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**Datasheet for the decision
of 6 August 2024**

Case Number: T 1762/22 - 3.2.01

Application Number: 12750765.5

Publication Number: 2753859

IPC: F16L59/065, A24F47/00

Language of the proceedings: EN

Title of invention:
INSULATING

Patent Proprietor:
Nicoventures Trading Limited

Opponents:
Fontem Ventures B.V.
JT International S.A.

Headword:

Relevant legal provisions:
EPC Art. 83, 84, 54, 56

Keyword:

Sufficiency of disclosure - (yes)

Claims - interpretation of ambiguous terms - clarity (yes)

Novelty - after amendment - (yes)

Inventive step - (yes)

Decisions cited:

Catchword:



Beschwerdekammern
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Case Number: T 1762/22 - 3.2.01

D E C I S I O N
of Technical Board of Appeal 3.2.01
of 6 August 2024

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Decision under appeal: **Interlocutory decision of the Opposition
Division of the European Patent Office posted on
6 May 2022 concerning maintenance of the
European Patent No. 2753859 in amended form.**

Composition of the Board:

Chairman	G. Pricolo
Members:	M. Geisenhofer
	O. Loizou

Summary of Facts and Submissions

- I. Appeals were filed by the patent proprietor and opponent 2 against the interlocutory decision of the opposition division finding that, on the basis of the auxiliary request 3, the patent in suit met the requirements of the EPC.
- II. The opposition division held that the subject-matter of the independent claim of this request was novel over documents
- R1 US 2009 / 26 June 2041 A1,
R4 US 4 675 508 and
R18 WO 2010/107613 A1, respectively,
- and involved an inventive step when starting from either of documents R1 and R18, or in the alternative from document
- R3 US 2007/0074734 A1.

The opposition division further decided that the independent claim of this request was sufficiently clear and that the patent disclosed the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art.

- III. During the oral proceedings held before the Board, the patent proprietor withdrew their appeal.
- (a) The appellant (opponent 2) requested that the decision under appeal be set aside and the patent be revoked.
- (b) The respondent (patent proprietor) requested that the appeal of opponent 2 be dismissed.

(c) Opponent 1, party as of right, did neither provide submissions nor participated in the oral proceedings, as announced with letter dated 26 July 2024.

IV. The independent claim according to auxiliary request 3 (version allowed by the opposition division) reads as follows:

*"An apparatus comprising:
a heater (3) configured to heat smokeable material (5) to volatilize at least one component of the smokeable material (5), and
thermal insulation (18) configured to thermally insulate the apparatus, characterised by the thermal insulation comprising:
a boundary comprising a first boundary section, a second boundary section and a third boundary section which connects the first and second boundary sections together; and
an internal insulating region (20) inside the boundary and configured to thermally insulate the first boundary section from the second boundary section;
wherein the third boundary section follows an indirect path between the first and second boundary sections, and wherein the indirect path comprises a non-straight path;
wherein a thermal conductivity of the third boundary section is higher than a thermal conductivity of the internal insulating region;
and wherein the internal insulating region has a lower pressure than a pressure at the exterior of the boundary;
wherein the apparatus is a heat-not-burn device."*

V. The appellant's arguments can be summarised as follows:

- (a) The independent claim did not comply with Article 84 EPC since the skilled person was not able to clearly distinguish between heat-not-burn devices in the sense of the claim and other devices.
- (b) The invention could not be carried out, contrary to Article 83 EPC, since the skilled person could not determine what shall be considered as a boundary section following an indirect, non-straight path.
- (c) The subject-matter of the independent claim lacked novelty in the sense of Article 54 EPC over R1, R4 and R18, respectively, at least an inventive step as required by Article 56 EPC when starting from either of R1, R3 or R18 as closest prior art.

