

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 OD 40295 SAM	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/EP2004/053649	International filing date (<i>day/month/year</i>) 22.12.2004	Priority date (<i>day/month/year</i>) 22.12.2003
International Patent Classification (IPC) or national classification and IPC F01 K25/06		
Applicant OSER, Erwin		

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 _____ sheets, as follows:

sheets of the description, claims and/or drawings which have been amended and are the basis for 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 and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 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 checked="" type="checkbox"/>	Box No. VII	Certain defects in the international application
<input checked="" 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/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2004/053649

Box No. I	Basis of the report
1.	<p>With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.</p> <p><input type="checkbox"/> This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:</p> <p><input type="checkbox"/> international search (Rule 12.3 and 23.1(b))</p> <p><input type="checkbox"/> publication of the international application (Rule 12.4)</p> <p><input type="checkbox"/> international preliminary examination (Rule 55.2 and/or 55.3)</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>1-13</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. <u>1-24</u> _____ as originally filed/furnished</p> <p>nos.* _____ 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 and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.</p>
3.	<p><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><input type="checkbox"/> any table(s) related to sequence listing (<i>specify</i>): _____</p>
4.	<p><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><input type="checkbox"/> any table(s) related to sequence listing (<i>specify</i>): _____</p>
<p>* If item 4 applies, some or all of those sheets may be marked "superseded."</p>	

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2004/053649

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	1-24	YES
	Claims		NO
Inventive step (IS)	Claims	1-24	YES
	Claims		NO
Industrial applicability (IA)	Claims		YES
	Claims	1-24	NO
2. Citations and explanations (Rule 70.7)			
	Reference is made to the following documents:		
	D1: DE 102 14 183 C1 (SIEMENS AG) 8 May 2003		
	D2: PATENT ABSTRACTS OF JAPAN, Vol. 010, No. 381 (M-547), 19 December 1986 (1986-12-19) & JP 61 171811 A (SANYO ELECTRIC CO LTD; others: 01) 2 August 1986.		
	Independent claims 1 and 19:		
	Document D1 is considered the closest prior art. It discloses a method and a system for transforming heat energy into mechanical energy, from which the subject matter of independent claims 1 and 19 differs primarily in that a first component of the working substance can be absorbed by an absorption substance and heat energy is transferred to the remaining, vaporous second component, which can be returned to the evaporator for evaporation of the liquid working substance flowing through the evaporator. In addition, a refrigeration machine is disclosed by means of which additional heat energy for evaporating the working substance is supplied.		

Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
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The subject matter of claims 1 and 19 is therefore novel (PCT Article 33(2)).

The problem to be solved by the present invention is therefore understood to be that of improving the efficiency of the evaporator.

If the first component of the vapour mixture emitted by the expansion machine is adiabatically absorbed in the absorption device, the corresponding absorption heat is transferred to the remaining vaporous second component. The return of this remaining vaporous second component to the evaporator in order to evaporate the liquid working substance flowing through the evaporator, the remaining vaporous second component condensing therein, makes it possible to withdraw the condensation heat at higher temperatures. This increases the efficiency of the process.

The solution to this problem, as proposed in claim 1 of the present application, therefore involves an inventive step (PCT Article 33(3)).

Dependent claims 2 to 18 and 20 to 24:

Dependent claims 2 to 18 and 20 to 24 are dependent on claims 1 and 19, respectively, and therefore likewise meet the PCT requirements for novelty and inventive step.

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

Contrary to the requirements of PCT Rule 5.1(a)(ii), the description does not cite documents D1 and D2 or indicate the relevant prior art disclosed therein.

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

The combined heat exchange circuits of the coolant in the refrigeration machine and the working substance in the circuit containing the expansion machine in figure 1 draw heat energy externally in the evaporator (13). Using this energy, work is carried out in the expansion machine (4) after the working substance has been evaporated in the evaporator (6). At no point in the circuits is heat energy dissipated. This means that the total entropy of the system is increased. The combined circuit in figure 1 is therefore inconsistent with the second law of thermodynamics and consequently fails to meet the requirements of PCT Article 33(1) and (4), since the invention is not industrially applicable.

Moreover, the application does not satisfy the requirements of PCT Article 6, because claim 24 is not clear. The subject matter for which protection is sought is not defined clearly. The device claim attempts to define the subject matter in terms of the result to be achieved or in terms of method features, but in so doing merely states the problem to be solved, without specifying the technical features necessary to achieve this result.