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EXAMINER

BALSECA, FRANKLIN D

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Please find below and/or attached an Office communication concerning this application or proceeding.

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte VIMAL V. SHAH, WALLACE R. GARDNER, and
DONALD G. KYLE

Appeal 2015-005577
Application 11/945,055¹
Technology Center 2600

Before THU A. DANG, KRISTEN L. DROESCH, and
CARL L. SILVERMAN, *Administrative Patent Judges*.

SILVERMAN, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's Final Rejection of claims 1–3, 6–8, 11–13, and 16. App. Br. 3. Claims 4, 5, 9, 10, 14, and 15 are subject to objection. *Id.* at 6. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

¹ According to Appellants, the real party in interest is Halliburton Energy Services, Inc. App. Br. 2.

STATEMENT OF THE CASE

The invention relates to downhole drilling employing acoustic telemetry. Abstract; Spec. ¶ 2. Claim 1 is exemplary of the matter on appeal:

1. A method comprising:
receiving an acoustic signal that is propagated along a drill string;
correlating the acoustic signal to a first stored acoustic signal representing a first symbol,
wherein the first stored acoustic signal is acquired from a propagation along the drill string in an approximately noise free environment.

App. Br. 16 (Claims App'x.).

THE REJECTION

Claims 1–3, 6–8, 11–13, and 16 stand rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Scherbatskoy (US 5,113,379; issued May 12, 1992) in view of Schultz (US 6,434,084 B1; issued Aug. 13, 2002)). Final Act. 3–6.

ANALYSIS

Appellants argue Scherbatskoy does not teach the claim 1 limitation “wherein the first stored acoustic signal is acquired from a propagation along the drill string in an approximately noise free environment.” App. Br. 10–13; Reply Br. 2–3.

According to Appellants, Scherbatskoy’s pump noise remains a significant factor in the received signal and the “noiseless signal” is arrived at only after the received signal has been filtered and thereafter processed to

remove pump noise. App. Br. 10–11 (citing Scherbatskoy col 35, l. 45–52). Appellants argue the Examiner errs in finding “*the noise created by the pump is not random which makes it easy to remove*” and [also argues] “the Examiner thus appears to interpret the term “noise” to be limited to random noise.” *Id.* 13.

The Examiner finds Scherbatskoy teaches drilling operations are stopped when the signal is sent and the noise created by the running pump can easily be filtered. Ans. 3 (citing Scherbatskoy col. 8, ll. 31–52). The Examiner interprets *the signal is transmitted in an approximately noise free environment* to mean the environment still has noise when the signal is transmitted and finds Scherbatskoy teaches (or at least suggests) the disputed limitation because “a major part of the noise is removed by stopping drilling operations.” *Id.*

In response to the Examiner’s Answer, Appellants argue Scherbatskoy teaches transmitting the signal through a noisy environment and then using filtering. According to Appellants, the Examiner errs in suggesting “because the noise in the environment $P(t)$ is non-random, and therefore filterable, *that no matter how noisy, the environment qualifies as approximately noise free.*” Reply Br. 3. Appellants also argue “it is unreasonable to suggest that the significant pump noise of Scherbatskoy allows for a noise-free environment for propagation of the signal.” *Id.*

We are not persuaded by Appellants’ arguments and agree, instead, with the Examiner’s interpretations and findings.

Based on the record before us, Appellants present no persuasive basis to limit the meaning of *approximately noise free environment* as understood by one of ordinary skill in the art to exclude the teaching of Scherbatskoy as relied on by the Examiner. Claim terms in a patent application are given the broadest reasonable interpretation consistent with the Specification, as understood by one of ordinary skill in the art. *In re Crish*, 393 F.3d 1253, 1256 (Fed. Cir. 2004). However, great care should be taken to avoid reading limitations of the Specification into the claims. *E-Pass Techs., Inc. v. 3Com Corp.*, 343 F.3d 1364, 1369 (Fed. Cir. 2003).

Here, *approximately noise free* can be reasonably broadly interpreted as encompassing Scherbatskoy's stopped drilling operation, and we note this is consistent with the Specification. For example the Specification discloses, "[t]his library of signals may be generated during an *approximately noise free environment (such as when drilling operations are not being performed)*." (Emphasis added) Spec. ¶ 38. In addition, the availability of additional filtering is consistent with the signal being generated during an *approximately noise free environment*.

In view of the above, we sustain the rejection of claim 1, and independent claims 6 and 11 as these claims recite the disputed limitation and are argued together with claim 1. App. Br. 13. Dependent claims 2, 3, 7, 8, 12, and 13 are not argued separately and, therefore, we sustain the rejection of these claims. *See* 37 C.F.R. § 41.37(c)(1)(iv).

Regarding independent claim 16, Appellants argue Scherbatskoy and Schultz do not teach the limitation *transmit an acoustic signal along the drill string when the drill string is not in motion*. App. Br. 14. According to Appellants, it would have not been obvious to transmit Schultz' signal along

the drill string when the drill string is not in motion because Scherbatskoy teaches that noise is still present when the signal is transmitted. *Id.*

The Examiner notes the claim does not recite that the signal is transmitted when no operational noise is present as the claim only recites that the signal is transmitted when the drill string is not in motion. The Examiner then finds:

Scherbatskoy clearly teaches that the signal is sent when the drill string is not in motion [see Scherbatskoy, col. 8, L. 44–52]. Scherbatskoy also clearly teaches that all his teachings can be applied in an acoustic system [see Scherbatskoy, col. 54, L. 55–68, and col. 55, L. 1–15]. For this reason, one of ordinary skill in the art at the time the invention was made would have applied Scherbatskoy's teachings in any acoustic system including Schultz's acoustic system. Schultz was only used to show a well-known feature in the art feature which is that in an acoustic system; the signals are transmitted through the drill string. For all the reasons above, the cited prior art teach all the argued limitations, and the appellant's arguments are not persuasive.

Ans. 4.

We are not persuaded by Appellants' arguments and agree, instead, with the Examiner's findings. Therefore, we sustain the rejection of claim 16.

DECISION

We affirm the Examiner's decision rejecting claims 1–3, 6–8, 11–13, and 16.

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