

TRANSLATION

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/RU2010/000036	International filing date (<i>day/month/year</i>) 02.02.2010	Priority date (<i>day/month/year</i>) 13.01.2009
International Patent Classification (IPC) or national classification and IPC B64G1/10, B64G1/22		
Applicant MAIBORODA, Alexander Olegovich		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 6 sheets, including this cover sheet.

3. This report is also accompanied by ANNEXES, comprising:

a. (sent to the applicant and to the International Bureau) a total of 2 sheets, as follows:

sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).

sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.

b. (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see paragraph 3bis of Annex C of the Administrative Instructions).

4. This report contains indications relating to the following items:

<input checked="" type="checkbox"/>	Box No. I	Basis of the report
<input type="checkbox"/>	Box No. II	Priority
<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input type="checkbox"/>	Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input type="checkbox"/>	Box No. VI	Certain documents cited
<input type="checkbox"/>	Box No. VII	Certain defects in the international application
<input type="checkbox"/>	Box No. VIII	Certain observations on the international application

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/RU	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/RU2010/000036

Box No. I	Basis of the report
1.	<p>With regard to the language, this report is based on:</p> <p><input checked="" type="checkbox"/> the international application in the language in which it was filed</p> <p><input type="checkbox"/> a translation of the international application into _____, which is the language of a translation furnished for the purposes of:</p> <p><input type="checkbox"/> international search (Rules 12.3(a) and 23.1(b))</p> <p><input type="checkbox"/> publication of the international application (Rule 12.4(a))</p> <p><input type="checkbox"/> international preliminary examination (Rule 55.2(a) and/or 55.3(a))</p> <p>2. With regard to the elements of the international application, this report is based on (<i>replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report</i>):</p> <p><input type="checkbox"/> the international application as originally filed/furnished</p> <p><input checked="" type="checkbox"/> the description:</p> <p>pages <u>1-11</u> _____ as originally filed/furnished</p> <p>pages* _____ received by this Authority on _____</p> <p>pages* _____ received by this Authority on _____</p> <p><input checked="" type="checkbox"/> the claims:</p> <p>nos. _____ as originally filed/furnished</p> <p>nos.* <u>12-13</u> _____ as amended (together with any statement) under Article 19</p> <p>nos.* _____ received by this Authority on _____</p> <p>nos.* _____ received by this Authority on _____</p> <p><input checked="" type="checkbox"/> the drawings:</p> <p>sheets <u>1/1</u> _____ as originally filed/furnished</p> <p>sheets* _____ received by this Authority on _____</p> <p>sheets* _____ received by this Authority on _____</p> <p><input type="checkbox"/> a sequence listing – see Supplemental Box Relating to Sequence Listing.</p> <p>3. <input type="checkbox"/> The amendments have resulted in the cancellation of:</p> <p><input type="checkbox"/> the description, pages _____</p> <p><input type="checkbox"/> the claims, nos. _____</p> <p><input type="checkbox"/> the drawings, sheets/figs _____</p> <p><input type="checkbox"/> the sequence listing (<i>specify</i>): _____</p> <p>4. <input type="checkbox"/> This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).</p> <p><input type="checkbox"/> the description, pages _____</p> <p><input type="checkbox"/> the claims, nos. _____</p> <p><input type="checkbox"/> the drawings, sheets/figs _____</p> <p><input type="checkbox"/> the sequence listing (<i>specify</i>): _____</p> <p>5. <input type="checkbox"/> This report has been established taking into account the rectification of an obvious mistake authorized by or notified to this Authority under Rule 91 (Rule 70.2(c)).</p> <p>6. <input type="checkbox"/> Supplementary international search report(s) from Authority(ies) _____ have been received and taken into account in drawing up this report (Rule 45bis.8(b) and (c)).</p>
*	<i>If item 4 applies, some or all of those sheets may be marked "superseded."</i>

