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File Number: T 713/91 - 3.2.5  
Application No.: 82 901 981.9  
Publication No.: 0 082 206  
Title of invention: Flexible core of writing pen

Classification: B43K 1/12

**D E C I S I O N**  
of 26 January 1993

Applicant: AuBex Corporation

Opponent: Teibow Co. Ltd.

Headword:

EPC Articles 56 and 114(2)

Keyword: "Inventive step (yes) - Late filed evidence disregarded"



Case Number : T 713/91 - 3.2.5

**D E C I S I O N**  
of the Technical Board of Appeal 3.2.5  
of 26 January 1993

**Appellant :**  
(Proprietor of the patent)      **AuBex Corporation**  
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Tokyo 130 (JP)

**Representative :**                      **Whalley, Kevin**  
Marks & Clerk  
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**Respondent :**  
(Opponent)                              **Teibow Co. Ltd.**  
36, Mukojuku-cho  
Hamamatsu-city (JP)

**Representative :**                      **Haecker, Walter**  
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**Decision under appeal :**              **Decision of the Opposition Division of the**  
**European Patent Office dated 3 July 1991 with**  
**written reasons posted on 16 July 1991 revoking**  
**European patent No. 0 082 206 pursuant to**  
**Article 102(1) EPC.**

**Composition of the Board :**

**Chairman :**      C. Payraudeau  
**Members :**      A. Burkhart  
                    H.J. Seidenschwarz

## Summary of Facts and Submissions

I. The Appellant appealed against the decision of the Opposition Division, revoking the European patent No. 0 082 206.

II. Oral proceedings were held.

(i) The Appellant (Patentee) requested that the decision under appeal be set aside and that the patent be maintained as granted (main request) or on the basis of the Claims 1 to 4 or 1 to 3 filed with the statement of grounds (first and second auxiliary request).

The Respondent (Opponent) requested that the appeal be dismissed.

(ii) Claim 1 of the contested patent reads as follows (subdivisions a, a1, a2, b, c added by the Board):

"1. A pen nib for writing instruments, such as calligraphic brushes, writing or painting brushes, and the like, comprising a porous rod-like nib body (20) including a bundle of longitudinally oriented crimped polyamide fibres (21), and synthetic resin material having one or more of said polyamide fibres as the core, such as to form random-shaped elements (23) with composite fibre-like sections, the random-shaped elements (23) being arranged in a random aggregation in any cross-section of the nib body (20) leaving capillary channels for passing ink therethrough, in the form of a number of fine gaps having an orientation in the axial direction of the nib body (20) and, inside of the nib body (20), a porosity within the range of 35-70%, at least one

end of the nib body (20) being formed as a writing end having a predetermined configuration, characterised in:

(a) that said synthetic resin material consists of an elastomer (22)

(a1) having an elongation of approximately 200% or more, and

(a2) a 100% elastic modulus of approximately 100 kg/cm<sup>2</sup> or less,

(b) said synthetic resin elastomer (22) cooperating with the polyamide fibres (21) to form a rubber-like elastic body with composite-fibre textures

(c) such that said writing end (25) has such an elastic restoring characteristic provided by the synthetic resin elastomer (22) that, after the pen nib has been maintained for 30 seconds in a condition in which it is bent by 180° and is then unloaded, the pen nib restores by at least 120° within three seconds."

(iii) The following documents were referred to during the oral proceedings:

D1: English translation of JP-A-51-46225

D2: Advances in Polyurethane Technology, edited by J.M. Buist and H. Gudgeon, John Wiley and Sons Inc., New York, 1968, pages 108-110,

D4: US-A-3 864 183,

Test documents No. 7 and 8, filed by the Respondent with his letter of 16 January 1991, Test documents No. 1848 and 2118, filed by the Appellant with his letter of 30 November 1992.

- (iv) The Appellant's submissions can be summarised as follows:

The late filed test documents should be considered by the Board, since they show that when following the teaching of the example of document D1, and using therefore a mixture weight ratio of 1:1; no elastomer can normally be obtained.

This evidence establishes that the tests carried out by the Respondent with respect to the disclosure of document D1 are useless, since they had not been carried out in conformity with the teaching of the single example of document D1 but had been based on a mixture molar ratio of 1:1.

