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D E C I S I O N
of 5 July 1999

Case Number: T 0429/95 - 3.2.5

Application Number: 88201307.1

Publication Number: 0297663

IPC: B41J 5/10

Language of the proceedings: EN

Title of invention:

Keyboard for a word typewriter

Patentee:

van Ardenne, Robertus A.M., Ing.

Opponent:

Stichting B4 Velotype International

Headword:

-

Relevant legal provisions:

EPC Art. 100(a)

Keyword:

"Inventive step (yes)"

Decisions cited:

-

Catchword:

-



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Boards of Appeal

Chambres de recours

Case Number: T 0429/95 - 3.2.5

D E C I S I O N
of the Technical Board of Appeal 3.2.5
of 5 July 1999

Appellant: Stichting B4 Velotype International
(Opponent) Duinweg 9
2585 JT The Hague (NL)

Representative: -

Respondent: van Ardenne, Robertus A.M., Ing
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Representative: Keijser, Johannes Maurits L.F.
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 16 March 1995
rejecting the opposition filed against European
patent No. 0 297 663 pursuant to Article 102(2)
EPC.

Composition of the Board:

Chairman: A. Burkhart
Members: P. Alting van Geusau
J. C. M. De Preter

Summary of Facts and Submissions

- I. The mention of the grant of European patent No. 0 297 663 in respect of European patent application No. 88 201 307.1, filed on 23 June 1988, was published on 25 September 1991.

Claim 1 of the patent reads as follows:

"1. Keyboard for recording and/or reproducing written information in a typewriter, word processor, printer, computer or in telecommunications equipment, according to the principle of the so-called word typewriter, which keyboard has a group of vowel keys (4) in the centre consisting of three columns, to the left thereof a group of initial consonant keys (5) and to the right thereof a group of final consonant keys (6), the vowel keys in the outer columns of the vowel keys group (4) each forming part of a row in an adjacent block of keys otherwise containing consonants, and also facilities for reproducing capitals of the letters and for reproducing figures and punctuation marks, the keys in some cases being situated in blocks containing both rows and columns and the keys in the centre column of the vowel keys and the bottom rows - intended to be operated with the thumb - of consonant keys are offset with respect to the adjacent row or column, respectively, all the keys being connected to an electronic processing unit which, by means of code signals, arranges the information from the keys struck approximately or exactly simultaneously into syllables to be recorded or to be reproduced, characterised in that the group of initial consonant keys (5) and the

group of final consonant keys (6) both contain substantially all the consonants, and in that the vowel keys in the centre column are hexagonal and are inserted between the keys of the outer columns which are matchingly shaped at the adjacent side."

II. Notice of opposition was filed on the grounds of Article 100(a) and (b) EPC. In respect of an alleged lack of inventive step in particular the following documents were relied upon during the opposition proceedings:

D1: EP-A-0 053 168 (WO81/03641)

D2: DE-C-586 252

D6: SWO-1 rapport 769/4 "een eerste evaluatie van de velotype t.b.v het gebruik binnen de ptt"
Staatsbedrijf der PTT centrale afdeling sociaal wetenschappelijk onderzoek, December 1984

III. By a decision which was given at the end of oral proceedings held on 24 January 1995 and posted on 16 March 1995 the Opposition Division rejected the opposition.

The Opposition Division was of the opinion that, starting from the closest prior art as was represented by document D1, neither of the further cited documents would lead the skilled person to the arrangement of keys defined in claim 1 of the patent as granted.

IV. On 15 May 1995 a notice of appeal was lodged against that decision together with payment of the appeal fee.

The statement of grounds of appeal was filed on 7 July 1995.

The appellant requested that the decision under appeal be set aside and that the patent be revoked.

- V. In a communication issued in preparation for oral proceedings, auxiliarily requested by the appellant, the Board drew attention to the fact that the opposition was only substantiated in respect of the objection under Article 100(a) EPC and that the appellant had informed the Board that he no longer wished to pursue the objection under Article 100(b) EPC.

