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465 Columbus Avenue
Suite 340
Valhalla, NY 10595

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marianne.fox@philips.com
debbie.henn@philips.com
patti.demichele@Philips.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MAYA ELLA BARLEY and JOACHIM KAHLERT[1]

Appeal 2014-005514
Application 13/130,395
Technology Center 3700

Before DONALD E. ADAMS, JEFFREY N. FREDMAN, and JACQUELINE T. HARLOW, *Administrative Patent Judges*.

PER CURIAM

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134(a) involving claims to a cardiac imaging apparatus. The claims are rejected as anticipated and obvious. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

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[1] According to Appellants, the Real Party in Interest is Koninklijke Philips Electronics N.V. (App. Br. 3).

STATEMENT OF THE CASE

The Specification describes an apparatus that purports to improve cardiac imaging "such that conclusions about regions of the heart having an abnormal behavior can be made more accurate and more optimal" (Spec. 1:18–21).

Claims 1–10 and 12–14[2] are on appeal. Claim 1 is illustrative and reads as follows (emphasis added):

> 1. An imaging apparatus for imaging a heart, wherein the imaging apparatus comprises:
>
> a property type providing unit (56; 91) for providing property types of the heart (2) at different locations of the heart (2);
>
> a first site determination unit (57; 92) for determining a first site (70, 71, 74, 75) of the heart (2), wherein the first site (70, 71, 74, 75) comprises a first property type of the provided property types;
>
> a second site determination unit (58; 93) for determining a second site (72, 73) of the heart (2), wherein the second site (72, 73) comprises a second property type of the provided property types and *wherein the second site (72, 73) has a known causal relation to the first site (70, 71, 74, 75)*; and
>
> a display unit (61) for displaying the first site (70, 71, 74, 75) and the second site (72, 73).

[2] We note that while claim 11 is included in the list of rejected claims on the Final Rejection and Advisory Action summary sheets, claim 11 is not rejected in the body of the action (*see* Ans. 2–6; Final Act. 2–7).

The claims stand rejected as follows:

I. Claims 1–5 and 12–14 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Panescu.[3]

II. Claims 6–10 stand rejected under 35 U.S.C. § 103(a) as being obvious based on Panescu and Lemery.[4]

I.

The Examiner has rejected claims 1–5 and 12–14 under 35 U.S.C. § 102(b) as being anticipated by Panescu.

Findings of Fact

FF 1. Panescu discloses

> Systems and methods [that] examine heart tissue morphology using three or more spaced apart electrodes, at least two of which are located within the heart in contact with endocardial tissue. The systems and methods transmit electrical current through a region of heart tissue lying between selected pairs of the electrodes, at least one of the electrodes in each pair being located within the heart. The systems and methods derive the electrical characteristic of tissue lying between the electrode pairs based, at least in part, upon sensing tissue impedances. The systems and methods arrange the derived tissue electrical characteristics into groups of equal electrical characteristics. The systems and methods display the groups of equal electrical characteristics in spatial relation to the location of the examined tissue regions. The systems and methods make possible the use of multiple endocardial electrodes for taking multiple measurements of the electrical characteristics of heart tissue. Multiplexing can be used to facilitate data processing[.] The systems and methods also make possible the identification of

[3] Panescu et al., US 5,494,042, issued Feb. 27, 1996.

[4] Lemery et al., *Feasibility study of endocardial mapping of ganglionated plexuses during catheter ablation of atrial fibrillation*, 3 HEART RHYTHM 387–396 (2006).

> regions of low relative electrical characteristics, indicative of infarcted tissue, without invasive surgical techniques.

(Panescu Abstract; *see also* Ans. 2–3.)

FF 2. Panescu discloses that "[c]onventional cardiac tissue mapping techniques use multiple electrodes positioned in contact with epicardial heart tissue to obtain multiple electrograms. Digital signal processing algorithms convert the electrogram morphologies into isochronal displays, which depict the propagation of electrical impulses in heart tissue over time" (Panescu 1:21–27; *see also* Ans. 2–3).

