

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 12

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DAVID R. COK

Appeal No. 96-4074
Application 08/387,669¹

ON BRIEF

Before HAIRSTON, FLEMING and CARMICHAEL, Administrative Patent Judges.

FLEMING, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 1 through 10, all of the claims

¹ Application for patent filed February 13, 1995.

pending in the present application.

The invention relates to the field of image processing. In particular, the invention is directed to finding the center of approximately circular patterns in images. Appellant discloses on page 1 of the specification that it is important to determine the center of an approximately circular pattern of an image of a droplet of fluid to be tested. On page 2 of the specification, Appellant discloses the invention is a method and system for determining the best central location in an image by determining a score for each of a set of candidate center locations where the highest score is the most likely center of those in the set of candidates.

The independent claim 1 is reproduced as follows:

1. A method for finding a center of an approximately circular pattern in a physical image, the method comprising the steps of:

scanning the physical image to produce an array of digital values;

applying the array of digital values to a predetermined score calculation;

calculating a score at each of a set of candidate center locations, including a highest score and a lowest score;

determining which one of the set of candidate center locations has the highest score;

selecting as the center of the approximately circular pattern, the candidate center location determined as having the highest score.

The Examiner relies on the following references:

Watanabe et al. (Watanabe)	4,644,583	Feb. 17, 1987
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Matsui et al. (Matsui)	4,790,023	Dec. 6, 1988
Specht et al. (Specht)	4,805,123	Feb. 14, 1989

Claims 1, 4, 7 and 8 stand rejected under 35 U.S.C. § 103 as being unpatentable over Watanabe in view of Matsui. Claims 5, 6, 9 and 10 stand rejected under 35 U.S.C. § 103 as being unpatentable over Watanabe in view of Matsui and further in view of Specht.

Rather than reiterate the arguments of Appellant and the Examiner, reference is made to the brief and answer for the respective details thereof.

OPINION

We will not sustain the rejection of claims 1 through 10 under 35 U.S.C. § 103.

The Examiner has failed to set forth a *prima facie* case. It is the burden of the Examiner to establish why one having ordinary skill in the art would have been led to the claimed invention by the express teachings or suggestions found in the prior art, or by implications contained in such teachings or suggestions. *In re Sernaker*, 702 F.2d 989, 995, 217 USPQ 1, 6 (Fed. Cir. 1983). "Additionally, when determining obviousness, the claimed invention should be considered as a whole; there is no legally recognizable 'heart' of the invention." *Para-Ordnance Mfg. v. SGS Importers Int'l, Inc.*, 73 F.3d 1085, 1087, 37 USPQ2d 1237, 1239 (Fed. Cir. 1995), *cert. denied*, 117 S.Ct. 80 (1996) *citing W. L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1548, 220 USPQ 303, 309 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984).

Appellant argues on page 7 of the brief that Appellant's claims are distinguished over Watanabe in view of Matsui and Specht. Appellant argues that the Appellant's invention addresses the problem of finding the center of symmetry of a gray scale, rather than using the edge locations in the analysis as taught in the prior art. Appellant further argues that Watanabe, Matsui and Specht do not teach that a physical image is scanned to produce an array of digital values, that the array is applied to a predetermined score calculation in which a score is calculated for each set of candidate center locations and that the center is determined by the candidate having the highest score.

On pages 4 and 5 of the answer, the Examiner admits that Watanabe fails to teach the Appellant's claimed steps of calculating a score at each of a set of candidate center locations, determining which one of the set of candidate center locations has the highest score and selecting the center of the approximately circular pattern, the center location determined as having the highest score as recited in Appellant's claim 1. The Examiner then states that Matsui teaches in column 3, line 61, and column 4, line 10, how to calculate the center of gravity based on gray level. The Examiner concludes that it would have been obvious to one of ordinary skill in the art to calculate Matsui's center of gravity for Watanabe's approximate circle. On pages 5 and 6 of the answer, the Examiner then

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further states that "Matsui et al. in view of Watanabe et al. does

not explicitly determine the final center position from multiple candidate center locations of which each is associated with a score as the applicant does." The Examiner then argues that Matsui's center of gravity is inherently associated with a score.

"Inherency and obviousness are distinct concepts." *W. L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1555, 220 USPQ 303, 314 (Fed. Cir. 1983) *citing In re Spormann*, 363 F.2d 444, 448, 150 USPQ 449, 452 (CCPA 1966). Furthermore, "[t]o establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by person of ordinary skill.'" *In re Robertson*, Slip Op 98-1270 (Fed. Cir. February 25, 1999) *citing Continental Can Co v. Monsanto Co.*, 948 F.3d 1264, 1268, 20 U.S.P.Q.2d 1746, 1749 (Fed. Cir. 1991).

"Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result for a give set of circumstances is not sufficient." *Id. citing Continental Can Co v. Monsanto Co.*, 948 F.3d 1264, 1269, 20 U.S.P.Q.2d 1746, 1749 (Fed. Cir. 1991).

Upon a careful review of Matsui, we find that center of gravity is calculated directly by equation (1) and equation (2) which will give the center of gravity, G (i_G, j_G) coordinate. We fail to find that

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Matsui teaches that a physical image is scanned to produce an array of digital values, that the array is applied to a predetermined score calculation in which a score is calculated for each set of candidate center locations and that the center is determined by the candidate having the highest score as recited in Appellant's claims 1 through 10. Furthermore, we fail to find that those skilled in the art would have found that the missing descriptive matter is necessarily present in the thing described in Matsui.

Furthermore, we fail to find any suggestion of modifying Matsui's method of determining the center of gravity to provide a method for finding a center of an approximately circular pattern in a physical image as recited in Appellant's claims. The Federal Circuit states that "[t]he mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." *In re Fritch*, 972 F.2d 1260, 1266 n.14, 23 USPQ2d 1780, 1783-84 n.14 (Fed. Cir. 1992), *citing In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). "Obviousness may not be established using hindsight or in view of the teachings or suggestions of the inventor." *Para-Ordnance Mfg. v. SGS Importers Int'l*, 73 F.3d at 1087, 37 USPQ2d at 1239, *citing W. L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d at 1551, 1553, 220 USPQ at 311, 312-13.

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We have not sustained the rejection of claims 1 through 10 under 35 U.S.C. § 103.

Accordingly, the Examiner's decision is reversed.

REVERSED

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