

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43*bis*.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/EP2018/078927

International filing date (day/month/year)
22.10.2018

Priority date (day/month/year)
23.10.2017

International Patent Classification (IPC) or both national classification and IPC
INV. B01D47/06 B05B7/12 B01D53/00 B05B7/00 B05B7/24 A61M11/04 A61L2/02 A61L2/20 A61L9/015

Applicant
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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 43*bis*.1(a)(i) with regard to novelty, inventive step and 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 usually 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 66.1*bis*(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.

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Date of completion of
this opinion

see form
PCT/ISA/210

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Box No. I Basis of the 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:

Box No. IV Lack of unity of invention

1. ☒ In response to the invitation (Form PCT/ISA/206) to pay additional fees, the applicant has, within the applicable time limit:
- ☒ paid additional fees
 - ☐ paid additional fees under protest and, where applicable, the protest fee
 - ☐ paid additional fees under protest but the applicable protest fee was not paid
 - ☐ not paid additional fees
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is
- ☐ complied with
 - ☒ not complied with for the following reasons:
see separate sheet
4. Consequently, this report has been established in respect of the following parts of the international application:
- ☐ all parts.
 - ☒ the parts relating to claims Nos. 1-19

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)	Yes: Claims	<u>15, 16</u>
	No: Claims	<u>1-14, 17-19</u>
Inventive step (IS)	Yes: Claims	
	No: Claims	<u>1-19</u>
Industrial applicability (IA)	Yes: Claims	<u>1-19</u>
	No: Claims	

2. Citations and explanations

see separate sheet

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:

see separate sheet

Item IV

1 NON-UNITY

This Authority considers that there are two inventions covered by the claims indicated as follows:

Group I: Claims 1-12 and 17-18 which are directed to a washing / decontaminating system comprising pressurizing means in fluid communication with nebulizing means and with a first pressurized tank, wherein the pressurized tank, containing a liquid, are fluid communication with the nebulizing means, the system further comprising a first pressure-regulating valve between the pressurizing means and the pressurized tank and a second pressure-regulating valve between the pressurizing means and the nebulizing means.

Group II: Claims 13-16 is directed to a washing /decontaminating system comprising first and second circuits for feeding first and second liquids to nebulizing means.

The subject-matter of claim 1 is already disclosed by documents D1 (see fig. 3) and D2 (see fig. 1) both disclosing spraying systems comprising nebulizing means in fluid communication with pressurizing means and a liquid pressurized tank, wherein the pressurized tank, containing a liquid, are fluid communication with the pressurizing means by means of a first pressure-regulating valve between said pressurizing means and the inlet of the pressurized tank and a second pressure-regulating valve between said pressurizing means and the nebulizing means; there is therefore no special technical feature between the claim-groups I and II.

Also, examining the possible correspondence by objective problem, one finds that the objective of each of the mentioned claim-groups I and II are different:

Group I: the special technical features of group I comprises a group of valves, that provide the effect of maintain stability in the pressures and solve the problem of providing a specific droplet size and droplet distribution.

Group II: the special technical features of group II comprises a third pressure-regulation valve connected in series with the second regulating valve, which enables connection with a further pressure tank and solves the problem of providing a circuit for feeding an additional fluid to the nebulizing means.

Hence, the group of claims I and II comprise neither the same, nor corresponding special technical features, so the technical relationship between the subject matter of the claims required by Rule 13.2 PCT is lacking and the claims are not so linked as to form a single general inventive concept as required by Rule 13.1 PCT.

Consequently the application does not meet the requirement for unity of invention.

Item VIII

2 CLARITY (Art. 6 PCT)

- 2.1 Claim 1 refers to first inlet means for a first gas, however it is not clear where this inlet means are located. Therefore, the structural relationship of first inlet means, the first pressurized tank, and the first pressure regulating valve is unclear. It should be clarified that *the first pressure regulating valve (3) is in fluid communication with a first pressurized tank (5) through first inlet means of said gas into the tank.*
- 2.2 Claims 1, 14 and 19 refer to apparatus claims and should be defined in terms of structural apparatus features. The presence of functional features are permitted in an apparatus claim, however it should be born in mind that the operation parameters, such as the pressure within the apparatus, are not considered a structural element of the apparatus. When assessing novelty over the prior art said functional features are taken into account only as far as they might imply a restriction for the apparatus.
- 2.3 The limitation of claim 10 is unclear because the structural relationship of the first feeding valve and the first evacuation valve is not clear. It should be specified their position according to fig. 6.
- 2.4 Claim 15 discloses that a fifth valve (24) is arranged before the pressure-regulating valve (23), which is contradictory with the teaching of figures 4 and 5, which depict that valves (23) and (24) are arranged is parallel.

