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EXAMINER

YANG, WEI WEN

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte DE HE WENG

Appeal 2014-008569
Application 13/097,245¹
Technology Center 2600

Before ROBERT E. NAPPI, NORMAN H. BEAMER, and
SCOTT E. BAIN, *Administrative Patent Judges*.

BAIN, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant appeals under 35 U.S.C. § 134(a) from the Examiner's Final Rejection of claims 1–8, which constitute all claims pending in the application. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

STATEMENT OF THE CASE

Introduction

The claimed invention relates to a magnetic resonance imaging (MRI) method for achieving water-fat separation and reducing the degree of

¹ Appellant identifies Siemens Aktiengesellschaft as the real party in interest. App. Br. 1.

sensitivity to motion. Abstract. Claim 1 is the only independent claim, and reads as follows (with the disputed limitations in italics):

1. A magnetic resonance (MR) imaging method for achieving water-fat separation, the method comprising:

operating an MR data acquisition unit to execute a three-point Dixon technique and *utilizing a BLADE artifact correction track to acquire original data for one in-phase image of said three-point Dixon technique and original data for two out-of-phase images of said three-point Dixon technique;*

in a processor, reconstructing the in-phase image on the basis of said original data of the in-phase image, and utilizing said original data for the in-phase image to perform phase correction on said original data for the out-of-phase images to obtain phase-corrected data, and reconstructing the out-of-phase images from said phase-corrected data; and

in said processor, calculating images of water and fat based on said in-phase image and said out-of-phase images, and making said images of water and fat available from said processor.

App. Br. 14 (Claims App.).

The Rejections on Appeal

Claims 1, 4, and 6–8 stand rejected under pre-AIA 35 U.S.C. § 103(a) as unpatentable over Eggers et al. (WO 2008/135885 A1; publ. Nov. 13, 2008) (“Eggers”), Wang et al. (US 2006/0241381 A1; publ. Oct. 26, 2006), and Ma (US 2010/0195885 A1; publ. Aug. 5, 2010). Final Act. 7–14.

Claim 2, 3, and 5 stand rejected under pre-AIA 35 U.S.C. § 103(a) as unpatentable over Eggers, Wang, Ma, and James G. Pipe, *Motion Correction with PROPELLER MRI: Application to Head Motion and Free-Breathing Cardiac Imaging*, 42 Magn. Reson. Med., 963–69 (1999). Final Act. 14–18.

ANALYSIS

We have reviewed the Examiner's rejections in light of Appellant's arguments presented in this appeal. Arguments which Appellant could have made but did not make in the Briefs are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(iv). On this record, we are not persuaded the Examiner erred. We adopt as our own the findings and reasons set forth in the rejections from which this appeal is taken and in the Examiner's Answer, and highlight the following for emphasis.

Claims 1, 4, and 6–8

Appellant argues the foregoing claims as a group, and chooses claim 1 as representative of the group. App. Br. 12; *see* 37 C.F.R. § 41.37(c)(iv). Appellant argues the Examiner erred in finding the prior art (and specifically, the combination of Eggers with Wang) teaches utilizing a BLADE artifact correction track “to acquire original data for one in-phase image of [a] three-point Dixon technique and original data for two out-of-phase images of [a] three-point Dixon technique,” as recited in claim 1. App. Br. 2–7. Specifically, Appellant argues “[t]he Eggers et al. reference does not disclose the acquisition of MR data using any type of Dixon technique, and thus does not disclose the acquisition of original data . . . in a Dixon technique” as required by the claim. *Id.* at 3. We are not persuaded.

The Examiner relies not on Eggers alone, but on the combination of Eggers *with* Wang as teaching the disputed limitation.² As the Examiner finds, Wang teaches the “Dixon method” is a well-known MRI technique for

² The Ma reference, which the Examiner finds teaches the limitation “making said images of water and fat available from said processor” (Final Act. 11), is not at issue in this appeal (App. Br. 8).

obtaining images of water and fat. Ans. 12–13 (citing Wang ¶¶ 6, 13). A three-point Dixon method, as taught in Wang, involves “acquiring one in-phase image and two opposite-phase images,” as recited in claim 1. Ans. 13; Wang ¶ 6. As the Examiner further finds, Eggers teaches (in the context of operating an MR data acquisition unit, as claimed) “utilizing a BLADE artifact correction track to []acquire/generate original MR data for one in-phase image and original data for two out-of-phase images.” Ans. 12–13 (citing Eggers 3–4).³ Appellant argues (App. Br. 4), the “in-phase” and “out-of-phase” images in Eggers are not the same as those in a three-point Dixon method, but this argument misconstrues the Examiner’s rejection. As the Examiner finds (Ans. 12–13), the *combination* of Wang’s teaching of the three-point Dixon method with Eggers’ MR acquisition unit teaches the disputed limitation. *See In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986) (nonobviousness cannot be established by attacking the references individually when the rejection is predicated upon a combination).

Appellant further argues the Examiner erred in finding a “suggestion or motivation to combin[e]” Eggers and Wang. App. Br. 8–12. Again, we are unpersuaded. The Examiner finds, and Appellant does not dispute, the references are “in the same field of endeavor: [a]cquiring MR signal data of species such as water and fat[,] and reconstruction [of] MR images.” Ans. 15. Moreover, both references address the same problem of correcting for

³ Eggers refers to “PROPELLER” sequence rather than “BLADE,” but Appellant and the Examiner treat the terms as synonymous. App. Br. 3 (“use of a BLADE (or PROPELLER) sequence”); Ans. 12 (“BLADE/PROPELLER techniques”).

error in such images, and both do so at least partly through the use of phase-contrast (comparing in-phase and out-of-phase images). Ans. 12; *see Innovention Toys, LLC v. MGA Entm't, Inc.*, 637 F.3d 1314, 1322–23 (Fed. Cir. 2011) (rationale to combine may be found in references sharing the “same purpose,” “goal,” or “objective”). Indeed, Eggers teaches the BLADE/PROPELLER techniques discussed therein are (like Wang’s method) “advantageous for phase-contrast [image] acquisition[.]” Eggers 4; Ans. 12

For the foregoing reasons, we sustain the rejection of claims 1, 4, and 6–8 under pre-AIA 35 U.S.C. § 103(a) as unpatentable over Eggers, Wang, and Ma.

Claims 2, 3, and 5

Appellant argues claims 2, 3 and 5 are allowable for the same reasons as claim 1, and that Pipe does not cure the deficiencies of the Examiner’s rejection of claim 1. App. Br. 12–13. Because we find no error in the Examiner’s rejection of claim 1, Appellant’s argument regarding the remaining claims also is unpersuasive of error. Accordingly, we sustain the rejection of claims 2, 3 and 5 under pre-AIA 35 U.S.C. § 103(a) as unpatentable over Eggers, Wang, Ma, and Pipe.

DECISION

We affirm the Examiner’s decision to reject claims 1–8.

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). *See* 37 C.F.R. § 41.50(f).

AFFIRMED