

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 23

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte GARETH H. LOUDON and YI-MIN WU

Appeal No. 2000-2065
Application No. 08/652,160

ON BRIEF

Before HAIRSTON, FLEMING, and SAADAT, **Administrative Patent Judges.**

FLEMING, **Administrative Patent Judge.**

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 17, 55, 56, 58, 59, 61 and 62. Claims 1-16, 18-54, 57, 63-68 have been canceled.

The invention includes an on-line handwriting recognition system for ideographic characters based on subcharacter hidden Markov models that can recognize cursive and print style

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handwriting. See Appellants' specification, page 5, lines 21-24. The invention includes a handwriting preprocessor (54) which performs the operations shown in steps 350, 352, 354, and 356 of Figure 11. Step 350 receives digitized input and, for printed characters, interpolates between consecutive strokes to create a one stroke version of the printed character. Step 352 smooths the interpolated characters. Step 354 scales all inputted characters and step 356 resamples all characters. See Appellants' specification, page 27, lines 13-19 and Figures 11 and 12.

Independent claim 17 present in the application is reproduced as follows:

17. A method of recognizing a handwritten character comprising:

receiving an input of said handwritten character, wherein said handwritten character is written with multiple strokes;

preprocessing said input to provide a one-stroke written representation of said handwritten character wherein said preprocessing comprises smoothing said points in said input, scaling said points, and resampling said points; and,

recognizing said handwritten character, wherein said recognizing is performed after said preprocessing.

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References

The references relied on by the Examiner are as follows:

Gourdol	5,594,810	Jan. 14, 1997
Poon et al.	5,687,254	Nov. 11, 1997

Yoshida et al. "Online Handwritten Character Recognition for a Personal Computer System." IEEE Transactions on Consumer Electronics, vol. CE-28, no. 3 (August 1982), pp. 202-209.

Rejections at Issue

Claims 17, 55, 56, 58, 59, 61 and 62 stand rejected under 35 U.S.C. § 103 as being unpatentable over Yoshida, Poon and Gourdol.

Rather than repeat the arguments of Appellants or the Examiner, we make reference to the brief¹ and the answer² for the details thereof.

OPINION

We will reverse the rejection of claims 17, 55, 56, 58, 59, 61 and 62.

¹ Appellants filed an Appeal Brief on February 14, 2000. We will refer to the appeal brief as the Brief.

² The Examiner filed an answer on February 29, 2000. We will refer to the answer as the Answer.

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In response to the Examiner's statement that Yoshida teaches that smoothing of points because Yoshida discloses interpolating the inter-stroke gap, Appellants argue that Yoshida does not teach or suggest preprocessing of input wherein the preprocessing comprises smoothing said points in said input, scaling said points, and resampling said points. See Brief, page 11, lines 1-4. Specifically, Appellants argue that Yoshida's interpolation is different from smoothing of points as performed in the claimed invention, because in the claimed invention, interpolation of the input character occurs prior to the smoothing. See Brief, page 10, lines 25-28. The interpolated character is smoothed using a simple triangular filter using conventional techniques well known in the art. See Brief, page 10, lines 28-29.

The question before us is whether the Examiner properly interpreted smoothing of points of the input in the preprocessing stage to include interpolation of points.

Claims will be given their broadest reasonable interpretation consistent with the specification, and limitations appearing in the specification are not to be read into the claims. *In re Etter*, 756 F.2d 852, 858, 225 USPQ 1, 5. "[W]hen interpreting a claim, words of the claim are generally given

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their ordinary and accustomed meaning, unless it appears from the specification or the file history that they were used differently by the inventor." *In re Paulsen*, 30 F.3d 1475, 1480, 31 USPQ2d 1671, 1674 (Fed. Cir. 1994).

In determining the scope of the claims of the present invention, we find that Appellants used the word "smoothing" differently than as used by the Examiner. The Examiner uses the word "smoothing" to include interpolation of the inter-stroke gaps. See Answer, page 4, lines 12-13. It is known that "interpolation" is to estimating a value of a function between two known values. "Smoothing" is known in the prior art as a method of reducing noise in an image and to prepare images for further processing. Smoothing is often accomplished using filters, such as by using a simple triangular filter. See, for example, Appellants' specification page 27, lines 13-14, which discloses that "the interpolated character is smoothed using a simple triangular filter using conventional techniques well known in the art." See also Figure 13 which shows the effect of conducting a smoothing operation of the characters. Smoothing has the effect of rounding the sharp edges. See, for example, the edge formed by points 374b, 374a and 370c, which is rounded

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after smoothing. The interpolation of characters as performed in Yoshida is not smoothing as recited in claim 17, because interpolation is not a method used to reduce noise and does not have a rounding effect. We therefore, cannot sustain the Examiner's position that Yoshida teaches smoothing of the input. Hence, we must reverse the Examiner's rejection of claim 17.

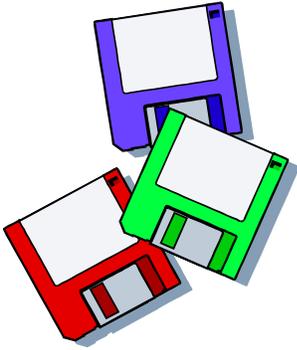
REVERSED

KENNETH W. HAIRSTON)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
MICHAEL R. FLEMING)	APPEALS
Administrative Patent Judge)	AND
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DECISION: REVERSED

Prepared: September 15, 2003

Draft Final

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