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Bezeichnung der Erfindung: Data entry apparatus with dual-mode tabbing function
Title of invention: selectable from keyboard
Titre de l'invention :

Klassifikation / Classification / Classement : G 06 F 3/153

ENTSCHEIDUNG / DECISION

vom / of / du 31 March 1987

Anmelder / Applicant / Demandeur :

Patentinhaber / Proprietor of the patent /
Titulaire du brevet :

IBM Corporation

Einsprechender / Opponent / Opposant : Nixdorf Computer AG

Stichwort / Headword / Référence :

EPO / EPC / CBE Article 56 EPC

Kennwort / Keyword / Mot clé : "Inventive step"

Leitsatz / Headnote / Sommaire

Europäisches
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European Patent
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Boards of Appeal

Office européen
des brevets
Chambres de recours



Case Number : T 63/84

D E C I S I O N
of the Technical Board of Appeal 3.5.1.
of 31 March 1987

Appellant : International Business Machines Corporation
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Decision under appeal : Decision of Opposition Division of the European Patent Office dated 27 December 1983 revoking European patent No. 009 536 pursuant to Article 102(1) EPC.

Composition of the Board :

Chairman : J.A.H. van Voorthuizen
Member : W. Oettinger
Member : P. Ford

Summary of Facts and Submissions

I. European patent No. 0 009 536 was granted to the Appellant on the European patent application No. 79 102 160.3 filed on 28 June 1979 claiming a priority of 14 August 1978, and the grant was published on 25 November 1981.

The grant was based on 7 claims. The independent claim reads as follows:

"1. Data entry apparatus comprising a keyboard (1) for entering data and commands, a message buffer (80) for containing data entered on said keyboard, display means (2) for displaying data contained within said message buffer, a tab rack (102) for defining tab stop positions and tab key means (10) on said keyboard operable in a first tabbing mode to cause said apparatus to tab to the right to one or more tab stop positions defined by said tab rack, characterised in that said tab key means is operable in a second tabbing mode to cause said apparatus to perform directly a line-advance and tab leftwards operation to the nearest pre-defined tab stop position in the next line of text, without returning to a position to the left of this nearest tab stop position and without movement to tab stop positions to the right of the position at which the tab key means is operated, and in that there is provided keyboard operated selection means for selectively placing said apparatus in said first tabbing mode upon operation of said tab key means for the line by line entry of data or in said second tabbing mode upon operation of said tab key means for the column by column entry of data."

Claims 2 to 7 are dependent claims, all referring back to Claim 1.

II. The Respondent filed a notice of opposition on 25 August 1982 on the ground that the subject-matter of Claim 1 as granted did not involve an inventive step having regard to the prior art.

Reference was made generally to the documents cited in the pre-grant procedure. Specific reference in respect of Claim 1 was - later - only made to one of these documents:

US-A-3 648 245 (D2).

In the notice of opposition, additional reference was made - in respect of Claim 1 - to:

DE-B-1 611 491 (D4);

DE-B-2 333 160 (D5).

After the expiry of the time-limit for opposition, the Opponent referred - in respect of Claim 1 - to:

DE-C-2 301 104 (D6);

US-A-3 501 746 (D8).

The Appellant agreed to their being considered.

III. On 27 December 1983 the Opposition Division revoked the patent on the basic ground that the subject-matter of Claim 1 lacks an inventive step having regard to D2, D4 and D6.

IV. On 29 February 1984 the Appellant gave notice of appeal. The appeal fee was paid on the same date. A Statement of Grounds of Appeal was filed on 3 May 1984.

With the Statement of Grounds, the Appellant offered three "conditional amendments" which, in effect, were based on Claim 2, Claim 6 and a combination of Claims 2 and 7 respectively.

- V. In a response filed on 19 September 1984, the Respondent submitted that the decision under appeal was well-founded, and drew the Board's attention to the following further prior documents:

US-A-4 101 879 (D11);

JP-A-48-41 638 (D12).

- VI. In a communication dated 23 June 1986, the Rapporteur of the Board drew the parties' attention to the fact that the Board might consider in particular D5, but also D4 and D11, allowing its late introduction in the procedure under Article 114(1) EPC, to be - apart from D2 as the starting point - of particular relevance to Claim 1.

