BESCHWERDEKAMMERN DES EUROPÄISCHEN PATENTAMTS

BOARDS OF APPEAL OF THE EUROPEAN PATENT OFFICE

CHAMBRES DE RECOURS DE L'OFFICE EUROPEEN DES BREVETS

Internal distribution code:
(A) [ ] Publication in OJ
(B) [ ] To Chairmen and Members
(C) [X] To Chairmen

D E C I S I O N
of 25 October 2000

Case Number: T 1132/98 - 3.5.2

Application Number: 91118672.4

Publication Number: 0483879

IPC: G11B 20/18

Language of the proceedings: EN

Title of invention:
Optical card reproducing apparatus wherein a data process is made during an access operation

Applicant:
Olympus Optical Co., Ltd.

Opponent:
-

Headword:
-

Relevant legal provisions:
EPC Art. 56

Keyword:
"Inventive step - yes"

Decisions cited:
-

Catchword:
-

Europäisches Patentamt | European Patent Office | Office européen des brevets

Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 1132/98 - 3.5.2

D E C I S I O N
of the Technical Board of Appeal 3.5.2
of 25 October 2000

Appellant: Olympus Optical Co., Ltd.
43-2, 2-chome, Hatagaya
Shibuya-ku
Tokyo 151-0072 (JP)

Representative: Kahler, Kurt, Dipl.-Ing.
Patentanwälte
Kahler, Käck, Fiener et col.
Vorderer Anger 268
D-86899 Landsberg/Lech (DE)

Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 10 July 1998 refusing European patent application No. 91 118 672.4 pursuant to Article 97(1) EPC.**

Composition of the Board:

Chairman: W. J. L. Wheeler
Members: R. G. O'Connell
J. H. P. Willems

Summary of Facts and Submissions

I. This is an appeal from the decision by the examining division to refuse European patent application No. 91 118 672.4 on the ground that the subject-matter of claim 1 filed during oral proceedings on 1 July 1998 did not involve an inventive step having regard to the following prior art documents:

D1: EP-A-0 301 108

D2: GB-A-2 205 423

D3: US-A-4 864 113.

II. In a communication accompanying a summons to oral proceedings as requested by the appellant the board indicated that it was inclined to agree with the appellant on the issue of inventive step but that certain deficiencies in the application still constituted an obstacle to the grant of a patent. Following further exchanges with the rapporteur by phone and e-mail the appellant submitted amended application documents.

III. Claim 1, the single independent apparatus claim, is worded as follows:

"An optical card reproducing apparatus comprising:

a card-like recording medium (1) having a plurality of linear tracks (2) in which are formed respectively a data part (5), in which information can be recorded/reproduced, and ID parts (4A, 4B) in which identifying information is recorded;

an optical head (12) provided with a light beam means (12a) for generating light beams, an optical system (12b, 12c, 12d, 12e, 12f) for condensing said light beams and radiating them to said card-like recording medium (1) and a photodetector (12g) for receiving a light reflected by said card-like recording medium (1) through said optical system;

a first moving means (14, 27, 28, 34) for relatively moving either one of said optical head (12) and said card-like recording medium (1) in a track crossing direction to cross said tracks (2);

a second moving means (13, 25, 26, 35) for relatively moving either one of said optical head (12) and said card-like recording medium (1) in a track direction which is parallel with said tracks (2);

a means (20, 36, 16, 62) for making an error correction process of detecting and correcting errors on information reproduced from said card-like recording medium (1); and

a seek control means for judging whether the track illuminated by said light beam is the target track to be reproduced or not, on the basis of the output signal of said photodetector in case the light reflected by said ID part is received;

wherein from the time when it is judged by said seek control means that the track illuminated by said light beam is said target track and thereafter, the data is reproduced from said data part of said target track during the relative movement by said second moving means in the direction along said target track,

characterized in that,

after reproduction of the data from said target track an error correcting process is made by said means (20, 36, 16, 62) for making an error correcting process, said error correcting operation of the data being effected before said relative movement along the track is stopped."

Claim 8, the single independent method claim, recites steps corresponding to the apparatus features of claim 1.

IV. The appellant argued as follows:

The conclusion of the examining division that the subject-matter of claim 1 did not involve an inventive step because the person skilled in the art, starting from the uncontested closest prior art D1, would find the solution to the problem of selecting the time interval for error correction processing in the prior art document D3, was not well founded. The latter document had not been correctly interpreted by the examining division. In the decision under appeal the examining division stated accurately that D3, cf Figure 7 and associated description, disclosed that data read from the card was transferred from line buffers 101 and 102 to a host computer during the deceleration and acceleration period, ie the time interval from t_{D1} to t_{E1} in Figure 7. The appellant did not, however, agree with the examining division's observation that it was equally evident that the error correction had to be effected before the corrected data could be sent to the host computer. In D3 it was not evident that the error correction was effected between

t_{B1} (end of writing of data from the card into the buffer memories) and t_{A2} (end of deceleration and acceleration period) in Figure 7 of D3. On the contrary it was clear that the data stored in the line buffers had not been subject to any error correction. In D3, column 4, lines 29 to 34, the data item stored in the line buffer was described as follows:

"The content of the data to be stored into the line buffers includes: preamble data to perform the PLL control; a sync mark to search the beginning of the data; recording data; and postamble data to perform the PLL control when the data is read out in the opposite direction."

Since the function of the sync mark was to detect punctuation in one code word, ie the unit consisting of the data body plus error correction code, the fact that the data stored included the sync mark meant that the data had not been subjected to error correction. D3 did not describe any other means in the reader/writer for correcting error. It was therefore reasonable to conclude that the reader/writer did not in fact contain any such means and that the error correction was effected in the host computer. Such an arrangement would be consistent with the problem addressed by D3, as indicated in the abstract, which was to reduce the idle time of the host side.

V. The appellant 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 9 faxed on 5 September 2000;

Description: pages 2 to 6 as originally filed;
pages 1, 7a, 10, 35 und 36 faxed on 5 September 2000;
pages 7, 8, 33, 34, filed 11 August 2000 with the letter dated 8 August 2000;
pages 9, 11 to 32 and 37 to 43 filed 22 November 1996 with the letter dated 18 November 1996;

Drawings: Figures 1 to 4, 6 to 8, 18 to 20, 22, 23 and 24a to 24f as originally filed.

VI. The oral proceedings were cancelled.

Reasons for the Decision

1. The appeal is admissible.

2. Novelty not being in dispute, the main issue to be decided in this appeal is whether the optical card reproducing apparatus according to claim 1, namely a card reader which reads optically encoded error protected data from tracks on a card while it is moved relatively to an optical read head, involves an inventive step, having regard to the prior art known from D1 and D3 in combination.

3.1 Closest prior art, problem and solution

It is not disputed by the appellant, and it is confirmed by the board, that the optical card reader disclosed in Figures 2, 3, 6 and 7 of D1 together with their associated descriptions, has all the features of the prior art portion of claim 1. In the judgement of

the board, it is appropriate to regard D1 as the closest prior art since it is the only prior art document on file which refers to error correction of data read from an optical card. This is in line with the view of the examining division and is also accepted by the appellant. Further the board agrees with the analysis of the examining division that the objective technical problem solved by the reader of claim 1 is to be seen in selecting the time interval for effecting the error correction process before corrected data is sent from the reader to the host computer. The solution taught in the present application and specified in the characterising portion of claim 1 is to effect this operation before the relative movement along the track is completed.

3.2 Inventive step

3.2.1 The board disagrees with the implicit assumption in the decision under appeal that the person skilled in the art, starting from D1, would necessarily focus on the selection of the time interval as an obvious problem and immediately start scouring the literature in search of a solution to this problem. In the judgement of the board, the assumption that the skilled person would do other than regard the error correction as an operation to be slotted in in sequence at the end of the card scan, ie after the card has come to rest, marks the beginning of an ex post facto analysis.

3.2.2 This in turn appears to have led the examining division to read more into the prior art document D3 than is objectively disclosed or suggested. In fact there is neither disclosure nor suggestion in D3 that an error correction takes place in the time interval between t_{D1}

and t_{E1} of Figure 7, ie before relative movement has stopped. As convincingly argued by the appellant, the reference in D3, column 4, lines 29 to 34, to the sync mark being included in the data transferred to the line buffer points rather to the data correction being effected in the host computer. Hence insofar as there is any suggestion derivable from D3 as to the timing of the error correction step it teaches away from the solution of claim 1 of the present application. The assertion at page 4 of the decision under appeal, where the teaching of D3 is discussed, that it is "evident that the error correction has to be effected before the corrected data can be sent to the host computer" amounts, in the view of the board, to reading D3 in the light of the claimed invention. In this connection it is worth emphasising that D3 - as correctly noted at point 2 of the decision under appeal when dealing with novelty - does not mention error correction processing; it deals only with reading and efficient transfer of data to the host computer.

3.2.3 In the judgement of the board therefore, it would not be obvious for the person skilled in the art, starting from the closest prior art D1, and addressing the problem specified at point 3.1 above, to modify the known card reader by means of the features specified in the characterising portion of claim 1.

3.2.4 The board concludes therefore that the subject-matter of claim 1 is to be regarded as involving an inventive step within the meaning of Article 56 EPC, having regard to the prior art represented by D1 and D3. The same applies to the independent method claim 8.

3.2.5 Prior art document D2 was mentioned in the section on

novelty in the decision under appeal but only to confirm that it concerned a (magnetic) disk drive rather than an optical card reader. The examining division did not refer to D2 in connection with inventive step and the board regards it as being too remote from the field of the present invention to require further consideration.

4. In the judgement of the board, the application now meets the requirements of the EPC.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the department of first instance with the order to grant a patent in the following version:

Claims: 1 to 9 faxed on 5 September 2000;

Description: pages 2 to 6 as originally filed;
pages 1, 7a, 10, 35 und 36 faxed on 5 September 2000;
pages 7, 8, 33, 34, filed 11 August 2000 with the letter dated 8 August 2000;
pages 9, 11 to 32 and 37 to 43 filed 22 November 1996 with the letter dated 18 November 1996;

Drawings: Figures 1 to 4, 6 to 8, 18 to 20, 22, 23

and 24a to 24f as originally filed.

The Registrar: The Chairman:

M. Hörnell W. J. L. Wheeler