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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte RAINER NEBOSIS, GEERT WELLENS, and WOLFGANG SCHORRE

Appeal 2017-005369
Application 14/009,371
Technology Center 2800

Before JEFFREY T. SMITH, DONNA M. PRAISS, and JENNIFER R. GUPTA, *Administrative Patent Judges*.

GUPTA, *Administrative Patent Judge*.

DECISION ON APPEAL[1]

Appellants[2] appeal under 35 U.S.C. § 134(a) from the Examiner's final decision rejecting claims 22–32 and 35–45. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

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[1] In this Decision, we refer to the Specification filed October 2, 2013 ("Spec."), the Final Office Action mailed April 12, 2016 ("Final Act."), the Appeal Brief filed September 2, 2016 ("Appeal Br."), the Examiner's Answer mailed December 7, 2016 ("Ans."), and the Reply Brief filed February 6, 2017 ("Reply Br.").

[2] Appellants identify the real party in interest as Agfa Healthcare NV. Appeal Br. 2.

The subject matter of the claims on appeal relates to a system and method for performing optical coherence tomography. Spec. 1, ll. 7–8. Claim 22, reproduced below from the Claims Appendix of the Appeal Brief, with key disputed limitations highlighted in italicized text, is representative of the claims on appeal.

> 22. A method for optical coherence tomography, the method comprising the steps of:
>
> *displaying at least one parameter on a display device, the at least one parameter relating to a property of an object to be examined*, and enabling a user to change and/or to select the at least one parameter displayed on the display device;
>
> acquiring a first image in a region of a first plane of the object in real time using optical coherence tomography equipment;
>
> acquiring a second image in a region of a second plane of the object in real time using the optical coherence tomography equipment, the second plane of the object being different from the first plane of the object;
>
> simultaneously rendering the first image as a real time image and the second image as a still image on the display device when a control command entered by an operator indicates to operate the optical coherence tomography equipment in a first operating mode; and
>
> simultaneously rendering the second image as a real time image and the first image, which has already been acquired previously in real time, as a still image on the display device when the control command entered by the operator indicates to operate the optical coherence tomography equipment in a second operating mode; wherein
>
> during the step of acquiring the first image and/or the step of acquiring the second image, detecting light reflected or backscattered from a certain depth of the object and *adjusting a focal point of a sample objective*, which is located in a sample

> arm of the optical coherence tomography equipment, such that the focal point of the sample objective is located in a region of the certain depth in the object from which the light reflected or backscattered is detected, and *the adjusting the focal point of the sample objective is based on the at least one parameter being changed and/or selected by the user*.

App. Br. 12 (Claims App.).

Claim 37, the other independent claim on appeal, recites "[a] system for performing optical coherence tomography" comprising limitations similar to those highlighted above in reproduced claim 22. *Id.* at 15–16 (Claims App.).

DISCUSSION

The Examiner maintains the rejection of claims 22–32 and 35–45 under pre-AIA 35 U.S.C. § 103(a) as unpatentable over Nariyuki et al. (US 2010/0042084 A1, published February 18, 2010) ("Nariyuki") in view of Dastmalchi et al. (US 2008/0100612 A1, published May 1, 2008) ("Dastmalchi"), and further in view of Nebosis (US 2010/0027020 A1, published February 4, 2010). Ans. 2.

We focus on representative claim 22 in deciding this appeal.

The dispositive issue before us in this appeal is:

Has the Examiner reversibly erred in finding that the combination of Nariyuki, Dastmalchi, and Nebosis taught or would have suggested a method for optical coherence tomography that includes displaying at least one parameter on a display device, "the at least one parameter relating to a property of an object to be examined, and enabling a user to change and/or to select the at least one parameter displayed on the display device," and adjusting a focal point of a sample objective where "the adjusting the focal

point of the sample objective is based on the at least one parameter being changed and/or selected by the user," as recited in claim 22? We answer this question in the affirmative.

Although neither Appellants nor the Examiner expressly interpret claim 22, we begin our analysis with claim construction. During prosecution, the PTO gives the language of the proposed claims "the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in the applicant's specification." *In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997).