FF 3. Panescu discloses

> This electrical characteristic (called the "E-Characteristic") can be directly correlated to tissue morphology. A low relative E-Characteristic indicates infarcted heart tissue, while a high relative E-Characteristic indicates healthy heart tissue. Intermediate E-Characteristic values indicate the border of ischemic tissue between infarcted and healthy tissue.
>
> The systems and methods make possible the differentiation of regions of low relative E-Characteristic from regions of high relative E-Characteristic, without invasive surgical techniques.
>
> The systems and methods that embody the invention arrange the derived tissue E-Characteristics into groups of equal E-Characteristics. The systems and methods display the groups of equal E-Characteristics in spatial relation to the location of the examined tissue regions.
>
> This aspect of the invention make possible the creation of heart tissue maps showing regions of iso-E-Characteristics. This capability enhances the likelihood of successfully identifying foci for ablation.

(Panescu 2:4–23; *see also* Ans. 2–3.)

FF 4. Panescu discloses that

> the systems and methods create a display in three dimensions showing groups of equal electrical characteristics in spatial relation to the location of the electrodes on the structure. The systems and methods create this display by computing the location of the electrodes on the structure in a three dimensional coordinate system.

(Panescu 2:45–51; *see also* Ans. 2–3.)

FF 5. Panescu discloses

> To speed up data processing, each processor **238** includes a static RAM block **240**. The data is processed real-time and stored in the blocks **240**.
>
> The signal processors **238** include various means for processing the electrogram signals as follows:
>
> (i) to detect the earliest depolarization event;
>
> (ii) to construct from the electrogram signals iso-chronal or iso-delay maps of the depolarization wavefronts, depending upon how the electrograms are obtained, which can be presented on the display device **246** for viewing by the physician; and
>
> (iii) to construct from the electrogram signals iso-conduction maps, which can also be presented on the display device **246** for viewing by the physician.
>
> The CPU **206** employs additional means for processing the electrogram signals and the E-Characteristic signals as follows:
>
> (iv) to match the iso-conduction maps with the iso-E-Characteristic maps, which can be presented on the display device **246** for viewing by the physician; and
>
> (v) based upon the matched output of (iv), to identify a potential ablation site.

(Panescu 15:17–40; *see also* Ans. 2–3.)

FF 6. The Specification teaches

> The first site and the second site are preferentially causally related if the property type of at least one of the first site and the second site causes or promotes the property type of the other of the first site and the second site. It is further preferred that the term "causal relation" relates to the pathophysiological relationship between the first property type of the first site and the second property type of the second site. In particular, the first site and the second site are causally related, if one of the first site and the second site comprises an anatomical property type that could also be regarded as an anatomical feature – which may be found in the healthy human heart (such as a ganglionated plexus) or may be disease-created (such as an area of myocardial infarct) – and if the other of the first site and the second site comprises an electrical property type that could also be regarded as electrical behavior, which is caused or promoted by the anatomical property type (for example ectopic foci or fractionated electrograms that are the electrical triggers or substrate of cardiac arrhythmia).

(Spec. 2:12–24.)

Analysis

We adopt the Examiner's findings of fact and reasoning regarding the scope and content of the prior art (Ans. 2–7; FF 1–6), and agree that the claims are anticipated by Panescu. We address Appellants' arguments below.

Appellants contend that Panescu fails to teach that the second site "has a known causal relation to the first site" as required by the claims on appeal (App. Br. 14). In particular, Appellants contend that Panescu lacks description of any causal relationship between tissue regions having either the same E-Characteristics or different E-Characteristics, and further, that

Panescu does not teach the cause of any particular tissue region's E-Characteristics (App. Br. 14–15; *see also* Reply Br. 9–11).

We are not persuaded. The Specification does not define "causal relation" but teaches that "[t]he first site and the second site are preferentially causally related if the property type of at least one of the first site and the second site causes or promotes the property type of the other of the first site and the second site," and that "[i]t is further preferred that the term 'causal relation' relates to the pathophysiological relationship between the first property type of the first site and the second property type of the second site" (FF 6). The Specification goes on to state that

> the first site and the second site are causally related, if one of the first site and the second site *comprises an anatomical property type that could also be regarded as an anatomical* feature – which may be found in the healthy human heart (such as a ganglionated plexus) or may be disease-created (such as an area of myocardial infarct) – and if the other of the first site and the second site comprises *an electrical property type that could also be regarded as electrical behavior*, which is caused or promoted by the anatomical property type (for example ectopic foci or fractionated electrograms that are the electrical triggers or substrate of cardiac arrhythmia).

