



Action n°: UPC CFI 315 /2023

Revocation action 571801/2023

DECISION

of the Court of First Instance of the Unified Patent Court

Central division Paris Seat (Section 1)

delivered on 05 November 2024

concerning EP 3 504 991 B1

HEADNOTES:

1. An objective approach must be applied to the evaluation of the requirements of Art. 56 EPC (inventive step).
2. The reference to the person skilled in Art. 56 EPC is an element of this objective approach. Subjective considerations or the subjective knowledge and skill of individuals, like the named inventor(s) or the parties to the case, do not have an influence on the evaluation of inventive step.
3. The reference to the state of the art in Art. 56 EPC, which according to Art. 54 (2) EPC shall be held to comprise everything made available to the public by means of a written or oral description, by use, or in any other way, before the date of filing (or the earliest priority date (Art 89 EPC)) of the European patent application, is a further element of this objective approach. In general, an invention shall be considered as involving an inventive step if, having regard to any element that forms part of the state of the art, it is not obvious to a person skilled in the art. It is, however, Claimant that defines the scope of evaluation for a revocation action. The Court does not evaluate reasons for revocation that the Claimant has not raised.
4. The reference to an inventive step (“erfinderische Tätigkeit” in the German version of Art 56 EPC; “une activité inventive” in the French version of Art 56 EPC) indicates that what is to be evaluated under Art 56 EPC is an activity, that can be motivated by an underlying problem. It is decisive, whether what is claimed as an invention did or did not follow

from the prior art in such a way that the skilled person would have found it in his attempt to solve the underlying problem on the basis of its knowledge and skills.

5. Under the front-loaded system of UPC proceedings, parties are under an obligation to set out their full case as early as possible. A failure to do so may lead to the exclusion of arguments. However, in order to secure fairness and equity of the proceedings (Preamble RoP 5), if a party, in its first submission, raises an argument and the other party takes issue with this argument in reply, the party may further substantiate its initial argument in its second submission.

KEYWORDS: Novelty, inventive step, late filing of facts and evidence

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PATENT AT ISSUE

European patent **EP 3 504 991 B1**, hereafter referred to as “EP 991” or as “the Patent”.

PANEL/DIVISION

Panel 1 of the Central Division (Paris Seat)

DECIDING JUDGES

This decision has been delivered by the presiding judge **François Thomas**, the legally qualified judge **Maximilian Haedicke** as judge-rapporteur and the technically qualified judge **Max Tilmann**.

DATE OF THE ORAL HEARING

12 September 2024

SUMMARY OF FACTS AND REQUESTS

1 The dispute

- 1.1 On 15 September 2023, Claimant brought a revocation action¹ against Defendant at the Paris Central Division of the Unified Patent Court (Action n°: 571801/2023 UPC_CFI_315/2023), requesting the Court to revoke European Patent No. EP 3 504 991 B1.
- 1.2 On 20 October 2023, Defendant filed a Preliminary objection pursuant to Rules 19.1(a) and 48 of the Rules of Procedure of the Unified Patent Court (‘RoP’), denying the competence of the Court on the grounds of an allegedly false denomination of Defendant by Claimant. The Court rejected the Preliminary objection. This holding was confirmed on appeal (Action n°: APL_588425/2023 UPC_CoA_437/2023).
- 1.3 A Statement of Defence to Revocation was filed on 12 December 2023. At the same time and within the same submission, an Application to amend the patent was filed. A Reply to the Defence was submitted on 19 February 2024, including a Defence to an Application to amend the Patent. The Court also received a Rejoinder to the Reply, dated 19 March 2024, that included a Reply

¹ The Statement for Revocation, Defence to Revocation, Reply to the Defence to Revocation and Rejoinder to the Reply to the Defence to Revocation are herein referred to as ‘SfR’, ‘DtR’, ‘RtD’ and ‘R’, respectively.

to the Defence to an Application to amend the patent. On 19 April 2024, Claimant filed a Rejoinder to the Reply to the Defence to an Application.

- 1.4 On 31 May 2024, the Court received a further submission by Defendant entitled “Comments to Claimant’s submission of 19 April 2024 including reply to Defendant’s rejoinder and the reply to Defendant’s application to amend the patent”.
- 1.5 On 21 June 2024, the interim conference was held. On 19 July 2024, Defendant identified 13 auxiliary requests pursued during the oral hearing. On 23 August 2024, an order on the value of the litigation was submitted. On 3 September 2024, the Court received the summaries sent by parties.
- 1.6 The oral hearing in was held on 12 September 2024.
- 1.7 On 19 September 2024, Defendant filed the Presentation used during the hearing via e-mail.
- 1.8 For the submissions of the parties and previous orders issued by the Court, reference is made to the case file in the Case Management System.

2 The patent

- 2.1 The patent entitled VAPORIZATION DEVICE SYSTEMS was filed on 23 December 2014. The patent claims the priorities of US201361920225 P of 23 December 2013, US 201461936593 P of 6 February 2014 and US 201461937755 P of 10 February 2014. The publication of the mention of the grant of the Patent was made on 27 January 2021. Registered owner of the Patent is Defendant.
- 2.2 According to Claimant’s Statement for Revocation (SfR; mn 6) and undisputed by Defendant, EP991 at the time of filing the SfR was valid in the following member states of the UPCA: Austria, Belgium, France, Germany, Italy, Denmark, Finland, Slovenia, Latvia, Netherlands, Portugal and Sweden.
- 2.3 Oppositions against the grant of the Patent at the European Patent Office (“EPO”) were pending at the time of filing the SfR; Claimant is not party to the opposition proceedings.
- 2.4 Claim 1 of the Patent as granted reads:

A cartridge for a device for generating an inhalable aerosol with an airflow path, the cartridge comprising

a fluid storage compartment (32);

a channel (50) comprising a portion of an air inlet passage (51);

a second air passage (41) in fluid communication with the channel, the second air passage (41) being formed through material of the cartridge;

a heater (36) affixed to a first end of the cartridge, the heater comprising a heater chamber (37) in fluid communication with the second air passage;

a first condensation chamber (45) in fluid communication with the heater chamber;

a second condensation chamber (46) in fluid communication with the first condensation chamber; and

a mouthpiece (37) affixed to a second end of the cartridge wherein said mouthpiece comprises an aerosol outlet (47) in fluid communication with the second condensation chamber;

wherein the air inlet passage (51) is formed by assembly of a device body and the cartridge

2.5 Claim 3 of the Patent as granted reads:

A device for generating an inhalable aerosol from a liquid vaporizable material, the device comprising the cartridge as defined in any preceding claim and a device body; wherein the device body comprises a cartridge receptacle (21) into which the cartridge is insertably received.

3 Requests

3.1 Claimant requests (to the extent still relevant):

- I. European patent n° EP 3 504 991 to be revoked with effect for the territories of Austria, Belgium, France, Germany, Italy, Denmark, Finland, Slovenia, Latvia, Netherlands, Portugal and Sweden.
- II. To dismiss Defendant's alternative requests to maintain the Patent based on any of Defendant's proposed amendments of the claims of the Patent, including all of Defendant's Auxiliary Requests, and Defendant's alternative requests (2)(c) and (d).
- III. To dismiss Defendant's request (3) and, in case that the Court deems it necessary, to admit Exhibits MWE 23 to 56 to the proceedings.
- IV. Defendant to be ordered to bear the legal costs of the proceedings.

3.2 Defendant requests (to the extent still relevant):

- (1) the revocation action be dismissed;
- (2) the Patent be maintained:
 - a. as granted;

- b. in the alternative based on one of the proposed amendments of the claims of the Patent (Auxiliary Requests 1 to 13 as filed with submission of 19 July 2024);
 - c. further in the alternative in parts based on the independent validity of one or more of its dependent claims in combination with independent claim 1 as granted; and
 - d. yet further in the alternative in parts based on the independent validity of one or more of its dependent claims as granted in combination with claim 1 the proposed amendments of the claims of the Patent (Auxiliary Requests 1 to 13 as filed with submission of 19 July 2024);
- (3) documents MWE 23 to MWE 50 not to be admitted into the proceedings;
- (4) for Claimant to bear the costs of the proceedings.

Regarding the submission of 19 April 2024, Claimant further requests to admit this submission also insofar as the submission is not limited to commenting on Defendant's Application to amend the Patent.

Regarding the submission of 31 May 2024, Defendant further requests admission of this response.

4 The arguments

4.1 Regarding the main claim 1, Claimant argues that the invention claimed therein is not valid for several reasons. Claimant argues that the claimed invention of claim 1 formed part of Chinese Patent Application Publication No. 101843368 A (hereinafter referred to as "Chen") as well as of U.S. Patent Application Publication No. 2013/0192617 A1 (hereinafter referred to as "Thompson") and hence was not new at the earliest priority date (violation of Art. 54 EPC). Claimant argues that the claimed invention of claim 1 could not be considered to involve an inventive step (violation of Art. 56 EPC), because it was obvious to the skilled person having regard to the following state of the art:

- lack of inventive step over U.S. Patent Application Publication No. 2011/0036346 A1 (hereinafter referred to as "Cohen"), combined with common general knowledge;
- lack of inventive step over Cohen combined with U.S. Patent No. 8,333,197 B2 (hereinafter referred to as "Cross").

Regarding the further claims 2 to 11, Claimant argues lack of novelty and lack of inventive step in relation to particular elements of the state of the art; for details, reference is made to the case file in the Case Management System.