Considering the question whether the characterising features of claim 1 of the patent in suit had a functional interrelation, which was contested by the appellant, the Board pointed to D2, page 1, lines 39 to 50, from which could be derived that a honeycomb arrangement of the keys allowed for a smaller width of the keyboard. This would appear to be particularly important when a large number of keys, such as was the case in the arrangement in accordance with claim 1 of the patent in suit, was involved and for that reason the characterising features of claim 1 might be considered to have some functional interrelation. Since it would appear to be undisputed that neither of the cited documents disclosed the use of two substantially complete sets of consonant keys nor an arrangement in which the vowel keys were arranged as claimed in claim 1 important issues to be discussed during the oral proceedings would relate to the questions why the skilled person necessarily would have

adopted teachings from D2, why he would have rearranged only the vowel keys in the manner as claimed - rather than all the keys - why two complete sets of consonant keys were introduced and why he would then immediately and unavoidably have arrived at the keyboard claimed.

VI. With facsimile dated 22 April 1999 the appellant announced that he would not attend the oral proceedings. The parties were informed by facsimile on the same day that the oral proceedings had been cancelled.

VII. In support of its request for revocation of the patent the appellant essentially relied on the following submissions:

The Opposition Division argued for the first time in the decision under appeal that the problem to be solved had to be regarded as inventive and in so far the decision, at least partly, was based on grounds unknown to the appellant. Although the Opposition Division correctly considered document D1 to represent the closest prior art it overlooked the fact that the electronic decoding and processing already existed and was therefore also comprised in the state of the art. In this respect the teachings of the patent could only be carried out if it was accepted that the electronic processing was available to the skilled person at the priority date of the present patent.

The Opposition Division considered the posing of the problem inventive. However, no inventive insight was required to draw the conclusion that any experienced typist would only reluctantly change from a normal

typewriter to the velotype and furthermore, the report D6 already pointed at the difficulties due to the omitted consonants in a keyboard in accordance with D1. Therefore the provision to introduce extra consonant keys was not inventive.

Furthermore document D2 gave a clear teaching that a honeycomb structure was advantageous to produce a keyboard enabling threefold positions. Simple linguistic rules then lead to the insight to use the hexagonal shaped keys only for the vowels keys. From the appellant's analysis it would be clear that the characterising features were not related to a solution to one and the same problem but in fact each solved an independent partial problem in a known manner. Therefore the claimed solution as defined in claim 1 of the patent in suit was deprived of any inventive activity.

VIII. The respondent contested the appellant's view and its submissions are summarised as follows:

The appellant's objections concerning the alleged unknown grounds of rejection of the opposition could not be followed because the Opposition Division was not obliged to present all possible grounds for rejection of the opposition in detail.

Concerning the alleged incorrect judgment of the state of the art by the opposition Division, the appellant's reasoning was based on the assumption that the electronic processing unit of the claimed keyboard would be a copy of the processing unit in the velotype known from D1. However, in accordance with the present

patent the signals from simultaneously pressed keys must be ordered and thus decoding rules were needed which had nothing in common with the decoding rules of the velotype.

As regards the appellant's submission that it was obvious to return to the principle of one key/one character, the keyboard claimed in claim 1 of the patent in suit did not simply return to this principle but went in a different direction namely to provide a substantially complete set of consonant keys both in the group of initial and in the group of final consonant keys. In this respect it was not correct that the characterising features were not related to one and the same problem because the special arrangement of the keys allowed for a more compact keyboard and thus enhanced typing speed in spite of the increased amount of keys. Furthermore the hexagonal key arrangement in D2 was different from the arrangement of hexagonal keys for a central column of vowels as in the present patent and therefore D2 could not render the provision of this feature in the claimed keyboard obvious. For these reasons the appellant's submissions were not considered convincing and therefore not suitable to throw doubt on the patentability of the keyboard claimed in claim 1 of the patent in suit.

The respondent requested that the appeal be dismissed.

Reasons for the Decision

1. The appeal is admissible.

2. The opposition was based in the grounds of Article 100(a) and (b) EPC but it was substantiated only in respect of Article 100(a) EPC.

Since the Board does not see any reason for doubting that the skilled person could manufacture the keyboard disclosed in the present patent and taking into account that the appellant stated on appeal that the objection under Article 100(b) EPC was not maintained, no further consideration of this objection is considered necessary.

3. *Novelty*

Novelty of the subject-matter of claim 1 follows from the fact that the available prior art does not disclose a keyboard in which the keys are arranged in the manner as defined in claim 1.

Novelty has in fact neither been in dispute in the earlier nor in the present proceedings.

4. *Inventive step*

- 4.1 The Board and the parties are in agreement that D1 represents the closest prior art. This document discloses a keyboard according to the pre-characterising portion of claim 1.

