

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

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

To:

see form PCT/ISA/220

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/EP2018/071710

International filing date (day/month/year)
09.08.2018

Priority date (day/month/year)
09.08.2017

International Patent Classification (IPC) or both national classification and IPC
INV. A24F47/00 ADD. H05B6/10 H05B6/44

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 43bis.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 66.1bis(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.

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Date of completion of this opinion

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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. II Priority

1. The validity of the priority claim has not been considered because the International Searching Authority does not have in its possession a copy of the earlier application whose priority has been claimed or, where required, a translation of that earlier application. This opinion has nevertheless been established on the assumption that the relevant date (Rules 43bis.1 and 64.1) is the claimed priority date.
2. This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43bis.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:

see separate sheet

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>1-13</u>
	No: Claims	
Inventive step (IS)	Yes: Claims	<u>1-13</u>
	No: Claims	
Industrial applicability (IA)	Yes: Claims	<u>1-13</u>
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VII Certain defects in the international application

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

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

Re Item II

Priority

The priority claim has been found invalid for all claims (Rules 43*bis*.1 and 64.1 PCT), the reasoning being as follows:

Independent claim 1 of the present application refers to an aerosol-generating device comprising, inter alia, a first and a second coil disposed at least partially around, or adjacent to, a heating zone, wherein "the first coil is a drive coil couplable to a source of alternating current, and the second coil is a resonant coil of a resonant circuit, the second coil being inductively couplable to the first coil."

As there is no basis in the priority document for these features, the priority claim of independent claim 1 is deemed invalid. The same applies to claims 2-13, which are fundamentally dependent on claim 1.

Thus, for the purpose of this opinion, the international filing date of 9 August 2018 (2018-08-09) is considered to be the relevant date.

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Reference is made to the following documents:

- D1 WO 2018/138072 A1 (BRITISH AMERICAN TOBACCO INVESTMENTS LTD [GB]) 2 August 2018 (2018-08-02)
- D2 US 2016/021934 A1 (CADIEUX EDMOND J [US] ET AL) 28 January 2016 (2016-01-28)
- D3 US 2016/120225 A1 (MISHRA MUNMAYA K [US] ET AL) 5 May 2016 (2016-05-05)
- D4 WO 2017/001818 A1 (NICOVENTURES HOLDINGS LTD [GB]) 5 January 2017 (2017-01-05)

Document D1 is regarded as being the prior art closest to the subject-matter of independent claim 1, and discloses in Fig. 11 an aerosol-generating device 400 comprising:

a housing 110 having a chamber (cf. recess) sized to receive at least a portion of

an aerosol-forming substrate (see p. 23, l. 3-12),
wherein the chamber defines a heating zone 111;
a first coil 114 disposed at least partially around, or adjacent to, the heating zone 111 (see Fig. 11);
a second coil 115 disposed at least partially around, or adjacent to, the heating zone 111 (see Fig. 11), wherein
the first coil 114 is a drive coil couplable to a source of alternating current 116 (see p. 23, l. 16-19).

The subject-matter of independent claim 1 therefore differs from this known device in that the second coil is a resonant coil of a resonant circuit, the second coil being inductively couplable to the first coil.

The subject-matter of independent claim 1 is thus novel (Article 33(2) PCT).

The technical effect obtained by the differentiating feature set out above lies in that the current flow and hence the magnetic field strength produced by the coils is increased. The problem to be solved by the present invention may therefore be regarded as increasing the overall efficiency of the device (see p. 2, l. 1-3 of the present application).

The solution to this problem proposed in independent claim 1 is considered as involving an inventive step (Article 33(3) PCT) as none of the available prior art documents disclose or render obvious the overall combination of features of said claim.

Indeed, document D2 teaches in [0056] and Fig. 1 the provision of a first coil inductively coupled to a second coil. However, the second coil is arranged to heat a resistive heating element which in turn vaporises a liquid stored in a non-replaceable liquid reservoir. Moreover, the second coil is not a resonant coil of a resonant circuit. Thus even when combining document D1 with the teaching of D2, the skilled person would not arrive at the subject-matter of claim 1.

Document D3 teaches in [0120] the provision of a primary coil transferring energy to a secondary coil which constitutes the heating coil. However, there is no mention of a resonant circuit. Thus also when combining document D1 with the teaching of D3, the skilled person would not arrive at the subject-matter of claim 1.

Document D4 teaches on p. 15, l. 7-12 the integration of a coil into a resonant circuit and addresses the problem of providing rapid and effective heating. However, there is no mention of combining this teaching with a second coil, although D4 teaches the

provision of multiple coils for a different embodiment (see Fig. 6). Thus, starting from document D1, the skilled person is neither prompted to look to the teaching of D4, nor would he promptly arrive at the subject-matter of claim 1 when doing so.

Claims 2-13 are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step (Article 33(1)-(3) PCT).

Re Item VII

Certain defects in the international application

Contrary to the requirements of Rule 5.1(a)(ii) PCT, there is no mention of relevant background art in the description, nor are any relevant documents identified therein.

The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).

Independent claim 1 is not in the two-part form in accordance with Rule 6.3(b) PCT, which in the present case would be appropriate, with those features known in combination from the prior art (i.e. D1, see **Item V**) being placed in the preamble (Rule 6.3(b)(i) PCT) and the remaining features being included in the characterising part (Rule 6.3(b)(ii) PCT).

Re Item VIII

Certain observations on the international application

The application does not meet the requirements of Article 6 PCT, the reasoning being as follows:

The subject-matter described on p. 2, l. 35 - p. 3, l. 9; p. 14, l. 23-26 and l. 33; p. 17, l. 22-25; and throughout p. 18, concerning various aspects of the invention, does not fall within the scope of the claims. This inconsistency between the claims and the description leads to doubt concerning the matter for which protection is sought, thereby rendering the claims unclear (Article 6 PCT).

Moreover, the vague and imprecise statement in the description on p. 25, l. 18-20 implies that the subject-matter for which protection is sought may be different to that defined by the claims, thereby resulting in lack of clarity (Article 6 PCT) when used to interpret them.