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Datasheet for the decision of 8 May 2008

Case Number: T 0422/04 - 3.3.05

Application Number: 98107350.5

Publication Number: 0873775

IPC: B01D 46/24

Language of the proceedings: EN

Title of invention:
Exhaust gas filter and method of producing the same

Applicant:
MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.

Opponent:
-

Headword:
Gas filter/MATSUSHITA

Relevant legal provisions:
EPC Art. 84

Relevant legal provisions (EPC 1973):
-

Keyword:
"Lack of clarity (all requests)"

Decisions cited:
-

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0422/04 - 3.3.05

D E C I S I O N
of the Technical Board of Appeal 3.3.05
of 8 May 2008

Appellant: MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 7 November 2003 refusing European application No. 98107350.5 pursuant to Article 97(1) EPC.**

Composition of the Board:

Chairman: G. Raths
Members: B. Czech
S. Hoffmann

Summary of Facts and Submissions

I. This appeal is from the decision of the examining division to refuse European patent application No. 98107350.5 on the ground of lack of novelty.

II. With its statement of grounds of appeal of 15 March 2004, the appellant filed four sets of amended claims as main and first to third auxiliary requests, respectively.

Claim 1 according to the main request has the following wording:

"*1. An exhaust gas filter for trapping particulates in an exhaust gas, which particulates are adapted to be burnt out by means of regeneration combustion, said filter comprising:*

a cylindrical body made of ceramic material, said body being so dimensioned that a specific heat h (cal/g°C) of ceramic powder constituting said body and a bulk specific gravity d (g/cm^3) of said exhaust gas filter satisfy the relation 0.12 cal/cm^3 °C ≤ h x d ≤ 0.19 cal/cm^3 °C;

a number of hollow cells provided in said body, each of which extends in a direction of an axis of said body to open at opposite ends of said body; and

a filler closing one of opposite axial ends of each of said cells in such a manner that at the opposite ends of said body, the closed ends of the cells and the open ends of the cells alternate one another."

The respective claims 1 according to the first, second and third auxiliary requests differ from the wording of

claim 1 according to the main request in that they comprise additional features appended to the latter.

In its statement of grounds of appeal, the appellant argued that the claimed subject-matter was novel and inventive over the prior art cited in the contested decision.

III. In said statement of grounds of appeal the appellant requested that the contested decision be set aside and that a patent be granted

(a) on the basis of
- claims 1 to 4 according to the main request filed with the statement of grounds of appeal;
- description pages 4 and 10 as filed on 24 March 2003, description pages 1 to 3, 5 to 9 and 11 to 19 of the application as filed; and
- figure 2 as filed as filed on 24 March 2003, and figures 1, 1a, 3 and 4 of the application as filed;

or, alternatively,

(b) on the basis of
- the claims according to one of the first to third auxiliary requests filed with the statement of grounds of appeal; and
- the description pages and figures mentioned under (a).

Alternatively, the appellant requested that oral proceedings be held.

IV. The appellant was summoned to oral proceedings. In the annex to the summons, the board raised objections concerning all requests, inter alia in regard of the unclear definitions of the parameters *d* and *h x d* in all the respective amended claims 1. In this context, the board also referred to document

D7: US 4 364 761 A.

V. With its reply dated 30 April 2008, the appellant withdrew its auxiliary request for oral proceedings and informed the board that neither the applicant nor its representatives would attend the oral proceedings.

VI. No other written submission reached the board before the oral proceedings, which were held on 8 May 2008 in the absence of the appellant. At the end of the oral proceedings the board announced its decision.

Reasons for the Decision

Clarity of claim 1 – All requests

1. The respective claims 1 according to all requests relate to an *exhaust gas filter* and contain references to a parameter *d* standing for a *bulk specific gravity of said exhaust gas filter*.

2. In document D7 (cited in the description of the present application), and in particular in column 3, lines 29 to 51 thereof, reference is made to two different ways of characterising a ceramic monolith structure for filtering particles from exhaust gas, namely by its

"overall porosity" or its "wall porosity". It is thus apparent from D7 that the skilled person characterising ceramic monolith exhaust gas filters differentiates between the porosity of the material making up the walls and the porosity of the monolith body including its hollow passages or cells.

2.1 The porosity of a ceramic body made of a specific material correlates with bulk specific gravity or bulk density values, which also depend on the specific gravity or density of the material in a pore-free form. In this respect, see e.g. the formula $d = \rho(1-v_v)$ referred to in point 2.3 on page 4 of the contested decision, wherein *d stands for the bulk specific density,* v_v *for* the porosity of the body walls, and ρ for the true density of the material constituting said body. This was not disputed by the appellant.

2.2 The skilled person will thus also differentiate between the bulk specific gravity of the porous material making up the filter walls and the overall specific gravity of the filtering body including the volume of the hollow cells extending through it.

3. The *exhaust gas filter* according to the respective claims 1 of all of the appellant's requests comprises *a cylindrical body* wherein *hollow cells* (see reference numerals 12 and 13 in figure 3 of the application as filed) are provided.

3.1 However, the application as filed contains no indications concerning the type of method used in determining the bulk specific gravity of the exhaust

gas filter, let alone any useful details concerning specific conditions or sample preparation.

3.2 On the one hand, the wording of the claims as such, but also the description e.g. on page 16, lines 14 to 16, appear to indicate that what is meant by *bulk specific gravity of said exhaust gas filter* is the ratio of the volume of the cylindrical body to its weight.

3.3 On the other hand, the sentence on page 10, lines 14 to 16, of the description, which relates to measuring the bulk specific gravity of the exhaust gas filter body 31 from "*its* ***own*** *weight and volume*" (emphasis added by the board), can be understood as referring to measuring the bulk specific gravity of the porous ceramic material making up the filter **walls**, i.e. without taking into account the volume of the hollow cells extending between the said walls.

3.4 Moreover, the appellant never objected to the calculations of the examining division, insofar as these calculations refer to the porosities and bulk densities of the ceramic **walls**, see e.g. the communication of 12.11.2002, page 2, point 4.1, lines 6 and 7, and the contested decision, page 4, point 2.3, first sentence. In these considerations the parameter *d* was thus considered to quantify the density of the **wall** material rather than the density of the entire filter body including cells.

3.5 In view of the missing and/or diverging elements of information addressed above in points 3.1 to 3.3, the expression *bulk specific gravity of said exhaust gas filter* referred to in the respective claims 1 of all

requests is ambiguous and thus renders these claims unclear as to the value of the parameter *d* to be considered (bulk specific gravity of the wall material only **or** bulk specific gravity of the volume of the cylindrical filter body including the volume of the hollow cells).

3.6 Consequently, the condition imposed by the said claims 1 concerning possible values of the composite parameter *h x d* does not constitute a clear delimitation of the claimed subject-matter.

4. The additional features comprised in the respective claims 1 according to the three auxiliary requests have no bearing on the above findings.

5. The board concludes that none of the respective claims 1 according to the main and the three auxiliary requests meets the requirements of Article 84 EPC.

6. Therefore, none of the appellant's requests is allowable.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar | The Chairman

S. Sánchez Chiquero | G. Raths