(FF 6 (emphasis added)).

Panescu teaches that "[t]he systems and methods arrange the derived tissue electrical characteristics into groups of equal electrical characteristics" and that "[t]he systems and methods also make possible the identification of regions of low relative electrical characteristics, indicative of infarcted tissue" (FF 1). Panescu further teaches:

> This electrical characteristic (called the "E-Characteristic") can be directly correlated to tissue morphology. A low relative E-Characteristic indicates infarcted heart tissue, while a high relative E-Characteristic indicates healthy heart

> tissue. Intermediate E-Characteristic values indicate the border of ischemic tissue between infarcted and healthy tissue.
>
> * * *
>
> This aspect of the invention make[s] possible the creation of heart tissue maps showing regions of iso-E-Characteristics. This capability enhances the likelihood of successfully identifying foci for ablation.

(FF 3.) Because Panescu teaches grouping of electrical characteristics based regions in the heart or tissue morphology that are indicative of infarcted tissue, Panescu necessarily teaches one site having a "known causal relation" with another site.

> Where, as here, the claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product. ... Whether the rejection is based on "inherency" under 35 U.S.C. § 102, on "prima facie obviousness" under 35 U.S.C. § 103, jointly or alternatively, the burden of proof is the same, and its fairness is evidenced by the PTO's inability to manufacture products or to obtain and compare prior art products.

In re Best, 562 F.2d 1252, 1255 (CCPA 1977).

Accordingly, we agree with the Examiner that as regions of cardiac tissue are linked via a network of cells and mechanisms, such as blood flow and electrical conductivity, the regions are therefore, known to have a causal relationship, or cause and effect, between each other such that Panescu meets this claimed limitation (Ans. 7).

Appellants contend that the fact that a first tissue region is healthy and a second tissue region is unhealthy is actually an indication that these tissues do not have a causal relationship, and that Panescu's E-Characteristics of

regions are without any regard to a particular type of cause or promotion (App. Br. 16).

We do not find these arguments persuasive. We agree instead with the Examiner that Appellants' arguments impermissibly seek to read new limitations into the claims (Ans. 6–7). "[L]imitations are not to be read into the claims from the specification." *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993). *See also In re Self*, 671F.2d1344, 1348 (CCPA 1982) ("[A]ppellant's arguments fail from the outset because ... they are not based on limitations appearing in the claims."). Moreover, we find Appellants' arguments, unsupported by evidence, insufficient to rebut the express teaching of Panescu. "Attorney's argument in a brief cannot take the place of evidence." *In re Pearson*, 494 F.2d 1399, 1405 (CCPA 1974).

Therefore, we affirm the rejection of claims 1 and 12–14. Because the claims are not separately argued, claims 2–5 fall with claim 1. We note that in regard to claims 2–5, Appellants reiterate the language of the claims, and state the Panescu fails to disclose those limitations, without articulating an affirmative arguments (App. Br. 18–19). "A statement which merely points out what a claim recites will not be considered an argument for separate patentability of the claim." 37 C.F.R. § 41.37(c)(iv).

II.

The Examiner has rejected claims 6–10 under 35 U.S.C. § 103(a) as being obvious based on Panescu and Lemery. Appellants present no additional argument based on the teachings of Lemery, and rely on the same arguments addressed above with regard to Panescu (*see* App. Br. 16–17). Therefore, we affirm the rejection of claims 6–10. We note that in regard to

claims 6–10, Appellants merely reiterate the language of the claims (*id.* at 20–22). *See* 37 C.F.R. § 41.37(c)(iv).

SUMMARY

We affirm the rejection of claims 1 and 12–14 under 35 U.S.C. § 102(b) based on Panescu. Claims 2–5 fall with claim 1.

We affirm the rejection of claims 6–10 under 35 U.S.C. § 103(a) based on Panescu and Lemery.

TIME PERIOD FOR RESPONSE

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

AFFIRMED