

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

Aktenzeichen / Case Number / N<sup>o</sup> du recours : T 194/84 - 3.4.1

Anmeldenummer / Filing No / N<sup>o</sup> de la demande : 80 303 285.3

Veröffentlichungs-Nr. / Publication No / N<sup>o</sup> de la publication : 0 028 879

Bezeichnung der Erfindung: Zinc electrodes for nickel-zinc accumulators

Title of invention:

Titre de l'invention :

Klassifikation / Classification / Classement : H01M 4 24

### ENTSCHEIDUNG / DECISION

vom / of / du 22 September 1988

Anmelder / Applicant / Demandeur : General Motor Corp.

Patentinhaber / Proprietor of the patent /

Titulaire du brevet :

Einsprechender / Opponent / Opposant :

Stichwort / Headword / Référence : Cellulose fibres/GENERAL MOTOR

EPÜ / EPC / CBE Article 123(2) EPC

Schlagwort / Keyword / Mot clé : Inadmissible generalisation; novelty test

### Leitsatz / Headnote / Sommaire

The test for additional subject-matter corresponds to the test for novelty only insofar as both require assessment of whether or not information is directly and unambiguously derivable from that previously presented, in the originally filed application or in a prior document respectively. An amendment is not allowable if the resulting change in content of the application, in other words the subject-matter generated by the amendment, is novel when compared with the content of the original application. Therefore what is to be tested is the change in content, i.e. the amended content minus the original content. Only then is the test applicable also to amendment by generalisation or omission of a feature (cf. point 2.4 of the Reasons).

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



Aktenzeichen / Case Number / N° du recours : T 194/84 - 3.4.1

Anmeldenummer / Filing No / N° de la demande : 80 303 285.3

Veröffentlichungs-Nr. / Publication No / N° de la publication : 0 028 879

Bezeichnung der Erfindung: Zinc electrodes for nickel-zinc accumulators  
Title of invention:  
Titre de l'invention :

Klassifikation / Classification / Classement : H01M 4124

**ENTSCHEIDUNG / DECISION**  
vom / of / du 22 September 1988

Anmelder / Applicant / Demandeur : General Motor Corp.

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 : Inadmissible generalisation.

Leitsatz / Headnote / Sommaire

Europäisches  
Patentamt

Beschwerdekammern

European Patent  
Office

Boards of Appeal

Office européen  
des brevets

Chambres de recours



Case Number : T 194 /84 - 3.4.1

**D E C I S I O N**  
of the Technical Board of Appeal 3.4.1  
of 22 September 1988

**Appellant :** GENERAL MOTORS CORPORATION  
General Motors Building  
3044 West Grand Boulevard  
Detroit Michigan 48202  
USA

**Representative :** Haines, Arthur Donald  
GM Patent Section  
Luton Office (F6)  
P.O. Box No. 3  
Kimpton Road  
Luton  
Beds. LU2 OSY  
GB

**Decision under appeal :** Decision of Examining Division 019 of the European Patent Office dated 17 April 1984 refusing European patent application No. 80 303 285.3 pursuant to Article 97(1) EPC

**Composition of the Board :**

**Chairman :** K. Lederer  
**Members :** C. Black  
R. Schulte

### Summary of Facts and Submissions

- I. European patent application No. 80 303 285.3 (publication No. 0 028 879) was refused by a decision of the Examining Division 019. The decision was based on Claims 1 to 4 received 11.10.83.
- II. The reason for the refusal was that the application as amended contained subject-matter which extended beyond the content of the application as filed, so that the requirement of Article 123(2) EPC was not met.
- III. The Appellant lodged an appeal against the said decision.
- IV. In a response to a communication of the Board the Appellant now requests the appealed decision to be set aside and a patent to be granted on the basis of

- (i) Claims 1 to 4 filed on 11 October 1983 (main request) of which Claim 1 reads as follows:

"An alkaline nickel-zinc electric storage battery cell having a nickel electrode, a zinc electrode spaced from the nickel electrode, and an aqueous alkaline electrolyte bridging the space between the electrodes, wherein said zinc electrode includes a conductive grid embedded in an active material of zinc-rich particles in intimate admixture with other ingredients, characterised in that said other ingredients include a combination of calcium oxide and/or hydroxide particles for forming calcium zincate during discharge of said cell and an entanglement of sufficient stable, reinforcing, hydrophilic, absorbent fibrous irrigators pervading said admixture to bind said particles together on said grid and so wet said admixture with electrolyte

as to maintain the effectiveness of the  $\text{CaO}/\text{Ca}(\text{OH})_2$  therein, wherein said irrigators comprise cellulose fibres having substantially comparable absorbency to that of natural cellulose and wherein said active material contains substantially no other binders which would significantly interfere with the ability of the fibres to irrigate the admixture or diminish the performance of the zinc electrode."

- (ii) Claims 1 to 4 filed on 10 January 1985 as "Alternative No. 1" (1st subsidiary request) of which Claim 1 reads as follows:

"An alkaline nickel-zinc electric storage battery cell having a nickel electrode, a zinc electrode spaced from the nickel electrode, and an aqueous alkaline electrolyte bridging the space between the electrodes, wherein said zinc electrode includes a conductive grid embedded in an active material of zinc-rich particles in intimate admixture with other ingredients, characterised in that said other ingredients include a combination of calcium oxide and/or hydroxide particles for forming calcium zincate during discharge of said cell and an entanglement of sufficient stable, reinforcing, hydrophilic, cellulose fibres pervading said admixture to bind said particles together on said grid and so irrigate said admixture with electrolyte as to maintain the effectiveness of the  $\text{CaO}/\text{Ca}(\text{OH})_2$  therein, wherein said cellulose fibres have an irrigateability at least substantially equal to that of natural cellulose and said admixture contains substantially no other binders which would significantly interfere with the irrigateability of the cellulose fibres or diminish the performance of the zinc electrode."

- (iii) Claims 1 to 3 filed on 10 January 1985 as "Alternative No. 2" (2nd subsidiary request) of which Claim 1 reads as follows:

"An alkaline nickel-zinc electrode storage battery cell having a nickel electrode, a zinc electrode spaced from the nickel electrode, and an aqueous alkaline electrolyte bridging the space between the electrodes, wherein said zinc electrode includes a conductive grid embedded in an active material of zinc-rich particles in intimate admixture with other ingredients, characterised in that said other ingredients include a combination of calcium oxide and/or hydroxide particles for forming calcium zincate during discharge of said cell and an entanglement of sufficient natural cellulose fibres to bind said particles together on said grid and so irrigate said admixture with electrolyte as to maintain the effectiveness of the  $\text{CaO/Ca (OH)}_2$  therein, said active material containing substantially no other binders which would significantly interfere with the ability of the cellulose to thus irrigate the admixture or diminish the performance of the zinc electrode."

The Appellant further requests:

- (iv) the case to be remitted to the Examining Division, for further prosecution as might be required;
- (v) oral proceedings in case the Board intends to reject the appeal;
- (vi) reimbursement of the appeal fee.

