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D E C I S I O N
of 18 October 2005

Case Number:	T 0049/04 - 3.4.03
Application Number:	97935052.7
Publication Number:	0917698
IPC:	G09B 17/00
Language of the proceedings:	EN

Title of invention:
Text processor

Patentee:
Walker, Randall C.

Opponent:
-

Headword:
Text Processor/WALKER

Relevant legal provisions:
EPC Art. 52(1),(2),(3), 56

Keyword:
"Invention within the meaning of Article 52(1) EPC (yes)"
"Inventive step (yes)"

Decisions cited:
T 0641/00, T 0643/00, T 0258/03, T 0125/04

Catchword:
"Following T 643/00 rather than T 125/04, the presentation of
natural language text on a display in a manner which improves
readability, enabling the user to perform their task more
efficiently, relates to **how**, ie by what physical arrangement
of the text, cognitive content is conveyed to the reader and
can thus be considered as contributing to a technical solution
to a technical problem; reasons 4.5 to 4.7.

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Case Number: T 0049/04 - 3.4.03

D E C I S I O N
of the Technical Board of Appeal 3.4.03
of 18 October 2005

Appellant: Walker, Randall C.
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Decision under appeal: **Decision of the Examining Division of the
                             European Patent Office posted 31 July 2003
                             refusing European application No. 97935052.7
                             pursuant to Article 97(1) EPC.**

Composition of the Board:

Chairman: R. G. O'Connell
Members: G. Eliasson
                   T. Bokor

Summary of Facts and Submissions

I.   This is an appeal against the refusal of European
        patent application 97 935 052.7 on the ground that the
        requirement of inventive step was not met having regard
        to the prior art document

        D2: D. E. Knuth and M. F. Plass, "Breaking Paragraphs
             into Lines", Software-Practice and Experience,
             Vol. 11, pages 1119 to 1184 (1981)

        and the notorious practice of poetry.

II.   In response to a communication from the board
        accompanying a summons to oral proceedings, the
        appellant applicant filed amended application documents.

III.   In the appeal procedure, the following prior art
        document was cited:

        D3: US 5 060 155 A.

IV.   At oral proceedings before the board, the appellant
        applicant requested that the decision under appeal be
        set aside and that a patent be granted on the basis of
        the following documents:

        Claims
             1 to 15 filed during the oral proceedings

        Description
        pages 1, 2, 4 to 7 filed with letter of
             23 February 2003,
        pages 3a, 3b filed during the oral proceedings,

page 3 filed with letter of 19 September 2005,

pages 8 to 28 as originally filed

Drawings

Figures 1, 3 to 11 as originally filed

Figure 2 filed with letter of 23 February 2003.

V.   The independent claims 1 and 12 according to the above
        request read as follows (labelling introduced by the
        board; the emphasised features indicate the features
        which have been added during the appeal procedure):

"1. A method for enhancing text presentation from a
        machine readable **natural language** text based on
        reader specific parameters including at least the
        viewing field dimensions comprising:

(a)   parsing said text into punctuation and parts of
        speech for extracting text specific attributes;

(b)   storing said text specific attributes in relation
        to the parts of speech to produce an enriched text;

(c)   applying primary folding rules followed by
        secondary folding rules **to said enriched text**,
        applied in order of a folding rule rank thereby
        dividing said text into text segments said folding
        rules having at least **said** punctuation attributes
        and parts of speech attributes as inputs and
        visual attributes as outputs;

(d)   applying secondary folding rules until a limit is
        reached, this limit preferably being the minimum
        line length; and

(e)   wherein the visual attributes include the
      displaying of the text segments in new lines;

(f)   applying text segment horizontal displacement
      rules to said text segments to determine a
      horizontal displacement for each text segment,
      said horizontal displacement rules including parts
      of speech as inputs and visual attributes of
      horizontal displacement as outputs to produce an
      enhanced text; and

(g)   displaying said enhanced text by cascading the
      text segments in lines down and across a display."

