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**Datasheet for the decision
of 22 May 2025**

Case Number: T 0182/23 - 3.2.04

Application Number: 13003929.0

Publication Number: 2835063

IPC: A24F47/00

Language of the proceedings: EN

Title of invention:

Electronic smoking device and process of manufacturing thereof

Patent Proprietor:

Fontem Ventures B.V.

Opponents:

Philip Morris Products S.A.
JT International S.A.
Weickmann & Weickmann Patent- und
Rechtsanwälte PartmbB

Headword:

Relevant legal provisions:

EPC Art. 123(2), 54, 56

Keyword:

Amendments - added subject-matter (no) - allowable (yes)

Novelty - (yes) - main request (yes)

Inventive step - (yes) - main request (yes)

Decisions cited:

Catchword:



Beschwerdekammern
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Case Number: T 0182/23 - 3.2.04

D E C I S I O N
of Technical Board of Appeal 3.2.04
of 22 May 2025

Appellant: Philip Morris Products S.A.
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Decision under appeal: Interlocutory decision of the Opposition
Division of the European Patent Office posted on
11 November 2022 concerning maintenance of the
European Patent No. 2835063 in amended form.

Composition of the Board:

Chairman A. Pieracci
Members: C. Kujat
K. Kerber-Zubrzycka

Summary of Facts and Submissions

- I. Opponent 1's appeal lies from the interlocutory decision of the opposition division of the European Patent Office concerning maintenance of the European Patent No. 2 835 063 in amended form pursuant to Articles 101(3) (a) and 106(2) EPC.
- II. The opposition division held *inter alia* that the patent as amended according to Auxiliary Request 5 and the invention to which it related met the requirements of the EPC, having regard *inter alia* to the following pieces of evidence:
- D1 CN 202456412U
D3 US 2008 0257367 A1
- III. Opponent 1 as appellant requests that the decision under appeal be set aside and that the patent be revoked.
- IV. The respondent (patent proprietor) requests that the appeal be rejected (and that the decision of the opposition division be maintained) or, in the alternative, that the patent be maintained on the basis of one of auxiliary requests 1 to 11 filed with their reply to the statement of grounds of appeal.
- V. Opponent 2 had withdrawn their appeal with letter of 17 March 2023. As parties as of right, neither opponent 2 nor opponent 3 made any submissions
- VI. In preparation for oral proceedings the Board issued a communication pursuant to Article 15(1) RPBA setting out its provisional opinion on the relevant issues.

Oral proceedings were duly held on 22 May 2025 in the presence of the proprietor and opponents 1 and 2 as a video conference.

VII. Independent claim 1 of the Main Request, which corresponds to Auxiliary Request 5 upheld by the opposition division, reads as follows (the feature references used by the parties are indicated in square brackets):

"**[1.1]** Electronic smoking device, comprising an elongate housing sleeve (60) having a first end (62) and a second end (64) and

[1.2] accommodating at least part of the following components:

[1.2.1] a battery (40) as an electric power source powering

[1.2.2] an electrically activatable atomizer (76) including an electric heater and adapted to atomize a liquid supplied from a reservoir (78) to provide an aerosol exiting from the atomizer (76),

[1.2.3] a puff detector (48) adapted to detect a user requesting the generation of an aerosol, and

[1.2.4] control electronics (42, 44) connected to the puff detector (48) and adapted to control the heater of the atomizer (76);

[1.3] the electronic smoking device further comprising an elongate insert (10)

[1.3.1] permitting lateral access and

[1.3.2] fitting into the housing sleeve (60) via one of the ends (62, 64) of the housing sleeve (60), wherein

[1.4] at least part of the following components is mounted on the insert (10): the battery (40), the puff detector (48), the control electronics (42, 44), the atomizer, characterized in that

[1.5] the insert (10) comprises a first end (12), which is located at the first end (62) of the housing sleeve (60) when the insert (10) is fitted into the housing sleeve (60) and a second end (30), which is located at the second end (64) of the housing sleeve (60) when the insert (10) is fitted into the housing sleeve (60)

[1.6] the battery (40), the puff detector (48) comprising an inhaling sensor, and the control electronics (42, 44) are mounted on the insert (10), and

[1.7] a connector (50) is mounted at a second end (30) of the insert (10), which is located at the second end (64) of the housing sleeve (60) when the insert (10) is fitted into the housing sleeve (60), wherein

[1.8] the connector (50) is adapted to provide a mechanical connection to another portion (72) of the electronic smoking device (70), which comprises the atomizer (76), and wherein the connector (50) includes electrical connections for the atomizer (76)."