- 4.2 Regarding Chen, it is particularly in dispute between the parties if Chen also shows a cartridge that comprises a fluid storage compartment, a second air passage in fluid communication with the channel, the second air passage being formed through material of the cartridge; a heater affixed to a first end of the cartridge, the heater comprising a heater chamber in fluid communication with the second air passage; a first condensation chamber in fluid communication with the heater chamber; a second condensation chamber in fluid communication with the first condensation chamber; a mouthpiece affixed to a second end of the cartridge wherein said mouthpiece comprises an aerosol outlet in fluid communication with the second condensation chamber.
- 4.3 Regarding Thompson, it is particularly in dispute between the parties if Thomson also discloses a cartridge comprising a fluid storage compartment, a second air passage in fluid communication with the channel, the second air passage being formed through material of the cartridge; a heater affixed to a first end of the cartridge, the heater comprising a heater chamber in fluid communication with the second air passage; a first condensation chamber in fluid communication with the heater chamber; a second condensation chamber in fluid communication with the first condensation chamber; a mouthpiece affixed to a second end of the cartridge wherein said mouthpiece comprises an aerosol outlet in fluid communication with the second condensation chamber.
- 4.4 Regarding Cohen, it is particularly in dispute between the parties if the cartridge in Cohen comprises a fluid storage compartment, a channel comprising a portion of an air inlet passage; a heater affixed to a first end of the cartridge, the heater comprising a heater chamber in fluid communication with the second air passage; a first condensation chamber in fluid communication with the heater chamber; a second condensation chamber in fluid communication with the first condensation chamber. Claimant considers the only distinguishing feature between the claimed invention of claim 1 and Cohen to be the provision of a separate mouthpiece that is affixed to the second end of the cartridge and argues that its provision was obvious from common general knowledge and/or other teachings in the field. Regarding Cohen, Defendant argues that the claimed invention distinguishes from Cohen in more than the feature identified by Claimant. Defendant argues that the claimed invention shall be considered as involving an inventive step, because, having regard to the state of the art cited by Claimant as regards the evaluation of inventive step, it is not obvious to a person skilled in the art.
- 4.5 During the hearing the panel indicated that the panel perceived a different understanding of the feature 1.5 between the parties. The panel noted that

it understood Claimant to interpret feature 1.5 to require the point of affixation of the heater to be at the first end of the cartridge, while it did not specify the placement of the heater and especially the heater chamber. The panel noted that it understood Defendant to interpret feature 1.5 to require the placement of the heater and especially the heater chamber at the first end of the cartridge, while it did not specify the point of affixation of the heater. Having been requested by the panel to reconfirm this understanding and explain, if and how the respective understanding would read on the embodiment of Fig. 9, Claimant argued that Claimant's view about the requirement for the point of affixation of the heater to be at the first end of the cartridge would be upheld, because the snap-fit connection used in Fig. 9 could be considered to belong to the first end of the cartridge.

GROUNDS FOR THE DECISION

5 Preclusion of late filed facts and evidence

- 5.1 Defendant requests documents MWE 23 to MWE 50 not be admitted into the proceedings; Claimant requests to dismiss Defendant's request and, in case that the Court deems it necessary, to admit Exhibits MWE 23 to 56 to the proceedings.
- 5.2 Due to the front-loaded approach of the UPC system, R44 RoP requires the Statement for Revocation to contain an indication of the facts relied on (R44 (f) RoP) and the evidence relied on, where available and an indication of any further evidence which will be offered in support (R44 (g) RoP). Similarly, the RoP contain provisions which define the admissible content of the further submissions. The parties are under an obligation to set out their full case as early as possible (Preamble RoP 7, last sentence) and to provide all their legal and factual arguments, and any evidence supporting it in a timely manner.
- 5.3 Whenever possible, Claimant is obliged to submit its arguments, facts and attachments in its Statement for Revocation which he has plenty of time to prepare. However, when submitting the Statement for Revocation, Claimant cannot anticipate which points Defendant will dispute and by what means. Therefore, Claimant is allowed, in its Reply to the Statement of Defence, to present arguments in response to arguments raised by Defendant in its Statement of Defence.
- 5.4 A clear distinction between newly introduced arguments and arguments raised as a mere reaction to previously filed arguments cannot always be drawn. In order to secure fairness and equity of the proceedings (Preamble

RoP 5), if a party, in its first submission, raises an argument and the other party takes issue with this argument in reply, the party may further substantiate its initial argument in its second submission.

Reply to the Statement of Defence and Hajaligol Declaration

- 5.5 In its Reply to the Statement of Defence dated 19 February 2024, Claimant filed 28 new documents. Defendant requests not to admit any of the newly filed documents into the proceedings. This request especially pertains to the preclusion of the Hajaligol Declaration (MWE 23) and all enclosures.
- 5.6 The Hajaligol report is admissible as far as it is a reaction to arguments submitted in the Statement of Defence. Therefore, the report is admissible as far as it contains arguments regarding the common general knowledge ('State of the art before the critical filing date of the Patents', mn. 21 -33). These arguments are raised in response to arguments raised by Defendant in its Statement of Defence to revocation mn 16 et seq. Their submission is therefore admissible.
- 5.7 The "Hajaligol Declaration" is also admissible as far as it can be considered a response to Dr. Collins proposed construction of the claim features of the Patent. The Hajaligol Declaration takes issue with the Collins declaration and focuses on alleged contradictions. A clear distinction between newly added arguments and arguments which are used as a response to Dr. Collins' report cannot be drawn. In order to secure plaintiff's right to be heard, the entire Hajaligol report, including its attachments MWE 24 to MWE 50 is admitted into the proceedings.

Rejoinder to the Reply to the Defence to revocation / Reply to the Defence to the Application to amend the patent

- 5.8 Rule 52 RoP delineates the scope of the Rejoinder to the Reply to the Defence to revocation. According to Rule 52 RoP 'Defendant may lodge a Rejoinder to the Reply to the Defence to revocation together with any Reply to the Defence to an Application to amend the patent pursuant to Rule 43.3 and 55 RoP (..). The Rejoinder shall be limited to a response to the matters raised in the Reply.'
- 5.9 Therefore, as far as the Rejoinder to the Reply to the Defence to revocation (19 March 2024) is concerned, the arguments regarding the admissibility of the Hajaligol Declaration are admitted. Page 1-20 mn 92 of the Rejoinder are therefore admissible.

- 5.10 P. 20-38 of the Rejoinder are a response to the plaintiff's Reply to the Defence to revocation and to the arguments contained in the Hajaligol Declaration. As the content of the Hajaligol Declaration is admitted, also the response thereto is to be admitted. P. 20-38 are therefore admitted.
- 5.11 P. 38-93 of the Rejoinder are admitted. They focus on general issues concerning patentability, but at the same time, they constitute a response to the Hajaligol Declaration and to the Reply to the Defence to revocation. As previously mentioned, in order to safeguard the fundamental right to be heard, a generous standard is to be applied.
- 5.12 Similarly, the expert report of Ramon Alacon (Exhibit TP-12) is admissible as it can be considered to be a reaction to the Hajaligol Declaration which is admitted to the proceedings, too.
- 5.13 According to Rule 55, 32.3 RoP, the 'proprietor may lodge a Reply to the Defence to the Application to amend the patent within one month of service of the Defence (...)'. Applying this rule, this submission of 19 March 2024 is also admissible as far as it is commenting on the Application to amend the patent. Therefore, P. 94 et seq. are admitted.

Reply to the Rejoinder and Reply to Defendant's Application to amend the Patent

- 5.14 On 19 April 2024, Claimant filed a 'Reply to the Rejoinder and Reply to Defendant's Application to amend the Patent'.
- 5.15 According to Rules 55, 43.3, 32.3 RoP, Claimant may lodge a Rejoinder regarding Defendant's Application to amend the Patent. P. 15-50 mn. 45 et seq. deal with Defendant's Application to amend the Patent and are therefore admissible, including MWE 52 to MWE 56 that form part of this Rejoinder.
- 5.16 According to Rule 32.3 second sentence RoP '(t)he Rejoinder shall be limited to the matters raised in the Reply'. Claimant requests under Rules 58, 36, 9.1 RoP admission of its submission also insofar as the submission is not limited to 'the matters raised in the Reply.' This request is to be denied. There is no good reason why an exception should be made to the general rule in Rule 32.3 second sentence RoP. Claimant had the opportunity to present its case. In the interest of efficient proceedings, no further arguments can be introduced at this stage of the proceedings. Their admission would not be in line with the UPC's front-loaded approach. P. 1 to 15 (mn. 44) of Claimant's submission of 19 April 2024 are therefore inadmissible.

Submission of 31 May 2024

- 5.1 Defendant's submission of 31 May 2024 is inadmissible, as there is no legal basis for it in the RoP. The submission stands in contrast to the front-loaded approach of the UPC system. There are no good reasons why, as an exception, the submission should be admitted in this case.

6 Technical introduction

- 6.1 EP991 pertains to electronic inhalable aerosol devices or electronic vaping device and a cartridge for such a device. According to [0002] EP991 particularly pertains to electronic aerosol devices which utilize a vaporizable material that is vaporized to create an aerosol vapor capable of delivering an active ingredient to a user.
- 6.2 As regards the background to the invention, the Patent initially states that WO 2009/132793 A1 discloses an aerosol generating device comprising a storage portion for storing aerosol-forming substrate. The device comprises: a vaporizer for heating the aerosol-forming substrate, a capillary material for conveying the liquid aerosol-forming substrate from the storage portion towards the vaporizer by capillary action, and a porous material between the capillary material and the vaporizer.

