Paper No. 24

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte HAN-SIN KIM

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Appeal No. 2002-1705
Application 09/132,751

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HEARD: March 18, 2003

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Before KRASS, FLEMING, and BARRY, **Administrative Patent Judges.**

FLEMING, **Administrative Patent Judge.**

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 1 through 9, all the claims pending in the instant application.

The invention relates to a method for correcting a vertical

tolerances must be minimized in order to maintain high quality image scanning, since each block is scanned individually to make up the entire image. See pages 2 and 3 of Appellant's specification. To illustrate this problem, a vertical line drawn down through the horizontally arranged blocks of a document original, as shown in figure 2A, is scanned. Due to the above described assembly tolerances, a distorted reproduction such as shown in figure 2B results. Although high-precision manufacturing may be employed to minimize this problem, such tolerances will always exist to some degree. See page 3 of Appellant's specification.

Appellant solves this problem by calculating a set of correction values for a given scanner at the time of manufacture and storing the correction values in a programmable read only memory. The pre-stored correction values are used to correct the image distortion produced by assembly tolerances. See page 4 of Appellant's specification.

Figure 3 is a flow chart of a process for calculating

according to the Appellant's invention. See page 6 of Appellant's specification.

Referencing to figure 3, a vertical line is scanned such as shown in figure 2A. See page 7 of Appellant's specification. The scanned vertical line is compared to the ideal vertical line. A set of shift-correction values are calculated corresponding to the right and left correction shifting needed to correct the scannedline to become the ideal vertical line. See page 8 of the Appellant's specification. A complete set of shift-correction values is stored in the PROM memory device of the manufactured scanner. This is shown as step S33 in figure 3. See page 8 of Appellant's specification.

Referring to figure 5, to correct the vertical alignment error of a document original to be scanned, the block count N is initialized in a step S51, in order to begin the scanning at the first block. Then, in a step S52, scanning and rasterization of the Nth block is performed in the conventional manner. The vertical alignment of each dot of the rasterized block is

reached as determined by S54. See pages 8 and 9 of Appellant's specification.

The independent claims 1 and 5 present in the application are reproduced as follows:

1. A method for correcting vertical alignment error in a shuttle scanner, comprising the steps of:

(a) initializing a block count of a document to be scanned to a value of N;

(b) scanning the Nth block and rasterizing the scanned block into a dot image;

(c) shifting each dot of the dot image formed by the rasterized block according to a set of pre-stored correction values; and

(d) incrementing the block count and performing said steps (b) through (d) until an end of the document being scanned is reached.

5. A method for correcting vertical alignment error in a shuttle scanner, comprising the steps of:

(a) producing a set of correction values for correcting the vertical alignment error;

(b) storing the correction values;

(c) scanning each block of a document to be scanned; and

(d) modifying said each block scanned in accordance with the

Reference

The reference relied on by the Examiner is as follows:

Cullen et al (Cullen) 5,335,290 Aug. 2, 1994

Rejection at Issue

Claims 1 through 9 stand rejected under 35 U.S.C. § 102 as being anticipated by Cullen.

Rather than repeat the arguments of the Appellant or the Examiner, we make reference to the briefs[1] and the answer for the respective details thereof.

OPINION

With full consideration been given to the subject matter on appeal, the Examiner's rejection and the arguments of Appellant and Examiner, for the reasons stated **infra**, we reverse the Examiner's rejection of claims 1 through 9 under 35 U.S.C. § 102.

It is axiomatic that anticipation of a claim under § 102 can be found only if the prior art reference discloses every element of the claim. **See In re King**, 801 F.2d 1324, 1326, 231 USPQ 136, 138 (Fed. Cir. 1986) and **Lindemann Maschinenfabrik GMBH v.**

American Hoist & Derrick Co., 730 F.2d 1452, 1458, 221 USPQ 481, 485 (Fed. Cir. 1984).

Appellant argues that Cullen fails to teach "shifting each dot of the dot image formed by the rasterized block according to a set of pre-stored correction values" as recited in Appellant's claim 1. See page 12 of the appeal brief. Appellant argues that Cullen does not teach "producing a set of correction values for correcting the vertical alignment error" and "modifying said each block scanned in accordance with the stored correction values" as recited in Appellant's claim 5. See pages 17 through 19 of the appeal brief.

The Examiner argues that Cullen does teach shifting each dot of the dot image formed by the rasterized block according to a set of pre-stored correction values as recited in Appellant's claim 1. In particular, the Examiner argues that Cullen teaches that shifting is performed by sorting bit-mapped scan lines within rectangles to merge with other rectangles so that skewing to be corrected. The Examiner points to column 6, lines 35

recited in Appellant's claim 5. In particular, the Examiner argues that Cullen teaches producing a set of correction values for correcting the vertical alignment error. The Examiner points to Cullen's figure 2C, items 201 through 209, and column 6 lines 43 through 58. The Examiner also argues that Cullen teaches modifying said each block scanned in accordance with the stored correction values. The Examiner points to Cullen's figure 2C, items 209 through 211, and column 6, lines 43 through 58. See page 5 of the Examiner's answer.

Appellant responds to the Examiner's argument that Cullen teaches shifting each dot of the dot image formed by the rasterized block according to a set of pre-stored correction values as recited in Appellant's claim 1 on page 6 of the reply brief. In particular, Appellant points out that the portions relied on in Cullen by the Examiner are directed to skew detection, estimation and correction and a description of the advantages of the document segmentation method in terms of improved system memory requirement and higher processing speed.

independent claim 5 on page 14 of the reply brief. In particular, Appellant points out that the citations relied on by the Examiner in Cullen teach reclassification of rectangles after skew correction and do not disclose or suggest the steps recited in Appellant's claim 5.

Upon our careful review of Cullen, we fail to find that Cullen teaches the claimed limitations as recited in Appellant's claims 1 through 9. In particular, we find that Cullen teaches a method and apparatus for segmenting a document image into areas containing text, images and straight lines. See column 2, lines 48 through 49. Furthermore, Cullen teaches that document segmentation is done by providing a bit-mapped representation of the document image, compressing the bit-mapped representation into compressed scanlines, extracting run lengths for each compressed scanline from the bit-mapped representation of the document image, constructing rectangles from the run lengths, initially classifying each of the rectangles as either text, image or as a vertical or horizontal line; detecting and;

segmentation system of the implement embodiment in column 5, line 45, through column 7, line 28. Cullen teaches compression of the bit-mapped representation in column 7, line 29, through column 8, line 50. Cullen teaches run length extraction and classification in column 8, line 51, through column 10, line 41. Cullen teaches rectangular construction and initial classification in column 10, line 42, through column 14, line 51. Cullen teaches skew detection in column 14, line 52, through column 16, line 26. Cullen teaches skew angle correction of the constructed rectangles in column 16, line 28 through column 17, line 46. Finally, Cullen teaches verification of rectangle classification in column 17, line 48 through column 21, line 4.

From a careful reading of Cullen, we find that Cullen is determining skew, correction of skew, classifying and merging. We fail to find that Cullen teaches shifting each dot of a dot image formed by a rasterized block according to a set of pre-stored correction values as recited in Appellant's claims 1 through 4. Furthermore, we fail to find that Cullen teaches

In view of the foregoing, we have not sustained the Examiner's rejection of claims 1 through 9 under 35 U.S.C. § 102 as being anticipated by Cullen.

REVERSED

ERROL A. KRASS Administrative Patent Judge	)	
MICHAEL R. FLEMING Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
LANCE LEONARD BARRY Administrative Patent Judge	)	

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