

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

PCT

To: MARK S. EINSIEDEL
BAKERHOSTETLER
200 CIVIC CENTER DRIVE
SUITE 1200
COLUMBUS, OH 43215

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT AND
THE WRITTEN OPINION OF THE INTERNATIONAL
SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

	Date of mailing <i>(day/month/year)</i>
Applicant's or agent's file reference 112197-000100	FOR FURTHER ACTION See paragraphs 1 and 4 below
International application No. PCT/US 23/65519	International filing date <i>(day/month/year)</i> 07 April 2023 (07.04.2023)
Applicant BIDI VAPOR, LLC	

1. The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

Filing of amendments and statement under Article 19:
The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

How? Directly to the International Bureau preferably through ePCT, or on paper to:
The International Bureau of WIPO, 34, chemin des Colombettes, 1211 Geneva 20, Switzerland

For more detailed instructions, see the *PCT Applicant's Guide*, International Phase, paragraphs 9.004 – 9.011.

2. The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. **With regard to any protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

the protest together with the decision thereon has been transmitted to the International Bureau together with any request to forward the texts of both the protest and the decision thereon to the designated Offices.

no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Reminders**

The applicant may **submit comments on an informal basis on the written opinion of the International Searching Authority** to the International Bureau. These comments will be made available to the public after international publication. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established.

Shortly after the expiration of **18 months from the priority date, the international application will be published** by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau before the completion of the technical preparations for international publication (Rules 90bis.1 and 90bis.3).

Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for **entry into the national phase** before those designated Offices. In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months. For details about the applicable time limits, Office by Office, see www.wipo.int/pct/en/texts/time_limits.html and the *PCT Applicant's Guide*, National Chapters.

Within **22 months from the priority date, the applicant may request that a supplementary international search be carried out** by a different International Searching Authority that offers this service (Rule 45bis.1). The procedure for requesting supplementary international search is described in the *PCT Applicant's Guide*, International Phase, paragraphs 8.006-8.032.

Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-8300	Authorized officer Kari Rodriguez Telephone No. PCT Helpdesk: 571-272-4300
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SEARCH HISTORY

Application Number	PCT/US 23/65519
Search Conducted By	MCL
Search Approved By	SCL

CPC/IPC Classifications Searched	<p>IPC(8): A24F 47/00, A61M 15/00, H05B 1/02, H05B 3/44, A24F 7/00, F22B 1/28 (2023.01)</p> <p>CPC: A61M 11/042, A61M 15/0065, H05B 3/44, H05B 1/0244, F22B 1/284, A24B 15/167</p> <p>ADD H05B 2203/021, A61M 15/06, A61M 2205/15, A61M 2205/60, A61M 2205/276</p>
Date Conducted	29 June 2023 (29.06.2023)

Documentation Searched	<p>IPC(8): A24F 47/00, A61M 15/00, H05B 1/02, H05B 3/44, A24F 7/00, F22B 1/28 (2023.01)</p> <p>CPC: (keyword limited; see below)</p>
Search Terms Used	Vaporization, housing, reservoir, battery, heating, airflow, light, PCBA, sensor, controller, seal, tank, coil, notch, cap
Date Conducted	29 June 2023 (29.06.2023)

Electronic Database Searched	PatBase
Files Searched	<p>Full-text: AU BE BR CA CH CN DE DK EP ES FI FR GB IN JP KR SE TH TW US WO</p> <p>Bibliographic: (European) AT BA BE BG CH CS CY CZ DD DK EE ES FI GE GR HR HU IE IS IT LT LU LV MC MD MT NL NO PL PT RO RS SE SI SK SM TR UA YU (Asia) EA GC HK ID IL IN KZ MN MY PH RU SG SU TH TJ TW UZ VN (North America) CA CR CU DO GT HN MX NI PA SV TT (South America) AR BR CL CO EC PE UY (Australasia) AU NZ (Africa) AP DZ EG KE MA MW OA ZA ZM ZW</p>
Date Conducted	29 June 2023 (29.06.2023)
Search Logic:	

Classification Search:

- 1 Info session log created:27 June 2023 19:47:05
- 2 Info View coverage information
- 3 Info Login to PatBase:27 June 2023 19:47:05
- 4 Search Step 1 IC=(A24F47/00, A61M15/00, H05B1/02, H05B3/44, A24F7/00, F22B1/28) 78547 results
- 5 Search Step 2 CPC=(A24F47/008, A61M11/042, A61M15/0065, H05B3/44, H05B1/0244, F22B1/284, A24B15/167, H05B2203/021, A42F47/008, A61M11/042, A61M15/06, A61M2205/15, A61M2205/60, A61M2205/276) 15790 results
- 6 Search Step 3 UC=(392/395)441 results
- 7 Search Step 4 1 OR 2 OR 3 84816 results
- 8 Search Step 5 4 AND FT=(vapor! AND housing AND reservoir AND battery AND heating) 1190 results
- 9 Search Step 6 5 AND FT=(airflow AND light) 564 results
- 10 Search Step 7 6 AND FT=(PCBA) 10 results
- 11 Search Step 8 7 AND FT=controller 8 results
- 12 Search Step 9 6 AND FT=(seal AND tank AND notch) 31 results
- 13 Search Step 10 9 AND FT=controller 17 results
- 14 Search Step 11 10 AND cap 10 results
- 15 Search Step 12 10 AND FT=cap 10 results
- 16 Search Step 13 12 AND FT-PCBA 0 results
- 17 Search Step 14 12 AND FT=PCBA 1 results
- 18 View Step 14 (12 AND FT=PCBA) Records 1-25
- 19 View Step 12 (10 AND FT=cap) Records 1-25

Key Word Search:

- 20 Search Step 15 FT=(vapor! AND housing AND reservoir AND battery AND heating) 5334 results
- 21 Search Step 16 15 AND FT=(airflow AND light) 1333 results
- 22 Search Step 17 16 AND FT=(seal AND tank AND notch) 54 results
- 23 Search Step 18 17 AND FT=controller 38 results
- 24 Search Step 19 18 AND FT=cap 26 results
- 25 View Step 19 (18 AND FT=cap) Records 1-25

Forward Backward Search:

- 26 Search Step 20 PN=(US2020114094 OR US2015208729 OR US2022001119 OR US2017231281 OR US2018310616 OR US2022095684 OR US10667560 OR US2018070649 OR US10674765 OR US10687554) 8 results
- 27 Search Step 21 CTB 20 OR CTF 20 4426 results
- 28 Search Step 22 21 AND FT=(vapor! AND housing AND reservoir AND battery AND heating) 545 results
- 29 Search Step 23 22 AND FT=(airflow AND light) 286 results
- 30 Search Step 24 23 AND FT=controller 157 results
- 31 Search Step 25 24 AND FT=(seal AND tank AND notch) 10 results
- 32 View Step 25 (24 AND FT=(seal AND tank AND notch)) Records 1-25

Electronic Database Searched	Google
Files Searched	Patents
Date Conducted	29 June 2023 (29.06.2023)
Search Logic:	
<p>Google.com/?tbn=pts vaporization housing reservoir battery heating About 14,900 results vaporization housing reservoir battery heating coil About 14,100 results vaporization housing reservoir battery heating coil airflow About 5,460 results vaporization housing reservoir battery heating coil airflow light About 4,670 results vaporization housing reservoir battery heating coil airflow light PCBA About 613 results vaporization housing reservoir battery heating coil airflow light PCBA sensor About 602 results vaporization housing reservoir battery heating coil airflow light PCBA sensor controller About 599 results vaporization housing reservoir battery heating coil airflow light PCBA sensor controller notch About 120 results vaporization housing reservoir battery heating coil airflow light PCBA sensor controller notch tank About 39 results</p> <p>Google Patent - vaporiz\$ AND housing AND reservoir AND battery About 75,736 results vaporiz\$ AND housing AND reservoir AND battery AND airflow About 26,499 results vaporiz\$ AND housing AND reservoir AND battery AND airflow AND light About 18,486 results vaporiz\$ AND housing AND reservoir AND battery AND airflow AND light AND PCBA About 2,820 results vaporiz\$ AND housing AND reservoir AND battery AND airflow AND light AND PCBA AND sensor About 2,436 results vaporiz\$ AND housing AND reservoir AND battery AND airflow AND light AND PCBA AND sensor AND controller About 2,411 results (vaporiz\$ AND housing AND reservoir AND battery AND airflow AND light AND PCBA AND sensor AND controller AND coil) About 1,407 results (vaporiz\$ AND housing AND reservoir AND battery AND airflow AND light AND PCBA AND sensor AND controller AND coil AND seal) About 585 results (vaporiz\$ AND housing AND reservoir AND battery AND airflow AND light AND PCBA AND sensor AND controller AND coil AND seal AND tank) About 250 results (vaporiz\$ AND housing AND reservoir AND battery AND airflow AND light AND PCBA AND sensor AND controller AND coil AND seal AND tank AND notch) About 87 results</p>	