VIII. The relevant submissions of the parties will be discussed in detail in the reasons for the decision.

Reasons for the Decision

1. Amendments

The appellant opponent 1 challenges allowability of the amendments in claim 1 of the Main Request.

1.1 Claim 1 of the Main Request is based on a combination of original claims 1, 6 and 12 and a further feature 1.5 taken from the description (1.5: *"the insert (10) comprises a first end (12), which is located at the first end (62) of the housing sleeve (60) when the insert (10) is fitted into the housing sleeve (60) and*

a second end (30), which is located at the second end (64) of the housing sleeve (60) when the insert (10) is fitted into the housing sleeve (60)"). The appellant opponent 1 argues that feature 1.5 contains an unallowable intermediate generalisation of the original disclosure on page 7, lines 16-34. In their view, that passage only discloses a connector mounted at the second end of the insert in combination with a charging port mounted at the first end of the insert. Further, they consider the omitted charging port not dispensable for the function of the invention considering the technical problem the invention serves to solve, see item 46 of their statement of grounds of appeal.

- 1.2 The Board disagrees. According to original claim 6, a connector is mounted at a second end of the insert (which is located at the second end of the housing sleeve when the insert is fitted into the housing sleeve). Due to the reference to a second end of the insert, that passage already discloses the implicit fact that the insert has a first end, albeit without specifying its relative location to the housing sleeve. In the Board's view, that information can be gleaned independently from the presence of a charging port from the sentence on original page 7, lines 14 to 18. This sentence reads: *"For example, a charging port can be mounted at one end of the insert, by definition at the first end of the insert, which is located at (i.e. in the area of) the first end of the housing sleeve when the insert is inside the housing sleeve."* According to the application, the components are mounted on the elongate insert before the insert is inserted into the housing sleeve, see original page 4, lines 14 to 17 (*"Generally, the elongate insert is a component designed to aid the assemblage of the electronic smoking device. It provides a platform onto which*

internal parts or components can be mounted prior to insertion into the housing sleeve.", emphasis added by the board). A component such as the charging port according to original page 7, line 15 can only be mounted at the first end of the insert if this end can be identified at the time of mounting the charging port to the insert, i.e. before insertion of the insert into the housing sleeve. By the same token, the connector according to original claim 6 can only be mounted at the second end if also this end can be identified at the time of mounting the connector. In the Board's understanding, this discloses directly and unambiguously that the insert has a fixed length - extending from the first to the second end of the elongate housing sleeve - no matter at which end of the insert the optional charging port might be mounted. The Board therefore considers the length of the insert - extending from the first to the second end of the housing sleeve - a piece of information which is not inextricably linked to the presence of a charging port at the first end of the insert. Its isolation from the sentence on original page 7, lines 14 to 18 and subsequent incorporation into amended claim 1 therefore does not lead to an unallowable intermediate generalisation.

- 1.3 This view is not altered by the appellant's arguments about a lack of disclosure of the contested feature in the drawings, see items 3 to 41 of their statement of grounds of appeal, because the Board's reasoning is not based on the drawings, but entirely on the written disclosure in original page 7, lines 14 to 18 and original claim 6. In addition to that, the appellant's reference to omitted features of the battery, the puff detector, the control electronics and the charging port in items 44 to 46 of their statement of grounds of

appeal does not seem to apply to claim 1 of the present main request, because the battery, the puff detector and the control electronics are contained in feature 1.6 of that claim. The reference to "opposed patent" in item 45 rather creates the impression that these arguments relate to claim 1 of the granted patent, which is not under dispute in the present appeal proceedings. That notwithstanding, and contrary to the appellant's assertion in items 46 and 48 of their statement of grounds of appeal, neither is a charging port indispensable for the function of the invention, nor does its removal require a new design of the device, because a charging port is described as optional in the application in case that the battery is re-chargeable. See the statements "*For example, a charging port can be mounted at one end of the insert...*" on original page 7, lines 14 to 16 and "*The battery is preferably a rechargeable battery...*" on original page 3, lines 2 and 3.

- 1.4 The contested issue of admittance of the objection notwithstanding, claim 1 of the Main Request does not contain subject-matter which extends beyond the content of the application as filed, Article 123(2) EPC.

2. *Novelty*

The appellant opponent 1 disputes the decision's finding that the subject-matter of claim 1 of Auxiliary Request 5 is novel over the disclosure of document D1, see paragraph 9.7 of the impugned decision. Further, they challenge novelty over the disclosure of document D3.