V. The arguments contained in the Appellant's written submissions may be summarised as follows. On a proper

reading of the specification the skilled person would recognise that the invention was not to be restricted to an electrode comprising natural cellulose fibres as set out in the claims originally filed. The sentence on page 3, lines 20 to 24 of the description "According to the present invention an Ni-Zn battery has a zinc electrode which is substantially free of customary binder materials and whose active material is pervaded with an entanglement of stable, reinforcing and hydrophilic fibres" provides a general statement of the invention. The sentence on page 3, line 35 to page 4, line 6 "The invention comprehends ... entangled natural cellulose fibres ... etc." clearly relates to a particular embodiment of the invention, because the word "comprehend" in this context means "include or embrace; comprise" according to the American Heritage Dictionary of the English Language. Natural cellulose fibres are suitable examples of the stable, reinforcing and hydrophilic fibres referred to on page 3, lines 23, 24 because the entangling of the fibres, in paper fashion, mechanically retains and strengthens the active material while the fibres' hydrophilicity irrigates the active material with electrolyte (page 4, lines 15 to 19). Because of this teaching, the skilled person will appreciate that structurally similar fibres having comparable irrigateability (or absorbency) will also be useful. Since it is known that rayon fibres (i.e. regenerated cellulose fibres) are structurally identical to the cellulose from which they came (Golding B., Polymers and Resins, D. Van Nostrand Co. Inc., New York, Toronto and London, 1959, page 194), amendment to embrace cellulose fibres in general did not result in subject-matter which extended beyond the content of the application as filed. In this respect, attention was directed inter alia to the Guidelines C-VI, 5.6, in that the subject-matter in question, i.e. cellulose fibres other than natural cellulose fibres, would, in the context of the invention, be so well-known to the person skilled in the art that its

introduction could be regarded as an obvious clarification. The Appellant further contended that the amendment satisfied the novelty test - Guidelines C-VI, 5.4 and C-IV, 7.2.

**Reasons for the Decision**

1. The appeal is admissible.
2. Main request.
  - 2.1 Claim 1 according to the main request is derived largely from a combination of the features of original Claims 1 and 2, amplified in terms of their disclosed functions. It differs from said combination in requiring "sufficient stable, reinforcing, hydrophilic, absorbant fibrous irrigators pervading said admixture to bind the particles on the grid ... wherein said irrigators comprise cellulose fibres having substantially comparable absorbancy to that of natural cellulose" whereas original Claim 1 required a "mixture of ... sufficient natural cellulose to hold said particles in place on said grid." It is this aspect of the amendment which requires investigation as to whether the requirement of Article 123(2) EPC is fulfilled and in this respect the most significant effect of the amendment is that the claim now embraces cellulose fibres other than natural cellulose fibres, in addition to natural cellulose fibres.
  - 2.2 The description and claims as originally filed are wholly consistent in referring only to natural cellulose fibres, the one exception being the passage on page 3, lines 20 to 24 quoted in paragraph V, which, in isolation, might suggest that the invention is not limited to natural cellulose fibres, or even to cellulose fibres. However, it is the content of the application as a whole which has to



be considered, and the passage has to be interpreted as it would be by the average skilled person in the context of the whole specification. The remainder of the description refers repeatedly to natural cellulose fibres and where only the expressions "cellulose fibres" or "fibres" are used there is a clear antecedent reference to natural cellulose fibres. The examples of suitable fibres on page 7 are also restricted to natural cellulose fibres (wood-based cellulose fibres, newsprint and high-grade filter paper). Accordingly, the Board is of the opinion that the above-mentioned statement on page 3, lines 20 to 24 can only be interpreted as a general statement about the invention, to be subsequently particularised, and not as giving any indication as to the scope of the invention.

The Appellant's argument that the use of the word "comprehends" on page 3, line 35 demonstrates that the statement following it relates to a particular embodiment of the invention, as set out in general terms in the passage on page 3, lines 20 to 24, cannot be followed. It is indeed necessary to read the passage on page 3, line 35 to page 4 line 6 in conjunction with that on page 3, lines 20 to 24. However the latter is consistent with the claims in indicating that the invention resides in the nickel-zinc battery, whereas the former states that the invention comprehends a zinc electrode. For the reader to whom the description is addressed, the use of the word "comprehends" seems to be associated with the change in wording from battery to electrode, and since he knows, e.g. from the claims and the title, that the invention resides in the battery, he will interpret "comprehends" as having the same effect as wording such as "relates particularly to". Further the wording "zinc electrode for an alkaline, Ni-Zn battery comprising a substantially homogeneous mixture of zinc-rich particles (page 3, line 35 to page 4, line 4) is for the average skilled person merely more detailed information about the zinc electrode referred to

