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Anmeldenummer / Filing No / N<sup>o</sup> de la demande : 85 904 189.9

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Bezeichnung der Erfindung: Music teaching apparatus and method

Title of invention:

Titre de l'invention :

Klassifikation / Classification / Classement :

### ENTSCHEIDUNG / DECISION

vom / of / du 3 July 1990

Anmelder / Applicant / Demandeur : Beattie, John Robert

Patentinhaber / Proprietor of the patent /  
Titulaire du brevet :

Einsprechender / Opponent / Opposant :

Stichwort / Headword / Référence : Marker/Beattie

EPÜ / EPC / CBE Article 52(1), 2(d), and (3)

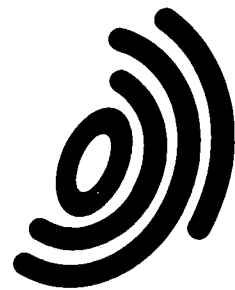
Schlagwort / Keyword / Mot clé : "presentations of information as such"

#### Leitsatz / Headnote / Sommaire

I. If the subject-matter of a claim consists of a mix of technical elements (in the present case a marker) and of non-technical elements (in the present case information relating to the tones of the key of a keyboard instrument) the subject-matter as a whole is excluded from patentability under Article 52(2) and (3) EPC if the mix does not make use of technical means in order to solve a technical problem.

II. An improvement of a teaching method is not a technical problem but an improvement of a method for performing mental acts.

III. A supposed contradiction between the Guidelines and an intended decision of a Board of Appeal is no ground for referring a question to the Enlarged Board of Appeal.



Case Number : T 603/89 - 3.4.1

**D E C I S I O N**  
of the Technical Board of Appeal 3.4.1  
of 3 July 1990

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**Decision under appeal :** Decision of Examining Division 063  
of the European Patent Office  
dated 27 April 1989 refusing European  
patent application No. 85 904 189.9  
pursuant to Article 97(1) EPC

**Composition of the Board :**

**Chairman :** K. Lederer  
**Members :** H.J. Reich  
C.V. Payraudeau

## Summary of Facts and Submissions

- I. European patent application 85 904 189.9 (publication number WO 87/00952) was refused by decision of the Examining Division of the European Patent Office.
- II. The decision was based on Claims 1 to 13 filed on 10 February 1989.
- III. The reason given for the refusal was that the subject-matter of Claim 1 was lacking novelty within the meaning of Article 54 EPC in view of the disclosure in document:  
  
D1: US-A-1 725 844,  
  
and, furthermore, was excluded from patentability in view of Articles 52(2)(c) and 52(2)(d) EPC. The Examining Division considered that the combined diatonic and chromatic notation devised and claimed by the applicant fell within the exclusions stated in the Convention, the learning of music per se being a mental act, and the notation per se being a presentation of information.
- IV. An appeal was lodged against this decision, accompanied by a revised set of Claims 1-6 and description pages 1-24 filed on 28 August 1989 of which Claim 1 reads as follows:  
  
"1. A marker for facilitating the reading and playing of music on a keyboard instrument having a standard keyboard with twelve keys per octave of which seven are white and five are black, said marker to be used with a system of display for written music which shows dodecatonic numbers superimposed upon the traditional heptatonic noteheads,

said marker comprising a body portion formed from a thin material and adapted to rest vertically behind the black keys and upon the white keys of said keyboard instrument, said body portion having displayed thereon in vertical register with each of said twelve black and white keys a number representing dodecatonically the chromatic semitone pitch sounded by each said black and white key, and tabs extending horizontally forward from the lower edge of said body portion and registering with each of said seven white keys, each of said horizontal tabs having displayed thereon the letter designation C, D, E, F, G, A or B representing heptatonically the diatonic scale degree pitch sounded by each said white key, the said vertical twelve dodecatonic number designations juxtaposed with the said horizontal seven heptatonic letter designations giving linear and regular expression to the chromatic semitone twelve-pitch structure of the keyboard and of music and, simultaneously, linear and regular expression to the diatonic scale degree seven-pitch structure of the keyboard and of music, thereby rendering both types of structure easy to visualize, where the following definitions apply:

**HEPTATONIC.** From the Greek derivations for "seven" and "tone". A heptatonic representation of musical pitch is herein defined as one in which there are seven independent, or "primary", entities per octave, plus five dependent, or "secondary", entities which show up as modified versions of the primary seven. In such a hierarchy the primary entities are seen as coequal among themselves and the secondary entities are seen as conceptually subordinate to the primary entities. As an example, "D#/Eb" would be considered a dependent, secondary entity conceptually subordinate to its immediate neighbors "D" and "E".

