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**Datasheet for the decision
of 12 July 2018**

Case Number: T 1614/14 - 3.2.06

Application Number: 09250807.6

Publication Number: 2105594

IPC: F01N13/00, F01N3/28

Language of the proceedings: EN

Title of invention:

Honeycomb structure

Patent Proprietor:

NGK Insulators, Ltd.

Opponent:

Emitec Gesellschaft für Emissionstechnologie mbH

Relevant legal provisions:

EPC Art. 123(2)

Keyword:

Amendments - allowable (no)



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Case Number: T 1614/14 - 3.2.06

D E C I S I O N
of Technical Board of Appeal 3.2.06
of 12 July 2018

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Decision under appeal: **Interlocutory decision of the Opposition
Division of the European Patent Office posted on
28 May 2014 concerning maintenance of the
European Patent No. 2105594 in amended form.**

Composition of the Board:

Chairman M. Harrison
Members: G. de Crignis
 J. Hoppe

Summary of Facts and Submissions

- I. By way of its interlocutory decision, the opposition division held that European Patent No. 2 105 594 as amended met the requirements of the European Patent Convention (EPC).
- II. The appellant (opponent) filed an appeal against this decision. Objections were made *inter alia* under Article 123(2) EPC.
- III. With its reply, the respondent (patent proprietor) submitted four auxiliary requests.
- IV. The Board issued a summons to oral proceedings and subsequently a communication setting out its preliminary opinion which indicated that the requirement of Article 123(2) EPC was not met with regard to the subject-matter of the claims of any request.
- V. With letter of 27 June 2018, the respondent withdrew its request for oral proceedings and filed further arguments in relation to the Board's provisional opinion on the objections under Article 123(2) EPC, as well as a new third auxiliary request, whereby the previous third and fourth auxiliary requests were renumbered as the fourth and fifth auxiliary requests. Additionally the respondent announced that it would not be represented at the oral proceedings.
- VI. Oral proceedings were held before the Board on 12 July 2018.

The respondent was not represented at the oral proceedings as announced in its letter of 27 June 2018.

The appellant requested that the decision under appeal be set aside and the European patent be revoked.

The respondent had requested in writing that the appeal be dismissed and auxiliarily that the patent be maintained in amended form on the basis of auxiliary requests 1 to 5 filed with letter of 27 June 2018, further auxiliarily that the case be remitted to the opposition division for the description to be adapted suitably.

VII. Claim 1 of the main request reads as follows:

"A honeycomb structure which is formed by a plurality of cells (5) separated from one another by porous partition walls (3) and functioning as fluid flow paths,
the honeycomb structure having a sensor plug-in hole (7) which is formed in the outer peripheral surface of the honeycomb structure and into which a sensor can be plugged,
characterized in that the honeycomb structure further has at least one deep hole (8) which communicates with the sensor plug-in hole and which extends through the honeycomb structure from the sensor plug-in hole (7) so as to intersect some of the cells of the honeycomb structure and which extends through a honeycomb end face, and wherein the honeycomb structure is made of a ceramic material or a sintered metal."

Claim 1 of all auxiliary requests includes the features of the characterizing portion of the main request.

The amendments to the auxiliary requests included additional features, all of which are not relevant to the current decision.

VIII. The relevant arguments of the appellant may be summarised as follows:

The requirement of Article 123(2) EPC was not met. The combination of features 1.4 ("which extends through the honeycomb structure from the sensor plug-in hole (7) so as to intersect some of the cells of the honeycomb structure") and 1.5 ("and which extends through a honeycomb end face") as used to define the at least one deep hole was not disclosed. In particular, no such combination could be derived from any of the disclosed embodiments, nor did any of the drawings show such an arrangement.

If Figure 7 were considered to provide a suggestion to the skilled person to combine features 1.4 and 1.5, then further features, such as the oblique design of the plug-in hole and the deep hole were also shown in that figure. These had however been omitted from the claim such that an unallowable intermediate generalisation of the original disclosure was present.

Since the same combination of features was present in all the auxiliary requests, these were also not allowable under Article 123(2) EPC for the same reasons.

IX. The relevant arguments of the respondent may be summarised as follows:

The problem addressed by the invention was to provide improved sampling of gas from different parts of the honeycomb structure. This was done by providing a deep hole in communication with the sensor plug-in hole.

Feature 1.4 was present in claim 1 as granted and could not be taken into consideration for the issue of added subject-matter as the ground of opposition under Article 100(c) EPC had never been raised. Features 1.5 and 1.6 were added after grant, such that only these features should be considered. Feature 1.6 had a basis in originally filed claims 8 and 16 and its compliance with the requirement of Article 123(2) EPC had not been disputed.