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/RU2010/000036

Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1.	Statement		
	Novelty (N)	Claims <u>1, 2</u>	YES
		Claims _____	NO
	Inventive step (IS)	Claims <u>1, 2</u>	YES
		Claims _____	NO
	Industrial applicability (IA)	Claims <u>1, 2</u>	YES
		Claims _____	NO
2.	Citations and explanations (Rule 70.7)		
	<p>D1: US 4775120 A, claims, columns 1-7, 12-17, 22; figures 1, 2, 4, 7, 10, 11</p> <p>D2: ANATOLII SHIBANOV. Zaboty kosmicheskogo arkhitekatora. Moscow, Detskaya literatura, 1982, pages 35-37</p> <p>D3: A.V. ANDREEV. Nekotorye voprosy transportirovki lunnogo veschestva. Trudy XIX Chtenii K.E. Tsiolkovskogo. Sektsiya "Problemy raketnoi i kosmicheskoi tekhniki". Moscow, Institute of the History of Natural Science and Technology, USSR Academy of Sciences, 1986, pages 87-96</p> <p>A method for delivering cargoes into space (claim 1) and a system for the implementation thereof (claim 2) are claimed.</p> <p>D1 discloses a method for delivering cargoes into space which includes first putting at least one container spacecraft into orbit which captures and accelerates cargoes that are launched at sub-orbital speed for the time necessary for the capture thereof by a container</p>		

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

spacecraft and are situated on the path of travel of a given container spacecraft; storing and subsequently transferring said cargoes to other spacecraft; and compensating for loss of velocity resulting from the capture of cargoes and the aerodynamic resistance of the container spacecraft by using part of the incoming cargo, wherein the cargoes to be captured may be launched as a plurality of small portions distributed across a given section of the trajectory of movement of a container spacecraft for the time required for the capture of said cargoes by the container spacecraft, and the cargoes enter, as separate portions, a receiving device and then a container provided with a decelerating medium.

The claimed method (claim 1) according to the amended claims differs from that known from D1 in that to compensate for loss of velocity resulting from the capture of cargoes and the aerodynamic resistance of the container spacecraft, a reactive engine system powered by a satellite solar power station is used, wherein a part of the incoming cargo serves as the working medium of said engine system (an electrodynamic cable system may be used as an alternative).

D2 discloses powering the engine system of a spacecraft with energy from a satellite solar power station; however, the working medium of the engine system is stored on board the spacecraft, which restricts the operating time of the engine system and/or results in an increase in the mass of the spacecraft and greater energy consumption in the operation thereof.

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

The use of part of the incoming cargo (i.e. the kinetic energy thereof) to compensate for loss of velocity of a container spacecraft as known from D1 is possible only with the highly specific selection of the orbits of the cargoes and the container spacecraft, which is difficult or impossible when delivering cargoes into space from the surface of a planet.

In view of the above, the characterizing features of the invention (claim 1) are not obvious to a person skilled in the art.

Therefore, the claimed method (claim 1) satisfies the criteria of novelty and inventive step.

D1 discloses a system for the implementation of a method for delivering cargoes into space, which comprises sub-orbital craft for launching cargoes, a satellite solar power station and at least one container spacecraft comprising a receiving device for capturing cargoes, storage tanks and a container provided with a decelerating medium, which container is connected to the receiving device and to a system for separating the cargoes from the decelerating medium, wherein a cargo is constituted, in particular, in the form of microcapsules or containers and part of the incoming cargo may be used in order to compensate for loss of velocity resulting from the capture of cargoes and the aerodynamic resistance of the container spacecraft.

The claimed system (claim 2) according to the amended claims differs from that known from D1 in that it is

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

equipped with an engine system (in the form of a reactive engine system or an electrodynamic cable system) that is powered by a satellite solar power station, wherein a part of the incoming cargo serves as the working medium of the reactive engine system.

As noted above, D2 discloses powering the engine system of a spacecraft with energy from a satellite solar power station; however, storing the working medium of the engine system on board the spacecraft restricts the operating time of the engine system and/or results in an increase in the mass of the spacecraft and greater energy consumption in the operation thereof.

As also noted, using part of the incoming cargo (without using an engine system) to compensate for loss of velocity of a container spacecraft as per D1 imposes tight or even impossible restrictions on the selection of the orbits of the cargoes and the container spacecraft.

In view of the above, the characterizing features of the invention (claim 2) are not obvious to a person skilled in the art.

Therefore, the claimed system (claim 2) satisfies the criteria of novelty and inventive step.

The inventions according to claims 1 and 2 satisfy the criterion of industrial applicability.