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Datasheet for the decision of 17 September 2009

Case Number: T 1862/07 - 3.2.05

Application Number: 96301499.8

Publication Number: 0730973

IPC: B41J 2/51

Language of the proceedings: EN

Title of invention:
Recording apparatus and method

Patentee:
CANON KABUSHIKI KAISHA

Opponent:
Océ-Technologies B.V.

Headword:
-

Relevant legal provisions:
EPC Art. 56, 123(2)

Relevant legal provisions (EPC 1973):
-

Keyword:
"Subject-matter extending beyond the context of the application as filed (no)"
"Inventive step (yes)"

Decisions cited:
-

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 1862/07 - 3.2.05

D E C I S I O N
of the Technical Board of Appeal 3.2.05
of 17 September 2009

Appellant: (Patent Proprietor)	CANON KABUSHIKI KAISHA 30-2, 3-chome, Shimomaruko Ohta-ku Tokyo (JP)
Representative:	TBK-Patent Bavariaring 4-6 D-80336 München (DE)
Respondent: (Opponent)	Océ-Technologies B.V. St. Urbanusweg 43 NL-5914 CC Venlo (NL)
Representative:	Janssen, Paulus J.P. Océ-Technologies B.V. P.O. Box 101 NL-5900 MA Venlo (NL)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted 6 September 2007 revoking European patent No. 0730973 pursuant to Article 102(1) EPC 1973.**

Composition of the Board:

Chairman: W. Zellhuber
Members: P. Michel
E. Lachacinski

Summary of Facts and Submissions

I. The appellant (patent proprietor) lodged an appeal against the decision of the Opposition Division revoking European Patent No. 0 730 973.

The patent in suit was revoked by the Opposition Division on the grounds of lack of either novelty or inventive step of the independent claims of the main request and first and second auxiliary requests, and that the third auxiliary request, referred to as the fifth auxiliary request, included amendments which do not satisfy the requirements of Article 123(2) EPC.

II. The appellant requested maintenance of the patent on the basis of claims 1 to 10 filed during the oral proceedings.

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

III. The following document is referred to in the present decision:

D1: US-A-4,999,646

IV. Claims 1 and 6 according to the sole request of the appellant read as follows:

"1. A recording apparatus for forming an image on a recording medium as a set of dots by discharging ink of at least one colour from at least one recording head (49), comprising:

image forming means (70) for forming the image on the recording medium by scanning the recording head (49) a plurality of times where said image forming means is arranged to form the image at a boundary region between a first scan and a second adjacent scan of the recording head (49) in two scans and to form the image at a non-boundary region other than the boundary region in a single scan and said image forming means (70) is arranged to divide image data to be formed in the boundary region into two sets of partial image data and not to divide image data to be formed in the non-boundary region, and said image forming means is arranged to form each set of partial image data in a different scan to form the image at the boundary region;

characterized in that:

said image forming means (70) further comprises selecting means for selecting processing patterns for dividing the image data to be formed in the boundary region by thinning the image data on the basis of a density of the image data, the processing patterns each defining an arrangement of partial image data that is different for each processing pattern, and the arrangement of partial image data having an area of thinning,

wherein said selecting means is operative to select the processing patterns on the basis of the density of the image data so that the area of thinning in the processing pattern increases as the density of image data increases."

"6. A recording method for forming an image on a recording medium as a set of dots by discharging ink of at least one colour from at least one recording head (49), comprising:

forming the image on the recording medium by scanning the recording head (49) a plurality of times with image data to be formed in a boundary region between a first scan and a second adjacent scan of the recording head (49) being divided into two sets of partial image data and each set of partial image data being formed in a different scan to form the image at the boundary region; and

forming the image on the recording medium by scanning the recording head (49) one time with image data to be formed in a non-boundary region other than the boundary region, the image data to be formed in a non-boundary region not being divided;

characterized by further comprising selecting processing patterns for dividing the image data to be formed in the boundary region by thinning the image data on the basis of a density of the image data, the processing patterns each defining an arrangement of partial image data that is different for each processing pattern and the arrangement of partial image data having an area of thinning,

wherein the processing patterns are selected on the basis of the density of the image data in said selecting step so that the area of thinning in the processing pattern increases as the density of image data increases."

V. The appellant argued substantially as follows in the written and oral procedure:

The reference to a manual switching circuit at page 10, lines 37 to 43 of the application as filed refers to Figure 24, where it is shown that a selector circuit 103 receives inputs from both the manual switching

circuit 300 and the filter table 101. It is thus not the filter table which is manually switched. Increase in the thinning area as the image density increases is described at page 10, lines 39 to 43, and illustrated in Figures 25A to 25C of the application as filed.

