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Anmeldenummer / Filing No / N° de la demande : 83 306 806.7

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Bezeichnung der Erfindung: A process for producing a protein adhesive binder

Title of invention:

Titre de l'invention :

Klassifikation / Classification / Classement : D21 H 1/24

ENTSCHEIDUNG / DECISION

vom / of / du 5 July 1988

Anmelder / Applicant / Demandeur : Ralston Purina Company

Patentinhaber / Proprietor of the patent /
Titulaire du brevet :

Einsprechender / Opponent / Opposant :

Stichwort / Headword / Référence :

EPO/EPC/CBE Art. 54, 111, Rule 67

Schlagwort / Keyword / Mot clé : "Novelty (yes)" - "Remittal" -
"Reimbursement (no) - no substantial
procedural violation"

Leitsatz / Headnote / Sommaire

Europäisches
Patentamt

Beschwerdekammern

European Patent
Office

Boards of Appeal

Office européen
des brevets

Chambres de recours



Case Number : T 293/86 - 3.3.2

D E C I S I O N
of the Technical Board of Appeal 3.3.2
of 5 July 1988

Appellant : Ralston Purina Company
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Decision under appeal : Decision of Examining Division 024
of the European Patent Office
dated 14.04.86 refusing European
patent application No. 83 306 806.7
pursuant to Article 97(1) EPC

Composition of the Board :

Chairman : P. Lançon
Members : S. Schödel
E. Persson

Summary of Facts and Submissions

- I. European patent application No. 83 306 806.7, filed on 8 November 1983 and published on 16 May 1984 under publication No. 108 649, was refused by a decision of the Examining Division dated 14 April 1986. The decision was based on Claims 1-6 filed on 15 July 1985 and Claims 7-25 as originally filed. Claim 1 read as follows:

"A process for producing a modified protein adhesive binder by treating an alkaline solution or dispersion of a protein material having reactive disulphide bonds with a reducing agent to reduce said material, and reacting the treated dispersion with a carboxylic acid anhydride."

- II. The stated ground for refusal was that the subject-matter of Claim 1 lacked novelty having regard to the disclosure of the document

(1) US-A-2 862 918.

In particular, no convincing arguments had been brought to show that the use, according to (1), of sulphur dioxide for the treatment of an alkaline solution or dispersion of protein material obtained from soybeans, excluded the possibility of reduction taking place; consequently, the expression "to reduce said material" in Claim 1 was not distinctive over the prior art.

- III. A Notice of Appeal against this decision was lodged by the Appellant on 11 June 1986, with payment of the appropriate fee. A Statement of Grounds was received on 11 August 1986. Later, by letter of 24 June 1988 an amended Claim 1 was submitted, the amendment being the insertion of the words "solution or" between "treated" and "dispersion".

The Appellant argued substantially as follows:

- (a) The sulphur dioxide did not function as a reducing agent under the conditions disclosed in (1) to any appreciable extent; on the contrary, the sulphur dioxide was added to acidify the combined alkaline extraction liquor and to precipitate the protein material;
- (b) the explanatory phrase "to reduce said material" in present Claim 1 with which the definition of "reducing agent" was intertwined was a clearly permissible definition of the conditions under which the relevant reaction must take place;
- (c) the requirement in Claim 1 for "reacting the treated dispersion with a carboxylic anhydride" was not disclosed in (1), wherein the relevant reaction was carried out on a different dispersion, i.e. after an intervening precipitation of the protein material and reslurrying step;
- (d) reference (1) therefore did not destroy the novelty of the claimed subject-matter; the Examining Division had acted contrary to the spirit and intent of the EPO in refusing the application after the second communication;
- (e) no reasoned statement had been provided in relation to Claims 2-25.

IV. The Appellant requests that the decision under appeal be set aside and a patent be granted on the basis of Claim 1 as presented above (cf. paragraph III), Claims 2-6 as filed

on 15 July 1985 (unamended) and Claims 7-25 as originally filed; also that the appeal fee be reimbursed.

Reasons for the Decision

1. The appeal complies with Articles 106 to 108 and Rule 64 EPC and is, therefore, admissible.
2. There is no objection to the present statement of claim under Article 123(2) EPC, since it is adequately supported by the original disclosure. This applies, in particular, to Claim 1 where the expressions "to reduce said material" and "treated solution or dispersion" are based on the original description at the foot of page 8 and on page 12 at line 8 respectively. Claims 2-25 were left unamended.
3. The application in suit relates to a process for producing an adhesive binder from a modified protein material.

Protein materials are well known for use as adhesive binders for pigment-containing coatings for the coating of paper. The pigment-containing coating provides the paper with a desirable finish. The function of the pigment in the coating is to fill in irregularities in the paper surface. The adhesive serves to bind the pigment particles to each other, as well as to the surface of the substrate. Vegetable protein materials such as isolated soy protein, produced by treating oil-free soy flakes with an alkaline solution to dissolve the protein, have already been employed as adhesive binders.

Desirable qualities of such binders are good rheological properties, characterised as good fluidity in weak alkaline dispersion, so that the coating compositions are not excessively viscous, insensitivity to heat, in particular

to avoid the tendency to form gels, and high adhesive strength.