Feature 1.5 was based on page 23, lines 10 to 22 (paragraph 68) of the application as filed. This paragraph of the description described optional features of the invention and thus had to be considered in combination with all the other features disclosed in the application as filed. There was no reason for the skilled person to think that this feature could not be present together with feature 1.4 or the other claimed features. Indeed it would be difficult to arrive at an embodiment of the invention that implemented feature 1.5 with the features of originally filed claim 1 but which did not also implement feature 1.4.

A basis for feature 1.5 could also be found on page 24, lines 1 to 3 (paragraph 70) of the application as filed, which was a general disclosure applicable for all embodiments of the described honeycomb structure.

Figure 7 disclosed an embodiment which was very close to being inside the scope of claim 1. All that would be required would be for the deep hole 8 to be lengthened

slightly to extend through the honeycomb end face. The skilled person would have considered this option in respect of paragraph 68.

In terms of a basis for general support of the combination of features against which the objection under Article 123(2) EPC had been raised, paragraphs 10, 20 and 73 of the application as filed should also be considered. Before citing specific examples, the description set out various options and was subdivided into sections, 1-1, 1-2, etc., each giving a separate disclosure, whereby the skilled person would recognise that each of these disclosures could be optionally combined with each other.

The same considerations applied to auxiliary requests 1 to 5.

Reasons for the Decision

1. Article 123(2) EPC - Claim 1 - Main request

1.1 Claim 1 of the main request relates to a honeycomb structure which is provided with a plug-in hole for a sensor. In the characterising portion it is defined how a further hole, the deep hole, is positioned in relation to the plug-in hole.

Claim 1 as originally filed did not include the combination of features 1.4 and 1.5 (specified here according to the feature-by-feature analysis used in the proceedings) concerning the deep hole.

1.2 The features in dispute concern the position of the deep hole and are the following ones:

"which extends through the honeycomb structure from the sensor plug-in hole (7) so as to intersect some of the cells of the honeycomb structure" (feature 1.4);
"and which extends through a honeycomb end face" (feature 1.5).

1.3 Feature 1.4 was already present in claim 1 as granted and it was not objected to under Article 100(c) EPC in the grounds of opposition. Accordingly, feature 1.4 - in isolation - is not an issue which may be considered in the current proceedings, since the proprietor had not given its consent to this. The appellant also argued that this feature should be considered in that its meaning had changed due to the addition of feature 1.5. However, no change of meaning could be established by the Board; feature 1.4 is simply drafted broadly. It always had been interpreted by the Board in consistency with regard to e.g. Figures 2A or 2B which illustrate the deep hole extending from the plug-in hole to intersect some of the cells of the honeycomb structure.

1.4 Feature 1.5 was added during the opposition proceedings and thus the amended subject-matter is indeed a matter to be considered with regard to the requirement of Article 123(2) EPC. It is the new combination of features, including the combination of feature 1.5 with the other claimed features (including feature 1.4) concerning in particular the deep hole, which has to comply with the requirement of Article 123(2) EPC. Hence, the subject-matter defined by this chosen combination of features should be clearly and

unambiguously derivable from the originally filed application.

- 1.5 As its basis for the combination of features 1.4 and 1.5 in the application as filed, the respondent referred in particular to paragraphs 58, 68 and 70. These paragraphs include references to Figures 2A, 2B and 7.

For further support of this combination of features, reference was made to paragraphs 10, 20 and 73 and to the subdivisions in the detailed description (1-1, 1-2, etc.) which the respondent argued should be read in such a way that all the features and options quoted there were disclosed in combination.

- 1.6 The wording in paragraph 58 states that
"In a specific example, as shown in Figs. 2A, 2B, the deep hole 8 is formed to open with respect to a sensor plug-in hole other end 17 in the length direction of the sensor plug-in hole 7a."

According to claim 1, and as shown in Figures 2A and 2B, the plug-in hole is formed in the outer peripheral surface and hence, this paragraph refers to the extension of the deep hole in this direction. This is illustrated in Figures 2A and 2B where the deep hole is shown extending from a sensor plug-in-hole along a straight path to the opposite peripheral surface of the honeycomb structure thereby intersecting a multiplicity of cells of the honeycomb structure.

No disclosure can however be found of a combination of the features of this embodiment with an extension of the deep hole to the honeycomb end face, nor can any such combination be derived directly and unambiguously therefrom.

1.7 Paragraph 68 of the application as filed is cited as a basis for feature 1.5. This paragraph concerns the embodiment "when the deep hole is extended through a honeycomb end face" and explains the advantage of this constructional design in relation to the use of a UEGO sensor.