The requirements of Article 123(2) EPC are thus satisfied.

Document D1 does not suggest the provision of selecting means for changing the area of thinning as the density of the image data increases. The terms "boundary region" and "area of thinning" are not synonymous.

The subject-matter of claims 1 and 6 thus involves an inventive step.

VI. The respondent argued substantially as follows in the written and oral procedure:

The application as filed does not disclose an apparatus having selecting means operative to select the processing patterns on the basis of the type of the recording medium so that the area of thinning of the processing pattern is changed as the density of the image data increases. In the eleventh embodiment, described at page 10, lines 3 to 43, selection takes place by manual switching.

The only disclosure in the application as filed of changing the area of thinning is in conjunction with Figure 14 of the drawings, which, as described at page 7, lines 33 to 36, relates to changing the area of

thinning as the spread of the recording medium increases.

The requirements of Article 123(2) EPC are thus not satisfied.

Document D1 discloses at column 6, lines 52 to 57, that the amount of swath overlap may be varied depending upon the type of print media and inks. At column 2, lines 13 to 23, it is noted that excessive volumes of ink per unit area can cause problems. It is thus obvious to the skilled person that the degree of overlap should be varied as the density of the image data increases. Changing the degree of overlap is the same as changing the area of thinning.

The subject-matter of claims 1 and 6 thus does not involve an inventive step.

Reasons for the Decision

1. *Article 123(2) EPC*

The feature of claim 1 of selecting means operative to select the processing patterns on the basis of the density of the image data so that the area of thinning of the processing pattern increases as the density of image data increases is disclosed in the application as filed (published version) at page 10, lines 40 to 43, in connection with the eleventh embodiment, which is illustrated in Figure 24.

The reference to the filter table 101 being manually switched refers to the use of a manual switching circuit 300 which generates a signal 301 for selecting the filter table (page 10, lines 13 to 15). Once selected, the filter table operates to select the processing patterns without manual intervention. Thus, the step of changing the area of thinning is not carried out manually. This is supported by the passage at page 10, lines 31 and 32, which refers to providing a plurality of filters in order to provide a more complex thinning pattern.

It is noted that Figure 24 and the description at page 10, lines 7 to 30, relate to an apparatus in which it is the selection of the nozzles which takes place in accordance with the filter table. The degree of overlap of adjacent swaths, that is, the extent of the boundary region, is not affected.

Whilst Figures 14A to 14C illustrate the area of thinning being changed as the spread of the recording medium increases, Figures 25A to 25C show increasing the area of thinning as the image density increases.

The same applies to the recording method of claim 6, which specifies that "the processing patterns are selected on the basis of the density of the image data in said selecting step so that the area of thinning in the processing pattern increases as the density of image data increases".

The requirements of Article 123(2) EPC are thus satisfied.

2. *Inventive step*

The only document which has been cited in the present proceedings is document D1. This document is largely concerned with a printing process in which adjacent scans overlap by 50%, so that there is no non-boundary region. It is, however, suggested at column 6, lines 52 to 57 that the overlap may be varied from 50% to lesser or greater amounts of overlap depending upon the type of print media and inks and also considering the print speeds and type of media drying system used.

As discussed under point 1 above, according to the patent in suit, it is not the area of overlap of adjacent swaths, in which the image is formed in two scans (boundary region), which is changed, but the area of thinning, which is situated within the area of overlap, as illustrated in Figures 25A to 25C.

Document D1 refers to the problems which result from excessive volumes of ink in conjunction with inadequate drying time at column 2, lines 13 to 23. However, the solution to this problem proposed by document D1 is to form the image in overlapping swaths, as set out in the preamble of claims 1 and 6 of the patent in suit.

Document D1 thus does not suggest a method or apparatus in which the area of thinning of the processing pattern increases as the density of image data increases.

The subject-matter of claims 1 and 6 thus involves an inventive step in accordance with Article 56 EPC.

Order

For these reasons it is decided that:

The decision under appeal is set aside.

The case is remitted to the department of first instance with the order to maintain the patent in amended form in the following version:

- claims 1 to 10 filed during the oral proceedings,

- description
  pages 2, 8, 12, 13 of the patent specification,
  pages 3 to 7, 9 to 11 and 14 filed during the oral proceedings,

- drawings, pages 19 to 50 of the patent specification.

The Registrar: The Chairman:

D. Meyfarth W. Zellhuber