"12. A device for enhancing text presentation from a
      machine readable **natural language** text an enhanced
      text presentation based on reader specific
      parameters including at least text viewing field
      dimensions comprising:

(h)   parsing means for parsing said text into
      punctuation and parts of speech for extracting
      text specific attributes;

(i)   storing means for storing said text specific
      attributes in relation to the parts of speech to
      produce an enriched text;

(j)   means for applying primary folding rules followed
      by secondary folding rules **to said enriched text**,
      applied in order of a folding rule rank thereby
      dividing said text into text segments said folding
      rules having at least **said** punctuation attributes

and parts of speech attributes as inputs and
visual attributes as outputs;

(k)   means for applying secondary folding rules until a
       limit is reached, this limit preferably being the
       minimum line length; and

(l)   wherein the visual attributes include the
       displaying of the text segments in new lines;

(m)   means for applying text segment horizontal
       displacement rules to said text segments to
       determine a horizontal displacement for each text
       segment, said horizontal displacement rules
       including parts of speech as inputs and visual
       attributes of horizontal displacement as outputs
       to produce an enhanced text; and

(n)   means for displaying said enhanced text by
       cascading the text segments in lines down and
       across a display."

VI.   In the decision under appeal, the examining division
       reasoned essentially as follows:

(a)   There was no inventive solution to a technical
       problem which went beyond the mere application of
       an algorithm for formatting text. Reference was
       made to document D2 as an example of a method for
       enhancing text presentation having a parser and a
       set of rules which, applied to a machine readable
       text, caused the presentation of the text to
       change according to reader-specific parameters.

(b) The problem of having meaningful text segments was
     known, for example from poetry. The semantic and
     syntactic division of the text was a task done by
     the parser which gave weight to the words
     according to rules previously defined. The skilled
     person had to choose the rules, an obvious choice
     being the rules of grammar. The claimed subject
     matter was therefore no more than a method of
     segmenting a text according to user-defined rules
     and displaying it in a certain format in a manner
     well-known in the art of line breaking algorithms.

VII.   The appellant applicant presented essentially the
       following arguments in support of his request:

(a) The present application addressed the problem of
     enhancing text presentation on a display. This
     problem was solved by dynamically formatting the
     text according to folding rules so that words were
     grouped together in accordance with the syntactic
     structure of the text.

(b) Document D2 was not concerned with the syntactic
     structure of the text to be edited. The words were
     treated as boxes where the only relevant parameter
     was the width of the box.

(c) The method of document D3 required complex
     calculations to generate a tree representation of
     the grammar of a sentence. In contrast, the
     present invention did not require a complete
     analysis of the grammar of a sentence. The folding
     rules simplified the calculation.

Reasons for the Decision

1.   The appeal is admissible.

2.   *Amendments and Clarity (Articles 123(2) and 84 EPC)*

Claim 1 comprises the features of claims 1, 7 to 9, 11,
12 and 16 as filed with the added specification that
the machine readable text is in a natural language (cf
application as filed, page 2, lines 6 to 20; Figures 3
to 9). Independent claim 12 comprises the corresponding
features in terms of a device. Dependent claims 2, 3, 5
to 10 correspond, respectively, to claims 2, 3, 10, 16,
17, 19, 21, and 22 as filed. Claim 4 corresponds to
claims 4 to 6 as filed, claim 11 to claims 23 to 25 as
filed, claim 13 to claim 22 as filed. Claims 14 and 15
are based, respectively, on page 20, lines 30 to 35 and
Figure 6 of the application as filed.

The board is furthermore satisfied that the claims are
clear. The claims therefore meet the requirements of
Articles 123(2) and 84 EPC.

3.   *Invention within the meaning of Article 52(1) and
        (2) EPC*

It follows from the terms used in claim 1 ("machine
readable natural language text", "parsing said text",
"storing said text ... to produce an enriched text",
"displaying ... across a display") that the method
steps are to be implemented on a computer although this
is not explicitly specified in the claim. Therefore the
method of claim 1 meets the criteria set out in

T 258/03 (Auction method/HITACHI OJ EPO 2004, 575) (cf headnote) for being an invention within the meaning of Article 52(1) EPC. This applies *a fortiori* to the subject matter of independent device claim 12.

4.   *Inventive step*

4.1   The present application relates to a method and an apparatus for enhancing the presentation of a text in a natural language on a (computer) display. The problem addressed by the application is that most people, when given the choice, prefer to read a text in print rather than on a conventional computer screen (cf application page 1, lines 32 to 36). The main reason for this is that text presentation on a computer screen is unsatisfactory compared to what is possible on a print medium because of the screen's lower resolution and contrast.

