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D E C I S I O N
of 9 July 1997

Case Number: T 0010/95 - 3.5.1

Application Number: 88302514.0

Publication Number: 0284355

IPC: G06F 15/20

Language of the proceedings: EN

Title of invention:
Document processing apparatus

Applicant:
Canon Kabushiki Kaisha

Opponent:
-

Headword:
-

Relevant legal provisions:
EPC Art. 54, 56

Keyword:
"Novelty (main request: no)"
"Inventive step (subsidiary requests: no)"

Decisions cited:
-

Catchword:
-

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Case Number: T 0010/95 - 3.5.1

D E C I S I O N
of the Technical Board of Appeal 3.5.1
of 9 July 1997

Appellant: Canon Kabushiki Kaisha
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Tokyo (JP)

Representative: Beresford, Keith Denis Lewis
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 16 May 1994 refusing European patent application No. 88 302 514.0 pursuant to Article 97(1) EPC.**

Composition of the Board:

Chairman: P. K. J. van den Berg
Members: R. R. K. Zimmermann
J.-C. Saisset

Summary of Facts and Submissions

I. The appeal was lodged against a decision of the examining division, dated 16 May 1994, refusing the European patent application No. 88 302 514.0, claiming a priority date of 23 March 1987 and published under the publication No. 0 284 355, for lack of inventive step having regard to the prior art formed by document EP-A-0 098 959 (cited as D1) and the general technical knowledge relevant to the invention.

II. The appellant filed the notice of appeal on 15 July 1994 requesting that the decision should be cancelled in its entirety; the fee for appeal was paid on the same day. On 21 September 1994 the appellant submitted the statement of grounds and a set of amended claims, requesting oral proceedings to be held in the case the Board of Appeal intended to issue an adverse decision.

III. The Board informed the appellant in writing about its preliminary opinion concerning the appeal. In particular, the Board referred to document D1 as the relevant prior art and expressed its doubts about the patentability of the invention taking into account the common general technical knowledge of a person skilled in the art.

IV. In oral proceedings held before the Board on 9 July 1997, the professional representative acting for the appellant submitted several sets of amended claims corresponding to a main request and three subsidiary requests to replace all earlier requests.

The independent claims (claim 1) of the main request and the subsidiary request 1 read as follows:

Main request:

"1. A document processing apparatus comprising:
first memory means (4a) for storing document information;
second memory means (3b) for storing hyphen position information;
means (MPU2) for reading out from said memory means (4a) a character train in one line of a length corresponding to the distance between the right and left margins;
display means (6) for displaying the document information which is stored in said memory means; and
display control means (5) for controlling said display means;
wherein there are provided
means (MPU2) for scanning (step 2) said character train and determining (step 3) whether or not a line end character of a word extends beyond the right margin and is a character of a dividable word;
means (MPU2) for comparing (step 5) a determined dividable word by reference to the second memory means (3b), for checking a valid position of a hyphen (step 6), and for inserting (step 8) a hyphen in the valid position of said dividable word;
editing means (2) for editing the document information which is displayed by said display means (6);
a buffer (7) coupled to said display means (6);
means (MPU2) for transferring the character train, extending from the head of the line to the inserted hyphen, to said buffer (7); and
means (MPU2) for coupling said editing means with said buffer (7) to effect display of said character train therein on said display means (6) on selection of a hyphen display mode."

Subsidiary request 1:

1. An electronic typewriter, comprising a keyboard (1) for supplying key code data, a microprocessor (2) arranged to receive the key code data from the keyboard (1), a random access memory (4) including a region (4a) for storage of a document, display means (5, 6,7) controlled by the microprocessor (2) for displaying the document, a printer (8) controlled by the microprocessor 10 (2) for printing the document, and a read only memory (3) including a control program (3a) arranged to cause the printer to print the document in the same form as it is displayed and arranged
(i) to convert the key code data from the keyboard (1) to character code data during entry and editing of the document and to store the character code data in the random access memory region (4a); and
(ii) during entry of the document to scan character code data of a line, check that the last word is a complete word, check whether the last complete word extends beyond the right margin and if so to rearrange the line so that the preceding word is the last complete word,
characterised in that the read only memory (3) also contains a hyphen position memory (3b), and in that the control program (3a) stored in the read only memory (3) is arranged to cooperate with the hyphen position memory (3b) during entry of the document when a complete word extends beyond the right margin to:
(iii) check whether or not a position exists at which a hyphen can be inserted into the word on the basis of information stored in the hyphen position memory (3b);
(iv) check whether the position of hyphen insertion is to the left of the right margin;
(v) on detection of a word having a position at which hyphen can be inserted and on detection of a hyphen

insertion position to the left of the right margin to insert a hyphen and instead display the line of character code up to the hyphen.