Irrespective on whether or not there is a mandatory link in this paragraph to the application of a UEGO sensor (as argued by the appellant), the embodiment is not unambiguously linked to further characteristics of the honeycomb structure. Hence, no combination of this embodiment (related to the deep hole extending through a honeycomb end face) with the feature concerning the intersection of some of the cells is present, nor can this be derived from the disclosure in this paragraph.

1.8 Further, paragraph 70 of the application as filed was cited by the respondent as a basis for the overall applicability of feature 1.5 in the patent in suit. Paragraph 70 states that
"the deep hole may extend through the honeycomb end face or may be formed in such a manner that it does not extend through the honeycomb end face".
This isolated and general statement is made without any connection to further features. There is a variety of further features disclosed, such as the features of (additionally) a lateral hole being present, a reference to the diameter of the deep hole and the lateral hole, the inclination of the deep hole with respect to the lateral hole, the manner of communication between deep hole and plug-in hole and the material of the honeycomb structure. These further features are disclosed in the description in relation to further conditions for being combined with one of

these options - however no such conditions are defined in the claim. Accordingly, in the absence of further particular specification when this option "may" apply (due to the wording "may extend through..."), no general disclosure is present of a combination of features 1.4 and 1.5 and nor can such a combination be directly and unambiguously derived.

- 1.9 A further argument of the respondent referred to the different sections of the description (1-1, 1-2, etc.) and the specific examples of embodiments in the application as filed and that they were all disclosed to the skilled reader in combination, apart from where they were stated as alternatives to each other or to be mutually exclusive.

However, the different sections and the specific examples of the various embodiments are distinct parts of the patent application. The detailed description of the invention - structured into section (1) honeycomb structure in the present invention, section (1-1) sensor plug in hole, section (1-2) deep hole etc. - each concern very specific and preferred embodiments which include still further features not specified in the claim. For example, the respective reference to paragraph 73 does not provide a basis for the claimed combination of features, since it includes further features (such as the lateral hole crossing the deep hole) which are not specified in claim 1, and hence, if this were the basis, the other features of the context in which such features are disclosed would be lacking such that an unallowable intermediate generalisation would then be present by only including certain of these features in claim 1.

1.10 The view of the respondent that, in paragraphs 10 and 20 of the application as filed, the problem addressed by the invention is defined in a way so as to provide improved sampling of gas from different parts of the honeycomb structure and would thus implicitly include the feature of the deep hole sampling gas from different cells by intersecting those cells applies in both paragraphs in relation to an exhaust gas control for excess air ratio (λ) = 1 and hence does not concern the honeycomb structure generally as defined in claim 1. No structural details concerning the extension of the deep hole to an end face or surface of the honeycomb structure are disclosed.

1.11 Figure 7 was also referred to as providing a basis for the claimed combination of features. This embodiment is described in paragraph 71. Figure 7 shows - and the corresponding description discloses - a deep hole being formed from the side of the sensor hole *"so that the deep hole does not extend through the honeycomb end face"*.

Hence, no disclosure or hint to the claimed subject-matter can be deduced from this Figure or paragraph since the deep hole specifically does not extend through the end face.

The respondent argued that the embodiment shown in Figure 7 was very close to being inside the scope of claim 1; all that would be required would be for the deep hole 8 to be extended slightly to extend through the honeycomb end face.

However, even when extending the deep hole 8 further, the embodiment shown in Figure 7 discloses several further features such as the deep hole and the plug-in

hole having an inclined extension in the honeycomb structure.

Hence, even if it were acknowledged that Figure 7 was "very close to being inside the scope of claim 1" such that this might provide a basis for certain features of claim 1, the extraction of only one feature of this particular embodiment and inserting this into the claim, would be an inadmissible intermediate generalisation of what is disclosed, namely that feature (with an extended deep hole) in combination with further features.

- 1.12 In summary, no disclosure concerning the deep hole intersecting some of the cells in combination with the deep hole also extending through a honeycomb end face results from, or could be derived from the disclosure. Accordingly, feature 1.5 is not disclosed in combination with feature 1.4 as claimed. Hence, the requirement of Article 123(2) EPC is not met.

2. *Auxiliary requests 1 to 5*

The combination of the features 1.4 and 1.5 of claim 1 of the main request are included in claim 1 of all the auxiliary requests. The additional features added in those requests do not affect the basis for that particular combination, nor has it been argued that they do.

Hence, the requirement of Article 123(2) EPC is not met with regard to the subject-matter of the claims of any of these auxiliary requests either.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chairman:



M. H. A. Patin

M. Harrison

Decision electronically authenticated