DODECATONIC. From the Greek derivations for "twelve" and "tone". A dodecatonic representation of musical pitch is herein defined as one in which there are twelve independent entities per octave, with no dependent entities showing up as modified versions of any other entities, and therefore no "primary" vs. "secondary" distinction. In such a hierarchy there are no entities which can be seen as subordinate to any others; all are coequal. As an example, "3" would be considered an independent, primary entity conceptually coequal with its immediate neighbors "2" and "4"."

Claims 2 to 6 are referred back to Claim 1.

- V. In a communication made in accordance with Article 11(2) of the Rules of Procedure of the Boards of Appeal in preparation of the oral proceedings requested by the Appellant, the Board informed the latter that it was provisionally of the opinion that the subject-matter of Claim 1 represented a mix of technical and non-technical elements, the latter consisting in a presentation of information. It was noted that following the Board's earlier decisions - in particular T 26/86, O.J. EPO 1988, 19 - a claim which consists of a mix of technical and non-technical elements was not considered as being excluded from patentability under Articles 52(2) and 52(3) EPC, if the corresponding invention was using technical means. Use of technical means was however not to be seen simply in the presence of a technical component but meant that the mix solved a technical problem, i.e. produced a technical effect in the concrete apparatus. The features of Claim 1 of the present application relating to the presentation of information did not seem to have any effect on the physical features of the apparatus but only acted on the student's mind. The intended improvement of the learning capabilities of a student was held to be a mental step.

Furthermore, the subject-matter of Claim 1 differed from the marker known from document D1 in no technical feature but only in its information related characteristics, i.e. in the fact that classical staff notation provided on the known marker was replaced by a dodecatonic numeric scale.

VI. Oral proceedings were held, at the end of which the Appellant requested:

(1) that the decision under appeal be set aside and a patent be granted on the basis of the following documents:

Claims 1 to 6, filed on 28 August 1989,  
description pages 1 to 24 filed on 28 August 1989,  
drawings sheet 1/5 as published,  
sheet 2/5 deleted,  
sheet 3/5 to 5/5 with Figures 4a to 7  
renumbered to Figures 3a to 6 (Main  
request);

(2) that the following question be referred to the Enlarged Board:

"If an invention consists of a mix of technical and non-technical features, must the invention then solve a pure technical problem?" (Auxiliary request).

VII. In support of his main request, the Appellant argued essentially as follows:

(a) Following decision T 26/86, an invention should be for the application of Article 52 EPC considered as a whole without any weighting of the claimed technical and non-technical features, independently from the examination for novelty and inventive step. Hence,

since in the present case the claimed invention comprised technical features, i.e. a marker, which fits on the keyboard, brings information into relation with the keys and offers space for certain symbols, the combination of these features with a new notation system was not excluded from patentability by Article 52(2) and (3) EPC even if the technical features per se could admittedly be considered as not novel or inventive. However, for the examination of novelty and inventive step the whole content of the claim had to be considered, i.e. the novelty and inventiveness could be founded on the non-technical features only.

- (b) The European Patent Convention does not exclude a teaching apparatus from patentability. Moreover, it would be inconsistent with the intention of this Convention that such an apparatus could be considered as not patentable under Article 52(2) and (3) EPC, because the claimed features (like in present Claim 1) improve the learning process of the student and thus the technical usability of the apparatus.
- (c) The Guidelines for Examination explicitly state in part C-IV, 2.3: "The arrangement or manner of presentation, as distinguished from the information content, may well constitute a patentable technical feature." No protection is sought for the information as such, i.e. for the heptatonic letters or for the dodecatonic numbers but for the marker carrying them. This marker is comparable with the examples for a patentable presentation of information having a technical feature given in the above chapter of the Guidelines, i.e. "a telegraph apparatus or communication system characterised by a particular code to present the characters (e.g. pulse code

modulation) or a measuring instrument designed to produce a particular form of graph for representing the measured information." In the present case, the technical features have to be seen in the provision of space for the signs; in the arrangement showing that said letters and numbers have identical meanings and in the fact that they both form a linear sequence related to the physical organisation of the keyboard.

