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Bezeichnung der Erfindung: Improved solid electrolyte gas sensing apparatus
Title of invention:
Titre de l'invention :

Klassifikation / Classification / Classement : G01N 27/56

ENTSCHEIDUNG / DECISION

vom / of / du 21 February 1989

Anmelder / Applicant / Demandeur : Westinghouse Electric Corporation (US)

Patentinhaber / Proprietor of the patent /
Titulaire du brevet :

Einsprechender / Opponent / Opposant :

Stichwort / Headword / Référence :

EPÜ / EPC / CBE Article 123(2) EPC

Schlagwort / Keyword / Mot clé : "Extension beyond the content of the application as filed"

Leitsatz / Headnote / Sommaire

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Case Number : T 445/87

D E C I S I O N
of the Technical Board of Appeal 3.4.1
of 21 February 1989

Appellant : Westinghouse Electric Corporation
Westinghouse Building Gateway Center
Pittsburgh Pennsylvania 15222 (US)

Representative : Mr Ronald van Berlyn
Ronald van Berlyn Chartered Patent Agent
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Decision under appeal : Decision of Examining Division 061 dated 28 July 1987 refusing European patent application No. 82 304 417.7 pursuant to Article 97(1) EPC

Composition of the Board :

Chairman : K. Lederer
Members : E. Turrini
L. Mancini

Summary of Facts and Submissions

I. European patent application No. 82 304 417.7 (publication No. 0 073 153) was refused by decision of the Examining Division.

II. The reason for the decision was that Article 123(2) EPC is infringed, in particular that the definition of the seal means set out in Claim 1 is not disclosed in the originally filed application. Furthermore, in the decision it was emphasised that the claims are not allowable under Article 52(1) EPC in view of prior art document US-A-4 284 487.

III. The Appellant lodged an appeal against the decision requesting its cancellation. He requested that Claim 7 be cancelled and he supported the allowability of the remaining claims.

In the official communication issued by the Board of Appeal was expressed the provisional opinion that Claim 1 is not allowable under Article 123(2) EPC. In his answer, the Appellant proposed to delete method Claim 8 and he declared his readiness to modify dependent Claims 2 to 6 (Claim 7 was already deleted) once the precise wording of Claim 1 has been approved by the Board of Appeal.

In a consultation by telephone, the Rapporteur underlined the fact that Claim 1 is not acceptable under Article 123(2) EPC.

The Appellant requested that oral proceedings be appointed.

IV. Oral proceedings were held in the absence of the Appellant duly summoned.

The Chairman summarised the relevant facts as appearing from the file, from which it appeared the request that the decision under appeal be set aside and that a patent be granted on the basis of Claim 1 filed on 25 March 1987.

V. This claim reads as follows:

"A gas analyzer apparatus (10), having reference gas (RG) vent means to vent a flowing reference gas from a reference gas environment to a monitored process gas (PG) environment, comprising an electrochemical measuring cell (20) for generating an electrical signal indicative of a gas constituent of interest of a monitored gas environment on the basis of a difference in the partial pressure of the gas constituent of a monitored gas environment contacting one surface of the electrochemical measuring cell (20) and that of the flowing reference gas environment contacting the opposite surface of the electrochemical cell, a tubular support means (30), characterized in that a seal (31) secures said electrochemical cell (20), said seal (31) being substantially resistant to gas flow therethrough, while resiliently accommodating mechanical stress between said cell and said tubular support means, said seal separating said reference gas environment within said tubular support means from said monitored gas environment at said cell, a housing portion (74) is adapted to retain the tubular support means within said housing portion, an aperture (70) therein defining the reference gas event means with said aperture (70) being at a location substantially proximate to the cell (20) so as to make the gas pressure of the reference gas environment substantially equal to the gas pressure of the monitored gas environment, whereby to maintain a reference gas flow rate such that gas

pressure difference between the reference gas environment and monitored gas environment across said cell is substantially equal to the pressure drop across said reference gas vent means."

VI. In support of the allowability of his request the Appellant argued essentially as follows:

The objection on Article 123(2) EPC concerning the feature of Claim 1 that the seal is resiliently accommodating mechanical stress between the cell and the tubular support means is unfounded because said feature is supported in the original specification.

Firstly, the original description mentions the existence of the seal securing the electrochemical cell.

Secondly, in the portion of the original description concerning the prior art, the contrasting performances between the use of a sealing arrangement and the use of a rigid arrangement are discussed. It is emphasised that in case of the sealing arrangement the chances for mechanical fracture are minimized, although this solution suffers from the deficiency of lack of seal integrity. The benefit of preventing mechanical damage to the cell necessarily derives as a result of the resilient nature of the utilised sealing means.

On the contrary, the rigid arrangement eliminates the leakage possibility but the danger of mechanical damage increases.

The invention aims to combine the benefits of the two arrangements of the prior art, while avoiding their drawbacks.

The leakage problem is avoided by substantially eliminating the pressure drop across the electrochemical cell. Mechanical damage can only be avoided by seal means which is resilient, i.e. the resiliency feature is disclosed by an implicit understanding of the problems that the invention overcomes.

Reasons for the Decision

1. The appeal is admissible.

2. Article 123(2) EPC.

The feature of Claim 1 that the seal is "resiliently accommodating mechanical stress between said (electrochemical)cell and said tubular support means" is not explicitly disclosed in the application as filed. This fact has been admitted by the Appellant.

In contrast to the Appellant's view the Board is of the opinion that said feature cannot be considered as implicitly disclosed in the original application for the following reasons.

There is not even a hint in the original disclosure at the utilisation of a resilient seal. Even the embodiment of Figure 1, where the seal 31 is indicated, refers merely to a disc-shaped solid electrochemical cell sealed within a support tube via a seal (page 5, line 36 to page 6, line 1), without giving any indication of the sealing material.

It is admitted by the Board that the originally filed description at page 4, lines 7 to 11, states that the invention not only solves the problem of minimizing adverse

effects of seal leaks, but also the problem of avoiding fractures of the solid electrolyte material and that one of the features which solve the posed technical problem concerning the fractures is the presence of a seal between the cell and the tubular support means. However, the resiliency of the seal for avoiding electrolyte fractures is not necessarily implied, because the utilisation of a resilient seal is not mandatory to solve the problem of electrolyte fractures. Another solution could be e.g. to choose a sealing material having an expansion coefficient which copes with the expansion coefficients of the surrounding materials such that the mechanical stresses between tubular support means and electrochemical cell are kept at a level which avoids any break danger.

Thus, the subject-matter of Claim 1 extends beyond the content of the application as filed and is therefore not allowable under Article 123(2) EPC.

3. Consequently, a European patent cannot be granted, as requested by the Appellant, on the basis of this Claim 1. The Board being bound by Article 113(2) EPC must therefore reject the Appellant's request.

Order

For these reasons, it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

F. Klein K. Lederer