In view of Appellant's counter-arguments filed on 31 October 1986, the Rapporteur indicated, in a further communication dated 11 February 1987, that this objection might be considered less compelling as far as D5 was concerned.

- VII. Oral proceedings were held on 31 March 1987.

In the oral proceedings, the Respondent cited the following further document, reference to which is made in D5, in support of his view that the Rapporteur's initial objection based on D5 was well-founded:

DE-C-1 224 962 (D13).

The Board allowed the late introduction of D13 into the procedure under Article 114(1) EPC in view of the apparent

particular relevance of this document, and the Appellant agreed to comment on it on the spot.

D12 was considered not relevant enough to justify its introduction at the late stage of the procedure. The Board therefore disregarded this document under Article 114(2) EPC.

VIII. In the oral proceedings, the Respondent argued essentially as follows:

Claim 1 is only an enumeration of features without functional interconnection. It is therefore admissible to oppose these features individually with separate documents and, as they are found to be known, to draw the conclusion that no inventive step is involved.

More particularly, D13 clearly confirms the opinion that D5 must be interpreted as disclosing (at column 1, lines 56-68 and at column 4, lines 21-26) the entering of data in columns by a limited carriage movement directly to the nearest tab stop leftwards in the next line of the same column. It would be wrong to interpret the function of the "vertical key" ("vertikaltaste"), although it is stated as "not requiring a movement of the carriage", as a pure line advance of a machine having a plurality of print-heads.

For the skilled person it is obvious to apply any functional features known from D13 and/or D5 in connection with mechanical book-keeping or invoicing or similar machines to electronic data apparatus such as text processors.

If there is a difference in the means implementing said functions, this difference does not appear from Claim 1.

According to his reply filed on 19 September 1984 to the appeal, the Respondent is further of the opinion that the claimed invention is obvious having regard to D4 for similar reasons to those applying with respect to D5.

Further, screen segmenting as known from D11 is regarded as an obvious means for a column-by-column data entry as claimed.

Not even by any of the offered conditional amendments would the claimed subject-matter be rendered inventive.

IX. The Appellant's arguments as presented in the oral proceedings, or in the Statement of Grounds of Appeal and the letters filed, may be summarised as follows:

Claim 1 defines clearly, at least in functional terms, the technical features of the invention necessary for solving the technical problem which can clearly be understood from the description (column 1, lines 21-24).

Although it is accepted that persons skilled in electronic data entry apparatus must be regarded as being aware, as far as functions are concerned, of prior art in the field of older mechanical apparatus such as represented by D4, D5 and D13, there is no such prior art suggesting a solution to the particular problem as defined. Even if features are known which would allow data to be entered column by column, these are not of a kind as to allow the data to be entered column by column as conveniently as row by row.

It is not obvious to apply the known functional features of mechanical apparatus in electronic data entry apparatus of the kind known from D2 if these features must first be modified in order to solve the new problem.

It is true that the machine known from D13 has means to allow the carriage of an invoicing or similar machine to perform, within selected columns of a form, e.g. for entering a sub-total or the sum total, a movement similar to that claimed. However, this is not generally the case for all columns defined by "tab" stops as claimed, but only for columns selected by special stops on an additional stop rack.

There is no incentive to provide means which allow to switch from the normal horizontal tabbing to a kind of tabbing which is to the nearest tab stop leftwards in the next line and allows, with a flick of a finger, an equally convenient column-by-column data entry of a list or table by means of the same tab rack, and which can, therefore, briefly be called "vertical tabbing".

If, for instance, in one of the other columns defined by tab stops, but not selected, said means is actuated then the carriage would return beyond the nearest tab stop leftwards to a column, if there is any, which was selected for the afore-mentioned purpose, this purpose not being relevant in data entering as claimed.

Therefore, D13 does not suggest the claimed invention and the same is true of D5, whether taken alone or as seen in the light of D13.

In effect, similar considerations apply to D4.

D11 does not suggest the use of screen segmenting for a column-by-column data entry of lists or tables, and does not suggest any selection between normal horizontal tabbing and "vertical tabbing" as is claimed.

No other document considered appears to be of relevance to the invention.

At least the offered conditional amendments would overcome any obviousness objection the Board might still have.

- X. The Appellant requests that the patent be maintained unamended, or, should the Board decide that Claim 1 cannot be maintained, in an amended form according to conditional amendments Nos. 1, 2, or 3, offered in the Statement of Grounds of Appeal, in that order; this request implying that the decision under appeal be set aside and the opposition rejected.

The Respondent requests that the appeal be rejected.

Reasons for the Decision

1. The appeal complies with Articles 106 to 108 and Rule 64 EPC and is, therefore, admissible.
2. The following matters are considered to be relevant to the determination of the issues raised under Article 56 EPC.
 - 2.1 A definition of features in functional terms is not in principle inadmissible, and in the present case, it is considered to be appropriate. Contrary to the submission of the Respondent, the combination claimed in Claim 1 is not properly to be regarded as an enumeration of unrelated features; their working inter-relationship is clear. In particular, from the claim it is manifest that it is the same tab key and related means responsible, according to

the preamble, for normal tabbing to the right, which is put, by a special keyboard-operated selection means, into a second mode in which the tabbing is to the nearest tab stop leftwards in the next line.

- 2.2 The combination of features thus clearly defined in Claim 1, solves the problem of providing a data entry apparatus in which data can be entered conveniently column by column as well as row by row.
- 2.3 Prior documents D13, D5 and D4 are not a priori irrelevant merely because they concern purely mechanical apparatus, not electronic apparatus as claimed. If they disclosed similar functions as claimed so that the particular problem posed is already solved by the known apparatus, then Claim 1 would be directed only to the application of such known functional features in electronic apparatus and this would have to be regarded as obvious.

The situation is, however, different.

- 2.4 The particular problem to be solved by the invention cannot be derived from D13.

Figure 8 clearly shows that the data is entered in the usual way by horizontal tabbing (mentioned e.g. at column 4, lines 63-67 and column 7, lines 5-10). Only in pre-determined columns (86, 92), prominent by a particularity of the data to be entered in them (in the only embodiment described: prices to be added to a sub-total or sum total), the carriage return - combined, of course, with a line advance - can be interrupted (column 3, lines 24-26) so that the carriage returns only the width of the column (column 3, lines 30-32) as shown in Figure 8 (lines 90, 95, 96, 99).

This limited carriage return within pre-determined columns, initiated by the depression of a special key (5 in Figure 1), is implemented as shown in Figure 2 and described at column 6, lines 52 ff. by special stops (50), 50a) on the carriage defining the said pre-determined columns (cf. Figure 9), and by a stop (40) in the machine brought by the special key (5) into the path of said special stops on the carriage. No such function is possible in the other columns defined by normal tab stops. The position and/or number of said special stops cannot easily be changed during use of the machine, as they are fixed to a bar (49) by screws. It would not therefore be possible to enter column by column the data in Figure 8 in columns other than the pre-determined ones (86, 92); for instance, it would not be possible to enter the data in columns 81, 82 etc. in the order 100, 50, 40, 75, 45, 0.95, 0.40, 0.45, 1.50, 2.40 etc.

Such a possibility can also not be derived from any - more generally formulated - passage in D13. For instance, at column 8, lines 12-14 reference is apparently made only to the fact that the same special key (5) can be used for a limited carriage return in not only one, but for instance, two columns (86 and 92), but - in the absence of any reference to other applications than invoicing where only a row by row entry appears sensible - does not suggest a general column by column entry of all data.

- 2.5 Should, nevertheless, the addressee of D13 gather from it the possibility of providing a limited carriage return within each of the columns defined by tab stops, he would be confined to the teaching to have a corresponding number (e.g. 6 or 7) of special stops invariably mounted on the bar (49) at the correct, pre-determined places.

This is contrary to the claimed invention as the latter uses the normal tab stops for "horizontal" tabbing - **freely settable** to allow choosing the widths of the columns during use of the machine - also for the second, "vertical" tabbing mode.

Moreover, the restriction of the limited carriage return to invariably pre-determined columns appears to make it impossible to replace the said special key (5) of D13 by selection means putting, as in the claimed invention, the normal tab key for "horizontal" tabbing in said second tabbing mode. No incentive to do this can therefore be derived from D13, even if dual mode tab keys as such, for different purposes modes, are known (from D2).

- 2.6 D5 makes reference, at column 1, lines 56 to 68, to D13 and the carriage return limitation known from this document. This reference adds nothing of relevance for the above considerations based on D13 directly.
- 2.7 The further reference in D5 to a "vertical key" must be seen in context.

The entry of data in the multiple column table shown at column 4, lines 31 to 51 is clearly described, at column 4, lines 1 to 18 as being row by row; anything else would, as in D13, not appear sensible for book-keeping or the like machines. Reference is then made, in contrast to this multiple column case, to the special case in which the items are to be entered "only in a single column" (column 4, lines 21 to 22) thus not requiring a movement of the carriage, for instance for printing out the sum total. This special single column entry is said to be achieved by actuating a "vertical key" or the like.

In the absence of any further explanation, this can either (if the reference to no carriage movement is taken literally) be understood as referring to accounting machines having a plurality of print heads (irrelevant to the claimed invention), or as referring to a means which has a function similar to the limited carriage return described in D13 and in D5 and which function is restricted to the particular "single column" mentioned.

Should, contrary to this restriction, the skilled person nevertheless try to apply this to the table at column 4, lines 31-51, he will, at the most, consider applying it to the "amount" column only (corresponding to the case of a single column accounting machine or to the case of one or two price columns as in D13). No reason is seen why he should change the general row by row entry in the table (column 4, lines 31 to 51) as described (column 4, lines 1 to 18) to an unspecified different way of entering the data.

- 2.8 The problem to be solved according to the claimed invention is also not addressed in D4.

Figure 3 clearly shows that the entry is row by row as in D13 and D5 and not column by column. It is only in special configurations of the data (such as in the second and third lines) that data entered in one column are followed, accidentally, by data to be entered in the next line of the same column.

- 2.9 Even given the column by column entry problem, the teaching of D4 would not suggest, or even allow, a solution which dispenses with the multiplicity of individual tab keys for all columns as proposed (column 2, lines 61 to 62).

2.10 D11 is nearer to the claimed invention than the aforecited documents only insofar as it concerns electronic rather than mechanical apparatus. It discloses the raster-like display of characters or symbols (Figure 2) in a predetermined number of character lines and rows on a CRT screen, and a corresponding cursor control. The display may be vertically segmented (Figure 3), the entering of data being line by line within each section, and then section by section. No reference is made to the possibility of using the apparatus for entering columns of a table or list and that in this case each display section should be attributed to one column of the table or list.

The particular problem to be solved is thus not addressed in that document.

2.11 Even if the problem addressed by the invention were considered to be known, D11 would not suggest its solution.

The screen segmenting as described permits a movement of the cursor to the next section only upon completion of movement along the predetermined number of lines in one section. The claimed invention is free from such limitation that would be inconvenient for the entering of tables or lists within a text.

D11 does not clearly state whether a tab rack, tab stops and a tab key play a role in the steering of the cursor from the last bit of data in one section to the first in the next.

What is clear, however, is that it does not suggest using the tab rack, tab stops and tab key, if present, for the purpose of steering the cursor from the last bit of data in one line of a section to the first in the next line of the same section by providing a selection means switching, as in the claimed invention, the same tab key from its normal tabbing mode to a second "vertical" tabbing mode.

- 2.12 Taking into account the points discussed above, it would not seem to be possible to base an obviousness argument against the claimed solution on a combination of several, or all, of the afore-cited prior documents.
- 2.13 The other prior documents introduced in the procedure, D6 and D8, are clearly even less relevant than those dealt with above.
3. For the foregoing reasons, the subject-matter of Claim 1 meets - apart from the other requirements according to Article 52 EPC - also the requirement that it involves an inventive step according to Article 56 EPC. The claim is therefore valid. The validity of the dependent claims follows from that of Claim 1.

Thus, the grounds for opposition mentioned in Article 100(a) EPC do not prejudice the maintenance of the patent unamended and, as a consequence, the decision taken under Article 102(1) EPC by the Opposition Division, is to be set aside and the opposition to be rejected under Article 102(2) EPC.

In the circumstances, the conditional amendments do not have to be considered.

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

1. The decision under appeal is set aside.
2. The opposition is rejected and the patent maintained unamended.

The Registrar:



B A Norman

The Chairman:


A H Van Voorthuizen
PF.