

(PCT Article 36 and Rule 70)

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

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/CN2012/000615

Box No. I Basis of the report

1. With regard to the **language**, this report is based on:
- ☒ the international application in the language in which it was filed
- ☐ a translation of the international application _____, which is the language of a translation furnished for the purposes of:
- ☐ international search (Rules 12.3(a) and 23.1(b))
- ☐ publication of the international application (Rule 12.4(a))
- ☐ international preliminary examination (Rule 55.2(a) and/or 55.3(a))
2. With regard to the **elements** of the international application, this report is based on (*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*):
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages _____ as originally filed/furnished.
- pages* 1-5 received by this Authority on 15.10.2012
- pages* _____ received by this Authority on _____
- ☒ the claims:
- nos. _____ as originally filed/furnished.
- nos.* _____ as amended (together with any statement) under Article 19
- nos.* 6 received by this Authority on 15.10.2012
- nos.* _____ received by this Authority on _____
- ☒ the drawings:
- pages 1, 2 as originally filed/furnished.
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☐ a sequence listing – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since either they are considered to go beyond the disclosure as filed, or they were not accompanied by a letter indicating the basis for the amendments in the application as filed, as indicated in the Supplemental Box (Rule 70.2(c) and (c-bis)):
- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
5. ☐ This report has been established:
- ☐ taking into account **the rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rules 66.1(d-bis) and 70.2(e)).
- ☐ without taking into account **the rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rules 66.1bis and 70.2(e)).
6. ☐ Supplementary international search report(s) from Authority(ies) _____
- ☐ has/have been received and taken into account in establishing this report (Rule 45bis.8(b) and (c)).
- * If item 4 applies, some or all of those sheets may be marked "superseded."

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Box No. II

Priority

1. ☐ This report has been established as if no priority had been claimed due to the failure to furnish within the prescribed time limit the requested:
- ☐ copy of the earlier application whose priority has been claimed (Rule 66.7(a)).
- ☐ translation of the earlier application whose priority has been claimed (Rule 66.7(b)).
2. ☐ This report has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rule 64.1). Thus for the purposes of this report, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:
- Upon verification, the priority of claims 1-5 and 8 and the technical solution of claim 6 comprising one of the parallel additional technical features that "air is adopted as fluid working medium in an air pipe" is established; however, the earlier application does not explicitly or essentially disclose the technical solution of claim 6 comprising the other parallel additional technical feature that "water is adopted as fluid working medium in an air pipe" and the technical features related to "water" in the technical solution defined in claim 7. Therefore, the priority of the technical solution of claim 6 comprising the parallel additional technical feature that "water is adopted as fluid working medium in an air pipe" and claim 7 is not established in the sense of PCT Article 8, and the international filing date of claims 6 and 7 is regarded as the relevant date.

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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	1-8	YES
	Claims	None	NO
Inventive step (IS)	Claims	1-8	YES
	Claims	None	NO
Industrial applicability (IA)	Claims	1-8	YES
	Claims	None	NO

2. Citations and explanations (Rule 70.7)

Cited document:**D1: CN1897168A****I. Novelty and inventive step**

1. Claim 1 relates to a method for generating high speed airflow. D1 discloses an energy converting method, and specifically discloses the following technical features: the method adopts an apparatus composed of a communicating pipe (15) (equivalent to an air pipe and a circulating pipe in the present application), a condenser (11) (equivalent to a refrigerator in the present application), a pump (12), and a low boiling point working fluid evaporator (8) (equivalent to a heat exchanger in the present application) (the condenser, the pump, and the low boiling point working fluid evaporator together constitute a starting and controlling system of the present application); some of the gaseous working fluids is condensed into liquid, the liquid is led into the communicating pipe, and then the liquid is re-cycled

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to the communicating pipe again after absorbing heat by undergoing the condenser, the pump, and the low boiling point working fluid evaporator; the method comprising the following steps: filling the apparatus with a working fluid of a low boiling point; activating the condenser, the pump, and the low boiling point working fluid evaporator; and after pressurized under liquid state, the working fluid of a low boiling point absorbing heat, being gasified, and entering the communicating pipe (15) (see D1, description, p. 7, paragraph 2 to p. 8, paragraph 4, and fig. 4). Although document 1 does not explicitly state the technical feature of "generating high speed airflow" of claim 1, it can be seen from the essential teachings of document 1, the reasons are as follows: the working fluid of a low boiling point would definitely form the high speed airflow under the effects of the condenser, the pump, and the evaporator.

Therefore, claim 1 differs from D1 in that: the air pipe changes the diameter of the pipe via necking, and curved channels or a spiral gas-liquid separating apparatus and a flow guiding apparatus are additionally arranged in the air pipe. Therefore, independent claim 1 is novel in the sense of PCT Article 33(2).

The aforementioned distinguishing technical features are neither disclosed by D1 or other documents listed in the search report, nor common general knowledge in the art. That is to say, the technical solution of claim 1 is not obvious to a person skilled in the art. Therefore, independent claim 1 involves an inventive step in the sense of PCT Article 33(3).

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2. Claims 2-7 directly or indirectly refer to claim 1. Therefore, when claim 1 is novel and involves an inventive step, the technical solutions of claims 2-7 are also novel in the sense of PCT Article 33(2) and involve an inventive step in the sense of PCT Article 33(3).

3. Claim 8 relates to an application of the method for generating high speed airflow of claim 1. Because the method for generating the high speed airflow of claim 1 is novel and involves an inventive step, the application according to the method for generating high speed airflow of claim 1 in claim 8 is also novel in the sense of PCT Article 33(2) and involves an inventive step in the sense of PCT Article 33(3).

II. Industrial applicability

Claims 1-8 can be made or used in industry, and therefore, are industrially applicable in the sense of PCT Article 33(4).

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Box No. VII Certain defects in the international application

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

A stop occurs at a place that is not an end in claim 7.