7 The claimed subject matter

- 7.1 The Patent includes 11 claims.
- 7.2 Claim 1 can be divided into the following features:
- 1.1. *A cartridge suitable to be used in a device for generating an inhalable aerosol with an airflow path, the cartridge having*
 - 1.2. *a fluid storage compartment (32);*
 - 1.3. *a channel (50) comprising a portion of an air inlet passage (51);*
 - 1.4. *a second air passage (41) in fluid communication with the channel, the second air passage (41) being formed through material of the cartridge;*
 - 1.5. *a heater (36) affixed to a first end of the cartridge, the heater comprising a heater chamber (37) in fluid communication with the second air passage;*
 - 1.6. *a first condensation chamber (45) in fluid communication with the heater chamber;*
 - 1.7. *a second condensation chamber (46) in fluid communication with the first condensation chamber;*

- 1.8. *a mouthpiece (37) affixed to a second end of the cartridge wherein said mouthpiece comprises an aerosol outlet (47) in fluid communication with the second condensation chamber;*
- 1.9. *the air inlet passage (51) is formed by assembly of a device body and the cartridge*

7.3 Claim 3 of the Patent can be divided into the following features:

3. *A device for generating an inhalable aerosol from a liquid vaporizable material, the device comprising*
 - 3.1 *the cartridge of claim 1;*
 - 3.2 *a device body;*
 - 3.3 *the device body comprises a cartridge receptacle (21) into which the cartridge is insertably received*

7.4 Several features of claim 1 of the Patent require interpretation.

Legal framework

7.5 The Court of Appeal of the UPC has laid down the following legal framework for the interpretation of patent claims (Order dated 26 February 2024 in UPC_CoA_335/2023, *NanoString/10x Genomics*, p. 26-27 of the original German language version, also see CoA UPC 13 May 2024, *VusionGroup/Hanshow*).

7.6 In accordance with Art. 69 EPC and the Protocol on its interpretation, a patent claim is not only the starting point, but the decisive basis for determining the scope of protection of a European patent. The interpretation of a patent claim does not depend solely on the strict, literal meaning of the wording used. Rather, the description and the drawings must always be used as explanatory aids for the interpretation of the patent claim and not only to resolve any ambiguities in the patent claim. However, this does not mean that the patent claim merely serves as a guideline and that its subject-matter also extends to what, after examination of the description and drawings, appears to be the subject-matter for which the patent proprietor seeks protection.

7.7 The patent claim is to be interpreted from the point of view of a person skilled in the art. When interpreting a patent claim, the person skilled in the art does not apply a philological understanding, but determines the technical meaning of the terms used with the aid of the description and the drawings. A feature in a patent claim is always to be interpreted in light of the claim as a whole (CoA UPC 13 May 2024, *VusionGroup/Hanshow*, point 29). From the function

of the individual features in the context of the patent claim as a whole, it must be deduced which technical function these features actually have individually and as a whole. The description and the drawings may show that the patent specification defines terms independently and, in this respect, may represent a patent's own lexicon. Even if terms used in the patent deviate from general usage, it may therefore be that ultimately the meaning of the terms resulting from the patent specification is authoritative.

- 7.8 In applying these principles, the aim is to combine adequate protection for the patent proprietor with sufficient legal certainty for third parties.
- 7.9 The relevant point in time for interpreting a patent claim for the assessment of validity is the filing (or priority) date of the application that led to the Patent.
- 7.10 The patent claim is to be interpreted from the point of view of a person skilled in the art. The person skilled in the art (skilled person) is a fiction which, in the interests of legal certainty, forms a standardized basis for the assessment of the legal concepts of "prior art", "novelty", "inventive step" and "enablement". The skilled person stands for the average expert who is typically active in the technical field of the invention, has had the usual prior training and has acquired average knowledge, skills and practical experience.

The skilled person

- 7.11 The person skilled in the art is a mechanical engineer with either a Bachelor's degree or a Master's degree in mechanical engineering and several years of experience in the technical field of electronic inhalable aerosol devices or electronic vaping devices, who may be assisted by an electrical engineer for issues that relate to the electrical circuitry implemented in electronic inhalable aerosol devices or electronic vaping devices that he himself cannot handle.
- 7.12 Electronic inhalable aerosol devices or electronic vaping devices are consumer products. General tasks in designing electronic inhalable aerosol devices or electronic vaping devices relate to the outer physical shape and mechanical properties of the device; the materials to be used for the device; the inner physical shape of the device, also as regards fluid dynamics and thermodynamics. These tasks typically fall into the competence of a mechanical engineer and not so much into the competence of an electrical engineer, a chemist or a physicist (as suggested by Claimant (SfR, mn 10)).
- 7.13 A further task in designing electronic inhalable aerosol devices or electronic vaping devices relates to the electrical circuitry implemented in these devices. This additional design task can either be performed by a mechanical engineer with some years of experience in the technical field of vaporizers or

by way of forming a team between the mechanical engineer and an electrical engineer.

- 7.14 Claimant states that alternatively to a mechanical engineer, the skilled person could alternatively possess a Bachelor's or Master's degree in chemistry or physics or a related field or someone from a related field (mn 10 SfR). This does not convince as it would render the selection of the skilled person too unspecific. Claimant does not provide any substantive reasons for suggesting these alternatives and hence does not provide any convincing arguments as to why Claimant's suggestion should prevail. Likewise, the statement by Mr. Hajaligol in mn 19 of MWE-23 also provides no further reasoning as to why Mr. Hajaligol is of the opinion that the person skilled in the art ought to be defined differently, hence – apart from a singular opinion - not providing any convincing arguments as to why Claimant's suggestion should prevail.
- 7.15 Average knowledge is knowledge that was directly available to the skilled person when evaluating the state of the art at a certain point in time. In general, this is information which the skilled person can recall from memory or which is directly available to him from familiar sources of information relating to the specific technical field at that point in time.

Claim interpretation from the point of view of the skilled person

- 7.16 **Feature 1.5:** *“heater comprises a heater chamber”*
- 7.17 According to feature 1.5, the heater comprises a heater chamber. The heater chamber in the cartridge according to claim 1 is an object that can contain a medium and wherein a medium can be heated in a way that after heating the medium is susceptible to condensation, the medium attributing to the provision of the inhalable aerosol referred to in claim 1.
- 7.18 From the sequence of feature 1.5 and 1.6 the skilled person understands that the medium that leaves the heater chamber to flow into the first condensation chamber is a medium that is susceptible to condensation. The sequence of features 1.3(+1.9), 1.4, 1.5 and 1.6 prescribes a path that air can take to flow from the air inlet passage through the second air passage into the heater chamber and out of the heater chamber to the first condensation chamber. To the skilled person's understanding, one medium inside the heater chamber hence will be air. In the context of the generation of inhalable aerosol (feature 1.1) and the provision of a fluid storage compartment in the device (feature 1.2), the skilled person understands that the medium that leaves the heater chamber to flow into the first condensation chamber at least partially is a mixture of air and a gas obtained from the fluid taken from the fluid storage compartment, the gas being the

part of the mixture that partially condensates in the first condensation chamber.

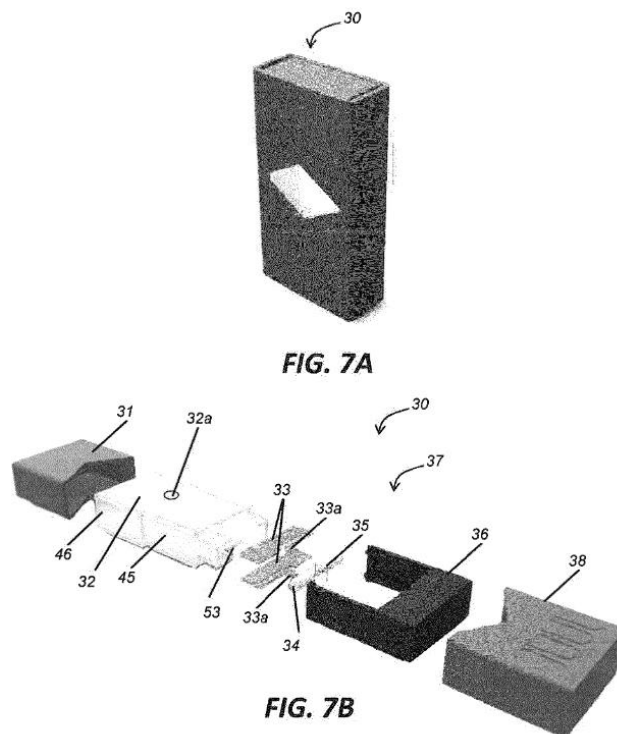
- 7.19 In some way or another the heater chamber is able to *contain* the aforementioned medium that after heating and having left the heater chamber is susceptible to condensation. This becomes apparent to the skilled person from the term “chamber” within the term “heater chamber”. To contain the medium, the heater chamber needs to be formed by facing surfaces, between which the chamber is formed (that border the chamber). The shape of the surfaces and the composition of the material that provides the respective surface depend on the medium to be contained and the purpose of containing the medium. The purpose for containing the medium in the heater chamber in the cartridge according to claim 1 to the skilled person’s understanding is to contain a medium, that is a mixture of air and (gaseous or to be gasified) fluid, while the medium is being heated so as to form a medium that - when it leaves the heater chamber to flow to the first condensation chamber - is a medium that is susceptible to condensation. Any shape of the surfaces that form the borders of a chamber and any composition of the material that provides the respective surface that serve this purpose for the respective medium at hand are sufficient.
- 7.20 The heater chamber can have two openings. One that allows for the heater chamber to be in fluid communication with the second air passage and one to allow the first condensation chamber to be in fluid communication with the heater chamber. To the skilled person, this follows from the sequence of features 1.3(+1.9), 1.4, 1.5 and 1.6 that prescribes a path that air can take to flow from the air inlet passage through the second air passage into the heater chamber and out of the heater chamber into the first condensation chamber. The shape and size and the relative placement of the two openings are left open by claim 1. Nothing in claim 1 excludes a tube shaped heater chamber, for example, where the two openings have the same cross-sectional area of the remainder of the tube. The above identified purpose can be obtained with such a heater chamber.
- 7.21 Contrary to RtD, mn 108 and Dr. Hajaligol’s statement, the term “heater chamber” does not simply refer to the (unbound) space surrounding the heater. To the skilled person’s understanding, in order to comprise a heater chamber, an object must have some sort of facing surfaces, in between which the chamber is formed.
- 7.22 **Features 1.5:** *“affixed to a first end of the cartridge”*
- 7.23 Feature 1.5 describes the heater to be affixed to a first end of the cartridge. In doing so, feature 1.5 (1) defines the manufacturing step of affixation to be the one to be used to provide the cartridge with the heater and (2) defines

the location of at least the majority of the parts that make up the heater, including the heater chamber, to be at a first end of the cartridge.

