

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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. 19

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MASAASI HAYASHI

Appeal No. 1999-1587
Application 08/601,751

HEARD: MARCH 21, 2001

Before JERRY SMITH, RUGGIERO and LEVY, Administrative Patent Judges.

JERRY SMITH, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal under 35 U.S.C. § 134 from the examiner's rejection of claims 6-9. Claims 1 and 3-5 have been canceled. Claim 2 has been indicated to contain allowable subject matter. An amendment after final rejection was filed on January 21, 1998 but was denied entry by the examiner.

The disclosed invention pertains to a neurofilter and a method of training the neurofilter to operate on image data so as to discriminate between text and picture regions of an image which is expressed by image data.

Representative claims 6 and 9 are reproduced as follows:

6. A neurofilter comprising:

a neural network having weighting coefficients which may be adjusted during a training procedure, said neural network having been subjected to a training procedure for setting said weighting coefficients such as to provide a specific type of filtering of image data or serial data which are sequentially supplied to said neural network,

wherein said neurofilter functions as a separation filter for operating on image data expressing an original image, said neurofilter responding to data of respectively different predetermined types of image region within said original image by producing an output signal at correspondingly different levels,

said neurofilter further comprising

smoothing filter means for executing smoothing processing of said output signal.

9. A filter apparatus comprising a parallel combination of a conventional filter and a neurofilter, having respective inputs thereof coupled in common, and means for combining output data produced from said neurofilter with output data produced from said conventional filter to thereby compensate for errors in said output data from the conventional filter, said neurofilter comprising a neural network having weighting coefficients which may be adjusted during a training

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procedure, said neural network having been subjected to a training procedure for setting said weighting coefficients such that respective output data produced from said neural network in response to sequentially supplied input data substantially correspond to amounts of difference

between actual output data which are produced from said conventional filter in response to said input data and ideal data which are required to be obtained in response to said input data.

The examiner relies on the following references:

Kawai et al. (Kawai)	5,339,365	Aug. 16, 1994
Ikeuchi	5,608,819	Mar. 04, 1997
		(filed May 18, 1994)

Claim 9 stands rejected under 35 U.S.C. § 102(e) as being anticipated by the disclosure of Ikeuchi. Claims 6-8 stand rejected under 35 U.S.C. § 103 as being unpatentable over the teachings of Ikeuchi in view of Kawai.

Rather than repeat the arguments of appellant or the examiner, we make reference to the briefs and the answer for the respective details thereof.

OPINION

We have carefully considered the subject matter on appeal, the rejections advanced by the examiner and the evidence of anticipation and obviousness relied upon by the examiner as support for the rejections. We have, likewise,

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reviewed and taken into consideration, in reaching our decision, the appellant's arguments set forth in the briefs along with the examiner's rationale in support of the rejections and arguments in rebuttal set forth in the examiner's answer.

It is our view, after consideration of the record before us, that the disclosure of Ikeuchi does not fully meet the invention as recited in claim 9. We are also of the view that the evidence relied upon and the level of skill in the particular art would not have suggested to one of ordinary skill in the art the obviousness of the invention as set forth in claims 6-8. Accordingly, we reverse.

We consider first the rejection of claim 9 as being anticipated by the disclosure of Ikeuchi. Anticipation is established only when a single prior art reference discloses, expressly or under the principles of inherency, each and every element of a claimed invention as well as disclosing structure which is capable of performing the recited functional limitations. RCA Corp. v. Applied Digital Data Systems, Inc.,

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730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir.); cert. dismissed, 468 U.S. 1228 (1984); W.L. Gore and Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 1554, 220 USPQ 303, 313 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

The examiner indicates how he reads claim 9 on the disclosure of Ikeuchi [answer, pages 3-4]. Appellant argues that 1) neither pseudo-half-tone processing section 4 nor bi-level

conversion section 6 of Ikeuchi can be considered to be a "conventional filter" as recited in claim 9; 2) neural network 17 of Ikeuchi is not connected in parallel with either processing section 4 or conversion section 6; and 3) the output of neural network 17 in Ikeuchi is not "combined" with the outputs of sections 4 or 6 in data selector 5 as recited in claim 9 [brief, pages 6-11]. The examiner responds that in his view the disclosure of Ikeuchi meets the broadest reasonable interpretation of claim 9 [answer, pages 6-8].

We agree with the position argued by appellant for essentially the reasons set forth in the briefs. Most importantly, we agree with appellant that neural network 17 of

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Ikeuchi is not connected in parallel with either pseudo-halftone processing section 4 or bi-level conversion section 6. As pointed out by appellant, for two electronic devices to be connected in parallel, the devices must be connected to a common point or device at both the inputs and at the outputs of the devices. Neural network 17 of Ikeuchi is not connected in parallel with devices 4 or 6 for reasons explained by appellant in the briefs. We also agree with appellant that the claimed combining of output data from two devices is not met by using one of the outputs to select the other output as is done in Ikeuchi.

Since we have determined that Ikeuchi does not disclose every element of the invention as recited in claim 9, we do not sustain the examiner's rejection of claim 9 based on Ikeuchi.

We now consider the rejection of claims 6-8 under 35 U.S.C. § 103 based on the teachings of Ikeuchi and Kawai. These claims stand or fall together as a single group [brief, page 6] so that we will consider independent claim 6 as the representative claim for this group. In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the examiner to

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establish a factual basis to support the legal conclusion of obviousness. See In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one having ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir.), cert. denied, 488 U.S. 825 (1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); ACS Hosp. Sys., Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the examiner are an essential part of complying with the burden of presenting a prima facie

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case of obviousness. Note *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). If that burden is met, the burden then shifts to the applicant to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. See *Id.*; *In re Hedges*, 783 F.2d 1038, 1039, 228 USPQ 685, 686 (Fed. Cir. 1986); *In re Piasecki*, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984); and *In re Rinehart*, 531 F.2d 1048, 1052, 189 USPQ 143, 147 (CCPA 1976). Only those arguments actually made by appellant have been considered in this decision. Arguments which appellant could have made but chose not to make in the briefs have not been considered [see 37 CFR § 1.192(a)].

With respect to representative, independent claim 6, the examiner finds that Ikeuchi teaches the invention of claim 6 except for the smoothing filter. The examiner cites Kawai as teaching the desirability of smoothing image data, and the examiner finds that it would have been obvious to use a

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smoothing filter as taught by Kawai on Ikeuchi's image data [answer, pages 5-6]. Appellant argues that the data which is smoothed in claim 6 is the multi-level control signal which is output from the neurofilter and not an image signal as in Kawai [brief, pages 12-15].

We agree with appellant that the examiner has not provided a cogent rationale as to why the multi-level control output of a neurofilter as recited in claim 6 should be smoothed as claimed. The examiner's rationale concerns the desirability of smoothing image data, but the data which is output from the neural network 17 in Ikeuchi is not image data, but instead, is bi-level control data. The record before us does not present any motivation for smoothing the bi-level output from neural network 17 of Ikeuchi. Therefore, we do not sustain the rejection of claims 6-8 based on the teachings of Ikeuchi and Kawai.

In conclusion, we have not sustained either of the examiner's rejections of the appealed claims. Therefore, the

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decision of the examiner rejecting claims 6-9 is reversed.

REVERSED

JERRY SMITH)	
Administrative Patent Judge)	
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JOSEPH F. RUGGIERO)	BOARD OF PATENT
Administrative Patent Judge)	APPEALS AND
)	INTERFERENCES
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STUART S. LEVY))
Administrative Patent Judge)	

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