VI. The respondent's arguments can be summarised as follows:

- (a) The term "heat-not-burn device" was a standard term which characterized a category of smoking devices that were well-known to the skilled person.
- (b) Figure 18 disclosed a suitable geometry used as path for the third boundary section. The patent hence disclosed at least one way of putting the invention into practice.
- (c) Neither R1 nor R18 disclosed a third boundary section having an indirect, non-straight path. R4 disclosed a water kettle which was not a heat-not-burn device. The subject-matter of the independent claim was hence novel.

(d) Starting from either of R1, R3 or R18, the skilled person had no teaching at hand that would render it obvious to use an indirect, non-straight path for a third boundary section connecting first and second boundary sections enclosing an insulating region there between. Such a path was in particular not rendered obvious by the common general knowledge.

(e) The skilled person would not combine R4 with any of R1, R3 or R18, respectively.

Reasons for the Decision

Clarity

1. The independent claim of the auxiliary request 3 as maintained by the opposition division is sufficiently clear (Article 84 EPC).
- 1.1 The appellant alleged that the term "*heat-not-burn device*" was not clear since the skilled person was not aware of criteria allowing to distinguish between devices being and devices not being heat-not-burn devices.
- 1.2 The Board notes that the independent claim is directed to an apparatus with a heater configured to heat smokeable material, i.e. to an apparatus in the technical field of smoking articles. As convincingly pointed out by the opposition division in the impugned decision (point 10.2 of the reasons), in this technical field the term "*heat-not-burn device*" is a standard term that generally refers - as the term suggests - to devices that are able to heat a rod of tobacco (such that volatile components are freed and can be inhaled),

whereas the tobacco is not burnt. This is achieved by limiting the temperature acting on the tobacco.

The skilled person is hence able to recognize whether an apparatus is a heat-not-burn device or not. In fact, the appellant did not provide evidence in support of the allegation that the term "heat-not-burn" device was not well-understood by the skilled person as argued by the opposition division.

- 1.2.1 The appellant argued that there were "hybrid" devices on the market that used a rod of tobacco combined with an e-liquid providing additional flavours (see e. g. R1, paragraphs [0066] and [0067]). It remained unclear whether such devices would also fall under the definition of "heat-not-burn" devices according to claim 1.
- 1.2.2 As set out above, the Board considers that a heat-not-burn device is a device that is capable of heating a rod of tobacco but does not burn it. Whether the same device is capable of providing an aerosol also when an e-liquid is additionally provided is irrelevant insofar the device is in any case functioning as a "heat-not-burn" device with tobacco only.
- 1.2.3 The appellant argued further that the independent claim referred to an apparatus which did not contain the substrate such that one and the same apparatus could be a heat-not-burn device depending on the kind of substrate used.
- 1.2.4 The Board does not agree since the heat-not-burn ability always refers to tobacco in dry form as a substrate.

Sufficiency of disclosure

2. The patent discloses the invention according to claim 1 in a manner sufficiently clear and complete for a skilled person to carry it out (Article 83 EPC).

2.1 The appellant argued that the skilled person was not able to determine a design for the third boundary section that followed an indirect, non-straight path.

2.2 The Board notes that figure 18 of the patent discloses according to paragraph [0079] an inwardly-facing, first boundary section 21 and an outwardly-facing, second boundary section 22. These two boundary sections are connected by a third boundary section 23 that follows an indirect path. The patent hence provides at least one embodiment showing how a boundary with the features cited in the independent claim can be put into practice.

2.3 The Board therefore fully shares the opposition division's decision as set out in reasons 5.2. This passage of the opposition division's decision refers to auxiliary request 1 but concerns the same features of the independent claim and is hence also applicable to auxiliary request 3.

Novelty

3. The subject-matter of claim 1 is novel (Article 54 EPC).

3.1 The appellant alleged that document R4 anticipated the subject-matter of the independent claim.

3.1.1 In the Board's view, the water kettle disclosed in R4 is not a heat-not-burn device as required by the independent claim. As set out above, such a device must be able to heat tobacco to a temperature such that components from the tobacco start volatilizing whereas the tobacco is not burnt. Volatilizing, however, requires a certain temperature being clearly above 100°C (R1 refers to a temperature of approximately 400°C) which cannot be obtained by a kettle intended for heating water to its boiling temperature (approximately 100°C).

