



(51) International Patent Classification:

A24F 40/44 (2020.01)

A24F 40/30 (2020.01)

A24F 40/48 (2020.01)

(21) International Application Number:

PCT/IB2020/051891

(22) International Filing Date:

04 March 2020 (04.03.2020)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

16/353,556

14 March 2019 (14.03.2019)

US

(71) Applicant: RAI STRATEGIC HOLDINGS, INC.

[US/US]; 401 North Main Street, Winston-Salem, North Carolina 27101 (US).

(72) Inventor: HEJAZI, Vahid;

1100 Poplar Station Circle NW, Apt. 203, Concord, North Carolina 28207 (US).

(74) Agent: CAGLE, Ryan W. et al.; Womble Bond Dickinson

(US) LLP, Attn: Patent Docketing, P.O. Box 7037, Atlanta, Georgia 30357-0037 (US).

(81) Designated States (unless otherwise indicated, for every

kind of national protection available): AE, AG, AL, AM,

AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ,

CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every

kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

— as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

(54) Title: AEROSOL DELIVERY DEVICE PROVIDING FLAVOR CONTROL

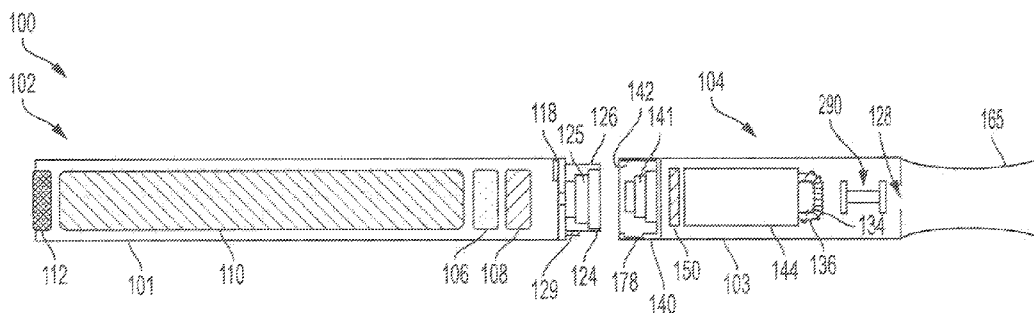


FIG. 1

(57) Abstract: The present disclosure relates to a flavor delivery article, a mouthpiece, a cartridge, and/or an aerosol delivery device that includes such flavor delivery article. The flavor delivery article includes a hollow elongate unit formed of a substantially continuous wall extending between a first end and a second end and defining an interior storage volume, the substantially continuous wall being formed of a porous material having a graded porosity across a thickness of the substantially continuous wall. The flavor delivery article further includes a flavor liquid contained within the interior storage volume of the hollow elongate unit. The flavor delivery article may be positioned anywhere within an aerosol delivery device (or a mouthpiece or a cartridge of an aerosol delivery device) wherein the flavor liquid may pass through the substantially continuous wall to be entrained in an air stream and/or vapor stream and/or aerosol stream passing through the aerosol delivery device.

Published:

- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*
- *in black and white; the international application as filed contained color or greyscale and is available for download from PATENTSCOPE*

(88) Date of publication of the international search report:

26 November 2020 (26.11.2020)

INTERNATIONAL SEARCH REPORT

International application No

PCT/IB2020/051891

A. CLASSIFICATION OF SUBJECT MATTER

INV. A24F40/44 A24F40/48 A24F40/30
ADD.

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)

A24F A24D

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

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

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CN 208 338 878 U (SHENZHEN INNOKIN TECH CO LTD) 8 January 2019 (2019-01-08)	1-4,8
A	paragraphs [0024] - [0026] figures 1-5	5-7

X	CN 207 969 655 U (ALD GROUP LTD) 16 October 2018 (2018-10-16)	1-3
A	the whole document	5-7

A	US 2017/367411 A1 (DUC FABIEN [CH]) 28 December 2017 (2017-12-28)	5-7
	abstract figures 1-2	

	-/--	

☒ 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

"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

22 September 2020

Date of mailing of the international search report

02/10/2020

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040,
Fax: (+31-70) 340-3016

Authorized officer

Cabrele, Silvio

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2020/051891

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:

see additional 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 an 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.:

1-8, 17-27
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.:

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/IB2020/051891

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	GB 2 561 867 A (NERUDIA LTD [GB]) 31 October 2018 (2018-10-31) abstract page 14, lines 9-14 page 15, lines 6-19 figures 1-10 -----	5-7
X A	US 2016/135506 A1 (SANCHEZ LUIS A [US] ET AL) 19 May 2016 (2016-05-19) abstract paragraph [0037] paragraph [0040] paragraphs [0054] - [0055] paragraph [0069] paragraph [0075] paragraph [0081] paragraphs [0086] - [0094] paragraphs [0104] - [0107] figures 1-34 -----	1,17-24, 26,27 25
A	WO 2018/050613 A1 (BRITISH AMERICAN TOBACCO INVESTMENTS LTD [GB]) 22 March 2018 (2018-03-22) abstract page 5, lines 15-17 page 8, line 11 - page 9, line 6 figures 1-8 -----	1,17-27
A	WO 2018/114312 A1 (PHILIP MORRIS PRODUCTS SA [CH]) 28 June 2018 (2018-06-28) abstract page 9, lines 5-11 figures 1-6 -----	1,17-27

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2020/051891

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
CN 208338878 U	08-01-2019	NONE	
CN 207969655 U	16-10-2018	NONE	
US 2017367411 A1	28-12-2017	CA 3021544 A1 CN 109195653 A EP 3471807 A1 JP 2019522965 A KR 20190019055 A RU 2018145298 A US 2017367411 A1 WO 2017220340 A1	28-12-2017 11-01-2019 24-04-2019 22-08-2019 26-02-2019 21-07-2020 28-12-2017 28-12-2017
GB 2561867 A	31-10-2018	CN 110740773 A CN 110769883 A CN 110769884 A CN 110769885 A EP 3615114 A1 EP 3615115 A1 EP 3615116 A1 EP 3615117 A1 GB 2561867 A GB 2561953 A GB 2561954 A GB 2561955 A GB 2561956 A GB 2561957 A GB 2561958 A GB 2561959 A US 2020187561 A1 WO 2018197511 A1 WO 2018197513 A1 WO 2018197514 A1 WO 2018197515 A1	31-01-2020 07-02-2020 07-02-2020 07-02-2020 04-03-2020 04-03-2020 04-03-2020 04-03-2020 31-10-2018 31-10-2018 31-10-2018 31-10-2018 31-10-2018 31-10-2018 31-10-2018 31-10-2018 18-06-2020 01-11-2018 01-11-2018 01-11-2018 01-11-2018
US 2016135506 A1	19-05-2016	CN 107205480 A EP 3220761 A1 US 2016135506 A1 WO 2016079589 A1	26-09-2017 27-09-2017 19-05-2016 26-05-2016
WO 2018050613 A1	22-03-2018	CN 109788800 A EP 3512367 A1 JP 2019528715 A KR 20190047043 A US 2019254344 A1 WO 2018050613 A1	21-05-2019 24-07-2019 17-10-2019 07-05-2019 22-08-2019 22-03-2018
WO 2018114312 A1	28-06-2018	CN 109982587 A EP 3554291 A1 JP 2020501539 A KR 20190089896 A WO 2018114312 A1	05-07-2019 23-10-2019 23-01-2020 31-07-2019 28-06-2018

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-8

Porous hollow elongate unit

2. claims: 9-16

Mouthpiece / end unit

3. claims: 17-27

Cartridge