2.1 Document D1 discloses an electronic smoking device with a lower casing 2, wherein a battery 8, control electronics 10, 12 and an electronic switch 7 are mounted on battery portion 4, see figure 3 and paragraph 0023 of the English translation. Battery portion 4 has a first, lower end which is located at the first, lower end of lower casing 2 when it is fitted into it, and a second, upper end which is located at the second, upper end of lower casing 2. The electronic switch 7 connects atomization portion 6 to the battery when the user inhales, see paragraphs 0023 and 0025 of the English translation.

2.2 The Board considers battery portion 4 to be an insert, since it is inserted into lower casing 2, see figures 1 and 3. The decision on novelty vis-à-vis document D1 depends on, inter alia, whether it also discloses a connector that is mounted at a second end of battery portion 4 (i.e. the insert), which is located at the second end of the lower casing 2 (i.e. the housing sleeve) when the battery portion is fitted into the lower casing, and which includes electrical connections for atomization portion 6. The Board finds this not to be so for the following reasons:

2.2.1 In a first line of argument, the appellant opponent 1 considers electronic switch 7 to serve both as puff detector and connector. In their view, electronic switch 7 is implicitly connected to battery portion 4 in the area where the switch is located such that this area forms another portion of the electronic smoking device according to feature 1.8 of claim 1 ("*wherein the connector is adapted to provide a mechanical connection to another portion ... which comprises the atomizer*"). While the Board accepts that there must be a mechanical connection between electronic switch 7 and

battery portion 4 in order to keep the switch in place, this does not translate into the disclosure of a connector mounted at a second end of the battery portion.

As stated by the appellant in item 92 of their reply of 8 April 2025, the term "mounted" generally refers to a component being affixed, attached or supported in a way that it is functionally integrated into a system. In the Board's understanding, the reference to a component affixed or attached in this definition excludes that the connector may be an integral part of the insert, e.g. a thread formed in an integrated bore or on an integrated protrusion formed during injection moulding of the insert from a thermoplastic material. The Board therefore construes feature 1.7 of claim 1 only in the sense that a connector is mounted at an insert if it was a separate component prior to mounting. This claim construction is confirmed by the patent in suit, which refers to "assemblage" in the context of a mounted component (paragraph 0016: *"the elongate insert is a component designed to aid the assemblage of the electronic smoking device. It provides a platform onto which internal parts or components can be mounted prior to insertion into the housing sleeve"; emphasis added by the board*).

Contrary to appellant opponent 1's argument in item 77 of their reply of 8 April 2025, the Board considers an integrated thread e.g. in the battery portion 4 of document D1 - albeit achieving a mechanical connection - not a connector mounted on the insert.

2.2.2 In document D1, the implicitly disclosed mechanical connection to electronic switch 7 can also be achieved by such an integrated thread in a bore or on a

protrusion of battery portion 4. The document therefore does not directly and unambiguously disclose that the connection involves a connector mounted at (a second end of) the battery portion 4. In the absence of such connector, the document also does not disclose that there is a connector which includes electrical connections to atomization portion 6.

2.2.3 During oral proceedings before the Board, appellant opponent 1 varied this first line of argument and considered the housing of switch 7 as the connector mounted at a second end of the insert. While the Board agrees that this housing may be considered a separate component that can be mounted on battery portion 4, this interpretation of document D1 does not match with all features of claim 1. Feature 1.6 requires the puff detector - the electronic switch 7 in the appellant's argument - to be mounted on the insert (*1.6: "the battery (40), the puff detector (48) comprising an inhaling sensor, and the control electronics (42, 44) are mounted on the insert (10)"*). The housing of electronic switch 7 therefore either belongs to the puff detector according to feature 1.6 and may not be considered the connector according to feature 1.7. Or there is no mounting of the puff detector on battery portion 4 if its housing is considered the connector defined in feature 1.7.

2.2.4 In a second line of argument based on paragraph 0024 of document D1, the appellant put forward that there is a connector in atomization portion 6. Indeed, the English translation of this paragraph discloses that the atomization portion 6 comprises a connector. However, in the absence of any statement to the effect, properties or location of this connector in paragraph 0024, this passage of the document does not disclose

that the connector is mounted at (a second end of) the battery portion 4, or that it includes electrical connections e.g. for the heating wire of atomization portion 6.