Claim 1 of subsidiary request 2 is identical with claim 1 of the main request except that at the end of the claim the feature "the second memory means (3b) being read-only memory" is added.

Claim 1 of subsidiary request 3 is identical with claim 1 of subsidiary request 1 except that the text "(a) the display is a single line display and (b)" is inserted after the words "characterised in that".

V. The arguments submitted by the representative in favour of the invention can be summarized as follows:

Document D1 disclosed nothing more than a document processing apparatus comprising memory and control means for entering, displaying and hyphenating text. Although this hyphenating function was achieved by scanning the text lines, determining a line end character in each text line and a valid position of a hyphen in the word containing this character by comparing the word with hyphenation data stored in a memory, and inserting a hyphen into the word if a valid position was determined, this apparatus did neither include editing means nor provided a combination of hyphenation and editing functions as proposed by the present invention.

The prior art relevant to the subject-matter of claim 1 of subsidiary requests 1 and 3 included the sort of electronic typewriter as defined in the preamble of these claims. However, an electronic typewriter and a document processing system belonged to substantially different classes of products: electronic typewriters in fact were designed as a low cost consumer product,

whereas document processing required sophisticated and thus expensive computer-based systems. Since document D1 was directed to document processing, it belonged to the remote prior art not relevant in the field of electronic typewriters. In addition, the feature of using a read-only memory for storing hyphen position information in an electronic typewriter was an unexpected design solution as the required amount of memory would have been too expensive for this type of product at the time.

Reasons for the Decision

1. The appeal is admissible.

2. The present requests were submitted by the appellant for the first time in the course of the oral proceedings. Although the appellant did not give reasons for the late submission, the Board decided to admit the requests since the examination of the new claims would not introduce any significant delay into the procedure because it was easily established that they did not deviate substantially from the previous claims.

   In particular, the amendments of the application resulting from these requests are clearly supported by the application as originally filed and thus meet the requirements of Article 123(2) EPC.

3. *Main request and subsidiary request 2*

   Claim 1 of both these requests is directed to a document processing apparatus. There has been no dispute that document D1 discloses a document

processing apparatus having the following features in common with the invention as defined in claim 1 of the main request:

first memory means for storing document information;
second memory means for storing hyphen position information;
means for reading out from said memory means a character train in one line of a length corresponding to the distance between the right and left margins;
display means for displaying the document information which is stored in said memory means;
display control means for controlling said display means;
means for scanning said character train and determining whether or not a line end character of a word extends beyond the right margin and is a character of a dividable word;
means for comparing a determined dividable word by reference to the second memory means, for checking a valid position of a hyphen, and for inserting a hyphen in the valid position of said dividable word.

However, document D1 also discloses other features of claim 1. In fact, document D1 refers on page 4, lines 11 ff. to an "interactive text processing system" including a microprocessor 11, a printer 15, a display device 14, and a keyboard 10. The term "interactive text processing system" implies that editing is a feature of the system. Furthermore, since "editing" is a generic term including any operation for adapting or improving the appearance of printed (or displayed) text, it conceptually includes formatting and justifying text. Apart from this, document D1 explicitly discloses formatting and justification of text, in addition to entering, reviewing, displaying and printing of text, on pages 6 to 8.

Furthermore, page 6, lines 7 ff. describes that the text data are formatted in a text buffer 27 (or a display format buffer 29) before being transferred under the control of the microprocessor 11 to the display device 14 (or the printer 15). Keyboard 10 and microprocessor 11, therefore, are "means for editing document information which is displayed by display means" as defined in claim 1. In addition, the cited passages show that document D1 discloses the claimed features of the buffer (document D1, buffer 27 or 29), and the means for transferring the character train and for coupling said editing means with said buffer (document D1, microprocessor 11) to effect display of text characters on the display means (document D1, display device 14).