Item V

(Group I)

Reference is made to the following documents:

D1 US 2012/241016 A1 (KOKOT JR RALPH [US] ET AL) 27 September 2012 (2012-09-27)

D2 US 3 916 032 A (CONNER KENNETH F) 28 October 1975 (1975-10-28)

3 NOVELTY (Art 33(2)PCT)

3.1 The document D1 discloses a washing and decontaminating system [0017] comprising nebulizing means [76] for a mixture of at least one first gas and at least one first liquid, and pressurizing means [26] of said first gas, wherein said pressurizing means [26] are in fluid communication with gas accumulation means [40] and said accumulation means [40] are in fluid communication with a first pressure-regulating valve [58] and with a second pressure-regulating valve [64], the first pressure-regulating valve [58] being in fluid communication with a first pressurized tank [12] through first inlet means [28] of said first gas, the first pressurized tank [12] being configured to contain the first liquid [14], and comprising first outlet means [18] of said first liquid to the nebulizing means [76] through a first valve [20], at a first pressure that is greater than atmospheric pressure, and wherein the second pressure-regulating valve [64] is in fluid communication with said nebulizing means [76], and is configured to pressurize the gas at a second pressure that is greater than atmospheric pressure.

Furthermore, the D1 also discloses the following features

- the first inlet means [28] of the first gas are located in the first pressurized tank [12] at a height that is higher than the first outlet means [18];
- the first pressurized tank [12] comprises means for feeding said first liquid [13];
- it comprises a second valve located between the first pressure-regulating valve [36] and the first pressurized tank [12];
- it comprises a third valve [68] located between the second pressure-regulating valve [64] and the nebulizing means [76];
- it comprises first remote actuating means [39] in series with the first pressure-regulating valve [58]; and non-return means [68], [92] in series with the first and second pressure-regulating valves [58], [64].

The subject-matter of claims 1-12 and 18-19 is not new in view of D1.

- 3.2 The document D2 discloses a system suitable for spraying a cleaning liquid (fig. 1) comprising nebulizing means [27] for a mixture of at least one first gas and at least one first liquid, and pressurizing means [10] of said first gas, wherein said pressurizing means [10] are in fluid communication with a first pressure-regulating valve [14] and with a second pressure-regulating valve [34], the first pressure-regulating valve [14] being in fluid communication with a first pressurized tank [15] through first inlet means [13] of said first gas, located at a height that is higher than the first outlet means, the first pressurized tank [15] being configured to contain the first liquid, and comprising first outlet means [21] of said first liquid to the nebulizing means [27] through a first valve [22, 23], at a first pressure that is greater than atmospheric pressure, and wherein the second pressure-regulating valve [34] is in fluid communication with said nebulizing means [27], and is configured to pressurize the gas at a second pressure that is greater than atmospheric pressure. The system further comprises second remote actuation means [32] in series with the second pressure-regulating valve [34].

The subject-matter of claims 1, 2, 4, 8, 9, 10 and 18 is not new in view of D2.

4 INVENTIVE STEP (Art. 33(3) PCT)

- 4.1 The subject-matter of claim 17 differs in that it comprises first and second means for measuring the flow rate in series with the first and second pressure-regulating valves respectively. This feature is merely one of several straightforward possibilities from which the skilled person would select, in accordance with circumstances, without the exercise of inventive skill, in order to solve the problem posed as it appears to be common practice (see metering valve [23] of D2). The subject-matter of claim 17 is thus not inventive.

Item V

(Group II)

Reference is made to the following document:

D3 US 3 547 409 A (JACUZZI FRANK) 15 December 1970 (1970-12-15)

5 NOVELTY (Art. 33(2)PCT)

- 5.1 The document D3 discloses a washing and decontaminating system (claim 3) comprising nebulizing means (reference [27] in fig.2) for a mixture of at least one first gas and at least one first liquid, and pressurizing means (claim 7, [87]) of said first gas, wherein said pressurizing means [87] are in fluid

communication with a first pressure-regulating valve arranged at the outlet of compressor [87] (no reference number provided). Compressor [87] is in fluid communication with a second pressure-regulating valve [97] and with a third pressure-regulating valve [95]; the first pressure-regulating valve [97] is in fluid communication with a first pressurized tank [37] through first inlet means of said first gas, the first pressurized tank [37] being configured to contain a first liquid [71], and comprising first outlet means [51] of said first liquid to the nebulizing means [27] through a first valve [49], at a first pressure that is greater than atmospheric pressure; the first pressure-regulating valve being further in fluid communication with said nebulizing means [27] and configured to pressurize the gas at a second pressure that is greater than atmospheric pressure and connected in series with the second and the third pressure-regulating valves [95] and [97], wherein the third pressure-regulating valve [95] is in fluid communication with a second pressurized tank [35] through second inlet means of said first gas, the second pressurized tank [35] being configured to contain a second liquid [39], and comprising second outlet means [51] of said second liquid towards the nebulizing means [27], through a fourth valve [49], at a third pressure that is higher than atmospheric pressure; and wherein the system comprises first and second means [31] for measuring the flow rate in series with the first pressure-regulating valve and the second pressure-regulating valve.

The subject-matter of claims 1, 13, 14 and 17 is not new in view of D3.

6 INVENTIVE STEP (Art. 33(3) PCT)

- 6.1 The additional features of unclear claim 15 and claim 16 are merely one of several straightforward possibilities from which the skilled person would select, in accordance with circumstances, without the exercise of inventive skill, in order to solve the problem posed. Thus, the subject-matter of claims 15 and 16 is not inventive.