- 2.2.5 During oral proceedings before the Board, appellant opponent 1 varied this second line of argument and considered a mechanical connection between atomization portion 6 and battery portion 4 to be implicitly present in document D1. Again, as for the first line of argument, the Board accepts that there must be a mechanical connection in order to keep the atomization portion in place. However, this does not translate into a connector mounted at a second end of the battery portion, or disclose a connector which includes electrical connections to e.g. the heating wire of atomization portion 6.

As explained in paragraph 2.2.1 of the present decision, the Board construes feature 1.7 of claim 1 only in the sense that a connector is mounted at an insert if it was a separate component prior to mounting. The implicitly disclosed mechanical connection to atomization portion 7 can be achieved by an integrated thread in a bore or on a protrusion on battery portion 4 which is suitable for accepting the lower end of atomization portion 6 (shown enlarged in item 97 of appellant opponent 1's statement of grounds of appeal). Document D1 therefore does not disclose directly and unambiguously that the connection involves a connector mounted at (a second end of) the battery portion 4. In the absence of such disclosure, document D1 also does not disclose that there is a connector which includes electrical connections to atomization portion 6.

2.3 Document D3 discloses an electronic cigarette which comprises a liquid cartridge 10, a battery 5, a printed circuit board 8 with a microprocessor, and a reed switch 13 acting as puff detector, and a heating element 12 acting as atomizer and being mounted on heat shield 15, see figures 1 and 2 of the document.

2.4 The Board considers printed circuit board 8 to be an insert, since it is inserted into case 2, see figure 2. The decision on novelty vis-à-vis document D3 depends on, inter alia, whether it also discloses a connector that is mounted at a second end of printed circuit board 8 (i.e. the insert), which is located at the second end of case 2 (i.e. the housing sleeve) when the printed circuit board is fitted into the case, and which includes electrical connections for heating element 12 (i.e. the atomizer). The Board finds this not to be so for the following reasons:

2.4.1 With regard to features 1.7 and 1.8 of claim 1, appellant opponent 1 argued that heat shield 15 is mounted at the second end of the insert. In their view, it functions as mechanical connector for the atomizer which is directly arranged on the heat shield, and that figure 2 depicts electric wiring on the inside of the heat shield connecting the atomizer with the microprocessor, see item 121 of their statement of grounds of appeal.

2.4.2 While the Board accepts that there must be a mechanical connection between heating element 12 and some part of the internal electronics of the cigarette in order to keep the heating element in place once these elements are inserted into case 2, this does not translate into the disclosure of a connector mounted at a second end of printed circuit board 8. With regard to heat shield

15, paragraph 0015 of document D3 only discloses that it *"may be interposed between the heating member 12 and the printed circuit board 8, to protect components thereon"*. The generic statement of interposing the heat shield neither specifies whether it is in physical contact with heating member 12, nor whether it is connected thereto. Moreover, as argued by appellant opponent 1 in item 125 of their statement of grounds of appeal, heat shield 15 is described as optional in D3 because it *"may be interposed"*. In the Board's view, this rather indicates that the heating member 12 should be connected to printed circuit board 8, even in case an additional heat shield is present. Such connection, however, does not necessarily involve a dedicated connector. Instead, the electrical wires of heating member 12 could be soldered directly to printed circuit board 8, and thus, simultaneously provide the required mechanical and electrical connection.

- 2.4.3 This missing information cannot be gleaned from figure 2 either, because it may be pure coincidence that heating member 12 and heat shield 15 touch each other in that figure. According to established jurisprudence, see Case Law of the Boards of Appeal of the European Patent Office 10th edition July 2022 ("CLBoA"), I.C. 4.6, not only should the structure of a feature be shown sufficiently clearly in a drawing, but also the technical function achieved should be derivable. Contrary to the appellant's assertion, the Board cannot derive from that figure whether heating member 12 is mechanically connected to heat shield 15, or whether the heat shield merely surrounds another structure which connects printed circuit board 8 directly to heating member 12. Such a structure is shown in figure 1 of document D3 as a rectangular protrusion at the left upper end of printed circuit board. The Board is

also not convinced that the circles and lines in the middle of heat shield 15 in figure 2 could justify the conclusion that they relate to electric wiring for the atomizer. While the board accepts that there must be electrical connections between printed circuit board 8 and heating member 12, such electrical connections to lighted tip 4, see paragraph 0019 of the document, are not shown in any figure. It is therefore well possible that also the electrical connections to heating member 12 are not shown, and that the circles and lines in the middle of heat shield 15 actually relate to something else.