- 4.2 This known keyboard is based on the principle that only a limited number of consonant keys is present both in the group of initial consonant keys and in the group of final consonant keys and that the missing consonants are formed by simultaneously depressing a particular

combination of consonant keys. This prior art keyboard can be made smaller than the conventional keyboards and because movements of the hands can be limited the typing velocity may be increased. However, special training is required to operate the machine and even after training continuous mental effort is necessary to think of the correct combination for letters which are not immediately recognisable (see the patent, column 1, lines 26 to 47).

4.3 Since the shortcomings following from the particular use of the keyboard known from D1 are immediately apparent to the skilled person, no inventive merit can be seen in the desire for improvement so as to make this known keyboard more suitable for general use and in particular, closer to normal typewriting, while maintaining word typing ability by allowing pressing a number of keys at the same time.

4.4 In accordance with claim 1 of the patent in suit this problem is solved in a keyboard of the form as is known from D1 firstly by adding keys so that a substantially complete set of consonant keys is present both in the group of initial consonant keys and in the group of the final consonant keys and secondly by providing that the vowel keys in the centre column are hexagonal and are inserted between the vowel keys of the outer columns which are matchingly shaped at the adjacent side.

In such a manner a complete directly accessible alphabet is provided on the keyboard while the consequential complication and retardation of the typing speed is effectively eliminated by the feature that all keys struck will result in the typing of at

least as many characters and further by the hexagonal shape and the "inserted" arrangement of the vowel keys in the centre column which, in addition to making the keyboard layout smaller, facilitates the simultaneous striking of three vowel keys (see column 2, line 52 to column 3, line 15 of the patent).

- 4.5 The appellant considered that, knowing the difficulties due to the omitted consonants in the D1 keyboard as was in fact mentioned in D6, it was obvious to the skilled person to return to the principle of one key/one stroke of the conventional typewriter and that the skilled person would replace both incomplete groups of consonant keys in the keyboard known from D1.

However, as was also observed by the Opposition Division, it is an important feature of the keyboard disclosed in D1 that a number of consonants are not represented by their own key so as to attain certain keyboard configuration and writing speed advantages. It would therefore go against the teaching of D1 to add a greater number of keys to the keyboard when wanting to maintain or increase the writing speed.

- 4.6 The appellant further relied upon D2 which was considered to give a clear indication that a honeycomb structure of the keys was advantageous when more than one key should be pressed at the same time and in so far D2 was particularly relevant in respect of the second characterising feature of claim 1.

However, D2 discloses a mechanical typewriter in which all the keys are hexagonally arranged. Although it is indicated that such arrangement facilitates the

actuation of one, two or three keys simultaneously with one finger, no suggestion can be drawn from this prior art to apply the principle of hexagonal keys to only one central column of vowel keys for the reasons as were extensively explained by the Opposition Division in the decision under appeal and which the Board considers to be convincing.

- 4.7 In this respect the appellant submitted that simple linguistic rules following from the occurrence of vowels and consonants in the alphabet would lead the skilled person to the introduction of hexagonal shaped vowel keys only.

However, in the absence of any objectively verifiable proof of the alleged insight of the skilled person, this argumentation appears to be based on hindsight and therefore cannot be considered to provide a valid reason for denying inventive step of the subject-matter of claim 1 of the patent in suit. Moreover, no reasons were given by the appellant why the skilled person would use hexagonal keys only for the central column of vowel keys and insert these keys between the vowel keys of the outer columns the latter being matchingly shaped at the adjacent side.

- 4.8 The appellant further expressed the view that since there was no functional interaction of the characterising features of claim 1, the obviousness of each of the characterising features immediately led to the obviousness of the subject-matter of claim 1.

In this respect attention is drawn to page 1, lines 39 to 50 of D2, from which can be derived that a honeycomb

arrangement of the keys allows for a smaller width of the keyboard. This would appear to be particularly important when a large number of keys, such as is the case in the arrangement in accordance with claim 1 of the patent in suit, is involved. Therefore the Board concludes that the characterising features indeed have some functional interrelation for solving the underlying problem of the patent in suit because the second characterising feature compensates for some of the disadvantages of the introduction of a larger number of keys following from the first characterising feature.

- 4.9 Summarising, in the Board's judgment, the proposed solution to the technical problem underlying the patent in suit defined in the independent claim 1 is inventive and therefore this claim as well as its dependent claims 2 to 14 relating to particular embodiments of the invention in accordance with Rule 29(3) EPC, are acceptable.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

A. Townend

A. Burkhart