- (d) It is explicitly stated in the Guidelines, part C-IV, 2.2: "if a claim is for a known manufactured article having a painted design or certain written information on its surface, the contribution to the art is as a general rule merely an aesthetic creation or presentation of information." The marker claimed in Claim 1 neither carries signs of ornamental character nor have its numbers and signs any informational content, i.e. they characterise no particular poem or musical piece.
- (e) Thus, applying the language of the Guidelines on the marker claimed in Claim 1, it follows clearly that Claim 1 defines an invention which is patentable under Article 52(2) and (3) EPC. Because the applicants usually consult the criteria for patentability in the Guidelines before filing a European patent application, the Appeal Boards should follow the teaching of the Guidelines. Otherwise, the Guidelines would be misleading for the public.

#### Reasons for the Decision

1. The Appeal is admissible.



2. **Main request**

2.1 The subject-matter of Claim 1 consists essentially of:

- (a) "A marker, comprising a body portion formed from a thin material and adapted to rest vertically behind the black keys and upon the white keys of a keyboard instrument and tabs extending horizontally forward from the lower edge of said body portion and registering with each of the seven white keys";
- (b) the tabs display the letters: C, D, E, F, G, A or B, "representing heptatonically the scale degree pitch sounded by each said white key"; and
- (c) the body portion displays in vertical register with each of the black and white keys a number "representing dodecatonically the chromatic semitone pitch sounded by each said black and white key";
- (d) numbers and letters being "juxtaposed" and "easy to visualize".

The remaining wording of Claim 1 mainly concerns a definition of the terms "heptatonic" and "dodecatonic".

2.2 Part (a) of Claim 1 contains the physical features of Claim 1 and forms the technical elements of the claim and it has not been contested by the Appellant that they are known from D1.

2.3 Part (b), already known from D1, and parts (c) and (d) of Claim 1 relate to the information presented and form the non-technical elements of the claim.

2.4 The Appellant has essentially argued on the following lines:

- (i) the invention relates to a mix of technical and non-technical elements and is therefore not excluded from patentability under Art. 52 EPC even if the novelty of the subject-matter of the claim lies in the non-technical elements;
- (ii) even if it was considered necessary that the mix, in order not to be excluded from patentability, should produce a technical effect, this condition was met by the present invention in which the technical effect was the obtention of an improved teaching instrument and the realization of an improved teaching method.

2.5 The Board agrees with the Appellant that the subject-matter of a "mix" claim is not excluded from patentability under Art. 52(2)(3) EPC when, but only when, the non-technical elements interact with the known technical elements in order to produce a technical effect. Thus, the Board considers that when there is an interaction between the technical and non-technical elements, and the mix as a whole solves a technical problem, it is not excluded from patentability (see decision T 26/86 already cited). In the absence of such an interaction - when the technical elements are only a support for the non-technical elements but do not otherwise co-operate therewith - the invention does not make use of technical means and cannot therefore be granted (see decision T 158/88, to be published). In other words, if the subject-matter of a claim consists of a mix of technical elements (in the present case a marker) and of non-technical elements (in the present case information relating to the tones of the key of a keyboard instrument) the subject-matter as a whole is excluded from patentability under Article 52(2) and (3) EPC if the mix

does not make use of technical means in order to solve a technical problem.

- 2.6 In the present case, the display of dodecatonic numbers (feature c), their juxtaposition with heptatonic letters (feature b) and their easy visualization (feature d) have no effect on the physical properties nor on the mechanical functioning of the three-dimensional marker structure with body portion and tabs (feature a). This known marker structure only forms a support for the above-mentioned information and has also no effect on the information (features b to c). Hence, due to the lack of any interaction within the claimed mix, no technical means are used.
- 2.7 The Appellant has argued that this interpretation of the Claim 1 was not correct and that the technical effect of the mix was to be seen in the realization of new teaching apparatus and method.
- 2.8 A teaching apparatus is certainly a technical subject-matter but, in the present case, the contribution of the purported invention to the realization of the apparatus resides only in the content of the displayed information and not in the apparatus itself which belongs to the state of the art. In other words, the problem solved by the purported invention resides in an improvement of a teaching method. Contrary to the opinion of the Appellant, the Board considers that the intended improvement is an improvement of a method for performing mental acts. Thus, no technical problem is solved by the changed mix.
- 2.9 For the above reasons the Board considers that Claim 1 is not allowable. Claims 2 to 6 depend on Claim 1 and are therefore also not allowable.