Electronic Database Searched	Google
Files Searched	Web
Date Conducted	29 June 2023 (29.06.2023)
Search Logic:	
vaporization housing reservoir battery heating About 1,220,000 results	

vaporization housing reservoir battery heating airflow About 368,000 results
vaporization housing reservoir battery heating airflow light About 544,000 results
vaporization housing reservoir battery heating airflow light PCBA About 22,800 results
vaporization housing reservoir battery heating airflow light PCBA sensor About 58,200 results
vaporization housing reservoir battery heating airflow light PCBA sensor controller About 25,300 results
vaporization housing reservoir battery heating airflow light PCBA sensor controller seal About 34,800 results
vaporization housing reservoir battery heating airflow light PCBA sensor controller seal tank About 9,160 results
vaporization housing reservoir battery heating airflow light PCBA sensor controller seal tank coil About 12,600 results
vaporization housing reservoir battery heating airflow light PCBA sensor controller seal tank coil notch About 6,950 results
vaporization housing reservoir battery heating airflow light PCBA sensor controller seal tank coil notch cap About 17,000 results

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

PCT

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT AND
THE WRITTEN OPINION OF THE INTERNATIONAL
SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

To: MARK S. EINSIEDEL
BAKERHOSTETLER
200 CIVIC CENTER DRIVE
SUITE 1200
COLUMBUS, OH 43215

Date of mailing
(day/month/year) **SEP 27 2023**

Applicant's or agent's file reference 112197-000100	FOR FURTHER ACTION See paragraphs 1 and 4 below
International application No. PCT/US 23/65519	International filing date (day/month/year) 07 April 2023 (07.04.2023)
Applicant BIDI VAPOR, LLC	

- The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.
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When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.
How? Directly to the International Bureau preferably through ePCT, or on paper to:
The International Bureau of WIPO, 34, chemin des Colombettes, 1211 Geneva 20, Switzerland

For more detailed instructions, see the PCT Applicant's Guide, International Phase, paragraphs 9.004 – 9.011.
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- 4. Reminders**
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Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-8300	Authorized officer Kari Rodriquez Telephone No. PCT Helpdesk: 571-272-4300
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PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 112197-000100		FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/US 23/65519	International filing date (<i>day/month/year</i>) 07 April 2023 (07.04.2023)	(Earliest) Priority Date (<i>day/month/year</i>) 10 June 2022 (10.06.2022)	
Applicant BIDI VAPOR, LLC			

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 4 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out 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)).

b. This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6bis(a)).

c. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. **Certain claims were found unsearchable** (see Box No. II).

3. **Unity of invention is lacking** (see Box No. III).

4. With regard to the **title**,

the text is approved as submitted by the applicant.

the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

the text is approved as submitted by the applicant.

the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. 17A

as suggested by the applicant.

as selected by this Authority, because the applicant failed to suggest a figure.

as selected by this Authority, because this figure better characterizes the invention.

b. none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 23/65519

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I: Claims 1-18 are directed to a vaporization device with airflow apertures in the housing.

Group II: Claims 19-20 are directed to a vaporization device with an enclosure surrounding a reservoir, a circuit board, and sealing with an o-ring.

Group III: Claims 21-26 are directed to vaporization device with an absorbent core within a sleeving secured by notches.

-- See extra sheet --

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
1-18

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 23/65519

A. CLASSIFICATION OF SUBJECT MATTER

IPC - INV. A24F 47/00, A61M 15/00, H05B 1/02, H05B 3/44, A24F 7/00, F22B 1/28 (2023.01)
ADD.