4. The sole ground of refusal of the application-in-suit was lack of novelty. The document cited in this connection, document (1), is concerned with acylated, isolated partially hydrolyzed soy protein and represents, in the Board's view, the closest prior art.
- 4.1 According to Example 1, which constitutes the relevant disclosure in this document, a process of obtaining such a product involves:
 - (a) extracting flakes of de-oiled soybeans successively with lime water (lime liquor), and with sodium hydroxide (caustic liquor) and finally washing with water at various temperatures and combining the lime liquor and the wash liquor;
 - (b) rendering the combined mass acid (pH 4.6) by the addition of sulphur dioxide;
 - (c) allowing the resulting precipitate to settle;
 - (d) re-slurrying the precipitate in the caustic liquor, identified above, adding lime and soda ash and heating the protein mixture (6h, 120°F);
 - (e) adding a phthalic acid anhydride to the protein solution while maintaining a pH of 9.5 by means of caustic soda, and completing hydrolysis,
 - (f) rendering the mass acid (pH 4.2-4.4) by the addition of sulphur dioxide and isolating the final product.

- 4.2 Compared with this multiple stage process, the process of the application-in-suit differs fundamentally in that no intervening steps such as precipitation of the protein material, re-slurrying and heating of the material with an alkaline substance as outlined above under (b), (c) and (d) are provided. This is irrespective of whether the sulphur dioxide used in (1) functions as a reducing agent or not.
- 4.3 According to the process as defined in Claim 1 of the application-in-suit one of the preferred protein materials having reactive S-S bonds employed as a starting material is derived from de-oiled soybean flakes from which the protein material is extracted with an alkaline solution. The resulting solution or dispersion of the protein material is first treated with a reducing agent, such as sulphur dioxide, and then reacted directly -i.e. without precipitating the protein material, re-slurrying and heating it again with an alkaline substance -with a carboxylic acid anhydride, before the reaction mixture is acidified to reduce the pH to a value of about 4 and thus precipitate the modified protein material at its isoelectric point. That the reaction with the carboxylic acid anhydride is carried out directly is clear from the wording in Claim 1.

None of the other documents cited in the search report is more relevant than (1).

- 4.4 Hence, the subject-matter of Claim 1 is novel over the cited prior art and the Examining Division's assertion that the subject-matter of Claim 1 had already been disclosed in (1) was not correct.

The same applies to Claims 2-25, which are directly or indirectly dependent on Claim 1 and which describe particular embodiments of the invention.

5. Since the appealed decision is founded exclusively on an objection under Article 54 EPC, and since no investigation appears to have been made by the Examining Division as to the other requirements of patentability, the Board deems it appropriate to make use of the powers conferred upon it by Article 111 EPC to remit the case to the first instance for further prosecution.

Under these circumstances it would be premature for the Board to express an opinion on the relevance of the wording "to reduce said material" in Claim 1, as to whether such a functional expression could be considered as being limitative and in conformity with Article 84 EPC.

6. Regarding the request for reimbursement of the appeal fee, it is observed that according to Rule 67 EPC it is a prerequisite for reimbursement that the Board renders a decision in the Appellant's favour, and that such reimbursement is equitable by reason of a substantial procedural violation.
 - 6.1 It is true that there was an incorrect interpretation of the prior art by the Examining Division. However an error in interpreting a document cannot possibly be regarded as a procedural violation. Therefore the success of the appeal in itself does not justify reimbursement of the appeal fee.
 - 6.2 In the present case the Examining Division twice communicated with the Applicant and invited him to file observations. In the Board's view, the issue of a further invitation was not necessary since both the Appellant and the Examining Division had already expressed their opinions on the point at issue - the former in a manner devoid of independently verifiable evidence or other information

which, on objective assessment, could have formed the basis of a rational change of opinion by the Examining Division - and these remained the same. There has therefore been no violation of Article 96(2) of the EPC (cf. T 42/84 of 23 March 1987, especially item 12).

- 6.3 Regarding Claims 2-25, it must be understood that under Article 97(1) EPC, a European patent application which fails to meet all of the requirements of the Convention must be refused in its entirety, without its being necessary to consider in detail whether there might be somewhere in the application, e.g. in a dependent claim, material indicative of being patentable.

Accordingly, arguments concerning Claims 2-25 cannot constitute the essential basis of the decision. An alleged violation concerning that part of the decision cannot be a substantial violation in the sense of Rule 67 EPC (cf. T 5/81, OJ EPO 1982, 249, especially item 4).

- 6.4 Thus, since the decision is not marred by a substantial procedural violation, the request for reimbursement of the appeal fee pursuant to Rule 67 EPC cannot be granted.

Order

For the above reasons, it is decided that:

1. The decision of the Examining Division is set aside.
2. The case is remitted to the Examining Division for further prosecution on the basis of Claim 1 filed with the letter of 24 June 1988, Claims 2-6 as filed on 15 July 1985 and Claims 7-25 as originally filed.

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

The Registrar:



F. Klein

The Chairman:



P. Lançon