Even if the person skilled in the art knows that a molar ratio of 1:1 has to be used to obtain an elastomer, there was no mention or suggestion in document D1 of an "elastomer" resin. The Respondent's allegation that the teaching of document D1 suggested an elastomer resin having the properties according to features (a1) and (a2) is therefore based on a non-permissible hindsight analysis.

The features (a), (a1), (a2), (b) and (c) of the characterising portion of Claim 1 have the following significance:

The feature (c) sets forth the standards the pen nib has to achieve and indicates that the pen nib of the invention has excellent flexural durability against repeated bending deformation and restoration. The features (a), (a1), (a2) and (b) set forth structural measures to realise the functional characteristics of the feature (c), by requiring that a specific elastomer is to be used as the synthetic resin material.

Neither document D4 nor document D1 discloses or suggests the said features of the characterising part of Claim 1, which are therefore inventive.

- (v) The Respondent's submissions can be summarised as follows:

The test results filed by the Appellant should be disregarded in accordance with Article 114(2) as they were filed so late that a thorough analysis of the test results reported could not be performed by the Respondent.

Document D1 deals with the same problem as the patent in suit, namely to provide pen nibs made of synthetic fibres the line-widths of which can be changed by using different writing pressures such as when using a calligraphic brush. This object is accomplished according to document D1 by using a special type of polyurethane resin. The pen nib made according to this teaching is reported to give pen nibs which are rich in elasticity and abrasion resistance, so that the written line-width can be freely changed by changing the load during writing and the shape of the nib is restored to the original shape after removal of the load. Following this

teaching, the person skilled in the art would use a polyurethane elastomer as a binder material in the pen nib known from document D4, if he wished to solve the problem underlying the invention of the contested patent.

When considering the disclosure of the prior art, the same standard should be applied as when considering the disclosure of a patent specification. Since the contested patent does not give any example how to produce a specific elastomer having the properties according to features (a1) and (a2), the patent admits implicitly that the person skilled in the art can produce without any difficulty an elastomeric polyurethane which fulfills the requirements of the features (a1) and (a2). The person skilled in the art wanting to produce a pen nib according to the teaching of the example of document D1 knows that in order to obtain an excellent elasticity of the resin he has to use a molar ratio of 1:1, and is therefore incited to use a molar ratio of 1:1 rather than the weight ratio of 1:1 mentioned in this document. He would end up with a polyurethane resin which fully meets the requirements of features (a1) and (a2), as had been demonstrated by the experimental evidence provided by the Respondent during the proceedings before the Opposition Division.

Features (b) and (c) define only the necessary consequences of the fact that an elastomer having the properties of features (a1) and (a2) is used in a pen nib according to document D4. Thus, the person skilled in the art inevitably arrives at a pen nib having all the features of Claim 1 of the contested patent, if he takes into consideration the teaching

of document D1 for solving the problem underlying the invention with respect to document D4.

### Reasons for the Decision

1. Tests carried out by the parties

Obviously, the tests carried out by the Respondent were not in conformity with the teaching of the example of document D1, since in these tests the reaction mixture was based on a molar ratio of about 1:1 (see documents No. 7 and 8 filed by the Respondent on 17 January 1991), whereas according to the example of document D1 a mixture weight ratio of 1:1 should be used.

Therefore, the test results presented by the Respondent are useless with respect to the disclosure of document D1.

It belongs without doubt to the general knowledge of the person skilled in the art that it is an essential prerequisite to the production of an elastomeric polyurethane to start from a mixture molar ratio of about 1:1 of the reactants, whereas, by starting from a mixture weight ratio of 1:1 only in such an extreme exceptional case an elastomeric polyurethane can be obtained, when the mixture weight ratio happens to correspond to a mixture molar ratio due to the selection of rather specific reactants. This general knowledge of the skilled person need not be verified by experimental tests.

Therefore, the Board exercises its discretion under Article 114(2) EPC to disregard the above-mentioned evidence filed late by the Appellant, which only confirms the general knowledge of the person skilled in the art.



2. Novelty

Document D4 discloses a pen nib comprising all the features recited in the preamble of Claim 1 of the contested patent.

The pen nib according to Claim 1 of the contested patent differs from this known pen nib by the features of the characterising portion of Claim 1 (a), (a1), (a2) (b) and (c).

Document D1 discloses a pen nib made of fibres, comprising a bundle of synthetic fibres bound with a polyurethane resin comprising a polyisocyanate and a polyol with an OH value of not more than 200.