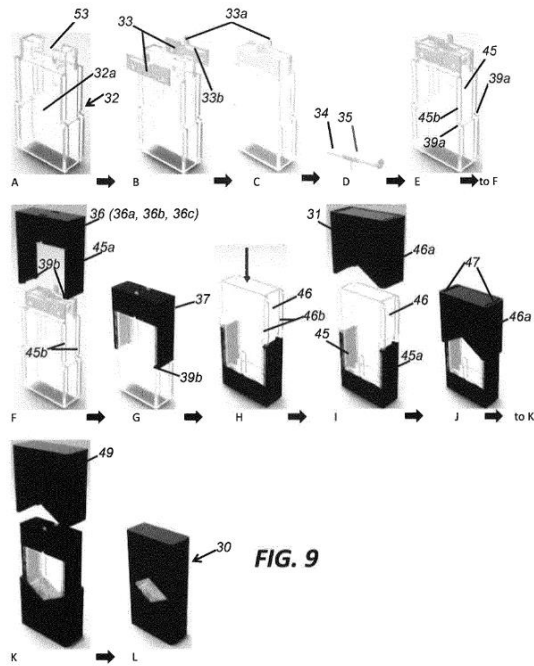
7.24 The term “affixed” to the skilled person indicates an attachment of one object (the heater) to another, already existing object. In contrast to other manufacturing methods, for example where an object is created as part of an object by way of machining or where an object is cast, “affixing” to the skilled person means the attachment of one existing object to another existing object.

7.25 This view is supported by the description of the Patent. For ease of reference Fig. 7A, 7B and 9 are copied in below.

7.26 Fig. 7A is an isometric view of an assembled cartridge. Fig. 7B is an illustrative exploded isometric view of a cartridge assembly



7.27 FIG. 9 provides an example of a method of assembling such a device. FIG. 9 is a sequence of the assembly method for the cartridge.



- 7.28 From [0139] the skilled person learns that it is intended that the cartridge may be configured for ease of manufacture and assembly. From this the skilled person understands that the intention of the reference in feature 1.5 to the heater being affixed to a first end of the cartridge (and the intention of feature 1.8 requiring the mouthpiece to be affixed to a second end of the cartridge) is to be seen as means to achieve an ease of manufacture and assembly of the cartridge in contrast of other, more difficult manufacturing ways of providing a cartridge with a heater and a mouthpiece.
- 7.29 Claim 1 leaves it open, if the heater is a unitary element that is affixed to the end of the cartridge in one unitary piece or if the heater is made up of several elements that are individually affixed to other parts of the cartridge. The embodiment shown in Fig. 7B and assembled according to Fig. 9 is a heater made up of several parts and shows the individual parts of the heater to be affixed to another piece of the cartridge, namely the fluid storage compartment 32a in successive steps. From this the skilled person learns that the affixation of the heater to the other elements of the cartridge must not necessarily be done in one step. But the embodiment shown in Fig. 7B and assembled according to Fig. 9 shows that even if the heater is affixed to other parts of the cartridge in several assembly steps, each element of the heater is affixed to other elements (in contrast to an element that forms part of the heater being formed by other ways on the cartridge). As regards the means of affixation, [0154] suggests the one or more free ends of the heater to be soldered in place (which is a means of permanent affixation), rested in a groove or snapped into a fitted location.

- 7.30 [0154] describes a step of inserting heater contacts 33 into the fluid storage compartment, a step of placing a wick 34 wound on a resistive heating element 35 on the fluid storage compartment, and a step of snapping a heater enclosure 36 in place. According to [0154] a heater hence can have heater contacts, a wick wound on a resistive heating element and a heater enclosure.
- 7.31 When taken literally, the term “affixed to a first end of the cartridge” could be understood to define the “a first end of the cartridge” to be an existing (part of an) object to which the heater affixed. When applying this view, the term “first end of the cartridge” would mean a physical end of the cartridge, whereby the cartridge does – in a viewing direction – not protrude beyond that physical end. Given that the heater is a part of the cartridge, a heater affixed to an end of the cartridge understood in this way would need to be understood to mean that the heater would need to be something else than the end of the cartridge (otherwise it could not be affixed to it) and would need to be physically arranged this side (on the “cartridge forming side”) of the physical end of the cartridge (otherwise the end of the cartridge would not be the *end* of the cartridge).
- 7.32 Such an understanding of the term “first end of the cartridge” is, however, in contradiction to the description. [0022] describes that in an embodiment the heater may enclose a first end of the cartridge and a first end of the fluid storage compartment. If the heater encloses the first end of the cartridge, the first end of the cartridge is within the heater; the heater would not be arranged this side of the first end (on the “cartridge forming side”). In the embodiments shown in Fig. 7B, 7C, 8B, 9, 10A, 10B, 10C, 11, 12, 14 it is a flat end surface of the heater that forms the physical end of the cartridge in one viewing direction. [0153] describes that the heater may enclose at least a first end of the cartridge, while [0153] also states that the enclosed first end of the cartridge may include the heater and the interior fluid storage compartment. Using the description and the drawings as explanatory aids for the interpretation of the patent claim the skilled person understands that the term “to a first end of the cartridge” in the term “affixed to a first end of the cartridge” defines the location where the heater is after having being affixed rather than being a reference to an existing (part of an) object to which the heater is affixed.
- 7.33 This view is further supported by the description. [0151] describes a small male snap feature 39b located at the end of the channel cover (of the heater) to be configured to fall into a female snap feature 39a, located mid-body on the side of the tank and creating a snap-fit assembly. To the skilled person this means that the actual point of attachment of the heater to a further element of the cartridge (the side of the tank) takes place mid-body on the

side of the tank. This supports the view that the term “to a first end of the cartridge” in the term “affixed to a first end of the cartridge” defines the location where the heater is after having being affixed rather than being a reference to an existing (part of an) object to which the heater is affixed (a location mid-body on the side of the tank is not an end of the cartridge).

7.34 From the embodiment described in [0151] the skilled person understands that feature 1.5 does not necessitate the complete heater to be located at the first end of the cartridge. While in the embodiment described in [0151] the majority of the parts that make up the heater, including the heater chamber, is located at a first end of the cartridge, the channel covers protrude from the end of the first cartridge and hence are not completely located at the first end of the cartridge. Feature 1.5 identifies the heater to have one feature as a minimum, namely the heater chamber. Claim 1 leaves it open, if the heater has additional elements, but requires the heater to at least have a heater chamber. Feature 1.5 further identifies the heater to be affixed to a first end of the cartridge. From the circumstance that claim 1 by way of feature 1.5 characterizes the heater only in two ways, namely (1) by its affixation to the first end of the cartridge and (2) by it to comprise a heater chamber in fluid communication with the second air passage, the skilled person understands that the two parts that make up this minimal definition of a heater are interlinked and define the location of at least the majority of the parts that make up the heater, including the heater chamber, to be at a first end of the cartridge.

7.35 This understanding is supported by the necessity to interpret feature 1.8 in a similar way. Feature 1.8 describes (among others) the mouthpiece to be affixed to a second end of the cartridge and to comprise an aerosol outlet. Similar to feature 1.5, when taken literally, the term could be understood to define the “a second end of the cartridge” to be an existing (part of an) object to which the mouthpiece is affixed. Again, like with feature 1.5, such an understanding of the term “second end of the cartridge” is, however, in contradiction to the description. [0023] describes that in an embodiment the mouthpiece may enclose a second end of the cartridge and a second end of the fluid storage compartment. If the mouthpiece encloses the second end of the cartridge, the second end of the cartridge is within the mouthpiece; the mouthpiece would not be arranged this side of the second end. In the embodiments shown in Fig. 7B, 7C, 8B, 9, 10A, 10B, 10C, 11, 12, 14 it is a flat end surface of the mouthpiece that forms the physical end of the cartridge in one viewing direction. [0158] again describes that the mouthpiece may enclose the second end of the cartridge and interior fluid storage compartment. [0175] describes a snap-fit coupling 39c, 39d of the mouthpiece to be similar of the snap-fit coupling 39a, 39b. In view of Fig. 91

and 9J that show the mouthpiece 31 to be slid onto the fluid storage compartment 32a in a manner similar to the heater 36 being slid onto the fluid storage compartment 32 in Fig. 9F, 9G and for Fig. 9I and 9J to show the mouthpiece to have lateral extensions (aerosol outlet channel covers 46a) similar to the lateral extensions (primary condensation channel covers 45a), the skilled person understands the reference in [0175] for the snap-fit coupling 39c, 39d to be similar to the snap-fit coupling 39a, 39b to include the possibility that describes a small male snap feature 39d located at the end of the aerosol outlet channel covers 46a to be configured to fall into a female snap feature 39c, located mid-body on the side of the tank and creating a snap-fit assembly. Like with feature 1.5, using the description and the drawings as explanatory aids for the interpretation of the patent claim the skilled person understands that the term “to a second end of the cartridge” in the term “affixed to a second end of the cartridge” defines the location where the mouthpiece is after having being affixed rather than being a reference to an existing (part of an) object to which the mouthpiece is affixed.