CPC - INV. A61M 11/042, A61M 15/0065, H05B 3/44, H05B 1/0244, F22B 1/284, A24B 15/167

ADD. H05B 2203/021, A61M 15/06, A61M 2205/15, A61M 2205/60, A61M 2205/276

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
See Search History document

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
See Search History document

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
See Search History document

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X ----	US 2018/0070649 A1 (JUUL Labs, Inc.) 15 March 2018 (15.03.2018), entire document	1-12, 16-18
Y		13-15
Y	US 2019/0364957 A1 (Pax Labs, Inc.) 05 December 2019 (05.12.2019), entire document	13-15
A	US 2016/0374399 A1 (Monsees et al.) 29 December 2016 (29.12.2016), entire document	1-18
A	US 10,687,554 B2 (Hawes et al.) 23 June 2020 (23.06.2020), entire document	1-18
A	US 10,674,765 B2 (RAI Strategic Holdings, Inc.) 09 June 2020 (09.06.2020), entire document	1-18

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents:

“A” document defining the general state of the art which is not considered to be of particular relevance

“D” document cited by the applicant in the international application

“E” earlier application or patent but published on or after the international filing date

“L” document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

“O” document referring to an oral disclosure, use, exhibition or other means

“P” document published prior to the international filing date but later than the priority date claimed

“T” later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

“X” document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

“Y” document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

“&” document member of the same patent family

Date of the actual completion of the international search

29 June 2023 (29.06.2023)

Date of mailing of the international search report

SEP 27 2023

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US, Commissioner for Patents
P.O. Box 1450, Alexandria, Virginia 22313-1450

Facsimile No. 571-273-8300

Authorized officer

Kari Rodriguez

Telephone No. PCT Helpdesk: 571-272-4300

----- Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet) -----

The inventions listed as Groups I-III do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

SPECIAL TECHNICAL FEATURES

The invention of Group I includes the special technical feature of one or more airflow apertures defined in a wall of the housing and spaced apart from the first and second ends thereof, not required by the claims of Groups II or III.

The invention of Group II includes the special technical feature of a non-absorbent tank disposed within the first portion of the housing, a printed circuit board assembly (PCBA) disposed within the second portion of the housing wherein the battery is directly electrically connected to the PCBA and the vaporization device is devoid of any wires electrically connecting any components to the PCBA, and a seal disposed at the intersection of the first and second portions of the housing and an O-ring positioned adjacent the seal, the seal and the O-ring collectively configured to provide a substantially fluid-tight seal between the first and second portions of the housing so as to retard leakage of the liquid from the first portion of the housing into the second portion of the housing, not required by the claims of Group I or III.

The invention of Group III includes the special technical feature of an absorbent core element configured to absorb the liquid and a first sleeving having a first end, a second end opposite the first end thereof, and a pair of notches extending in to the second end of the first sleeving, each notch of the pair of notches of the first sleeving being spaced apart from and axially aligned with one another and configured to receive and fixedly secure the absorbent core element, not required by the claims of Group I or II.

COMMON TECHNICAL FEATURES

Groups I-III share the common technical features of a housing, a reservoir, a battery, and a heating component. However, this shared technical feature does not represent a contribution over prior art as being anticipated by US 2018/0070649 A1 to JUUL Labs, Inc. (hereinafter "JUUL"), which discloses a vaporization device (Fig 1; para [0173]), comprising:
a housing (body 301, FIG 3; para [0165]) having a first end (see top end, FIG 3), a second end opposite the first end thereof (see bottom end, FIG 3);
a reservoir (chamber 304a, FIG 3; para [0165]) disposed in the housing adjacent the first end thereof and configured to store a liquid (para [0165]);
a battery (211, FIG 2; para [0162]) disposed in the housing adjacent the second end thereof and spaced apart from the reservoir (FIGS 2, 3); and
a heating component (heater 305, FIG 3; para [0165]) at least partially disposed within the reservoir (FIG 3), in electrical communication with the battery, and configured to be energized by the battery to produce vaporized aerosol from the liquid (para [0161]).

