

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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 17

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SHOJI HARA

Appeal No. 96-1268
Application 08/013,739¹

ON BRIEF

Before BARRETT, FLEMING and TORCZON, *Administrative Patent Judges*.

FLEMING, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 1 through 12, all of the claims pending in the present application at the time of the final action. In an after final amendment, filed October 28, 1994, Appellant canceled claims 1 through 6. In an advisory

¹ Application for patent filed February 4, 1993.

action dated November 15, 1994, the Examiner entered the above amendment. Thus, only claims 7 through 12 are before us for our consideration.

The invention relates to a method for determining the shape and location of an irradiation field on a recording medium when a radiation image is to be read out from the recording medium, on which the radiation image has been recorded.

Claim 7, the only independent claim is reproduced as follows:

7. A method for determining the shape and location of an irradiation field, wherein an image signal, which is made up of a series of image signal components representing a radiation image of an object, is obtained from a recording medium, on which the radiation image has been recorded, contour points, which are considered as being present on a contour of the irradiation field on the recording medium, are detected from image signal components corresponding to positions on the recording medium located along each of a plurality of lines in a respective plurality of radial directions, which lines radiate from a predetermined point located inside of the irradiation field on the recording medium towards edges of the recording medium, and a resulting region surrounded by line segments connecting the thus detected contour points is detected as the irradiation field,

the method for determining the shape and location of an irradiation field comprising the steps of:

i) carrying out differentiation processing on the image signal components corresponding to positions on the recording medium located along each of the plurality of lines in the plurality of radial directions, differentiated values being thereby obtained from the differentiation processing,

ii) with respect to each of said plurality of lines in the plurality of radial directions, making judgements as to whether or not a differentiated value increases beyond a predetermined value while the differentiation processing is proceeding from an image signal component corresponding to said predetermined point, towards an image signal component corresponding to an edge of the recording medium,

iii) in cases where it has been judged at step ii) that differentiated values increasing beyond

said predetermined value occur with respect to all each of said plurality of lines in the plurality of radial directions,

with respect to each of the plurality of lines in the plurality of radial directions, determining that the region, which extends from a point on the recording medium associated with each of the differentiated values judged to be increasing beyond said predetermined value to the corresponding contour point, is an effective image region,

iv) in cases where it has been judged at step ii that differentiated values increasing beyond said predetermined value occur with respect to at least a predetermined number of lines among the plurality of lines in the plurality of radial directions,

a) making judgments as to whether or not the image signal components corresponding to positions on the recording medium located along each of the plurality of lines in radial directions, for which the differentiated values increasing beyond said predetermined value do not occur, are uniform

b) when it has been judged at step iv) a) that the image signal components are uniform, with respect to each of the plurality of lines in radial directions, for which the differentiated values increasing beyond said predetermined value occur, determining that the region, which extends from a point on the recording medium associated with each of the differentiated values judged to be increasing beyond said predetermined value to the corresponding contour point, is an effective image region, and

v) determining that said effective image region is the irradiation field.

The Examiner relies on the following references:

Shimura	4,967,079	Oct. 30, 1990
Funahashi	4,977,504	Dec. 11, 1990

Claims 7 through 12 stand rejected under 35 U.S.C. § 103 as being unpatentable over Shimura and Funahashi.

Rather than reiterate the arguments of Appellant and the Examiner, reference is made to the briefs² and answers³ for the respective details thereof.

OPINION

We will not sustain the rejection of claims 7 through 12 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), *citing W. L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1548, 220 USPQ 303, 309 (Fed. Cir.

²Appellant filed an appeal brief on February 24, 1995. We will refer to this appeal brief as simply the brief. Appellants filed a reply appeal brief on July 31, 1995. We will refer to this reply appeal brief as the reply brief. The Examiner responded the reply brief in a supplement Examiner's answer mailed October 16, 1995, thereby, entering the reply brief.

³The Examiner responded to the brief with an Examiner's answer, mailed May 31, 1995. We will refer to the Examiner's answer as simply the answer. The Examiner responded to the reply brief with a supplemental Examiner's answer mailed October 16, 1995. We will refer to the supplemental Examiner's answer as simply the supplemental answer.

