

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

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SAARA MARJATTA SOFIA TOTTERMAN,
JOSE TAMEZ-PENA, EDWARD ASHTON,
And KEVIN J. PARKER

Appeal 2006-2514
Application 10/233,562
Technology Center 2600

Decided: March 6, 2007

Before KENNETH W. HAIRSTON, HOWARD B. BLANKENSHIP, and
ROBERT E. NAPPI, *Administrative Patent Judges*.

HAIRSTON, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants' appeal is under 35 U.S.C. § 134 from the final rejection of claims 1 to 24. We have jurisdiction under 35 U.S.C. § 6(b).

Appellants have invented a method and system for assessing a neurological condition of a patient. At least one three-dimensional image of a region of interest of the nervous system of the patient is taken, and at least one biomarker is identified in the at least one three-dimensional image. At least one quantitative measurement and at least one identification of the at least one biomarker are derived. The identification and the quantitative measurement of the at least one biomarker are stored in a storage medium.

Claim 1 is representative of the claims on appeal, and it reads as follows:

1. A method for assessing a neurological condition of a patient, the method comprising:

(a) taking at least one three-dimensional image of a region of interest of the patient, the region of interest comprising part of the nervous system of the patient;

(b) identifying, in the at least one three-dimensional image, at least one biomarker of the nervous system of the patient;

(c) deriving at least one quantitative measurement of the at least one biomarker; and

(d) storing an identification of the at least one biomarker and the at least one quantitative measurement in a storage medium.

The Examiner rejected claims 1 to 24 under 35 U.S.C. § 103(a).

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Kennedy	US 4,961,425	Oct. 9, 1990
Gilhuijs	US 6,112,112	Aug. 29, 2000
Front	US 6,368,331	Apr. 9, 2002

Appellants contend that one of ordinary skill in the art would not have found the motivation to combine the applied references to achieve the presently claimed invention because Gilhuijs is concerned with breast tumors whereas Kennedy is concerned with the brain (Br. 4-6).

We affirm.

ISSUE

Have the Appellants shown that the skilled artisan would not have combined the teachings of the applied references to arrive at the claimed subject matter?

FINDINGS OF FACT

Appellants' invention takes a three-dimensional image of an organ (e.g., the brain or nervous system), and identifies at least one biomarker (Fig. 1). A quantitative measurement is made of the biomarker, and the results are stored in a storage medium (Figs. 1 and 4).

In an appeal of Appellants' related application Serial Number 10/241,763 (Appeal Number 2005-2414), the Board found the following facts about the teachings of Gilhuijs in a decision dated October 27, 2005:

Notwithstanding the examiner's mixing of volume and surface, we find that the examiner's findings of fact (answer, pages 3 and 4) also points out tumor extent/shape (column 1, lines 14 through 16) as a biomarker. Gilhuijs derives "at least one quantitative measurement of the at least one biomarker" by "quantification of the tumor surface" (column 6, lines 61 through 64). We additionally find that the "radius" is also a quantitative measurement of the extent/shape tumor biomarker and is also a quantitative measurement of the malignant lesion with a

necrotic core biomarker (column 6, lines 19 through 36).

Gilhuijs uses statistical segmentation in the analysis of a breast tumor (Col. 4, ll. 31 through 34).

Although Gilhuijs describes a breast tumor, Kennedy takes a three-dimensional image of the brain to locate a biomarker (e.g., a brain lesion or tumor, brain white matter and the shape of the tumor or lesion) (Col. 3, l. 25 through Col. 4, l. 9). Kennedy derives at least one quantitative measurement (i.e., volumetric measurements of tumor size) of the at least one biomarker (Col. 2, ll. 3 through 52), and stores the results of the measurement along with an identification of the biomarker (Col. 4, l. 63 through Col. 5, l. 18 and Col. 9, ll. 15 through 35). Kennedy uses motion tracking and estimation during the measurement of tumor expansion (Col. 4, ll. 3 through 9). A histogram is used by Kennedy to model or display three-dimensional images taken over time of a region of interest (Col. 2, l. 56 through Col. 3, l. 6; Col. 5, l. 51 through Col. 6, l. 4).

Gilhuijs and Kennedy are applied together in the obviousness rejection of claims 1 to 8, 10 to 18 and 20 to 24. Gilhuijs, Kennedy and Front are applied together in the obviousness rejection of claims 9 and 19.

As indicated *supra*, Appellants contend that the skilled artisan would not have found it obvious to combine the teachings of the references because they scan two different parts of the human body.

PRINCIPLES OF LAW

“In reviewing the [E]xaminer’s decision on appeal, the Board must necessarily weigh all of the evidence and argument.” *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

In sustaining a multiple reference rejection under 35 U.S.C. § 103(a), the Board may rely on one reference alone without designating it as a new ground of rejection. *In re Bush*, 296 F.2d 491, 496, 131 USPQ 263, 266-67 (CCPA 1961); *In re Boyer*, 363 F.2d 455, 458 n.2, 150 USPQ 441, 444 n.2 (CCPA 1966).

ANALYSIS

As our findings *supra* indicate, the limitations of claims 1, 2, 4, 6 to 8, 10 to 13, 15, 17, 18, 20, 21 and 23 read directly on the brain and neurological analysis teachings of Kennedy. The breast analysis teachings of Gilhuijs are merely cumulative to teachings already present in Kennedy.

With respect to claims 3, 5, 14 and 16, we hold that the skilled artisan would have used the statistical segmentation teachings of Gilhuijs to aid in the identification of a tumor in surrounding tissue in Kennedy.

To the extent that Appellants' disclosed and claimed biomarker comprises a "higher-order measurement" as set forth in claims 22 and 24, we hold that Kennedy's biomarker is likewise a "higher-order measurement."

Turning lastly to claims 9 and 19, Appellants have not presented any patentability arguments for these claims apart from the arguments presented for the independent claims on appeal.

CONCLUSION OF LAW

The obviousness rejection of claims 1, 2, 4, 6 to 8, 10 to 13, 15, 17, 18, 20, 21 and 23 is sustained based on the teachings of Kennedy. The obviousness rejections of claims 3, 5, 9, 14, 16, 19, 22 and 24 are sustained based upon the teachings and suggestions of the applied references.

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DECISION

The Examiner's rejection of claims 1 to 24 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a)(1)(iv).

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AFFIRMED

KWH

ELD

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