Appellants' Specification does not expressly define "at least one parameter relating to a property of an object to be examined," but describes examples of such a parameter as "the moisture content" or "the skin type" of the object to be examined. Spec. 7, l. 27–8, l. 4; *see also* claim 43 ("wherein the at least one parameter relates to a skin type of a skin of the object to be examined.") *and* claim 44 ("wherein the at least one parameter relates to a moisture content of a skin of the object to be examined."). Notably, Appellants' Specification also distinguishes a parameter relating to a *property* of an object to be examined from a parameter relating to a *position* of the object to be examined. Spec. 8, ll. 23–24 ("[a]lternatively or in addition . . . the at least one parameter relates to a position of the first or second plane of the object"); *see also* Spec. 38, ll. 11–26 (describing depth selection and a property of the object to be examined, e.g., characterization of the moisture of the skin of a respective patient, as two different types of parameters displayed on a monitor). Thus, in the context of Appellants'

Specification, the broadest reasonable interpretation of the claim phrase "at least one parameter relating to a property of an object to be examined," is a characteristic or property of the object being examined, and not the position of the object.

The Examiner finds that Nariyuki's paragraph 65 discloses adjusting the imaging depth of the tomographic imaging system according to the characteristics of the inner wall of a blood vessel and Nariyuki's paragraphs 75, 76, 83, 84, and 86 disclose adjusting an axial imaging direction of the tomographic system based on a desired or designated treatment area of the blood vessel or object. Ans. 2. The Examiner finds that "the axial imaging direction and the imaging depth are 'parameters relating to a property of an object.'" Ans. 3. Additionally, the Examiner finds that Nebosis discloses a focus tracking system for adjusting a focal point of a sample objective, and provides a reason for including Nebosis's focus tracking system in Nariyuki's apparatus—"for the advantage of obtaining interference images with maximal sharpness for all of the selected depths and regions of interest within the sample." Final Act. 7–8; Ans. 4; Nebosis ¶¶ 73, 76.

Nariyuki's paragraph 65 discloses obtaining tomographic images at various depths of a sample. Despite the Examiner's finding, paragraph 65 does not disclose adjusting the depth according to characteristics of the blood vessel. Ans. 2; Nariyuki ¶65. Nariyuki's paragraphs 75 and 76 disclose a console controller (71) that displays a menu on a monitor (76) for guiding the operation of a laser treatment apparatus. Nariyuki ¶¶ 75, 76. Nariyuki's paragraphs 83, 84, and 86 disclose displaying a tomographic image (72), a parallel tomographic image (73), and a 3D image (74) on a

monitor, and using reference lines 91a, 91b, and 91c on tomographic image (72), parallel tomographic image (73), and 3D image (74), respectively, to indicate the positional relation or correspondence among the 3 tomographic images (72, 73, 74). Nariyuki ¶¶ 76, 83, 84, 86, Fig. 4. Reference line 91a is rotatable and movable and reference lines 91b and 91c are movable. *Id.* ¶¶ 84, 86.

As Appellants persuasively argue, the Examiner has not adequately explained how either adjusting imaging depth of a sample or adjusting the axial direction of an image as described in Nariyuki's paragraphs 65, 75, 76, 83, 84, and 86 fall within the scope of a "parameter relating to a property of an object," such as moisture content or skin type of an object. Reply Br. 2–4; Appeal Br. 8. Nor has the Examiner established that Nariyuki's paragraphs 65, 75, 76, 83, 84, and 86, alone or in combination with Dastmalchi and/or Nebosis, teach or suggest displaying data regarding the imaging depth or the axial imaging direction, rather than just the images themselves, on the monitor.

Moreover, as Appellants persuasively argue, on this record, the Examiner has not established Narikyuki in combination with Nebosis teaches or suggests adjusting a focal point of a sample objective based on at least one parameter relating to a property of an object to be examined. Reply Br. 5; Appeal Br. 8–10.

As a result, we do not sustain the Examiner's rejection of claims 22–32 and 35–45 as unpatentable of Nariyuki, Dastmalchi, and Nebosis.

DECISION

For the above reasons, the rejection of claims 22–32 and 35–45 is reversed.

REVERSED