1983).

Appellant argues in the brief that Shimura and Funahashi, together or individually, fail to teach or suggest the method steps iv and v as recited in Appellant's claim 7. On page 5 of the answer, the Examiner agrees that Shimura is silent to a specific teaching of the method step iv as recited in Appellant's claim 7. However, the Examiner argues on page 6 of the answer that Shimura teaches in Figure 4a and column 3, line 66, through column 4, line 10, that the portion corresponding to the sheet edge has a substantially lower image signal level than the irradiation field B.

In the reply brief, the Appellant argues that the Examiner has incorrectly interpreted Shimura. The Appellant points out that Figure 4a only shows that the graph stops at the sheet edge, but does not teach that the sheet edge has a substantially lower image signal level than the irradiation field B. On page 4 of the supplemental answer, the Examiner responds by stating that Shimura teaches in column 3, line 66, through column 4, line 10 and in Figure 4a that the portion corresponding to the region between the irradiation field B and the edge of the recording medium has a substantially lower image signal level than the irradiation field B itself.

Upon a careful review of Shimura, we find that the reference fails to teach the Appellants' recited method steps iv as recited in Appellant's claim 7. In column 3, lines 9-12, Shimura teaches that the object of their invention is to provide a method of recognizing an irradiation field even though it is irregular in shape. In column 3, lines 58-60, Shimura teaches that the prospective edge

points may be detected by differentiation processing of digitized image signals. In column 3, line 66, through column 4, line 10, Shimura teaches that the quantum level of the image data for the region outside the irradiation field is generally low, while the quantum level of the image data for the region inside the irradiation field is generally high. Shimura then teaches that the edge points are detected by determining when the difference values between the image signals at a portion becomes substantially larger than the difference values at the other portions.

In column 7, line 19, through column 8, line 41, Shimura illustrates this method by referring to Figures 2, 3 and 4a and b. In column 7, lines 19-24, Shimura teaches that Figure 2 shows an irradiation field B on a phosphor sheet 103. In column 7, lines 58-67, Shimura teaches that differentiation processing is done in the directions D1 to Dn which are radially outward toward the outer edge of the phosphor sheet 103 from the center O of the phosphor sheet 103. In column 8, lines 5-54, Shimura teaches that the prospective edge points are determined when the difference exceeds a predetermined threshold value. In particular, Shimura teaches that since the level of the image signals for the region inside the irradiation field B is markedly higher than the level of the image signals for the region outside the field B, the values of the preliminary read-out image signals Sp in a given direction Di distribute as shown in Figure 4a and accordingly, the edge point of the irradiation field as shown in Figure 4b. We do not find that Shimura teaches the method step iv as recited in Appellant's claim 7 or that Shimura is concerned with the problem of determining the location of a radiation blocking plate when the plate is placed at the periphery of the radiation image.

Appeal No. 96-1268
Application 08/013,739

Therefore, we fail to find that the references teach or suggest the method steps iv as recited in Appellant's claim 7. Furthermore, we note that the other claims have this limitation because of their dependency upon claim 7. We are not inclined to dispense with proof by evidence when the proposition at issue is not supported by a teaching in a prior art reference or common knowledge of unquestionable demonstration. Our reviewing court requires this evidence in order to establish a *prima facie* case. *In re Knapp-Monarch Co.*, 296 F.2d 230, 232, 132 USPQ 6, 8 (CCPA 1961); *In re Cofer*, 354 F.2d 664, 668, 148 USPQ 268, 271-72 (CCPA 1966).

We have not sustained the rejection of claims 7 through 12 under 35 U.S.C. § 103. Accordingly, the Examiner's decision is reversed.

REVERSED

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

Appeal No. 96-1268
Application 08/013,739

SUGHRUE, MION, ZINN, MACPEAK
and SEAS
2100 PENNSYLVANIA AVENUE, N.W.
WASHINGTON, DC 20037