Document D1 does not disclose the features of the preamble of Claim 1 of the contested patent "that the fibres are crimped" and "that the nib body has a porosity within the range of 35-70%". Moreover, document D1 does not mention any of the features (a), (a1), (a2), (b) or (c) according to the characterising part of Claim 1 of the contested patent.

Document D2 does not refer to a pen nib.

Consequently, the subject-matter of Claim 1 of the contested patent is new (Article 54 EPC).

3. Inventive step

- 3.1 The problem underlying the invention consists in improving the pen nib known from document D4 in such a manner that upon writing it rapidly deforms and restores its shape in response to any variation in the writing pressure, writing

angle and writing direction, such that it is usable as a calligraphic brush (see column 1, lines 23-27, column 2, lines 50-53 and column 3, lines 11-14 of the patent in suit).

- 3.2 This problem is solved according to the invention of the contested patent by adding to the pen nib known from document D4 the features (a), (a1), (a2), (b) and (c).

The significance of these features is as follows:

The feature (c) sets forth the standards the pen nib has to achieve, and indicates that the pen nib has excellent flexural durability against repeated bending deformation and restoration. The features (a), (a1), (a2) and (b) set forth structural measures to realise the functional characteristics of the feature (c), by requiring that a specific elastomer be used as the synthetic resin material.

- 3.3 The teaching of document D1 does not render obvious this solution, for the following reasons:

Although the problem underlying the pen nib according to document D1 (see page 4, second paragraph) is similar to that underlying the pen nib of the contested patent, there is no mention in document D1 of any of the features (a), (a1) and (a2). Nor can these features be considered as being implicitly contained in the disclosure of document D1 without the benefit of hindsight of the invention of the patent in suit.

As has been pointed out under point 1 above, the tests carried out by the Respondent do not prove that, if the example given in document D1 is followed in the normal straightforward way, elastomeric polyurethanes are

produced, since they were not based on the data disclosed in this example. These tests only demonstrate that the person skilled in the art knows that he could obtain polyurethane elastomers from a toluylene-diisocyanate-trimethylolpropane adduct and a polyester polyol, if he would disregard the specific teaching of the example of document D1 and use a mixture molar ratio of 1:1 instead of a mixture weight ratio of 1:1. However, the Board cannot see any incentive in document D1 which would cause the person skilled in the art to change the conditions given in the example of document D1 which he would consider to disclose the best way of carrying out the invention disclosed in document D1.

The elastic properties of the binder or the pen nib are not quantified in document D1. The general indications in document D1 that the pen nib has good elastic and restoring properties, if the fibres are bound by a polyurethane resin do not necessarily imply that the polyurethane resin must be elastomeric. One can consider that a pen nib fulfils already the general and unquantified standards of elasticity mentioned in document D1, if the binder polyurethane resin has a certain elasticity which is inferior to the specific elastomeric properties according to features (a), (a1) and (a2) of the characterising portion of Claim 1 of the contested patent.

Even if the person skilled in the art in view of document D1 considered the use of an elastomeric binder resin (which is denied by the Board), he would have to take further steps in order to arrive at the features of the characterising portion of Claim 1 of the contested patent, namely to establish the standard (c) and to select a specific elastomer having the properties (a1) and (a2), which properties are superior to those required by the

basic definition for an elastomer. However, there is absolutely no basis or hint to be found in document D1 which would cause the person skilled in the art to take the aforementioned further steps.

3.4 In conclusion, neither document D4 nor document D1 discloses or suggests to provide in a pen nib the features of the characterising portion of Claim 1 of the contested patent. Therefore, the subject-matter of Claim 1 of the contested patent involves an inventive step within the meaning of Article 56 EPC.

4. For the foregoing reasons, the Board is satisfied that the subject-matter of Claim 1 of the contested patent complies with Article 52(1) EPC.

Claims 2 to 5 of the contested patent which are dependent on Claim 1 and relate to specific embodiments of the subject-matter of Claim 1 are also patentable.

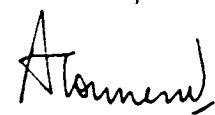
5. The patent can thus be maintained unamended.

Order

For these reasons, it is decided that:

1. The decision under appeal is set aside.
2. The patent is maintained as granted.

The Registrar:

  
A. Townend

The Chairman:

  
C. Payraudeau