As the common technical features were known in the art at the time of the invention, these cannot be considered special technical feature that would otherwise unify the groups.

Therefore, Groups I-III lack unity under PCT Rule 13 because they do not share a same or corresponding special technical feature.

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

To: MARK S. EINSIEDEL
BAKERHOSTETLER
200 CIVIC CENTER DRIVE
SUITE 1200
COLUMBUS, OH 43215

Date of mailing (day/month/year) **SEP 27 2023**

Applicant's or agent's file reference 112197-000100		FOR FURTHER ACTION See paragraph 2 below	
International application No. PCT/US 23/65519	International filing date (day/month/year) 07 April 2023 (07.04.2023)	Priority date (day/month/year) 10 June 2022 (10.06.2022)	
International Patent Classification (IPC) or both national classification and IPC IPC - INV. A24F 47/00, A61M 15/00, H05B 1/02, H05B 3/44, A24F 7/00, F22B 1/28 (2023.01) ADD. CPC - INV. A61M 11/042, A61M 15/0065, H05B 3/44, H05B 1/0244, F22B 1/284, A24B 15/167 ADD. H05B 2203/021, A61M 15/06, A61M 2205/15, A61M 2205/60, A61M 2205/276			
Applicant BIDI VAPOR, LLC			

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 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.

Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-8300	Date of completion of this opinion 29 June 2023 (29.06.2023)	Authorized officer Kari Rodriguez PCT Help Desk Telephone No. 571-272-4300
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WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US 23/65519

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 43*bis*.1(b)).
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.
 - b. furnished subsequent to the international filing date for the purposes of international search (Rule 13ter.1(a)),
 - accompanied by a statement to the effect that the sequence listing does not go beyond the disclosure in the international application as filed.
4. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, this opinion has been established to the extent that a meaningful opinion could be formed without a WIPO Standard ST.26 compliant sequence listing.
5. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US 23/65519

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:

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I: Claims 1-18 are directed to a vaporization device with airflow apertures in the housing.

Group II: Claims 19-20 are directed to a vaporization device with an enclosure surrounding a reservoir, a circuit board, and sealing with an o-ring.

Group III: Claims 21-26 are directed to vaporization device with an absorbent core within a sleeving secured by notches.

The inventions listed as Groups I-III do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

SPECIAL TECHNICAL FEATURES

The invention of Group I includes the special technical feature of one or more airflow apertures defined in a wall of the housing and spaced apart from the first and second ends thereof, not required by the claims of Groups II or III.

The invention of Group II includes the special technical feature of a non-absorbent tank disposed within the first portion of the housing, a printed circuit board assembly (PCBA) disposed within the second portion of the housing wherein the battery is directly electrically connected to the PCBA and the vaporization device is devoid of any wires electrically connecting any components to the PCBA, and a seal disposed at the intersection of the first and second portions of the housing and an O-ring positioned adjacent the seal, the seal and the O-ring collectively configured to provide a substantially fluid-tight seal between the first and second portions of the housing so as to retard leakage of the liquid from the first portion of the housing into the second portion of the housing, not required by the claims of Group I or III.

The invention of Group III includes the special technical feature of an absorbent core element configured to absorb the liquid and a first sleeving having a first end, a second end opposite the first end thereof, and a pair of notches extending in to the second end of the first sleeving, each notch of the pair of notches of the first sleeving being spaced apart from and axially aligned with one another and configured to receive and fixedly secure the absorbent core element, not required by the claims of Group I or II.

COMMON TECHNICAL FEATURES

Groups I-III share the common technical features of a housing, a reservoir, a battery, and a heating component. However, this shared technical feature does not represent a contribution over prior art as being anticipated by US 2018/0070649 A1 to JUUL Labs, Inc. (hereinafter "JUUL"), which discloses a vaporization device (Fig 1; para [0173]), comprising: a housing (body 301, FIG 3; para [0165]) having a first end (see top end, FIG 3), a second end opposite the first end thereof (see bottom end, FIG 3); a reservoir (chamber 304a, FIG 3; para [0165]) disposed in the housing adjacent the first end thereof and configured to store a liquid (para [0165]); a battery (211, FIG 2; para [0162]) disposed in the housing adjacent the second end thereof and spaced apart from the reservoir (FIGS 2, 3); and