Finally, on page 6, lines 20 ff., document D1 indicates that the control program "branches into the routines ... to hyphenate the word and/or selectively enter ...". Therefore, the hyphenation routine is performed and the hyphenated text displayed only if hyphenation is selected, or expressed differently: the display of a hyphenated portion of text is only effected "on selection of a hyphen display mode" as defined in claim 1.

Thus, having regard to document D1, the subject-matter according to claim 1 of the main request is not novel within the meaning of Article 54 EPC. Therefore, the said subject-matter is not patentable under Article 52(1) EPC.

The feature of using a read-only memory for storing the hyphen position information is the only one which distinguishes the subject-matter of claim 1 of subsidiary request 2 from claim 1 of the main request (see point IV). Since claim 1 of the main request was found not to be novel having regard to document D1, the

said feature of using a read-only memory is also the only feature which distinguishes the subject-matter of claim 1 of subsidiary request 2 from document D1.

Read-only memories are primarily used for the permanent storage of data and programs in microprocessor controlled systems. Since the hyphen position information is essentially invariable, it can be stored permanently so that the use of a read-only memory is an obvious possibility for storing this information in a microprocessor based system.

Therefore, the subject-matter of claim 1 of subsidiary request 2 lacks an inventive step (Article 56 EPC) and is thus not patentable under Article 52(1) EPC.

4. *Subsidiary requests 1 and 3*

These requests concern claims directed to an electronic typewriter.

4.1 Subsidiary request 3

The appellant considers the sort of electronic typewriter acknowledged in the preamble of claim 1 of this request as the closest prior art. The Board notes that although in the European search report no electronic typewriters are cited at all, it has no doubt that such typewriters did indeed form part of the prior art.

The characterising portion of claim 1 of subsidiary request 3 comprises the following three groups of features:

(a) the control program is arranged to co-operate with the hyphen position memory during entry of the document when a complete word extends beyond the right margin to execute the hyphenation function as set out in further detail in the characterising portion of the same claim 1,

(b) the read-only memory contains the hyphen position memory, and

(c) the display is a single line display.

Electronic typewriters according to the preamble of claim 1 use word wrapping for adjusting the text to the required length of the lines. Like other conventional justification methods, however, word wrapping produces unsatisfactory results, a problem which is discussed in document D1 on pages 1 and 2.

As pointed out in document D1, hyphenation solves this problem, improving the appearance of printed and displayed text. It is undisputed by the appellant that the hyphenation method proposed in document D1 (see in particular Figure 5) anticipates the hyphenation method as defined in claim 1. Improving the functionality of a conventional electronic typewriter by adding a hyphenation function according to feature (a) is, therefore, obvious to the person skilled in the art.

The claimed use of a read-only memory (feature (b)) does not provide a contribution to the inventive step for the same reasons as indicated above for its use in a document processing apparatus as defined in claim 1 of subsidiary request 2.

Since single line displays (feature (c)) are a common type of display in electronic typewriters they represent another design possibility obvious to the skilled person.

Thus, if taken individually, features (a) to (c), therefore, do not involve an inventive step. But also in combination, these features do not produce technical effects which could not be expected from the individual features. Therefore, their contribution in combination does not go beyond their individual contributions to inventive step.

The appellant argued that a dictionary-based hyphenation function, requiring a large amount of memory and provided normally only in sophisticated document processing systems, would be a surprising feature since electronic typewriters were supposedly simple and cheap consumer products.

The Board does not accept this argument as neither the amount of memory nor the price or quality of the typewriter is object of the present application. The memory space required seems to be more a question of the accuracy and reliability to be achieved than a characteristic of the hyphenation method itself. But even if such a typewriter requires costly components, the argument does not hold since a technically obvious solution does not become inventive for the sole reason that the product fails to be marketable because of too high a selling price. The required complexity of such a typewriter might have negative effect on this price, but it does not put its technical feasibility into question. If there had been a prejudice, it would certainly not have been a technical one, therefore, but rather an economic one.

4.2 Subsidiary request 1

The same reasoning holds for claim 1 of subsidiary request 1 since this claim defines the same electronic typewriter as claim 1 of subsidiary request 3, except for the obviously irrelevant difference that in claim 1 of subsidiary request 1 feature (c) is missing.

5. *Conclusion*

All the present requests, therefore, seek protection for an invention which lacks either novelty or inventive step, so that none of the requests are allowable.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

N. Maslin P. K. J. van den Berg