        Starting from a conventional computer system, the technical problem addressed by the present invention thus may be seen in providing a technical tool for enhancing natural language text presentation on a computer display.

4.2   The device according to independent claim 12 solves the above problem by displaying the text in shorter text segments on separate lines according to predefined rules: primary and secondary folding rules determine the division of the text into text segments and horizontal displacement rules determine the amount of horizontal displacement (indent) for each text segment. Since the folding rules, as well as the horizontal displacement rules, have parts of speech attributes as

inputs, the segmenting of the text, in contrast to the
line breaks made by a conventional word-processor, is
determined at least in part by the syntactic structure
of the text.

4.3   The claimed device thus aims at enabling the user to
       read a natural language text faster. Since the act of
       reading a natural language text belongs to the category
       "schemes, rules and methods for performing mental acts"
       (Article 52(2)(c) EPC), which are not to be regarded as
       inventions within the meaning of Article 52(1) EPC, the
       present invention inherently has non-technical aspects.
       The term "non-technical" as used here refers to subject
       matter which relates to things which are not to be
       regarded as inventions within the meaning of
       Article 52(1) EPC.

4.4   Following the principles set out in T 641/00 - 3.5.01
       (*Two identities/COMVIK* OJ EPO 2003, 352), when an
       invention consists of a mixture of technical and non-
       technical features, the non-technical features cannot
       support the presence of inventive step (headnote I).
       For the assessment of inventive step of the present
       claims, it is therefore necessary to investigate
       whether the claimed subject matter contains any "non-
       technical features".

4.5   In T 643/00 - 3.5.01 (Searching image data/CANON
       16 October 2003, not published in OJ EPO), it was held
       that:
       "an arrangement of menu items (or images) on a screen
       may be determined by technical considerations. Such
       considerations may aim at enabling the user to manage a
       technical task, eg. searching and retrieving images

stored in an image processing apparatus, in a more
efficient or faster manner, even if an evaluation by
the user on a mental level is involved. Although such
evaluation *per se* does not fall within the meaning of
"invention" pursuant to Article 52 EPC, the mere fact
that mental activities are involved does not
necessarily qualify subject matter as non-technical
since any technical solutions in the end aim at
providing tools which serve, assist or replace human
activities of different kinds, including mental ones"
(reasons 16).

4.6   It is instructive to compare this decision with
          T 125/04 (Assessment system/COMPARATIVE VISUAL
          ASSESSMENTS 10 May 2005, not published in OJ EPO) also
          decided by Technical Board of Appeal 3.5.01 albeit in a
          different composition. The latter concerned a
          comparative visual assessment system for aiding a user
          in selecting a desired product by representing relevant
          product aspects, such as maintenance expenses or
          quality of engineering, as a string of vectors. The
          horizontal length of a vector was proportional to the
          score attributed to the component, and the angle the
          vector formed with the horizontal indicated the
          importance of the component for the user's choice;
          reasons 2.

4.6.1   Whereas the conclusion was drawn in T 643/00 that an
          arrangement of menu items or images on a screen may be
          determined by technical considerations, it was held in
          T 125/04 that, in general, the task of designing
          diagrams was non-technical, even if the diagrams
          arguably conveyed information in a way which a viewer

may intuitively regard as particularly appealing, lucid
or logical; reasons 4.5.

4.6.2   These somewhat divergent conclusions from the two
        decisions T 643/00 and T 125/04 appear to stem from the
        different assessment of the features relating to the
        arrangement of images and diagrams, respectively. In
        T 643/00 the functions and steps of processing the
        images in a specific format and allowing selection and
        display of an image at higher resolutions were
        considered to provide information to the user in the
        form of a technical tool for an intellectual task he
        had to perform, and therefore contributed to the
        technical solution of the technical problem of an
        efficient search, retrieval and evaluation of images;
        reasons 17. In T 125/04 on the other hand the features
        corresponding to the representation of the respective
        relevant product features as a string of vectors were
        considered to be non-technical on the grounds that only
        the **information** conveyed by the images was relevant.
        These features had to do with **how** this content was
        represented. Thus, unlike the situation in T 643/00, no
        information was provided about the computer system
        itself, such as the location where the data were stored;
        reasons 4.8.