7.36 Taking the description and the drawings as explanatory aids for the interpretation of the patent claim, in the features 1.5 and 1.8 both references to “end of the cartridge” (first end of the cartridge; second end of the cartridge) need to be interpreted and are interpreted in a similar way in order to be in line with the description. The need to apply this interpretation to two individual features in the same way, reinforces the interpretation for the respective one of the two features.

7.37 Indeed, the skilled person derives a technical advantage from the combination of features 1.5 and 1.8 with the features 1.6 and 1.7 that in essence define the first condensation chamber and the second condensation chamber as regards the throughflow of fluid being arranged between the heater chamber and the aerosol outlet of the mouthpiece (feature 1.6 requiring first condensation chamber to be in fluid communication with the heater chamber; feature 1.7 requiring the second condensation chamber to be in fluid communication with the first condensation chamber; feature 1.8 requiring the aerosol outlet to be in fluid communication with the second condensation chamber). From his common general knowledge the skilled person knows that one way of obtaining condensation is to cool the fluid (this knowledge being reinforced by [0069] that also speaks of cooling the fluid (although with other means)). With this knowledge, the skilled person realizes that the placement of the heater, including the heater chamber, at a first end of the cartridge and the placement of the mouthpiece at a second end of the cartridge provides the opportunity to maximize the joint length of the first condensation chamber and the second condensation chamber, thereby increasing the travel time of the fluid and thereby increasing the

cooling time of the fluid, allowing for more time to achieve condensation. The existence of this technical effect further reinforces the skilled person's understanding of feature 1.5 defining the location of at least the majority of the parts that make up the heater, including the heater chamber, to be at a first end of the cartridge and feature 1.8 defining the location of at least the majority of the parts that make up the mouthpiece, including the aerosol outlet, to be at a second end of the cartridge.

7.38 This understanding is not altered by the argument brought forward by Claimant in the hearing on 12 September 2024 in response to the panel's question. In the skilled person's understanding of the embodiment shown in Fig. 9 and explained in [0151], the snap-fit connection used in Fig. 9 is not seen to belong to the first end of the cartridge. [0151] explicitly uses the term "mid-body on the side of the tank" to describe the location of the female snap feature 39a into which the small male snap feature 39b located at the end of the channel cover (of the heater) is configured to fall into. The skilled person does not consider something described to be "mid-body on the side of the tank" to form a part of a first end of the cartridge.

7.39 In mn 54 DtR, Defendant points to the circumstance that the heater element 6 is arranged in the middle portion of a device of the prior art ("Chen", see below). In mn 204 R, Defendant replies to Claimant's arguments in RtD by stating it not to be correct that the claimed heater (as defined in feature 1.5), is to include the entire "atomization unit" and the connections and surrounding components. Defendant's position emphasized in this mn, that the claimed heater is not to solely be the heating element, and notably is to comprise a heater chamber, but for it to be clear for the skilled person that it is the structure responsible for vaporization of the vaporizable material, not just any connection and surrounding component of said structure, is understood to mean, that Defendant considers feature 1.5 to be about at least the majority of the parts that make up the heater, including the heater chamber.

7.40 The interpretation of further features of claim 1 and 3 is in dispute between the parties, like the interpretation of the term "fluid storage compartment" in feature 1.2 or the term "condensation chamber" in features 1.6 and 1.7. The present decision does not depend on the interpretation of further features of claim 1 and 3. It hence does not need to be established, how the skilled person would interpret these further features when applying the above identified legal framework.

7.41 **Underlying problem**

7.42 The Patent does not formulate a specifying underlying problem.

- 7.43 Interpreting the claim, the skilled person identifies an interrelation between feature 1.5, that when interpreted in the above manner defines (among others) the location of at least the majority of the parts that make up the heater, including the heater chamber, to be at a first end of the cartridge and feature 1.8, that requires the mouthpiece to be affixed to the second end of the cartridge. This to the skilled person's understanding leads to a longer distance between the heater and the mouthpiece, which allows a longer distance for the condensation of vaporized fluid and can attribute to avoiding vapors of elevated temperatures to easily reach the mouthpiece, wherein the high temperatures may lead to an unpleasant inhaling experience or even to a violation of the user's safety. An underlying problem to this is to optimize the parameters of the inhalable aerosol that is inhaled by the user.
- 7.44 To reflect on the parameters of the inhalable aerosol that is inhaled by the user is an intrinsic motivation in the field of devices for generating an inhalable aerosol, as the inhalable aerosol is the very product that the device is to produce. This is also confirmed by Cross in [0047] that considers the air outlet temperature, the possibility of further nebulizing the liquid and preventing the mouth of the user from being scalded when sucking to be generally relevant design aspects.
- 7.45 Claimant's argument in mn 128 RtD that the claims and the Patent do not provide a requirement or specificity as to the dimensions of any of the components, does not lead to a different evaluation. For any cartridge, regardless of any specificity as to dimension, the placement of at least the majority of the parts that make up the heater, including the heater chamber, to be at a first end of the cartridge and the placement of the mouthpiece to the second end of the cartridge will set the heater chamber and the mouthpiece apart for the maximum distance that the particular cartridge can provide. Given the required placement of the first condensation chamber and second condensation chamber between the heater chamber and the mouthpiece (features 1.6, 1.7) the provision of this distance provides a relatively large length for the arrangement of the first condensation chamber and second condensation chamber.

8 **Validity**

- 8.1 The invention to which the Patent EP991 pertains is new; it does not form part of the state of the art relied upon by Claimant. The invention to which the Patent EP991 pertains also involves an inventive step, because, having regard to the state of the art relied upon by Claimant, the invention is not obvious to the person skilled in the art.

9 **Novelty**

- 9.1 An invention shall be considered to be new, if it does not form part of the state of the art (Art. 54 EPC). To form part of the state of the art, the subject matter of the patent with all its features needs directly and unambiguously disclosed in one citation.

Novelty over Chinese Patent Application Publication No. 101843368 A (“Chen”)

- 9.2 The invention to which **claim 1** pertains, does not form part of the disclosure of the Chinese Patent Application Publication No. 101843368 A (hereinafter referred to as “Chen”). It is new over “Chen” (Art. 54 EPC).
- 9.3 The invention to which **claim 1** pertains differs from the disclosure of “Chen” in that claim 1 in feature 1.5 requires a heater that comprises a heater chamber in fluid communication with the second air passage to be affixed to a first end of the cartridge, while in Chen this is not foreseen, as the location of at least the majority of the parts that make up the heater, including the heater chamber, is not at a first end of the cartridge.
- 9.4 The Chinese Patent Application Publication No. 101843368 A (“Chen”) was published prior to the earliest priority date of the Patent EP991 (23 December 2013), namely on 29 September 2010. “Chen” is prior art to be considered for the evaluation of the patentability under Art. 54 EPC. Reference will be made to the English translation as filed as MWE 14a; if not stated otherwise, references to paragraphs in a document that are made within this section are to MWE 14a.
- 9.5 As Defendant does not explicitly contest this, it appears to be without dispute among the parties that “Chen” discloses a cartridge suitable to be used in a device for generating an inhalable aerosol with an airflow path (feature 1.1), the cartridge having a channel comprising a portion of an air inlet passage (feature 1.3), the air inlet passage being formed by assembly of a device body and the cartridge (feature 1.9).
- 9.6 Indeed, by way of the embodiments of a device called “Mouthpiece 1” that are shown in the Fig. 1 to 7 and described in the description of Chen in relation to these Fig., Chen discloses embodiments of a cartridge suitable to be used in a device for generating an inhalable aerosol. [0042] teaches in this respect, that the electronic nebulizer shown in Fig. 1 (to which the Mouthpiece 1 is a part) is capable of nebulizing liquid in the nebulizer so that consumers may inhale the nebulized gas. The device for generating an inhalable aerosol, for which the mouthpiece 1 is to be used, has an airflow path. In this respect, [0050] teaches the details of how air travels through the device after having entered the air inlet hole 30 until it flows out of the mouthpiece 1 from the air outlet hole 41.

9.7 Chen discloses a channel comprising a portion of an air inlet passage. The channel is provided by the spacer cavity 324 provided between the inner electrode and the outer electrode. This spacer cavity is open towards the battery compartment 2 arranged below the mouthpiece 2. As the battery compartment 2 and the mouthpiece 1 are connected to each other, the open side of the spacer cavity 324 is closed to form an air inlet passage. Claim 1 does not define a starting point of the air inlet passage and does not exclude further elements to be arranged “upstream” of the channel. [0165] of EP991 for example describes an air inlet opening 50 and hence an element “upstream” of the channel. In Chen – in the assembled device – air passes through the semicircular holes 21 provided in an end face of the wall body of the outer electrode of the rod threaded electrode and passes through the space provided between the wall body of the outer electrode and the outer electrode of the mouthpiece, especially provided by the avoidance gap cavity 329, and passes through the through hole 325 to then enter into the (now closed) channel.

