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

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ANTHONY T. VU

Appeal 2007-0204
Application 10/938,966[1]

ON BRIEF

Before THOMAS, BARRETT, and RUGGIERO, *Administrative Patent Judges*.

BARRETT, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134(a) from the final rejection of claims 51-54 and the objection to claim 45.

We affirm.

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[1] Application for patent filed September 10, 2004, entitled "Real-Time Localization Monitoring, Triggering, and Acquisition of 3D MRI."

BACKGROUND

The invention relates to magnetic resonance imaging (MRI).

Claim 51 is reproduced below.

> 51. A method of acquiring MR images in a 3D MRI study comprising:
>
> identifying a desired imaging volume;
>
> entering a real-time monitoring mode using a modifiable pulse sequence with reduced slice encoding and rewinder gradients in a 2D mode;
>
> navigating in real-time by acquiring and monitoring 2D images until the desired imaging volume is sufficiently located;
>
> switching the modifiable pulse sequence from the 2D mode to a 3D mode;
>
> increasing slide encoding and rewinder gradients; and
>
> acquiring 3D images of the desired imaging volume.

THE REJECTION

Claims 51-54 stand rejected under 35 U.S.C. § 112, first paragraph, based on lack of written description in the originally filed disclosure for the limitation of "reduced" slice encoding and rewinder gradients. The Examiner states (Final Rejection, at 2):

> The specification fails to disclose that the slice encoding and rewinder gradients are reduced. The specification only discloses that these gradient[s] are disabled completely in the 2D mode. The language used

> in the claims implies that the gradients can be present but in a reduced level. The term reduced i[s] normally understood to mean[] less tha[n] the previous amount. One does not generally understand the term to mean that the gradients have been turned off.

The Examiner has also objected to claim 45, stating that "it is unclear as to how the parameters disabled relate to the disabled parameters set forth in claim 44" (Final Rejection at 2). Appellant argues that the supposed objection exalts form over substance and is actually a rejection. Since we agree with Appellant, and since Appellant has addressed the merits as if it were a rejection, the objection to claim 45 will be treated as a rejection under 35 U.S.C. § 112, second paragraph.

DISCUSSION

Claim 45

Appellant argues that the objection is really a rejection because it goes to the substance or clarity of the claim rather than the form. We agree. The objection goes to whether claim 45 is definite and therefore is properly treated as a rejection under 35 U.S.C. § 112, second paragraph.

Appellant argues that claim 45 calls for the disclosed computer program to disable the 3D parameters in a third dimension in "real-time" to modify the pulse sequence to create and apply an effective pulse sequence, which is neither unclear nor confusing (Brief at 4). It is argued that "[t]he computer disables the 3D parameters called for in the seventh line of claim 44 in real-time" (*id.*), which is not ambiguous or unclear (*id.*).

Claim 44 recites: "if the input is indicative of a desire to acquire 3D images, apply the common pulse sequence with 3D parameters; and if the input is indicative of a desire to acquire 2D images, disable slice encoding and rewinder gradients and apply the common pulse sequence with 2D parameters." Claim 45 depends on claim 44 and recites that a computer program causes the computer to "disable 3D parameters in a third dimension in real-time." The Examiner does not find the limitation of claim 45 is unclear in and of itself, but finds that it is unclear what the relationship is between "disable 3D parameters" in claim 45 and "disable slice encoding and rewinder gradients" in claim 44. Appellant states that the "3D parameters" refers to the 3D parameters in the limitation "apply the common pulse sequence with 3D parameters" in claim 44, and claim 45 is merely saying that the 3D parameters are disabled in "real-time." This does not answer the Examiner's question about the claim. The question is whether "disable 3D parameters in a third dimension" in claim 45 refers to "disable slice encoding and rewinder gradients" in claim 44, so that "3D parameters in a third dimension" refers to "slide encoding and rewinder gradients," or whether "disable 3D parameters in a third dimension" refers to disabling something else. We agree with the Examiner that claim 45 is indefinite for this reason. The rejection of claim 45 is sustained.