4.6.3   The present board differs at this point from the
        conclusions drawn in T 125/04. Firstly, the board
        concurs with the view expressed in T 643/00 that
        technical aspects cannot be ruled out in the design and
        use of a graphic interface. Furthermore, the board
        finds that a feature which relates to the manner **how**
        the "cognitive content", such as images, is conveyed to
        the user can very well be considered as contributing to

a technical solution to a technical problem. This would in particular be the case when, as the situation was in T 643/00, this particular manner of conveying the information enables the user to perform their task more efficiently; T 643/00, reasons 17.

For these reasons, the board is also unable to subscribe to the *ratio* of T 125/04 which posits that the task of designing diagrams is basically non-technical even when the diagrams convey information in a way which a viewer may regard as particularly lucid and logical.

4.6.4   Hence the board finds it more appropriate to apply the *ratio* of T 643/00 to the present case.

4.7   Applying the above to the present case, the board judges that the means for analysing the text and dividing it into text segments relates to the physical arrangement of the overall image structure of the displayed text with a view to solving a technical problem, namely to improve the text presentation, ie readability, on a display. Therefore, the board concludes that the claimed features, viewed as a whole, do not relate to a non-invention listed in Article 52(2) EPC as such.

4.8   It follows from the above that in the present case the display of the text is also not to be considered as intended to create an aesthetic effect. Hence, the comparison made in the decision under appeal with poetry must fail (cf item VI(b) above). The division of a poem into text segments is dictated by the aesthetic effect it is intended to induce in the reader. Indeed

the poetic device of enjambment is an example of a line
break which deliberately breaks a syntactical unit -
thus hindering readability - for aesthetic effect.
Furthermore, the line breaks and indentations are
inserted by the poet himself and therefore form an
integral part of the artistic creation. The claimed
device on the other hand breaks up the text into lines
without involving the author of the text.

4.9   Document D2 discloses a method for dividing the text of
        a paragraph into lines having approximately equal
        lengths in a word processor for type setting (cf
        summary).

        As pointed out by the appellant, the method of document
        D2 does not address any syntactic structure in the text
        to be divided into lines. The words in the text are
        treated as "sealed and locked" boxes where the content
        of the box is not relevant; the only relevant parameter
        is the width of the box (cf page 1121, penultimate
        paragraph). Since the claimed device applies folding
        rules using parts of speech attributes as input
        (claim 12, item (j); claim 1, item (c)), the division
        of the text in text segments is based on the syntactic
        structure of the text. Therefore, the board agrees with
        the appellant that the skilled person would not get any
        suggestion from document D2 which would lead him
        towards the claimed device.

4.10   A method of parsing and analysing natural language text
        is known from document D3 (cf abstract). The purpose is
        to generate a graphic representation of each sentence
        where all ambiguities of the sentence are represented
        in a single tree structure.

Since document D3 is solely concerned with representing the analysis of the text in a graphical form, the board judges that the skilled person faced with the problem of enhancing the text presentation on a display would not consider this document at all.

4.11   As the board sees it, the present invention both exploits and copes with technical aspects specific to a screen display, viz evanescence and limited viewing window, to provide an enhanced natural language text presentation which would be wildly impractical and indeed practically useless on a permanent print medium because of the volume constraints. For this reason the notorious use of indenting in poetry, inscriptions and posters for aesthetic effect on permanent media fails, in the judgement of the board, to provide a plausible suggestion to the person skilled in the art to implement a systematic syntax-based indentation of a text stream on an evanescent medium with a limited viewing window.

4.12   For the above reasons, in the board's judgement, the subject matter of independent claim 12 involves an inventive step within the meaning of Article 56 EPC.

4.13   Since the method of claim 1 carries out all the apparatus functions of the device of claim 12, the subject matter of claim 1 involves an inventive step for the same reasons.

Order

For these reasons it is decided that:

1.   The decision under appeal is set aside.

2.   The case is remitted to the examining division with the
        order to grant a patent on the basis of

   Claims
        1 to 15 filed during the oral proceedings;

   Description:
   pages 1, 2, 4 to 7 filed with letter of
        23 February 2003;
   pages 3a, 3b filed during the oral proceedings,
   page 3 filed with letter of 19 September 2005,
   pages 8 to 28 as originally filed;

   Drawings:
   Figures 1, 3 to 11 as originally filed,
   Figure 2 filed with letter of 23 February 2003.

Registrar   Chair

C. Eickhoff   R. G. O'Connell