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**Datasheet for the decision
of 22 May 2015**

Case Number: T 0955/11 - 3.3.05

Application Number: 00304298.3

Publication Number: 1055638

IPC: C01B3/38, C01B3/32, B01J8/02

Language of the proceedings: EN

Title of invention:
Hydrogen generator

Applicant:
Panasonic Corporation

Headword:
Hydrogen generator/Panasonic

Relevant legal provisions:
EPC Art. 123(2), 84, 111(1) sentence 2

Keyword:
Amendments - added subject-matter (no)
Claims - clarity (yes) - conciseness (yes)

Decisions cited:

Catchword:



**Beschwerdekammern
Boards of Appeal
Chambres de recours**

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Case Number: T 0955/11 - 3.3.05

**D E C I S I O N
of Technical Board of Appeal 3.3.05
of 22 May 2015**

Appellant: Panasonic Corporation
(Applicant) 1006, Oaza Kadoma
Kadoma-shi
Osaka 571-8501 (JP)

Representative: Price, Paul Anthony King
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Decision under appeal: **Decision of the Examining Division of the
European Patent Office posted on 4 November 2010
refusing European patent application No.
00304298.3 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman G. Raths
Members: A. Haderlein
P. Guntz

Summary of Facts and Submissions

- I. The present appeal lies from the decision of the examining division to refuse European patent application No. 00304298.
- II. The examining division found that the claims according to the main and the four auxiliary requests underlying the impugned decision did not meet the requirements of Article 123(2) EPC.

In its decision, the examining division was of the opinion that the application as filed did not disclose a hydrogen generator wherein the reforming part and the gas mixing part were located in the combustion chamber but wherein the heating part and the vaporisation part were not. Since according to the then pending main, first and second auxiliary requests the heating part and the vaporisation part were not necessarily located in the combustion chamber and since according to the then pending third and fourth auxiliary requests the heating part was not necessarily located in the combustion chamber, the requirements of Article 123(2) EPC were not met.

- III. In the course of the proceedings before the department of first instance, the examining division had indicated that an independent claim directed to a hydrogen generator wherein the water vaporisation part, the mixing part, the heating part and the reforming part were provided in the combustion chamber could lead to the grant of a patent (see results of consultation dated 4 October 2010, point 2, second paragraph).
- IV. With the statement setting out the grounds of appeal, the appellant (applicant) filed a sole request entitled

"Main Request".

- V. In a communication, the board expressed its opinion that the request on file did not meet the requirements of Articles 84 and 123(2) EPC. It informed the appellant that if a request was filed that overcame the objections raised by the board, it intended to remit the case to the examining division for further prosecution.
- VI. Under cover of its letter dated 24 April 2015, the appellant filed a new set of claims entitled "Main Request" replacing the previously filed request.
- VII. The wording of the claims of the request dated 24 April 2015 is as follows:

"1. A hydrogen generator for generating a hydrogen gas, comprising at least a fuel supply part (1) for supplying a hydrocarbon type fuel, a fuel combustion part (4), a water supply part (3) for supplying water, a water vaporization part (8) for vaporizing said water, a gas mixing part (11,21) for mixing said fuel and said water, a heating part (7) for heating the mixed fuel and water, and a reforming part (6) filled with a reforming catalyst, wherein said reforming part (6) is heated by an exhaust gas generated in said combustion part (4); said reforming part (6) is disposed in a combustion chamber (5) in which the exhaust gas generated in said combustion part (4) flows; and the hydrogen generator is configured such that the flow of said exhaust gas and the flow of a mixed gas of said fuel and said water are in reverse directions to each other; characterized in that:

said gas mixing part (11,21), said water vaporization part (8) and said heating part (7) are disposed in said combustion chamber (5).

2. The hydrogen generator in accordance with Claim 1, wherein said water vaporization part (8) is placed between said water supply part (3) and said gas mixing part (11).

3. The hydrogen generator in accordance with Claim 1, configured such that air to be supplied to said fuel combustion part (4) is heated by combustion heat of said fuel combustion part.

4. The hydrogen generator in accordance with Claim 1, further comprising a pre-heating part (31) for heating at least one of said hydrocarbon type fuel before flowing into said gas mixing part (11) and air to be supplied to said combustion part (4), wherein said pre-heating part (31) is provided on the periphery of said hydrogen generator.

5. The hydrogen generator in accordance with Claim 4, wherein a heat insulating part (10) is provided between said combustion chamber (5) and said pre-heating part (31).

6. The hydrogen generator in accordance with Claim 1, wherein said water vaporization part (8) is provided between said gas mixing part (21) and said reforming part (6)."

VIII. The appellant requests that the examining division's decision be set aside and that a patent be granted on the basis of the claims of the request entitled "Main

Request" filed under cover of its letter dated 24 April 2015.

Reasons for the Decision

1. Compliance with Article 123(2) EPC
 - 1.1 Claim 1 is based on originally filed claim 1 and further includes the features of originally filed claim 5 (see also page 7, lines 12 et seqq.; page 9, penultimate line, to page 10, line 17; page 12, lines 5 to 11; page 15, lines 14 to 20). Claim 1 now also requires that the reforming part, the gas mixing part, the water vaporisation part and the heating part are all disposed in the combustion chamber as disclosed in the three embodiments depicted in Figures 1 to 3.
 - 1.2 Claims 2 and 3 are based on originally filed claims 2 and 3. Claim 4 is based on claim 4 as originally filed and page 15, second full paragraph, of the description as originally filed.
 - 1.3 Claim 5 is based in particular on page 15, second full paragraph, of the description as originally filed.
 - 1.4 Claim 6 is based on page 13, second and third paragraph, of the description and Figure 2 as originally filed.
 - 1.5 The amendments carried out in the claims therefore meet the requirements of Article 123(2) EPC.
2. Clarity, conciseness - Article 84 EPC

The board is satisfied that the requirements of clarity and conciseness of the claims (Article 84 EPC) are met.

In particular, redundant wording has been removed from the claims.

3. Remittal

- 3.1 The application was refused by the examining division on the grounds of Article 123(2) EPC only. Moreover, the examining division had indicated that an independent claim directed to a hydrogen generator wherein the water vaporisation part, the gas mixing part, the heating part and the reforming part were provided in the combustion chamber could lead to the grant of a patent.

The set of claims submitted with the letter dated 24 April 2015 complies with the requirements of Article 123(2) EPC (see at 1. *supra*) and therefore overcomes the objections raised by the examining division in the impugned decision.

- 3.2 The board exercises its discretionary power under Article 111(1), second sentence, EPC and remits the case to the examining division for further prosecution.

Order

For these reasons it is decided that:

1. The impugned decision is set aside.
2. The case is remitted to the examining division for further prosecution.

The Registrar:

The Chairman:



C. Vodz

G. Rath

Decision electronically authenticated