Europäisches Patentamt
Beschwerdekammern

European Patent Office
Boards of Appeal

Office européen des brevets
Chambres de recours

Veröffentlichung im Amtsblatt Ja/Nein
Publication in the Official Journal Yes/No
Publication au Journal Officiel Oui/Non

001632

Aktenzeichen / Case Number / N° du recours : T 103/88

Anmeldenummer / Filing No / N° de la demande : 81 301 718.3

Veröffentlichungs-Nr. / Publication No / N° de la publication : 0 039 189

Bezeichnung der Erfindung: Process for producing alkali metal hydroxide
Title of invention:
Titre de l'invention :

Klassifikation / Classification / Classement : C25B 1/16, C25B 1/46
C25B 13/08

ENTSCHEIDUNG / DECISION

vom / of / du 6 July 1989

Anmelder / Applicant / Demandeur :

Patentinhaber / Proprietor of the patent /
Titulaire du brevet : Asahi Glass Company Ltd.

Einsprechender / Opponent / Opposant : Solvay & Cie SA

Stichwort / Headword / Référence :

EPÜ / EPC / CBE Article 54(1) EPC

Schlagwort / Keyword / Mot clé : "Novelty (denied)"

Leitsatz / Headnote / Sommaire

Europäisches Patentamt | European Patent Office | Office européen des brevets

Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number : T 103/88

D E C I S I O N
of the Technical Board of Appeal 3.4.1
of 6 July 1989

Appellant : (Opponent)
Solvay & Cie SA
Rue de Ransbeek 310
1120 Bruxelles (BE)

Representative :
M.P. Anthoine
c/o Solvay & Cie

Respondent : (Proprietor of the patent)
Asahi Glass Company Ltd
No. 1-2, Marunouchi 2-chome
Chiyoda-ku, Tokyo (JP)

Representative :
Mr. A.H. West
R.G.C. Jenkins & Co.
26 Caxton Street
London SW1H ORJ (GB)

Decision under appeal :
Interlocutory Decision of Opposition Division of the European Patent Office dated 4 January 1988 maintaining the European patent No. 0 039 189 in amended form pursuant to Article 102(3) EPC.

Composition of the Board :

Chairman : K. Lederer
Members : C. Black
C. Payraudeau

Summary of Facts and Submissions

I. European patent No. 0 039 189 was granted on the basis of European patent application No. 81 301 718.3.

II. Opposition to the granted patent was filed by the Appellant (Opponent), requesting its revocation on the grounds that its subject-matter was not novel or did not involve an inventive step having regard in particular to the disclosure in DE-B-2 843 479 (D1), equivalent to GB-A-2 005 723 (D1a).

III. The Opposition Division maintained the patent in amended form in accordance with Article 102(3) EPC, the only independent claim reading as follows:

A process for producing an alkali metal hydroxide by

(a) electrolyzing an aqueous solution of an alkali metal chloride fed into an anode compartment of a cell having an anode compartment and a cathode compartment separated by a cation exchange membrane comprising

(b) a fluorinated polymer having carboxylic acid ion exchange groups at a content of from 0.9 to 2.0 meq/g dry resin,

(c) the pH of the aqueous solution in the anode compartment being from 1 to 5, characterised in that

(d) a metal or a metal ion, selected from titanium, zirconium, hafnium, iron, cobalt, nickel, aluminium, copper, ruthenium, cerium, niobium,

beryllium, palladium, scandium and yttrium, is incorporated in the aqueous solution of the alkali metal chloride to form

(e) a thin layer made of a metal hydroxide or oxide on the surface of the membrane which faces the anode, the content of the metal component in the thin layer being from 0.005 to 50 mg per cm^2 of membrane surface.

The sub-division into features (a) to (e) corresponds to that used by the Opposition Division in its decision.

Claims 2 to 6 are dependent on Claim 1 and relate to particular embodiments of the process claimed in Claim 1.

IV. The gist of the Opposition Division's argumentation was that the onus would lay with the Opponent to substantiate his contention that the claimed subject-matter would inevitably be arrived at in following the teaching of D1a, and this had not been done.