9.8 For ease of reference for the following discussion, Fig. 1, 2 and 3 of Chen are inserted below.

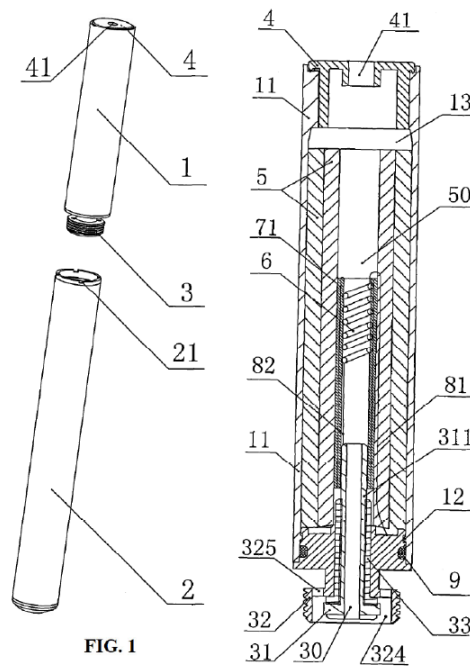


FIG. 1

FIG. 2

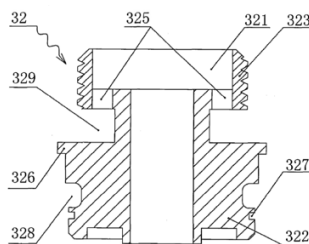


FIG. 3

- 9.9 Chen discloses a **heater**. Similar to elements that are described to belong to the heater in [0154] of EP991 (as one example), Chen discloses a cartridge (mouthpiece 1) with heater contacts (inner electrode 31, outer electrode 32) and a resistive heating element (heater 6 with electric leads 81, 82).
- 9.10 The cartridge of Chen has a **heating chamber**. The liquid adsorbed in the reservoir 5 is intended to diffuse through a gap position between the spiral wires of the heater into the central channel 50, where it is heated and nebulized when the heater 6 is electrified and heated [0048]; when the liquid-containing airflow in central channel 50 passes through the heater 6, the heater can heat up and further nebulize the airflow [0050]. The heating chamber of Chen is provided by the inward facing surfaces of the material that define the central channel 50 in the region of the heater 6, which is either the inward facing surfaces of the reservoir 5 for the embodiments without the diffusion layers 71 for liquid diffusion as described in [0053] or the inward facing surfaces of the diffusion layers 71 for liquid diffusion as described in [0053].
- 9.11 As the heating chamber in Chen is tube shaped and as the openings at opposite ends of the tube shaped heating chamber have the same size as the cross-section of the chamber, it needs to be established by other considerations than pure geometric considerations, where along the central channel 50 the heater chamber starts. To the skilled person's understanding, the heating chamber in Chen starts at about the lowest winding of the heater 6 (in the viewing direction of Fig. 2; the winding closest to the inner electrode 31/outer electrode 32). It is here that the medium begins to be heated. While it may be that heat radiation from the lowest winding of the heater 6 radiates downwards in the direction of the inner electrode 31/outer electrode 32 (in the viewing direction of Fig. 2) and may heat medium that is in the central channel 50 below the lowest winding of the heater 6, [0012] indicates that the air velocity in the central channel is high, which to the skilled person's understanding means that the amount of heating of the medium that will occur through radiation in the central channel 50 below the lowest winding of the heater 6 is negligibly small. This leads to the skilled person's understanding that the heating chamber in Chen starts at about the lowest winding of the heater 6 (the winding closest to the inner electrode 31/outer electrode 32). Claimant in mn 54 SfR indicates the heating chamber to start there.
- 9.12 As can be seen from Fig. 2, the heating chamber in Chen is arranged about half way along the longitudinal extend of the mouthpiece 1; the mouthpiece 1 extending longitudinally from the outer electrode 32 to the seal wall 4. The heater chamber hence is not located at a first end of the cartridge. The heater in Chen is not affixed to a first end of the cartridge as this requires the location

of at least the majority of the parts that make up the heater, including the heater chamber, to be at a first end of the cartridge.

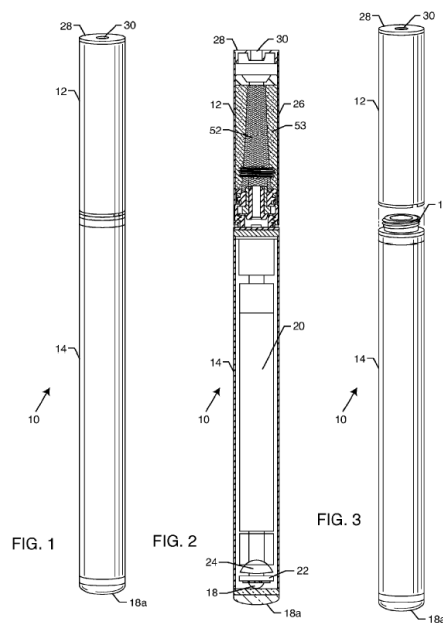
- 9.13 It is in dispute among the parties, if the cartridge disclosed in “Chen” comprises a fluid storage compartment (feature 1.2), a second air passage in fluid communication with the channel, the second air passage being formed through material of the cartridge (feature 1.4); a first condensation chamber (45) in fluid communication with the heater chamber (feature 1.6); a second condensation chamber (46) in fluid communication with the first condensation chamber (feature 1.7); a mouthpiece (37) affixed to a second end of the cartridge wherein said mouthpiece comprises an aerosol outlet (47) in fluid communication with the second condensation chamber (feature 1.8). Given that the subject matter of claim 1 is rendered new over “Chen” already for the reason of Chen not disclosing feature 1.5, it does not need to be established, if Chen does or does not show any of the further features that are in dispute among the parties.
- 9.14 The invention to which **claim 3** pertains differs from the disclosure of “Chen” in that the cartridge used in the device according to claim 3 by way of feature 1.5 of claim 1, to which claim 3 refers to for the design of the cartridge, requires a heater that comprises a heater chamber in fluid communication with the second air passage to be affixed to a first end of the cartridge, while in Chen this is not foreseen, as the location of at least the majority of the parts that make up the heater, including the heater chamber, is not at a first end of the cartridge..
- 9.15 Regarding the **subordinate claims 2 and 4 to 11**, the respective invention to which they pertain respectively differs from “Chen” in that claim 1, that is incorporated in each of the claims by their dependency either directly from claim 1 (claim 2) or their dependency on claim 3 (claims 4 to 11), which in itself is dependent on claim 1, requires in feature 1.5 a heater that comprises a heater chamber in fluid communication with the second air passage to be affixed to a first end of the cartridge, while in Chen this is not foreseen, as the location of at least the majority of the parts that make up the heater, including the heater chamber, is not at a first end of the cartridge.

Novelty over U.S. Patent Application Publication No. 2013/0192617 A1 (“Thompson”)

- 9.16 The invention to which claim 1 of the Patent pertains, does not form part of the disclosure of US Patent Application Publication 2013/0192617 A1 (hereinafter referred to as “Thompson”). The invention to which claim 1 pertains is new (Art. 54 EPC) over “Thompson”.
- 9.17 The invention to which **claim 1** pertains differs from the disclosure of “Thompson” in that claim 1 in feature 1.5 requires a heater that comprises a

heater chamber in fluid communication with the second air passage to be affixed to a first end of the cartridge, while in Thompson this is not foreseen, as the location of at least the majority of the parts that make up the heater, including the heater chamber, is not at a first end of the cartridge.

- 9.18 The U.S. Patent Application Publication No. 2013/0192617 A1 was published on 01 August 2023 and hence prior to the earliest priority date of the Patent EP991 (23 December 2013). “Thompson” is prior art to be considered for the evaluation of the patentability under Art. 54 EPC. If not stated otherwise, references to paragraphs in a document that are made within this section are to Thompson.
- 9.19 As Defendant does not explicitly contest this, it appears to be without dispute among the parties that “Thompson” discloses a cartridge suitable to be used in a device for generating an inhalable aerosol with an airflow path (feature 1.1), the cartridge having a channel comprising a portion of an air inlet passage (feature 1.3), the air inlet passage being formed by assembly of a device body and the cartridge (feature 1.9).
- 9.20 Indeed, by way of the “cartomizer 12” that is shown in the Fig. 1 to 9 and described in the description of Thompson in relation to these Fig., Thompson discloses a cartridge suitable to be used in a device for generating an inhalable aerosol. [0030] teaches in this respect, that the volatile liquid 56, which has been absorbed into the fibrous wick 50, is vaporized and passes through the air tunnel 52 as vapor simulating cigarette smoke.
- 9.21 For ease of reference for the following discussion, Fig. 1 to 9 of Thompson are inserted below.