### 3. Auxiliary request

- 3.1 The Appellant has requested that the question mentioned in point VI(2) hereinabove be submitted to the Enlarged Board of Appeal in the case the Board would consider Claim 1 of the main request as excluded from patentability under Article 52 EPC.
- 3.2 In support of this request, the Appellant has submitted that, in his opinion, the Guidelines part C-IV, 2 were in contradiction with the view expressed by the Board in his communication that a mix composed of technical and non-technical elements was excluded from patentability - when the technical elements were already known - except when the mix did solve a technical problem.
- 3.3 The Board of Appeal observes at first that "the Guidelines" do not have the binding authority of a legal text. For the ultimate authority on practice in the European Patent Office, it is necessary to refer firstly to the European Patent Convention itself and secondly to the interpretation put upon the Convention by the Boards of Appeal and the Enlarged Board of Appeal (Guidelines, General Introduction 1.1).
- 3.4 The Rules of Procedure of the Boards of Appeal (Art. 15) provide that when a Board disagrees with the interpretation of the Convention given in the Guidelines, it should "states the grounds for its action if it considers that this decision will be more readily understood in the light of such grounds".
- 3.5 Therefore a supposed contradiction between the Guidelines and an intended decision of a Board of Appeal is no ground for referring the question to the Enlarged Board.

3.6 The Board observes nevertheless that there is in fact no contradiction between the reasons given in point 2 hereinabove to consider the Claim 1 according to the main request as excluded from patentability and the Guidelines properly interpreted.

3.7 In fact, in both examples given in the Guidelines and cited by the Appellant (see point VII(c)) the non-technical element of the mix interacts with the technical element to produce a technical effect which solves a technical problem. In the case of the communication system, the code (non-technical element) must interact with the system (pulse code modulation means) in order to modify its operation, e.g. to reduce the probability of transmission errors which is a technical problem; in the case of a measuring instrument, the non-technical element (i.e. a special processing of the data) must interact with the instrument in order to produce a technical effect (a particular form of graph representing the measured information, which in turn solves a technical problem, e.g. improves the representation accuracy.

3.8 As stated in the Guidelines (part C-IV, 2.2)

"The examiner should disregard the form or kind of claim and concentrate on its content in order to identify the real contribution which the subject-matter claimed, considered as a whole, adds to the known art. If this contribution is not of a technical character, there is no invention within the meaning of Article 52(1)."

These views correspond exactly with the opinion expressed by the Board in point 2.

- 3.9 The Board considers also that there is no other ground to refer the question submitted by the Appellant to the Enlarged Board of Appeal.
- 3.10 According to Article 112(1) EPC, following a request from a party to the appeal, a Board of Appeal should refer a question to the Enlarged Board of Appeal if it considers that a decision is required in order to ensure uniform application of the law, or if an important point of law arises. Both prerequisites are not met in the present case. The Board follows with the present decision the earlier decision of the Board 3.5.1 dated 5 September 1988, T 115/85, O.J. EPO 1990, 30, as well as its own earlier decisions T 26/86, O.J. EPO 1988, 19 and T 158/88 (to be published) and ensures thus a uniform application of the law in the important point of law concerning inventions, which make use of features which are per se not patentable under Articles 52(2) and (3) EPC. The Appellant's question can, no doubt, be regarded as an important point of law. However, this question does not need to be referred to the Enlarged Board of Appeal because the Board of Appeal hearing the present case considers itself able to answer it beyond any doubt by reference to the Convention; see also decision J 05/81, O.J. EPO 1982, 155. For these reasons, the Board deems a decision of the Enlarged Board of Appeal as not necessary and the Appellant's auxiliary request is refused.

**Order**

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

**The appeal is dismissed.**

**The Registrar:**

**The Chairman:**

**M. Beer**

**K. Lederer**