V. The Appellant lodged an appeal against this decision and referred also in his Statement of Grounds to GB-A-1 518 387 (D7) which had already been mentioned in the European Search Report. In response to a communication from the Board accompanying a summons to oral proceedings, in which the Board provisionally agreed with the opinion of the Opposition Division as set out in paragraph IV above, the Appellant submitted the results of experimental tests which sought to overcome this apparent gap in his argumentation.

VI. At the oral proceedings the Appellant argued in effect that Claim 1 is not novel because D7 discloses explicitly features (a), (b) and (c), and features (d) and (e) are the inevitable result of carrying out the disclosed process. His experimental tests show that even if the anolyte comprises sodium chloride of a kind intended for use in regenerating water-softening ion-exchange resins, and therefore very pure, it nevertheless contains sufficient iron to provide a thin layer containing 0.027 mg/cm^2 iron, therefore within the range required by Claim 1. Using rock salt from a typical source the thin layer contained 0.150 mg/cm^2 iron. In both cases a low cell voltage (2.96V and 2.93V respectively) was obtained, this being an object of the patent in suit.

VII. The Respondent did not dispute the correctness of the results of the Appellant's experimental tests. However, he argued that the Appellant used salt samples available at the present day and has not demonstrated that the salt which would have been used in D7 was the same or similar. He contended that D7 is disclosing laboratory experiments in which, in order to ensure reproducability, analytical grade salt would have been used which was completely free from impurities. D7 does not mention the addition of iron or other ions to the anolyte or the build up of a metal oxide or hydroxide layer on the ion-exchange membrane. D7 therefore contains no novelty-destroying disclosure in respect of the subject-matter of Claim 1. As regards D1a, this teaches the purification of the starting material, e.g. sodium chloride, to remove iron and like ions, therefore points in the opposite direction to the subject-matter of Claim 1.

VIII. At the end of oral proceedings the Appellant requested that the decision under appeal be set aside and that the patent be revoked; the Respondent (Patentee) requested that the

appeal be dismissed and that the patent be maintained as amended in accordance with the communication pursuant to Rule 58(4) of 13 July 1987, that is on the basis of the claims as set out in paragraph III above.

Reasons for the Decision

1. The appeal is admissible.

2. Claim 1 differs from that of the granted patent in that it specifies a pH of 1 to 5 in the anode compartment and in stating the content of metal in the formed thin layer. It further differs from that originally filed in that it identifies the added metal or metal ion. These features were clearly disclosed in the original description and formed the subject-matter of original Claims 5, 4 and 2 respectively. Therefore, the requirements of Article 123(2) and (3) are satisfied.

3. As regards novelty the Board can agree with both parties in that D7 explicitly discloses feature (a) of Claim 1 (see its introduction) feature (b) (see page 2, lines 5 to 15) and feature (c) (see the examples).

The Respondent's argument in effect that the disclosure in D7 relates to laboratory experiments using sodium chloride even purer than the regenerating salt used in the Appellant's experimental tests cannot be followed. D7 might well be disclosing laboratory experiments; nevertheless the goal was an industrial process and the purity of the salt used would not be substantially different from that which would be economically suitable for an industrial process. Therefore, the Board is satisfied that at least it would not have been purer than that used in one of the Appellant's experiments which was already very pure.

Accordingly, the Board can agree that in carrying out the teaching of D7, the features (d) and (e) of Claim 1 are arrived at inevitably and that the subject-matter of this claim is therefore not novel.

4. To the Respondent's argument that D7 does not disclose the addition of iron or other metal ion it is observed that the application in suit requires incorporation of the metal or ion but not necessarily its addition. Page 4, lines 43 to 45 of the printed patent specification indicates that incorporation includes permitting an already present metal or metal ion to remain at a required concentration.

5. Claims 2 to 6 fall to the extent that they are dependent on an unallowable independent claim. Therefore, the ground for opposition mentioned in Article 100(a) prejudices the maintenance of this patent as amended.

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:

F.Klein K.Lederer