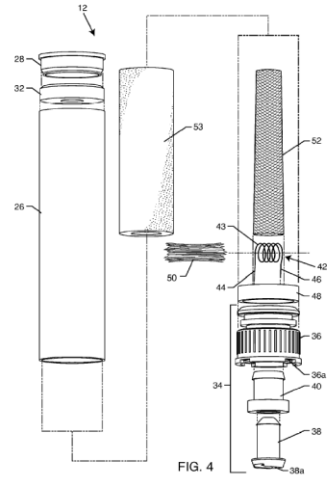


FIG. 4

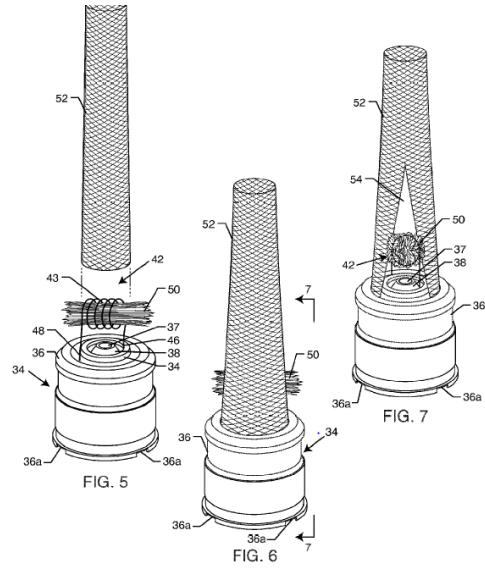


FIG. 5

FIG. 7

FIG. 6

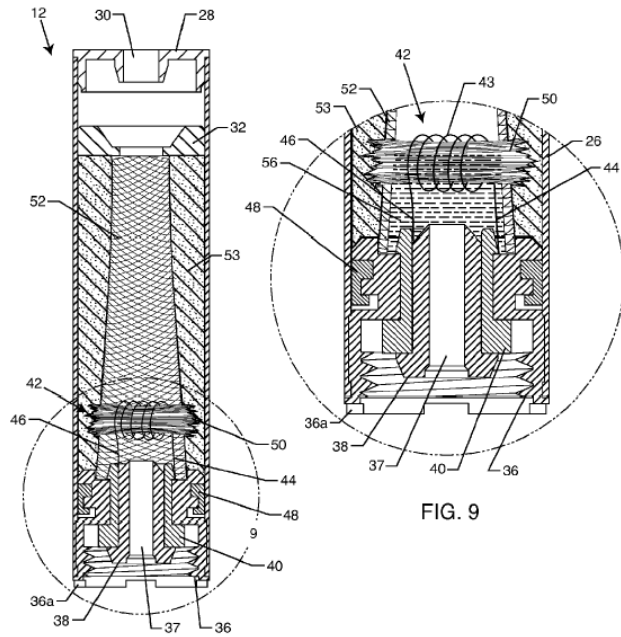


FIG. 8

FIG. 9

- 9.22 Thompson discloses a **heater**. Similar to elements that are described to belong to the heater in [0154] of EP991 (as one example), Thompson discloses a cartridge (cartomizer 12) with heater contacts (isolated positive and negative terminals included in coupling 34 ([0024])) and a resistive heating element (atomizing coil 42 and its positive terminal lead 44 and its negative terminal lead 46).
- 9.23 The cartridge of Thompson has a **heating chamber**. The heating chamber of Thompson is provided by the inward facing surfaces of the air tunnel 52 in the region of the atomizing coil 42 and where the air tunnel 52 contains triangular cutouts 54, the inward facing surfaces of the semi-absorbent packing material 53 arranged in those triangular cutouts 54 and in the region of the atomizing coil 42. To the skilled person's understanding, the thus formed heating chamber terminates at the upper end of the outer electrode 36, the rubber 40, the inner terminal 37. These provide facing surfaces sufficiently proximate to the atomizing coil 42 to be considered by the skilled person to attribute to *containing* medium that after heating and having left the heater chamber is susceptible to condensation.
- 9.24 As can be seen from Fig. 8, the heating chamber in Thompson is arranged about 1/3 of the longitudinal extend of the cartomizer 12; the cartomizer 12 extending longitudinally from the outer terminal 36 to the mouthpiece 28. The heater chamber hence is not located at a first end of the cartridge. The heater in Thompson is not affixed to a first end of the cartridge as this requires the location of at least the majority of the parts that make up the heater, including the heater chamber, to be at a first end of the cartridge.
- 9.25 It is in dispute among the parties, if the cartridge disclosed in "Thompson" comprises a fluid storage compartment (feature 1.2), a second air passage in fluid communication with the channel, the second air passage being formed through material of the cartridge (feature 1.4); a first condensation chamber (45) in fluid communication with the heater chamber (feature 1.6); a second condensation chamber (46) in fluid communication with the first condensation chamber (feature 1.7); a mouthpiece (37) affixed to a second end of the cartridge wherein said mouthpiece comprises an aerosol outlet (47) in fluid communication with the second condensation chamber (feature 1.8). Given that the subject matter of claim 1 is rendered new over "Thompson" already for the reason of Thompson not disclosing feature 1.5, it does not need to be established, if Thompson does or does not show any of the further features that are in dispute among the parties.
- 9.26 The invention to which **claim 3** pertains differs from the disclosure of "Thompson" in that the cartridge used in the device according to claim 3 by way of feature 1.5 of claim 1, to which claim 3 refers to for the design of the cartridge, requires a heater that comprises a heater chamber in fluid

communication with the second air passage to be affixed to a first end of the cartridge, while in Thompson this is not foreseen, as the location of at least the majority of the parts that make up the heater, including the heater chamber, is not at a first end of the cartridge.

- 9.27 Regarding the subordinate **claims 2 and 4 to 11**, the respective invention to which they pertain respectively differs from “Thompson” in that claim 1, that is incorporated in each of the claims by their dependency either directly from claim 1 (claim 2) or their dependency on claim 3 (claims 4 to 11), which in itself is dependent on claim 1, requires in feature 1.5 a heater that comprises a heater chamber in fluid communication with the second air passage to be affixed to a first end of the cartridge, while in Thompson this is not foreseen, as the location of at least the majority of the parts that make up the heater, including the heater chamber, is not at a first end of the cartridge.

10 Inventive step

- 10.1 The invention to which the Patent EP991 pertains involves an inventive step, because, having regard to the state of the art cited by Claimant for the evaluation of inventive step according to

- U.S. Patent Application Publication No. 2011/0036346 A1 (hereinafter referred to as “Cohen”), combined with common general knowledge or
- Cohen combined with U.S. Patent No. 8,333,197 B2 (hereinafter referred to as “Cross”),

the invention is not obvious to the person skilled in the art.

- 10.2 According to Article 56 EPC, an invention shall be considered as involving an inventive step if, having regard to the state of the art, it is not obvious to a person skilled in the art.

- 10.3 To provide legal certainty to the evaluation of inventive step, an objective approach must be established and applied to the assessment of inventive step.

- 10.4 The reference to the person skilled in Art. 56 EPC is an element of this objective approach. Subjective considerations, a subjective motivation to make specific modifications to the prior art or the subjective knowledge and skill of the named inventor(s) (or the parties to the case), for example, are not to have an influence on the evaluation of inventive step.

- 10.5 The reference to the state of the art in Art. 56 EPC, which according to Art. 54 (2) EPC shall be held to comprise everything made available to the public by means of a written or oral description, by use, or in any other way, before the date of filing (or the earliest priority date (Art 89 EPC)) of the European patent application, is a further element of this objective approach. In general, an invention shall be considered as involving an inventive step if, having

regard to *any element that forms part of* the state of the art, it is not obvious to a person skilled in the art. Limiting the evaluation of inventive step to certain elements of the prior art, for example a document perceived to be “the closest prior art”, generally bears the risk of introducing subjective elements into the evaluation, for example if the reasons for disregarding certain elements of the prior art are of subjective nature. This said, for reasons of procedural efficiency it may be justified in a particular case to focus the debate on a certain element or on certain elements of the prior art and it may be justified in a particular case to reduce the evaluation of other elements of the prior art to a minimum.

- 10.6 The reference to an inventive step (“*erfinderische Tätigkeit*” in the German version of Art 56 EPC; “*une activité inventive*” in the French version of Art 56 EPC) indicates that what is to be evaluated under Art 56 EPC is an activity. An activity can be motivated by an underlying problem. It is then decisive, whether what is claimed as an invention did or did not follow from the prior art in such a way that the skilled person would have found it in his attempt to solve the underlying problem on the basis of its knowledge and skills, for example by obvious modifications of what was already known.

U.S. Patent Application Publication No. 2011/0036346 A1 (“Cohen”) as starting point

- 10.7 The U.S. Patent Application Publication No. 2011/0036346 A1 (“Cohen”) was published on 17 February 2011 and hence prior to the earliest priority date of the Patent EP991 (23 December 2013). “Cohen” is prior art to be considered for the evaluation of the patentability under Art. 56 EPC. If not stated otherwise, references to paragraphs in a document that are made within this section are to Cohen.
- 10.8 As Defendant does not explicitly contest this, it appears to be without dispute among the parties that “Cohen” discloses a cartridge suitable to be used in a device for generating an inhalable aerosol with an airflow path (feature 1.1) with a second air passage in fluid communication with a channel, the second air passage being formed through material of the cartridge (feature 1.4).
- 10.9 By way of the combined cartridge 16 and atomizing unit 14 that is shown in the Fig. 1 to 8 and described in the description of Cohen in relation to these Fig., Cohen discloses a cartridge suitable to be used in a device for generating an inhalable aerosol. [0031] describes the operation of a device that contains the cartridge 16 and the atomizing unit 14 and especially describes heated air to pass over a wick causing a medium that has been absorbed into the wick to be atomized, creating a vapor containing the deliverables from the medium; nicotine being considered as a possible deliverable according to

[0004]. The device for generating an inhalable aerosol, for which the combined cartridge 16 and atomizing unit 14 is to be used, has an airflow path (see [0031]). By way of the holes 94, Cohen discloses a second air passage in fluid communication with a channel formed between the flat surface of the annular flange 92 and the slots 30 of the device body (the first coupling 26 that belongs to the electronics section 12), this particular second air passage being formed through material of the cartridge, namely the material of second coupling 90.