- 2.4.4 Document D3 therefore does not directly and unambiguously disclose that the connection between the heating member 12 and the printed circuit board 8 involves a connector mounted at (a second end of) the printed circuit board. In the absence of such connector, the document also does not disclose that there is a connector which includes electrical connections to heating member 12.
- 2.5 The contested issue of admittance of some of these objections notwithstanding, it follows from the above that none of the documents brought forward against novelty directly and unambiguously discloses a connector that is mounted at a second end of the insert, and which connector includes electrical connections for the atomizer. Therefore, neither D1 nor D3 is prejudicial to novelty of the subject-matter of claim 1, Article 54 EPC.

3. *Inventive Step*

The appellant opponent 1 disputes the decision's finding that the subject-matter of claim 1 of the Main Request involves an inventive step over each of documents D1 and D3 as alternative starting points.

3.1 In the context of novelty, see above, the Board already concluded that neither document D1 nor D3 disclose a connector that is mounted at a second end of the insert, and that the connector includes electrical connections for the atomizer. At least these two features are considered distinguishing features for the application of the problem-and-solution approach. The objective problem underlying the distinguishing features may well be formulated as making the device of D1 (or D3) operable, as proposed by the appellant opponent 1 in items 111 or 129 of their statement of grounds of appeal.

3.2 The Board must therefore now examine whether a skilled person would as a matter of obviousness modify the implicitly present connection in D1/D3 by changing its structure in order to arrive at a connector that is mounted at a second end of the insert, and which connector includes electrical connections for the atomizer. In accordance with the "could-would approach", see CLBoA, I.D.5, this means asking not whether the skilled person *could* have carried out the invention, but whether they *would* have done so in the hope of solving the underlying technical problem. In the present case, the Board accepts that the electronic smoking devices of D1/D3 may well be equipped with such a connector.

3.3 The Board is not convinced that the skilled person would do so. As already outlined in the discussion on novelty, see paragraph 2.2.1 above, the general concept of a mechanical connection with the insert is implicitly disclosed in document D1 for the connection between atomization portion 6 and battery portion 4, and in document D3 for the connection between printed circuit board 8 and heating member 12. This mechanical connection can be achieved in document D1 by providing e.g. a thread formed in an integrated bore or on an integrated protrusion on the battery portion 4, or in document D3 by soldering the electrical wires of heating member 12 to printed circuit board 8. However, in both cases, this is not considered to result in a connector "mounted at" the insert. Instead, this specific mechanical connection by means of a connector mounted at the insert requires the connector to be a separate component prior to its mounting to the insert. Appellant opponent 1 did not provide evidence for their allegation that choosing and implementing a connector is no more than customary practice. See item 113 and 131 of their statement of grounds of appeal. Without further evidence provided by the appellant, the Board cannot share their view as each party bears the burden of proof for the facts it alleges, see CLBoA, III.G. 5.1.1. This also applies to the line of argument starting from document D3.

3.4 This notwithstanding, the only argument advanced by appellant opponent 1 for the obviousness of the connector including electrical connections for the atomizer is that the connector in D1 will need to electrically connect to the connector of the atomizer and thereby electrically connect the atomizer to the battery, see item 112 of their statement of grounds of appeal. A similar argument is presented for the

electrical connection between atomizer 12 and the microprocessor of the printed circuit board 8 in document D3, see item 130 of the statement of grounds of appeal. The Board disagrees, because paragraph 0023 of the English translation of document D1 already discloses "hookup wires" for establishing an electrical connection between the battery portion 4 and the atomization portion 6. In the absence of further evidence provided by the appellant, the Board cannot share their view that the skilled person would as a matter of obviousness integrate the electrical connection by these hookup wires into a connector. This also applies to the implicitly present electrical connection between printed circuit board 8 and heating element 12 in document D3.

- 3.5 From the above it follows that a skilled person will not arrive at the subject-matter of claim 1 starting from each of documents D1 or D3 in an obvious manner. Therefore, claim 1 of the Main Request involves an inventive step in the light of this prior art, Article 56 EPC.
4. In conclusion, the Board finds that the appellant's contentions against the patent as upheld in amended form corresponding to the Main Request (Auxiliary Request 5 in the impugned decision) are without merit. In particular, claim 1 does not contain subject-matter which extends beyond the application as filed, Article 123(2) EPC, and the subject matter of claim 1 is novel and involves an inventive step in the light of the cited prior art, Articles 54 and 56 EPC.

The Board thus confirms the decision under appeal.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



G. Magouliotis

A. Pieracci

Decision electronically authenticated