on page 3, line 21. It follows that "entangled natural cellulose fibres" on page 4, lines 4, 5 is likewise to be seen as more detailed information about the hydrophilic fibres referred to on page 3, line 24 and not as an example thereof. This is corroborated by the repetition of "substantially free of customary binder materials" since there is clearly no question here of this feature being by way of example. Moreover, the average skilled person, reading the description, would attach more weight to the repeated references to "natural cellulose fibres" in the following lines than to the possible meaning of "comprehends".

For the average skilled person there is therefore no explicit indication that the zinc electrode might contain cellulose fibres other than natural cellulose fibres.

- 2.3 The Board also cannot accept the Appellant's arguments which seek to prove that from the explicit teaching of the original application, it is implicit for the average skilled person that fibres structurally similar to natural cellulose fibres and having comparable irrigateability, that is, ability to irrigate, would perform as well as natural cellulose fibres and should therefore be included in the content of the original application. The description contains four references to irrigation, namely, page 3, lines 26, 27 ("said ... fibres irrigate the active material"), page 4, lines 18, 19 ("the fibres' hydrophilicity irrigates the active material with electrolyte"), page 6, lines 4, 5, referring to irrigation (of zinc trapped as calcium zincate) with the cellulose fibres and page 7, lines 1 to 3 ("binders ... not in such quantity as to reduce the effectiveness of the cellulose in irrigating the electrode"). None of these discloses a degree of irrigateability of natural cellulose fibres which would provide a criterion for suitability of alternative fibres, therefore there is no implicit teaching in this

respect and there is, thus, no analogy to the rubber/elastomeric material example given in the Guidelines for Examination C-IV, 7.2 referred to by the Appellant. What is explicit is that zinc electrodes containing natural cellulose fibres have demonstrated superior capacity and power retention after prolonged cycling (page 4, lines 9 to 11) and that the precise mechanism by which the natural cellulose fibre holds the zinc-rich particles together and maintains capacity and power levels is not completely understood (page 4, lines 12 to 15), although a possible mechanism is suggested. If there is an implicit teaching in the specification as a whole, in particular from page 3, line 35 to page 5, line 3, it is that it is the "naturalness" of the natural cellulose fibres and not their irrigateability which results in the prolonged battery life at high capacity and power levels, particularly when combined with calcium oxide or hydroxide particles.

- 2.4 The Appellant's further argument, that the original application could properly be cited against the novelty of a more generic claim to cellulose fibres, is based on incorrect application of the novelty test for allowability of an amendment. Otherwise it would follow that amendments involving a generalisation or the omission of a feature would always be allowable. The test for additional subject-matter corresponds to the test for novelty only insofar as both require assessment of whether or not information is directly and unambiguously derivable from that previously presented, in the originally filed application or in a prior document respectively. It follows that an amendment is not allowable if the resulting change in content of the application, in other words the subject-matter generated by the amendment, is novel when compared with the content of the original application or, looked at another way, if the said change in content would be novelty-destroying for a hypothetical future claim when the original content would not be. It is important that it is the change in content

which is tested, that is, the amended content minus the original content, so that the test is applicable also to amendment by generalisation or omission of a feature.

Thus what "novelty test" really means is that the same standard should apply when examining novelty or allowability of amendments.