----- Continued in Supplemental Box -----

4. Consequently, this opinion has been established in respect of the following parts of the international application:
- all parts.
 - the parts relating to claims Nos. 1-18

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

1. Statement

Novelty (N)	Claims	11, 13-15, 18	YES
	Claims	1-10, 12, 16-17	NO
Inventive step (IS)	Claims	NONE	YES
	Claims	1-18	NO
Industrial applicability (IA)	Claims	1-18	YES
	Claims	NONE	NO

2. Citations and explanations:

Claims 1-10, 12, and 16-17 lack novelty under PCT Article 33(2) as being anticipated by US 2018/0070649 A1 to JUUL Labs, Inc. (hereinafter "JUUL").

Regarding claim 1, JUUL teaches a vaporization device (Fig 1; para [0173]), comprising:

a housing (body 301, FIG 3; para [0165]) having a first end (see top end, FIG 3), a second end opposite the first end thereof (see bottom end, FIG 3), and one or more airflow apertures defined in a wall of the housing and spaced apart from the first and second ends thereof (inlet 321, vent 307, FIG 3; dual vents are also shown in FIG 10C; para [0165], para [0242]);
a reservoir (chamber 304, FIG 3; para [0165]) disposed in the housing adjacent the first end thereof and configured to store a liquid (para [0165]);
a battery (211, FIG 2; para [0162]) disposed in the housing adjacent the second end thereof and spaced apart from the reservoir (FIGS 2, 3); and
a heating component (heater 305, FIG 3; para [0165]) at least partially disposed within the reservoir (FIG 3), in electrical communication with the battery, and configured to be energized by the battery to produce vaporized aerosol from the liquid (para [0161]).

Regarding claim 2, JUUL teaches the vaporization device of claim 1. JUUL further teaches wherein the one or more airflow apertures see are defined in the wall of the housing at or near a midpoint of the wall between the first and second ends of the housing (see inlet 321 and vent 307, FIG 3; para [0165])

Regarding claim 3, JUUL teaches the vaporization device of claim 1. JUUL further teaches wherein the one or more airflow apertures include a first airflow aperture and a second airflow aperture (see dual vents 47, FIG 10C, para [0242]), the first airflow aperture defined in a first side wall (see left side wall at FIG 10C) of the housing and the second airflow aperture defined in an opposite, second side wall of the housing (see right side wall at FIG 10C).

Regarding claim 4, JUUL teaches the vaporization device of claim 3. JUUL further teaches wherein the first and second airflow apertures are spaced equidistant from the second end of the housing (see vents equally spaced at opposite walls and hence equidistant from second (bottom) end of housing, FIG 10C).

Regarding claim 5, JUUL teaches the vaporization device of claim 1. JUUL further teaches wherein the one or more airflow apertures are positioned between the battery and the first end of the housing (see inlet and vent positioned between battery and top end, FIGS 2, 3) such that an air flow path through the vaporization device does not pass the battery (shown in FIG 2; para [0162]).

Regarding claim 6, JUUL teaches the vaporization device of claim 1. JUUL additionally teaches comprising one or more light sources (26, FIG 15; para [0222], [0319]), wherein each light source of the one or more light sources is positioned proximate a respective one of the one or more airflow apertures (50, FIG 14; para [0221]) and is configured to be illuminated to backlight the respective one of the one or more airflow apertures (see locations of light 26 and air inlet 50, FIGS 14-15; para [0222]).

Regarding claim 7, JUUL teaches the vaporization device of claim 1. JUUL also teaches further comprising a printed circuit board assembly (PCBA) disposed within the housing (see PCB 24 within receptacle 21, FIG 14; para [0221]-[0222]), wherein the battery is directly electrically connected to the PCBA (para [0069]: contact connection) and the vaporization device is devoid of any wires electrically connecting any components to the PCBA (para [0069]: wherein connection is via contacts).

