

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. 38

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte KINYA OSA

Appeal No. 2002-2064
Application No. 08/902,330

HEARD: May 6, 2003

Before BARRETT, FLEMING, and DIXON, ***Administrative Patent Judges.***
FLEMING, ***Administrative Patent Judge.***

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 1, 3-6, 8-13 and 16, all the claims pending in the instant application. Claims 2, 7, 14, 15 and 17-24 have been canceled.

Invention

The invention relates to a block deformation removing filter. See page 1 of Appellant's specification. Figures 1A and 1B are illustrations showing how to remove the block deformation by way of the prior art's low-pass filter. Figure 1A shows intensity values of decoded image before filtering, while figure

1B after filtering. See page 1 of Appellant's specification. As shown in figure 1B, possible differentials in the intensity level at the block boundary are smoothed by way of the prior art's low-pass filter, thereby taking the straight edge off the intensity value, resulting in a minimized block deformation. However, the process of block deformation removal by way of the prior art's low-pass filter also removes a necessary high frequency signal component of an original image other than the block deformation. Thus, the prior art's low pass filter causes a blurred image. See page 2 of Appellant's specification. Appellant's invention is to solve this problem so as to provide a block deformation removing filter that can not only remove the block deformation without affecting the high frequency signal component in the original image, but also successfully remove even block deformation with very small differential value of the signal in the block boundary. See pages 2 and 3 of Appellant's specification.

Figure 2 is a block diagram showing an embodiment of the block deformation removing filter according to the present invention. See page 5 of Appellant's specification. A block boundary differential detector 1 detects a differential of signal values (e.g., intensity signal levels) at a block boundary in an

image. A threshold value comparator 2 compares the absolute value of the detected differential with a predetermined threshold value, to determine whether the block deformation removing process be performed at the corresponding block boundary. A pattern selector 3 randomly selects a value pattern among several patterns of value to be added to signal values or levels of the two or more pixels in the vicinity of a block boundary on a scanning line crossing the block boundary at right angle. A random number generator 4 generates a pseudo random number which is applied to the pattern selector 3. The pattern selector 3 uses the random number to randomly select a value pattern among several patterns. An adder 5 adds additional values selected by the pattern selector 3 to respective signal values of pixels in the vicinity of the block boundary when the threshold value comparator 2 decides that the block deformation removing process should be performed. See page 6 of Appellant's specification.

Independent claim 1 present in the application is reproduced as follows:

1. A block deformation removing filter comprising:

a detector responsive to pixel signals included in a plurality of pixel blocks forming an image to detect a difference between absolute values of at least two pixel signal intensity levels in the vicinity of a block boundary of the pixel blocks;

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a comparator to compare the difference with a threshold value;

an adder to add value to the pixel signal levels in the vicinity of block boundary in accordance with the result of the comparison;

a generator to generate at least a random number; and

a selector to select a value pattern including said values which are fixed differential values from a plurality of value patterns based on the random numbers.

References

The references relied on by the Examiner are as follows:

Moronaga et al. (Moronaga)	5,229,864	Jul. 20, 1993
Honjo	5,337,088	Aug. 9, 1994

Rejection at Issue

Claims 1, 3-6, 8-13 and 16 stand rejected under 35 U.S.C. § 103 as being unpatentable over Honjo in view of Moronaga.¹

In our opinion, we will make reference to the briefs² and answer.

¹ The Examiner has withdrawn the rejection of claim 16 under 35 U.S.C. § 102 and has now rejected claim 16 under 35 U.S.C. § 103. See page 3 of the Examiner's answer.

² Appellant filed an appeal brief on November 30, 2001. Appellant filed a reply brief on April 8, 2002. The Examiner mailed an office communication on June 17, 2002, stating that the reply brief has been entered and considered.

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OPINION

With full consideration being given to the subject matter on appeal, the Examiner's rejection and arguments of the Appellant and the Examiner, for the reasons stated *infra*, we reverse the Examiner's rejection of claims 1, 3-6, 8-13 and 16 under 35 U.S.C. § 103.

In rejecting claims under 35 U.S.C. § 103, the Examiner bears the initial burden of establishing a *prima facie* case of obviousness. *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). *See also In re Piasecki*, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984). The Examiner can satisfy this burden by showing that some objective teaching in the prior art or knowledge generally available to one of ordinary skill in the art suggests the claimed subject matter. *In re Fine*, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). Only if this initial burden is met does the burden of coming forward with evidence or argument shift to the Appellant. *Oetiker*, 977 F.2d at 1445, 24 USPQ2d at 1444. *See also Piasecki*, 745 F.2d at 1472, 223 USPQ at 788.

An obviousness analysis commences with a review and consideration of all the pertinent evidence and arguments. "In

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reviewing the [E]xaminer's decision on appeal, the Board must necessarily weigh all of the evidence and arguments." *Oetiker*, 977 F.2d at 1445, 24 USPQ2d at 1444. "[T]he Board must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency's conclusion." *In re Lee*, 277 F.3d 1338, 1344, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002). With these principles in mind, we commence review of the pertinent evidence and arguments of Appellant and Examiner.

Appellant argues that neither Honjo nor Moronaga teaches or suggests selecting a value pattern including values from a plurality of value patterns based on a random number as recited in independent claims 1, 6 and 16. See pages 15 and 16 of the brief and pages 5-9 of the reply brief.

We note that independent claim 1 recites "a selector to select a value pattern including said values which are fixed differential values from a plurality of value patterns based on the random numbers." We also note that independent claim 6 recites "selecting a value pattern including said values from a plurality of value patterns based on the random number" and finally, we note that the remaining independent claim 16 recites

"selecting a value pattern including the values from a plurality of value patterns based on the random numbers."

Appellant argues that this claim language must be read in light of the Appellant's specification. Appellant points to page 8, lines 22-26, of the specification which show four patterns. For each pattern, there is a pixel intensity value for pixel position N. Appellant's specification further discloses that a random number is used to select each of these pixel position patterns. Appellant argues that this scheme is analogous to a so-called "table look up" approach, wherein the random number is only used to define one of four positions in the "table" of the value pattern to be used for a particular correction operation. See page 8 of Appellant's reply brief.

We note that the Examiner is relying on Moronaga for the teaching of selecting a value pattern including said values for a plurality of value patterns based upon a random number. See page 4 of the Examiner's answer.

We find that Moronaga teaches the use of a random number to generate random noise. Moronaga teaches that "[t]he coefficient setting section 310 and a random number generating section 312 are connected to the multiplier 304. . . . [T]he random number generating section 312 generates a random number. . . . The

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random number is used as random noise." See column 12, lines 36-41 of Moronaga. However, we fail to find that Moronaga teaches using this random number to select a pixel pattern of pixel intensity values at pixel positions end. Therefore, we find that the combination proposed by the Examiner does not teach all the limitations recited in Appellant's claims.

In view of the foregoing, we have not sustained the Examiner's rejection of claims 1, 3-6, 8-13 and 16 under 35 U.S.C. § 103.

REVERSED

LEE E. BARRETT)	
Administrative Patent Judge)	
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)	
)	
)	BOARD OF PATENT
MICHAEL R. FLEMING)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
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JOSEPH L. DIXON)	
Administrative Patent Judge)	

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