- 2.5 In the present case, the subject-matter of Claim 1 according to the main request can be seen either as a generalisation (natural cellulose fibres to cellulose fibres in general) or omission of a feature (natural). In either case the subject-matter generated is cellulose fibres other than natural cellulose fibres, and this subject-matter is novel when compared with the original content of the application, because as demonstrated in paragraphs 2.2 and 2.3 above, cellulose fibres other than natural cellulose fibres are neither explicitly nor implicitly disclosed. Moreover, a future claim to cellulose fibres but disclaiming natural cellulose fibres would be anticipated by the subject-matter generated by the amendment but not by the original application.
- 2.6 Claim 1, according to the main request, also contains the limitation that the cellulose fibres have substantially comparable absorbency to that of natural cellulose. This limitation has no effect on the conclusion that the amendment substituting "cellulose fibres" for "natural cellulose fibres" contravenes Article 123(2) EPC, because it does not exclude all cellulose fibres which are not natural cellulose fibres. Moreover, the limitation itself appears to constitute added subject-matter, because the original application documents made no mention of the absorbency of the fibres. Even if it could be accepted that a fibre's absorbency as measured by its moisture regain reflected its ability to irrigate as argued by the Appellant the objection would still arise because as shown

in paragraph 2.3 above the original application did not disclose a degree of irrigateability, and therefore, possibly, of absorbency of natural cellulose fibres, which would provide a criterion for the suitability of alternative cellulose fibres.

2.7 The main request has therefore to be refused.

3. First subsidiary request.

3.1 In Claim 1 according to this request "cellulose fibres" is again substituted for "natural cellulose fibres". The cellulose fibres are required to have an irrigateability, instead of an absorbency, at least substantially equal to that of natural cellulose. Accordingly, the same considerations apply to this claim as to that of the main request.

3.2 The first subsidiary request must therefore also be refused.

4. Second subsidiary request.

4.1 Claim 1 according to this request is limited to natural cellulose fibres. The remaining features of the claim are for the most part supported by the original disclosure, objection arising only in respect of the word "intimate" in the expression "in intimate admixture". This word does not appear in the application as filed and would seem to have been introduced in response to an objection by the Examining Division to the word "homogeneous" in original Claim 1. The Board can see no objection to the expression "substantially homogeneous" as is used on page 4, line 2 of the original description, which expression is therefore to be substituted for "intimate". With this amendment, Claim 1, according to the second subsidiary request, fulfils the requirements of Article 123(2) EPC. The claim

also complies with Article 84 EPC. Claims 2 and 3 according to the second subsidiary request are allowable as claims dependent on Claim 1. However, for consistency in terminology, in Claim 2 "mixture" on line 31 is to be amended to "admixture".

5. The Examining Division, in its communication of 18.01.83 indicated that the subject-matter of an independent claim, substantially of the scope of Claim 1 according to the second auxiliary request, would involve an inventive step. The Board sees no reason to deviate from the Examining Division's assessment in this respect. However, the most recently filed version of the description, that is, pages 3, 5, 6, 8, 9, 10, 12 and 13 received on 03.11.82 and 1, 2, 4, 7 and 11 received 05.03.83, is not adapted to the allowable claims. Accordingly, the Board has decided to exercise its power under Article 111(1) EPC to remit the case to the Examining Division for further prosecution.
6. In view of the foregoing, the appointment of Oral Proceedings as conditionally requested by the Appellant becomes unnecessary.
7. Having carefully studied the course of the procedure before the Examining Division as evidence by the file, the Board could not find any procedural violation, much less a "substantial" violation as is a prerequisite for reimbursement of appeal fees under Rule 67 EPC, nor did the Appellant give any reasons for this request of reimbursement.

**Order**

**For these reasons, it is decided that:**

1. The decision under appeal is set aside.
2. The case is remitted to the Examining Division with the order to grant a patent on the basis of Claims 1 to 3 received 10.01.85 and designated alternative No. 2, amended as follows:

Claim 1, line 7 - "intimate" is amended to "substantially homogeneous"

Claim 1, line 12 - spelling of "entanglement" is corrected.

Claim 2, line 31 - "mixture" is amended to "admixture"; and a description adapted to the amended claims.

3. The request for reimbursement of the appeal fee is refused.

The Registrar:



The Chairman:

