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D E C I S I O N
of 12 September 2000

Case Number: T 0562/97 - 3.2.5

Application Number: 90308426.7

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Title of invention:
Interlace printing process

Patentee:
Hewlett-Packard Company

Opponent:
Océ-Nederland B.V.

Headword:
-

Relevant legal provisions:
EPC Art. 54, 111(1)

Keyword:
"Novelty (yes)"
"Remittal to the first instance"

Decisions cited:
-

Catchword:
-



Case Number: T 0562/97 - 3.2.5

D E C I S I O N
of the Technical Board of Appeal 3.2.5
of 12 September 2000

Appellant: Océ-Nederland B.V.
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Respondent: Hewlett-Packard Company
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Decision under appeal: Interlocutory decision of the Opposition Division
of the European Patent Office posted 27 March
1997 concerning maintenance of European patent
No. 0 420 399 in amended form.

Composition of the Board:

Chairman: A. Burkhart
Members: P. E. Michel
M. K. S. Aúz Castro

Summary of Facts and Submissions

- I. The appellant (patentee) lodged an appeal against the interlocutory decision of the Opposition Division refusing the main request of the appellant for maintenance of patent No. 0 420 399 as granted but maintaining the patent in amended form according to an auxiliary request of the appellant.

Opposition was filed against the patent as a whole based on Article 100(a) EPC (lack of novelty and inventive step).

The Opposition Division held that whereas the grounds of opposition did not prejudice the maintenance of the patent as amended, the main request of the patentee for maintenance of the patent as granted was not allowable, considering the subject-matter of claim 1 to lack novelty in view of the document

D1: JP-A-60 107 975

Claim 1 of the patent as granted reads as follows:

"A process for using an ink-jet printer to produce high quality printed images on a plurality of pixel locations of a printing medium comprising a sequence for depositing an ink on the pixels of the medium, including:

a first pass of a printhead across a first swath of the printing medium wherein alternate of the pixel locations are printed, as required to produce a desired image, such that those of the pixels which are horizontally and vertically adjacent are not printed on said first pass of the printhead, and such that only

the alternate pixel locations in a top half of said first swath are printed on said first pass;

a second pass of the printhead across said first swath wherein alternate of the pixel locations are printed, as required to produce a desired image, such that those of the pixel locations to be printed on the top half of said first swath which were not printed on said first pass of said printhead are printed on said second pass of said printhead, and wherein alternate of the pixel locations to be printed in a bottom half of said swath are printed such that those of the pixels which are horizontally and vertically adjacent are not printed on said second pass of said printhead;

a third pass of the printhead across said first swath wherein alternate of the pixel locations are printed, as required to produce a desired image, such that the pixel locations to be printed in said first swath not printed on said first pass of said printhead or said second pass of said printhead are printed on said third pass of said printhead, and wherein a first pass on a next succeeding swath is accomplished simultaneously with said third pass of the printhead across said first swath; and

a continuation of passes of said printhead across a plurality of succeeding swaths, repeating the requirements of said first pass, said second pass, and said third pass, until the entirety of said desired image is produced."

II. Oral Proceedings were held before the Board of Appeal on 12 September 2000.

(i) The appellant requested that the decision under appeal be set aside and that the case be remitted to the first instance for further prosecution.

(ii) The respondent (opponent) requested that the appeal be dismissed.

III. The appellant argued essentially as follows:

The cited document D1 is deficient in detail as to which pixels are printed in the second and subsequent passes of the printhead. Whilst the summary of the process disclosed in D1 at paragraph 2.1.1 of the decision of the opposition division is accepted, it cannot be accepted that, in the absence of an explicit disclosure, it can be assumed that, during the second pass of the printing head (B), the lower half of the printing head is printing in a chequerboard fashion. On the contrary, the bottom half could be either empty or fully printed.

The first pass (A) of D1 involves the printing of all the pixels of the upper half of the printing head and thus does not correspond to the first pass as defined in claim 1 of the patent in suit, in which only the alternate pixel locations in the top half of the first swath are printed.

IV. The respondent argued essentially as follows:

The interpretation of the disclosure of D1 by the opposition division is correct. Claim 1 of the patent in suit merely uses different wording from that of D1 in order to describe the same process.

In a possible mode of operation, it would not be possible for the upper half of the printhead to print on the first pass, since it is above the top of the paper. A first pass would thus involve only the lower

half of the printhead.

Reasons for the Decision

1. *Novelty*

- 1.1 Document D1 discloses a process for using an ink jet printer in which the printhead makes a series of overlapping passes across a printing medium as shown in Figure 1. The object of this process is to reduce banding, that is, a series of noticeable bands across the print medium, which may be caused by inaccurate advance of the print medium between passes of the printhead. The document describes two passes (A) and (B). In the first pass (A), the ink jet orifices in the upper half of the printhead print the desired print pattern in full and the ink jet orifices in the lower half of the printhead print a half of the desired pixels. The printed pixels in the lower half may be arranged in a checkerboard pattern (Figure 3). The medium is then advanced by half the height of the printing head and the second pass (B) is made. In the second pass (B), the upper part of the printhead prints the remaining pixels omitted in the lower half of the printhead during the first pass (A).

Document D1 does not, however, explicitly disclose what, if anything, is printed by the ink jet orifices in the lower half of the printhead during the second pass (B).

- 1.2 Claim 1 of the patent in suit requires that, in a first pass of the printhead across a first swath of the printing medium, alternate of the pixel locations are

printed, as required to produce a desired image, such that those of the pixels which are horizontally and vertically adjacent are not printed on said first pass of the printhead, and only the alternate pixel locations in a top half of said first swath are printed on said first pass.

This is not the case in the process disclosed in document D1. As stated above, according to D1, in the first pass, the ink jet orifices in the upper half of the printhead print the desired print pattern in full and the ink jet orifices in the lower half print a half of the desired pixels.

According to the decision of the opposition division, the second pass (B) of the process disclosed in document D1 should be regarded as constituting the first pass of the sequence of passes as defined in claim 1 of the patent in suit. However, in order to satisfy the requirements of the first pass (A), it is necessary that the lower half of the printhead should not print during this pass. If this is the case, it cannot then be subsequently argued that document D1 includes an implicit teaching to print a checkerboard pattern in the lower half of the printing head during passes of the type (B). This interpretation of the disclosure of document D1 thus cannot be followed.

It was further suggested on behalf of the respondent that it is not possible for the upper half of the printhead to print on the first pass, since it is above the top of the paper during the first pass. This cannot be accepted. Document D1 teaches a first pass (A), in which the upper half of the printhead prints in full. There is no suggestion of a first pass involving only

the lower half of the printhead.

- 1.3 Claim 1 of the patent in suit further requires that, in a second pass of the printhead across said first swath wherein alternate of the pixel locations are printed, as required to produce a desired image, in which those of the pixel locations to be printed on the top half of said first swath which were not printed on said first pass of said printhead are printed on said second pass of said printhead, and wherein alternate of the pixel locations to be printed in a bottom half of said swath are printed such that those of the pixels which are horizontally and vertically adjacent are not printed on said second pass of said printhead.

Document D1 also does not include a disclosure of such a pass. As stated above, the first pass (A) of the printhead across the first swath results in a complete printing of the upper half of the swath. There thus does not remain any pixel locations to be printed on the top half of the first swath which were not printed on the first pass of said printhead to be printed on the second pass (B) of the printhead.

On the other hand, it is the case, as illustrated in Figure 3 of document D1, that alternate of the pixel locations to be printed in a bottom half of the first swath are printed such that those of the pixels which are horizontally and vertically adjacent are not printed on said second pass of said printhead.

- 1.4 Claim 1 of the patent in suit also requires that, in a third pass of the printhead across the first swath, alternate of the pixel locations are printed as required to produce a desired image, such that the

pixel locations to be printed in said first swath not printed on said first pass of said printhead or said second pass of said printhead are printed on said third pass of said printhead.

It follows from the above that document D1 also does not disclose such a third pass, since, in the process of document D1, the printing of the first swath is completed in two passes.

As also mentioned above, document D1 does not contain any explicit disclosure of a first pass on a next succeeding swath being accomplished simultaneously with the third pass of the printhead across the first swath. Figures 2 to 4 of document D1 show the first two lines of pixels of the second swath, these being numbered in Figure 2 as B7 and B8. This could be regarded as an indication that the printing of both these lines occurs during pass (B), in view of the fact that the lines in the lower half of the first swath are designated by a letter indicating on which pass they are printed and a number indicating the line of pixels on the printing head (see page 3, lines 17 to 23). On the other hand, a full printing by the lower half of the printing head during pass (B) would render it unnecessary for a subsequent print pass of any sort to overlap with the pass (B) in the manner suggested in Figure 1 as well as in Figures 2 to 4.

In the decision of the opposition division, it is argued that it is implicit in the teaching of document D1 that a first pass, in which alternate of the pixel locations are printed on the upper half of a next succeeding swath, is accomplished simultaneously with the last pass of the printhead across the previous

swath (leaving aside the fact that document D1 does not suggest a third pass over the same swath in any circumstances), in view of the fact that this is the only possibility which will achieve the stated aim of document D1, that is, to reduce banding. However, in the absence of any explicit disclosure as to any activity of the lower half of the printhead during a print pass of type (B), it cannot be assumed that a print pass of type (B) is, in fact, identical to the third pass of the patent in suit. Such an assumption inevitably involves a degree of ex post facto analysis.

It follows that document D1 does not contain any implicit or explicit disclosure of what, if anything, is printed by the lower half of the printhead during a print pass of type (B).

- 1.5 The subject-matter of claim 1 of the patent as granted is thus novel with respect to the disclosure of document D1, since this document does not disclose the sequence of first, second and third passes as defined in claim 1 of the patent in suit. In particular, the first pass as defined in claim 1 is clearly different from the first pass of the process disclosed in document D1. In addition, document D1 does not contain a clear disclosure of a pass having all the features of the second and third passes.

2. *Remittal to the first instance*

The question of whether or not the subject-matter of claim 1 of the patent as granted involves an inventive step was not considered by the opposition division. The Board therefore considers it to be appropriate in these circumstances to remit the case to the opposition

division for further prosecution in accordance with Article 111(1) EPC (second sentence, second alternative).

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the first instance for further prosecution.

The Registrar:

The Chairman:

A. Townend

A. Burkhart