Claims 51-54

The first question is whether, as a matter of claim interpretation, "reduced" gradients includes "turning off, or disabling" (Specification,

page 8) the gradients. "Reduce" is defined as "to diminish in size, amount, extent, or number," in accordance with the *Merriam-Webster Online Dictionary* definition provided by Appellant. In the final rejection, the Examiner states that "reduced" slice encoding and rewinder gradients would not be understood to include completely "turning off, or disabling" the gradients. *See* Final Rejection at 2 ("One does not generally understand the term to mean that the gradients have been turned off."). In the Examiner's Answer, the Examiner appears to state that "reduced" slice encoding and rewinder gradients, as claimed, can include completely "turning off, or disabling" those gradients. *See* Answer at 3 ("With respect to the definition of the term 'reduced', it is respectfully submitted that while the term 'disabled' involves a reduction in the gradients, the term 'reduced' is a much broader term that can merely imply that the gradients are at a level lower than that previously used but not necessarily completely disabled."). In any case, the Examiner's point is that the original disclosure does not provide written description support for the term "reduced" meaning anything other than being completely turned off or disabled. For completeness, we interpret "reduce" in the alternative to mean: (1) diminishing the gradients, but not completely eliminating them; and (2) "turning off, or disabling" the gradients.

The second question is whether the disclosure describes diminishing the slice encoding and rewinder gradients without "turning off, or disabling" those gradients. We find it does not. Appellant argues that page 8 of the specification describes the disablement of S_3 and S_4, but not the slice

encoding gradients S_1, S_2, or S_5 shown in Fig. 3 and, so, "it is clear that there are remaining slice and rewinder gradients still present in 2D imaging" (Brief at 5). We are not experts in this art, but it appears that while S_1, S_2, or S_5 are "slice gradients," they are not properly termed "slice encoding and rewinding gradients," as argued. Therefore, disabling S_3 and S_4 is not "reducing" the "slice encoding and rewinding gradients" from five to three; it is only reducing the number of slice gradients. If S_1, S_2, and S_5 are "slice encoding and rewinding gradients," then the number of "slice encoding and rewinding gradients" is reduced, but this does not appear to be the case.

Appellant argues that original claim 1 called for "applying a pulse sequence that is applicable as a 3D pulse sequence with slice encoding and rewinder gradients disabled in one dimension . . .," and that specifying that the slice encoding and rewinder gradients are disabled in one dimension means that they are not disabled in all dimensions (Brief at 5). This implies that there are "slice encoding and rewinding gradients" in other directions. We are not experts in this art, but it is not clear that S_1, S_2, or S_5 are "slice encoding and rewinding gradients" in other directions and we will not make this assumption absent a specific statement by Appellant.

Appellant argues that there are six slice encoding gradients (S_1-S_6) shown in Fig. 2, and four slice encoding gradients (S_1, S_2, and S_5 together with the next S_1) shown in Fig. 3, so "[i]t is perfectly clear that slice encoding gradients have been reduced" (Brief at 6). It may be that the number of slice gradients have been reduced, but it has not been shown that the number of

"slice encoding and rewinding gradients" have been reduced. Based on our reading of the specification, S_3 and S_4 are the only "slice encoding and rewinding gradients" and they are completely disabled, not diminished. Therefore, if "reduce" is defined to mean diminishing the gradients, but not completely eliminating them, there is no written description support. Since claim 44 recites "disable slice encoding and rewinder gradients," it is clear that Appellant could have recited "disable" instead of "reduced" if this is what was intended.

The third question is whether the claims are properly rejected under § 112, first paragraph, for lack of written description if the definition of "reduced" includes "turning off, or disabling." We find that the claims are properly rejected because the specification does not show that Appellant possessed the full scope of the "reduced" limitation. *See LizardTech, Inc. v. Earth Resource Mapping, Inc.*, 424 F.3d 1336, 76 USPQ2d 1724 (Fed. Cir. 2005) (patent failed to demonstrate that patentee possessed the full scope of the invention). The specification only supports "turning off, or disabling" the slice encoding and rewinder gradients, not just diminishing them. Thus, even if "reduced" includes "turning off, or disabling" the gradients, the rejection is proper. It is noted that similar reasoning can be applied to the limitation of "increasing slice encoding and rewinder gradients" in claim 51, because "increase" means to make greater, which implies that the gradients must not be at zero.

For the reasons stated above, the rejection of claims 51-54 for lack of written description is sustained.

CONCLUSION

The rejections of claims 45 and 51-54 are sustained.

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) (2004).

AFFIRMED

JAMES D. THOMAS Administrative Patent Judge	)	
LEE E. BARRETT Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
JOSEPH F. RUGGIERO Administrative Patent Judge	)	

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