Regarding claim 8, JUUL teaches the vaporization device of claim 1. JUUL additionally teaches further comprising a non-absorbent tank (para [0226]: enclosure) disposed within the housing adjacent the first end thereof, wherein the reservoir (32, FIG 7B; para [0226]) is disposed in the tank and the battery is spaced apart from the tank (see FIG 7B; para [0220], [0222]: device body 20 comprises a battery wherein device body has a receptacle for receiving the cartridge 30 that contains the tank).

Regarding claim 9, JUUL teaches the vaporization device of claim 8, and further discloses wherein the tank is constructed of plastic or stainless steel (para [0226]).

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

-----Box IV.3. Lack of unity of invention-----

a heating component (heater 305, FIG 3; para [0165]) at least partially disposed within the reservoir (FIG 3), in electrical communication with the battery, and configured to be energized by the battery to produce vaporized aerosol from the liquid (para [0161]).

As the common technical features were known in the art at the time of the invention, these cannot be considered special technical feature that would otherwise unify the groups.

Therefore, Groups I-III lack unity under PCT Rule 13 because they do not share a same or corresponding special technical feature.

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

----- Box V. 2. Citations and explanations -----

Regarding claim 10, JUUL teaches the vaporization device of claim 8. JUUL further teaches comprising a first seal proximate a first end of the reservoir (44, FIG 8A; para [0241]) and configured to provide a substantially fluid-tight seal therewith (para [0241]) and a second seal proximate an opposite, second end of the tank and configured to provide a substantially fluid-tight seal therewith (44, FIG 8A; para [0241]), the first and second seals collectively configured to retard leakage of the liquid from an interior of the tank (para [0196], [0241]).

Regarding claim 12, JUUL teaches the vaporization device of claim 1. JUUL additionally teaches comprising a nozzle cap operatively secured to the first end of the housing (38, FIG 7B; para [0220]: protective cap).

Regarding claim 16, JUUL teaches the vaporization device of claim 1. JUUL further teaches comprising a controller (24, FIG 14; para [0222], [0262]) configured to send a signal to the battery to continuously energize the heating component for the lesser (para [0266]-[0267], [0274]: wherein heating is applied during continuous usage or alternatively a time may be input) (a) a predetermined maximum amount of time as suction is applied to the vaporization device (para [0241], [0263]), and (b) continuously as suction is applied to the vaporization device (para [0241], [0262]).

Regarding claim 17, JUUL teaches a vaporization device (FIG 1, para [0173]), comprising:
a housing (body 301, FIG 3; para [0165]) having a first end (see top end, FIG 1), a second end opposite the first end thereof (see end at opposite bottom, FIG 1), the housing further including:
a first airflow aperture (inlet 321, FIG 3; para [0165]) defined in a first wall of the housing at or near a midpoint of the first wall between the first and second ends of the housing (FIG 3: first wall at left side of device); and
a second airflow aperture (aeration vent 307, FIG 3; para [0165]) defined in a second wall of the housing at or near a midpoint of the second wall between the first and second ends of the housing (FIG 3: see second wall at opposite right side of device);
a reservoir (oven chamber 304a, FIG 3; para [0165]) disposed in the housing adjacent the first end thereof and configured to store a liquid (para [0165]);
a battery (211, FIG 2; para [0162]) disposed in the housing adjacent the second end thereof and spaced apart from the reservoir (FIG 2; para [0162]); and
a heating component (heater 305, FIG 3; para [0165]) at least partially disposed within the reservoir (see FIG 3), in electrical communication with the battery, and configured to be energized by the battery to produce vaporized aerosol from the liquid (para [0128]), wherein the first airflow aperture and the second airflow aperture are each positioned between the battery and the first end of the housing such that an air flow path through the vaporization device does not pass the battery (FIGS 2, 3; para [0162]).

Claims 11 and 18 lack an inventive step under PCT Article 33(3) as being obvious over JUUL.

Regarding claim 11, JUUL teaches the vaporization device of claim 10, but does not specifically disclose further comprising a seal fixation member configured to engage and retain the second seal to substantially constant dimensions by engaging and retaining the second seal to retard expansion or contraction of the second seal. Notwithstanding, JUUL teaches a liquid tight seal fixation member used to seal the reservoir (206, FIG 2; para [0161]). Further, it is within the purview of a person of ordinary skill in the art to implement a sealing medium to engage and retain a seal to retard expansion or contraction to prevent leakage. As such, it would have been obvious to one of ordinary skill in the art to configure the device taught by JUUL further comprising a seal fixation member configured to engage and retain the second seal to substantially constant dimensions by engaging and retaining the second seal to retard expansion or contraction of the second seal so as to prevent distortion of components that would cause leakage.