10.10 The device according to Cohen is illustrated in the following figures.

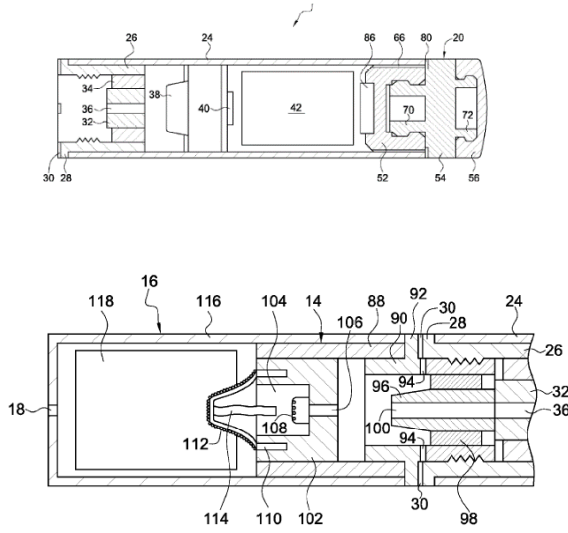


FIG. 8

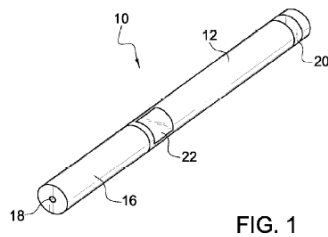


FIG. 1

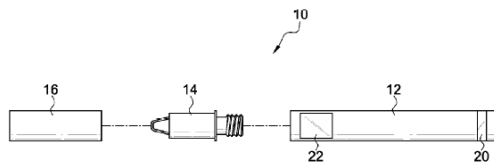


FIG. 2

10.11 Cohen discloses a **heater**. Compared to elements that are described to belong to the heater in [0154] of EP991 (as one example), the atomizing unit 14 of Cohen can be considered to be the heater of Cohen. The atomizing unit 14

has a **heating chamber** by way of the atomization chamber 104 and has a heating coil as atomizing device 108. Electrical contacts by way of the second coupling 90 and the second electrical contact 96 extend beyond the cartridge 16.

- 10.12 To the skilled person's understanding, the heating chamber terminates at the surface that surrounds the end of the air passage 106. These provide facing surfaces sufficiently proximate to the atomizing device 108 to be considered by the skilled person to attribute to *containing* medium that after heating and having left the heater chamber is susceptible to condensation. Claimant in mn 167 SfR indicates the heating chamber to have this extent.
- 10.13 [0018] describes the atomizing unit 14 to be connected to the cartridge 16 by way of interference fit. To the skilled person's understanding this means that the diameter of the cylinder-like middle section of the atomizing unit 14 is chosen in relation to the inner diameter of the tube-like part of the cartridge 16 to provide this interference fit. Implementing the attachment method described in [0018], the heater (atomizing unit 14) of Cohen is affixed to the cartridge along the length of the outer surface of the cylinder-like middle section of the atomizing unit 14 and the inner surface of the tube-like part of the cartridge 16 by way of interference fit. [0019] as an alternative suggests the atomizing unit 14 and the cartridge 16 to be joined together in a fixed manner, such as by gluing and the like. To the skilled person's understanding implementing the attachment method described in [0019], the heater (atomizing unit 14) of Cohen is permanently affixed to the cartridge along the length of outer surface of the cylinder-like middle section of the atomizing unit 14 and the inner surface of the tube-like part of the cartridge 16 by way of gluing and the like.
- 10.14 As can be seen from Fig. 8, the heating chamber in Cohen is arranged about half way of the longitudinal extend of the combined cartridge 16 and atomizing unit 14; the combined cartridge 16 and atomizing unit 14 extending longitudinally from the end of the second coupling 90 to the second end that contains the orifice 18. The heater chamber hence is not located at a first end of the cartridge. Cohen describes the heater to be affixed to the cartridge along the length of the outer surface of the cylinder-like middle section of the atomizing unit 14 and the inner surface of the tube-like part of the cartridge 16. The outcome of this affixation is a placement of the heating chamber about half way of the longitudinal extend of the combined cartridge 16 and atomizing unit 14. The heater in Cohen is not affixed to a first end of the cartridge as this requires the location of at least the majority of the parts that make up the heater, including the heater chamber, to be at a first end of the cartridge.

- 10.15 The claimed invention hence differs from Cohen in that in the invention the heater is affixed to a first end of the cartridge, which means that the location of at least the majority of the parts that make up the heater, including the heater chamber, is at a first end of the cartridge.
- 10.16 There is no suggestion in the state of the art relied upon by Claimant to affix a heater, which comprises a heater chamber, to a first end of the cartridge (in the sense established above) and to affix a mouthpiece to a second end of the cartridge. What is claimed as an invention hence did not follow from the prior art in such a way that the skilled person would have found it in his attempt to solve the underlying problem to optimize the parameters of the inhalable aerosol that is inhaled by the user on the basis of its knowledge and skills.
- 10.17 From the facts submitted it cannot be established that it belonged to the common general knowledge at the time of the earliest priority of the Patent to affix a heater, which comprises a heater chamber, to a first end of the cartridge (in the sense established above) while also affixing a mouthpiece to a second end of the cartridge. Claimant does not claim that it belonged to the common general knowledge at the time of the earliest priority of the Patent to affix a heater, which comprises a heater chamber, to a first end of the cartridge (in the sense established above) while also affixing a mouthpiece to a second end of the cartridge.
- 10.18 Regarding particular elements of the prior art, Claimant did not claim that the documents Cross, Monsees, Lee, Thompson and Chen showed an affixation of a heater, which comprises a heater chamber, to a first end of the cartridge (in the sense established above) while also affixing a mouthpiece to a second end of the cartridge. Such a claim would also not be convincing. As indicated above, Thompson and Chen do not show this feature. Setting aside the question, whether Claimant has sufficiently substantiated, what Cross, Lee or Monsees teach in regard to an affixation of a heater, which comprises a heater chamber, to a first end of the cartridge in conjunction with affixing a mouthpiece to a second end of the cartridge, and whether Claimant has sufficiently substantiated, what would motivate the skilled person to implement such a teaching into Cohen, all three documents do not guide the skilled person to the claimed invention. What may be considered as a heating chamber in Cross, namely the room in the cartridge 50, delimited by the first shell 52 and the second shell 54, that surrounds the heating element 78, occupies the middle of cartridge 50 and hence also does not include the teaching to affix a heater, which comprises a heater chamber, to a first end of the cartridge in conjunction with affixing a mouthpiece to a second end of the cartridge. In Lee the atomizer unit 140 is arranged about midbody of the electronic cigarette 100. Monsees refers to a device for generating an

inhalable aerosol with a detachable mouthpiece, but does not refer to a cartridge suitable to be used in such a device, where the mouthpiece would be part of the cartridge.

- 10.19 It is in dispute among the parties, if the cartridge disclosed in “Cohen” comprises a fluid storage compartment (feature 1.2), a channel comprising a portion of an air inlet passage (feature 1.3); a first condensation chamber (45) in fluid communication with the heater chamber (feature 1.6); a second condensation chamber (46) in fluid communication with the first condensation chamber (feature 1.7); a mouthpiece (37) affixed to a second end of the cartridge wherein said mouthpiece comprises an aerosol outlet in fluid communication with the second condensation chamber (feature 1.8). It does not need to be established, if Cohen does or does not show any of the further features that are in dispute among the parties.
- 10.20 The invention to which **claim 3** is based on an inventive step already for the reason that the cartridge used in the device according to claim 3 by way of feature 1.5 of claim 1, to which claim 3 refers to for the design of the cartridge, is based on an inventive step. Regarding the subordinate **claims 2 and 4 to 11**, the respective invention to which they pertain are based on an inventive step already for claim 1, that is incorporated in each of the claims by their dependency either directly from claim 1 (claim 2) or their dependency on claim 3 (claims 4 to 11), being based on an inventive step.

Chinese Patent Application Publication No. 101843368 A (“Chen”) or U.S. Patent Application Publication No. 2013/0192617 A1 (“Thompson”) as starting point

- 10.21 Chen or Thompson were not considered as a starting point for the evaluation of inventive step by Claimant in the SfR, but were first used as a starting point by Defendant (mn 98 DtR; mn 140 DtR). In response, Claimant maintains that claim 1 is invalid due to lack of novelty over Chen (mn 140 RtD) as well as Thompson (mn 154 RtD) and states that Defendant’s arguments are incorrect and meritless and should be dismissed. Claimant hence does not set fourth that the claimed invention shall be considered obvious to a person skilled in the art having regard to the state of the art according to Chen or having regard the state of the art according to Thompson.
- 10.22 As indicated above, in general, an invention shall be considered as involving an inventive step if, having regard to *any element that forms part of* the state of the art, it is not obvious to a person skilled in the art. Limiting the evaluation of inventive step to certain elements of the prior art, for example a document perceived to be “the closest prior art”, generally bears the risk of introducing subjective elements into the evaluation. In view of this, it would

generally be feasible to further evaluate, if having regard to Chen or if having regard to Thompson the invention is not obvious to a person skilled in the art.

10.23 It is, however, Claimant that defines the scope of evaluation for a revocation action. The Court does not evaluate reasons for revocation that the Claimant has not raised. As Claimant does not raise this issue, it can be left undecided, if the claimed invention shall be considered obvious to a person skilled in the art having regard to the state of the art according to Chen or having regard the state of the art according to Thompson.

11 Costs

11.1 In accordance with Article 69 UPCA and Rule 118.5 RoP, Claimant as the unsuccessful party, the Patent being upheld entirely, has to bear the legal costs of Defendant.

DECISION

Having heard the parties on all relevant aspects of the case, the Central Division:

1. dismisses the revocation action;
2. admits Claimant’s submission of 19 February 2024 including MWE 23 to MWE 50;
3. does not admit pages 1 -15 until mn. 44 including Exhibit MWE 51 of Claimant’s submission of 19 April 2024;
4. admits p. 15-50 of Claimant’s submission of 19 April 2024, including MWE 52 to 56;
5. does not admit Defendant’s submission of 31 May 2024;
6. Claimant bears the costs of the proceedings.

NAMES AND SIGNATURES	
<p>Judges</p> <p>Presiding judge:</p>	<p>For the Deputy-Registrar</p>

