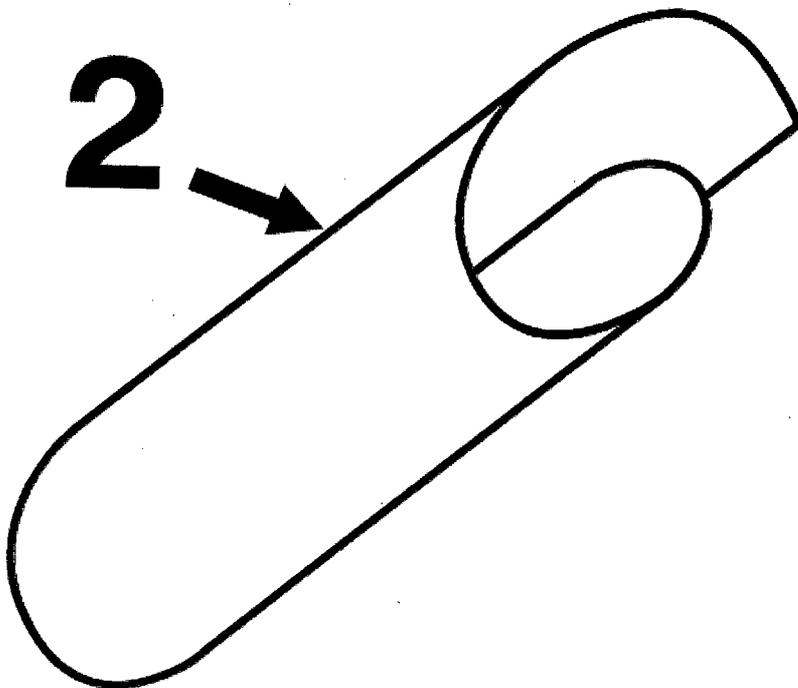


FIG. 2

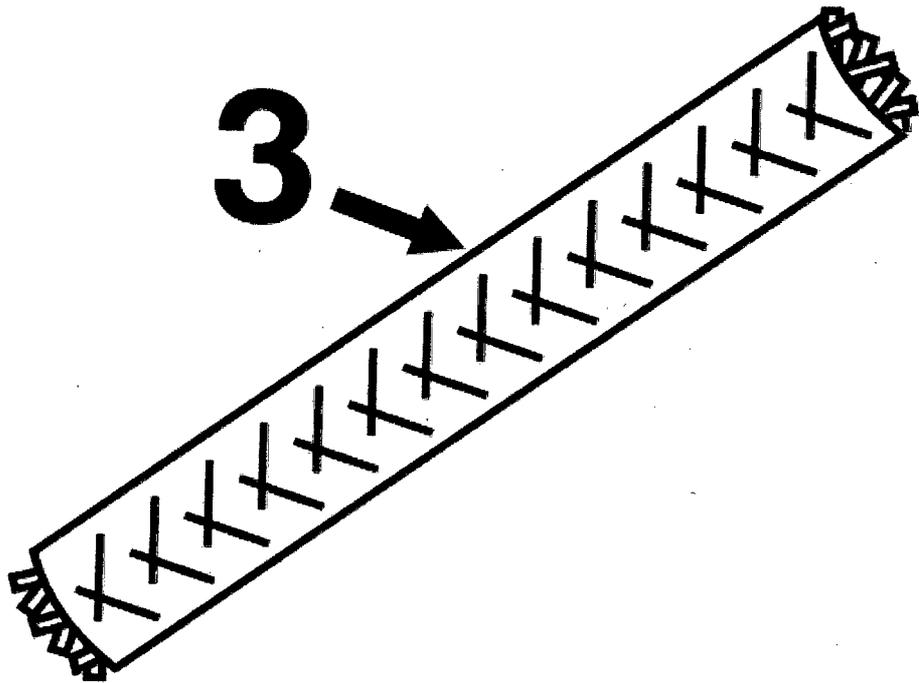


FIG. 3

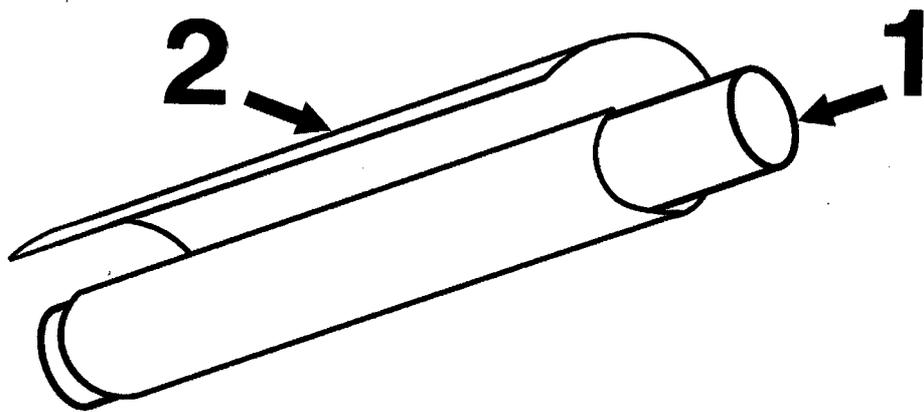


FIG. 4

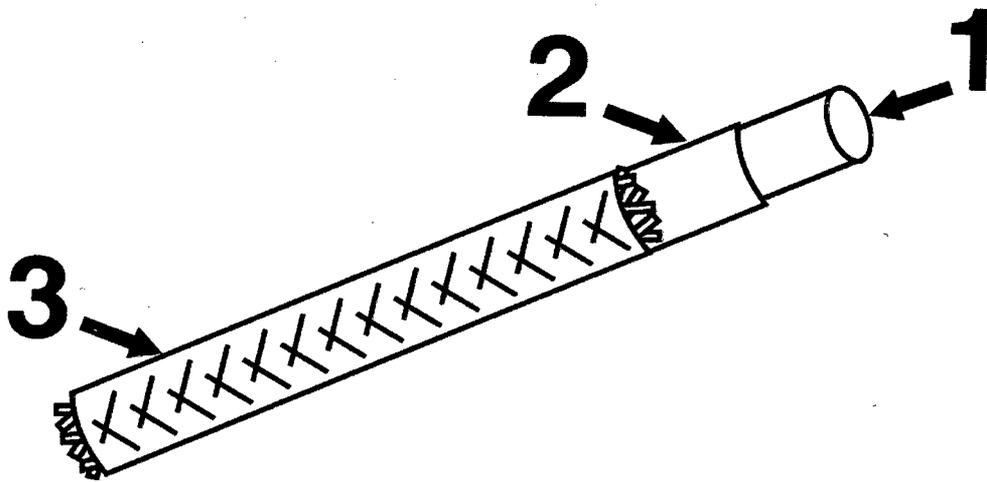


FIG. 5

INTERNATIONAL SEARCH REPORT

International application No
PCT/GR2011/000051

A. CLASSIFICATION OF SUBJECT MATTER
 INV. H01M4/12 H01M4/38 H01M6/32 H01M6/34 H01M6/04
 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)
 H01M

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 4 522 897 A (WALSH MYLES A [US]) 11 June 1985 (1985-06-11)	1,3-5
Y	column 1, lines 5-7, 31-33 column 2, lines 17-20, 37-41 column 3, lines 8-45, 63-66 column 4, lines 19-20, 27-32 figures 1-3	2,6-8
Y	----- US 2011/151320 A1 (ISHIDA JUN [JP] ET AL) 23 June 2011 (2011-06-23) abstract paragraphs [0014], [0051] ----- -/--	2

Further documents are listed in the continuation of Box C.

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 17 July 2012	Date of mailing of the international search report 23/07/2012
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Bossa, Christina
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INTERNATIONAL SEARCH REPORT

International application No
PCT/GR2011/000051

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 2007/116872 A1 (TSC CO LTD [JP]; SUZUKI SUSUMU [JP]; WEI HUA [JP]) 18 October 2007 (2007-10-18)	6
A	page 2, lines 30-35, 44 page 3, lines 1-18 page 4, lines 39-46 page 7, lines 13-16 page 8, line 42 page 9, lines 30-39	1,3,4
Y	----- US 5 424 147 A (KHASIN ERIC [IL] ET AL) 13 June 1995 (1995-06-13) column 2, lines 33-41	7
Y	----- US 3 674 564 A (KETLER ALBERT E JR) 4 July 1972 (1972-07-04) column 1, lines 12-47 -----	8

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/GR2011/000051

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