Regarding claim 18, JUUL teaches the vaporization device of claim 17. JUUL does not specifically disclose further comprising:
a first light source positioned proximate the first airflow aperture and configured to be illuminated to backlight the first airflow aperture; and
a second light source positioned proximate the second airflow aperture and configured to be illuminated to backlight the second airflow aperture.

However, JUUL additionally teaches comprising one or more light sources (26, FIG 15; para [0222], [0319]), wherein each light source of the one or more light sources is positioned proximate a respective one of the one or more airflow apertures (inlet 50, FIG 14; para [0221]) and is configured to be illuminated to backlight the respective one of the one or more airflow apertures (see locations of light 26 and air inlet 50, FIGS 14-15; para [0222]). Further, positioning a duplicative light source within the device is within the purview of one of ordinary skill in the art. As such, it would have been obvious to a person of ordinary skill in the art to configure the device taught by JUUL further comprising a first light source positioned proximate the first airflow aperture and configured to be illuminated to backlight the first airflow aperture and a second light source positioned proximate the second airflow aperture and configured to be illuminated to backlight the second airflow aperture so as to provide for enhanced lighting as desired.

Claims 13-15 lack an inventive step under PCT Article 33(3) as being obvious over JUUL in view of US 2019/0364957 A1 to Pax Labs, Inc. (hereinafter "Pax").

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

----- Preceding Supplemental Box for Box V.2. Citations and explanations -----

Regarding claim 13, JUUL teaches the vaporization device of claim 12. JUUL does not specifically disclose further comprising: a first oil-absorbing element positioned between the reservoir and the nozzle cap; and a second oil-absorbing element positioned between the reservoir and the nozzle cap and spaced apart from the first oil-absorbing element.

However, Pax teaches a vaporization device (para [0004]) comprising multiple oil-absorbent elements positioned between recesses between upper and lower regions of the device (para [0017]: discussing locations of absorbent pads, [0066]: wherein the absorbent padding prevents leakage of vaporizable material, [0071]: wherein the vaporizable material is an oil). Accordingly, it would have been obvious to a person of ordinary skill in the art to configure the device taught by JUUL with the oil-absorbing elements of Pax to configure a device further comprising a first oil-absorbing element positioned between the reservoir and the nozzle cap and a second oil-absorbing element positioned between the reservoir and the nozzle cap and spaced apart from the first oil-absorbing element in order to prevent leakage within the device.

Regarding claim 14, the vaporization device of claim 13 is made obvious by JUUL in view of Pax. However, neither reference specifically discloses wherein an axis through the longest dimension of the first oil-absorbing element is oriented substantially perpendicular to an axis through the longest dimension of the second oil-absorbing element. Notwithstanding, Pax teaches a first oil-absorbing element proximally located at the end region and a second oil absorbing element distally positioned (para [0017]). Further, varying orientation of components about an axis is within the purview of one of ordinary skill in the art in order to provide the desired absorption within the device. As such, it would have been obvious to one of ordinary skill in the art to configure the device made obvious by JUUL in view of Pax wherein an axis through the longest dimension of the first oil-absorbing element is oriented substantially perpendicular to an axis through the longest dimension of the second oil-absorbing element so as to provide for reliable absorption depending on the manufacturing or design specifications.

Regarding claim 15, the vaporization device of claim 13 is made obvious by JUUL in view of Pax. Further, Pax teaches wherein an air flow path through the vaporization device is split into a first air flow path along a first side of the first oil-absorbing element (first flow path 154 to flow inlet 162a is at the mouthpiece 152, FIGS 1D, 1F; para [0017]) and a second air flow path along an opposite, second side of the first oil-absorbing element (second flow path 154 to flow inlet 162b, FIGS 1D, 1F; para [0017]).

Claims 1-18 have industrial applicability as defined by PCT Article 33(4) because the subject matter can be made or used in industry.