3.1.2 The appellant argued that the apparatus claimed did not include the substrate used such that the feature "*apparatus is a heat-not-burn device*" had no limiting effect.

The Board disagrees since albeit the scope of protection defined by the independent claim does not encompass the substrate used, the claim requires the apparatus to be a heat-not-burn device. The claimed apparatus hence must have the suitability to heat tobacco such that components of the tobacco start volatilizing, whilst at the same time the tobacco doesn't burn. A kettle for heating water to a temperature of 100°C, however, is not suitable for such a use and hence is not a heat-not-burn device.

3.1.3 The Board therefore fully shares the opposition division's reasoning as set out in paragraphs 11.1.1 and 11.1.3 of the reasons for the impugned decision.

3.2 The appellant further alleged that document R18 anticipated the subject-matter of the independent claim.

3.2.1 Document R18 discloses in figure 1 an e-cigarette with an exterior wall (90) that defines two concentric walls with an air barrier or vacuum in between (see paragraph [0198] on page 38). The Board considers these concentric walls to correspond to the first and second boundary sections in the sense of the patent in suit.

In the Board's view, R18 does not provide any information on how these concentric walls are connected such that they are maintained at a distance. Clearly, some kind of arrangement must be provided for such purpose, the arrangement forming a third boundary section which connects first and second boundary sections. However, the geometry of this arrangement remains unknown.

(a) The appellant argued that the right-hand portion of the exterior wall extending beyond the heater could be considered as the third boundary section which connected the first and second boundary section together (see figure provided with their statement of grounds of appeal, page 14). This section followed a C-shaped path hence being indirect and non-straight.

(b) The Board disagrees. The portion of the housing identified by the appellant does not connect the concentric walls of exterior wall (90) but constitutes an independent part of the housing having itself two concentric walls. The function of this portion of the housing, however, is not to connect the concentric walls of the left part of the housing but to provide a mixing chamber (150) for the aerosols produced from the substrate in compartments 100 and 110.

Document R18 hence does not disclose a third boundary section following an indirect, non-straight path.

3.2.2 The Board hence fully shares the opposition division's decision set out in section 11.3 of the reasons.

3.3 The appellant finally alleged that document R1 was novelty-destroying for the subject-matter of the independent claim according to auxiliary request 3.

3.3.1 Document R1 discloses in figures 1 and 2 an e-cigarette with a tubular case (12) containing various components and an insulator (24). As set out in paragraph [0045], the solid insulator could be replaced by a partially hollow shell containing a sealed vacuum.

(a) The appellant argues that this hollow shell follows the geometry of the insulator shown in figure 2 whereby the shell implicitly comprises a boundary having a geometry as shown in their statement of grounds of appeal on page 17. This boundary comprises three sections (marked by red circles) whereby the part of the boundary identified as "third boundary section of the insulation" in the figure connects first and second boundary sections and has an indirect, non-straight path.

(b) The Board does not follow this understanding of R1 since the independent claim requires a first boundary section and a second boundary section, these boundary sections being connected by a third boundary section. The claim hence refers in the Board's understanding to two boundary sections being spaced apart and forming there between an internal insulating region having an elongate

shape. These two boundary sections are at their ends connected by a further, third boundary section.

The third boundary section hence cannot be a portion of a wall in a sequence of various portions of that same wall forming a boundary encircling an insulating region with arbitrary shape, but the third boundary section functions as a connection of the first and second boundary sections closing the elongate internal insulating region at its forefront.

Taking the embodiment of R1 in which the insulator (24) is replaced by a hollow shell, the first and second boundary sections will correspond to the longitudinally extending walls with irregular shape and the third boundary section will correspond to either of the forefronts shown in the appellant's drawing, both forefronts following a straight, linear path.

Document R1 hence does not disclose a third boundary section following an indirect, non-straight path.

