

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference J0187652WO01	FOR FURTHER ACTION		See item 4 below
International application No. PCT/JP2016/003934	International filing date (<i>day/month/year</i>) 30 August 2016 (30.08.2016)	Priority date (<i>day/month/year</i>) 04 September 2015 (04.09.2015)	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant SEIKO EPSON CORPORATION			

<p>1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p>In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.</p>																								
<p>3. This report contains indications relating to the following items:</p> <table> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. I</td> <td>Basis of the report</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table> <p>4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).</p>	<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
<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 issuance of this report 06 March 2018 (06.03.2018)
The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer Yukari Nakamura
Facsimile No. +41 22 338 82 70	e-mail: pct.team7@wipo.int

PATENT COOPERATION TREATY

TRANSLATION

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing (day/month/year)	22.11.2016
-------------------------------------	-------------------

Applicant's or agent's file reference J0187652WO01	FOR FURTHER ACTION See paragraph 2 below
--	--

International application No. PCT/JP2016/003934	International filing date (day/month/year) 30.08.2016	Priority date (day/month/year) 04.09.2015
---	---	---

International Patent Classification (IPC) or both national classification and IPC
D04H1/732 (2012.01) i, B27N3/00 (2006.01) i

Applicant
SEIKO EPSON CORPORATION

1. This opinion contains indications relating to the following items:

- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/JP	Date of completion of this opinion	Authorized officer
Facsimile No.		Telephone No.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2016/003934

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:
 - the international application in the language in which it was filed
 - a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).
2. This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a))
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing:
 - a. forming part of the international application as filed:
 - in the form of an Annex C/ST.25 text file.
 - on paper or in the form of an image file.
 - b. furnished together with the international application under PCT Rule 13ter.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.
 - c. furnished subsequent to the international filing date for the purposes of international search only:
 - in the form of an Annex C/ST.25 text file (Rule 13ter.1(a)).
 - on paper or in the form of an image file (Rule 13ter.1(b) and Administrative Instructions, Section 713).
4. In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that forming part of the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No. PCT/JP2016/003934
--

Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1. Statement	Novelty (N)	Claims <u>1-9</u>	YES
		Claims _____	NO
	Inventive step (IS)	Claims <u>5-6</u>	YES
		Claims <u>1-4, 7-9</u>	NO
	Industrial applicability (IA)	Claims <u>1-9</u>	YES
		Claims _____	NO

2. Citations and explanations:

Document 1: JP 2015-137437 A (SEIKO EPSON CORP.) 30
July 2015

Document 2: JP 2003-227089 A (MITSUBISHI HEAVY
INDUSTRIES, LTD.) 15 August 2003

▪ The invention as in claims 1-4 and 7-9 does not involve an inventive step in light of documents 1 and 2 cited in the ISR.

(1) The invention as in claim 1

If the matters set forth in the claims and paragraphs [0074] and [0123] of document 1 are put together, document 1 can be said to disclose a sheet production device that is provided with a deposition unit, which deposits a material including a fiber and a resin, and a humidity control unit (humidifying unit), which humidifies a deposit deposited by the deposition unit, said humidifying unit supplying droplets or a high-humidity gas to the deposit.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2016/003934

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Document 1 does not indicate that the humidifying unit includes a first air flow generation unit that generates an air flow in a direction that intersects with a support surface that supports the deposit, said air flow passing through the deposit, wherein droplets or a high-humidity gas are supplied to the deposit by means of the air flow generated by the first air flow generation unit.

However, document 2 (claims and paragraphs [0001], [0014], and [0020]) indicates that by providing a web (sheet) with a vacuum device (first air flow generation unit) facing a steam application device, steam is made to permeate the web efficiently, and strength etc. is thus improved. As such, taking into account strength etc., it would not be difficult to configure the humidifying unit disclosed in document 1 as stipulated in the invention as in claim 1 of the present application.

(2) The invention as in claims 2, 3, 7, and 9

Refer to document 1 (claims, paragraphs [0074] and [0123], and fig. 1).

(4) The invention as in claim 4

Taking into account production space etc., a person skilled in the art could, as appropriate, combine the air flow generation units disclosed in documents 1 and 2.

(5) The invention as in claim 8

Document 1 does not disclose the feature of providing the deposition unit with a drum in which a plurality of openings are formed, but document 1 (paragraph [0123]) indicates that the deposition unit is

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2016/003934

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

provided with an unraveling unit, and a person skilled in the art could, as appropriate, configure said unraveling unit to be drum-shaped.

- The invention as in claims 5 and 6 is novel and involves an inventive step in relation to documents 1 and 2 cited in the ISR.

Documents 1 and 2 do not disclose the feature wherein the deposition unit is provided with a first roller that makes contact with the deposit, the humidifying unit is provided with a second roller that makes contact with the humidified deposit, the surface free energy of the second roller is lower than the surface free energy of the first roller, and the flow rate of the air flow on the support surface generated by the first air flow generation unit is lower than the flow rate of the air flow on the support surface generated by the second air flow generation unit, and this feature could not be said to be easy.