- 3.3.2 The Board therefore fully shares the opposition division's decision set out in section 11.4 of the reasons.

Inventive step

4. The subject-matter of claim 1 involves an inventive step (Article 56 EPC).

5. The appellant argued starting from either of documents R1 and R18 as closest prior art.

5.1 In a first line of argument they considered the indirect, non-straight path of the third boundary section to have no technical effect such that this feature could be disregarded.

The Board notes that paragraph [0079] of the patent in suit refers to figure 17 and explains that extending the length of the third boundary section by using an indirect path allows to increase its resistance to heat flow from the first to the second boundary section. The indirect, non-linear path of the third boundary section hence has indeed a technical effect and cannot be disregarded.

5.2 In a second line of argument, the appellant considered it obvious to choose an indirect, non-straight path for the third boundary section of R1 and R18, respectively. This was part of the common general knowledge of the skilled person, and was also suggested by R4.

5.2.1 In the Board's view, there is no hint in the prior art that would lead the skilled person to the claimed solution when confronted with the task of reducing the heat flow from the first, inwardly-facing boundary section to the second, outwardly-facing boundary section of a boundary enclosing an internal insulating region.

The skilled person could modify the third boundary section to follow an indirect, non-straight path, but there is no particular reason why the skilled person would do so.

In particular, the provision of a third boundary section following a non-linear path would not be immediately apparent to the skilled person in view of the limited space existing between first and second boundary sections in both R1 and R18.

- 5.2.2 With regard to document R4, the skilled person starting from the smoking devices of R1 or R18 would not reasonably consider water kettles when looking for a possibility to increase resistance to heat flow. Moreover, the undulated spacer element disclosed in figure 8 of R4 and referred to by the appellant is by far longer than the distance between first and second boundary sections in R1 and R18 such that it cannot be simply transferred to the devices of R1 or R18 as third boundary section connecting first and second boundary sections.
- 5.3 The Board therefore shares the opposition division's decision as set out in section 12.4.1 of the reasons.
6. The appellant also argued starting from document R3 as closest prior art.
 - 6.1 Document R3 discloses a thermal insulation in the form of a solid jacket (62) disposed on the outside of the heating assembly (50). The jacket (62) is made of an insulating material such as ceramic, phenolic, wood, or the like (see paragraph [0021]).
 - 6.2 The appellant argued that the skilled person would replace this jacket by a double-walled insulation structure having a boundary with first and second boundary sections, these sections enclosing an internal insulating region with a pressure close to a vacuum. The manifold (28) would hence connect first and second

boundary sections of the boundary whereby the manifold's stepped shape would follow an indirect, non-straight path. It hence can be considered as a third boundary section with the features cited in the independent claim of the auxiliary request 3.

6.2.1 The Board does not follow the appellant's view that when replacing the jacket by a double-walled structure with first and second boundary sections, the manifold can be considered as a third boundary section connecting first and second boundary sections.

(a) The manifold of R3 is a solid cap with irregular shape that covers the entire hollow body of the lighter (20) at one end and hence not only connects first and second boundary sections.

The stepped connection between jacket (62) and manifold (28) is used to connect the manifold to the solid jacket which is, however, no longer possible in connection with a hollow double-walled structure but requires a redesign.

(b) The skilled person when replacing the jacket by a double-walled structure hence also has to modify the shape of the manifold whereby it is not obvious to replace the manifold (28) covering the entire end of the lighter (20) by a boundary section connecting just first and second boundary sections of the hollow, double-walled insulation structure.

(c) Even if the skilled person would use a third boundary section, it is not obvious that this boundary section would follow an indirect, non-straight path.

6.2.2 The Board therefore also shares the opposition division's decision set out in section 12.4.2 of the reasons.

7. The Board hence sees no reason to deviate from the opposition division's decision.

Order

For these reasons it is decided that:

1. The appeal is dismissed.
2. The appeal fee of the patent proprietor is reimbursed at 25%.

The Registrar:

The Chairman:



H. Jenney

G. Pricolo

Decision electronically authenticated