

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HUNTING TITAN, INC.,
Petitioner,

v.

DYNAENERGETICS GMBH & CO. KG,
Patent Owner.

Case IPR2018-00600
Patent 9,581,422 B2

Before SCOTT A. DANIELS, CARL M. DEFRANCO, and
ERIC C. JESCHKE, *Administrative Patent Judges*.

DEFRANCO, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

DynaEnergetics GmbH & Co. KG is the owner of U.S. Patent No. 9,581,422 B2 (“the ’422 patent”). Hunting Titan, Inc. filed a petition for *inter partes* review of claims 1–15 of the ’422 patent. Paper 1 (“Pet.”). We instituted *inter partes* review of all the challenged claims. Paper 10 (“Inst. Dec.”). DynaEnergetics opposed. Paper 18 (“PO Resp.”). Hunting Titan

replied. Paper 24 (“Pet. Reply”). And DynaEnergetics had the last word in a sur-reply. Paper 27 (“PO Sur-Reply”).

In addition, DynaEnergetics filed a contingent motion to amend. Paper 19 (“Mot. Amend”). Hunting Titan opposed. Paper 25 (“Pet. Opp. to Mot. Amend”). DynaEnergetics replied. Paper 28 (“PO Reply”). Hunting Titan filed a sur-reply. Paper 33 (“Pet. Sur-Reply”). Finally, each party moved to exclude certain evidence of the other party. Paper 32 (“Pet. Mot. Exclude”); Paper 34 (“PO Mot. Exclude”).

We have jurisdiction under 35 U.S.C. § 6. An oral hearing was conducted on May 14, 2019. Paper 41 (“Hr’g Tr.”). After considering the parties’ arguments and supporting evidence, we determine that Hunting Titan has proven by a preponderance of the evidence that claims 1–15 of the ’422 patent are unpatentable. 35 U.S.C. § 316(e). We also determine that Hunting Titan has carried its burden in showing that DynaEnergetics’ proposed substitute claims are not patentable over the prior art of record, and, thus, we deny DynaEnergetics’ motion to amend. Finally, we deny the parties’ respective motions to exclude as moot.

I. BACKGROUND

A. *Related Matters*

The ’422 patent is the subject of two infringement actions. The first infringement action, *DynaEnergetics GmbH & Co. KG v. Hunting Titan, Ltd.*, Civil Action No. 4:17-cv-03784 (S.D. Tex.), was filed December 14, 2017 and is currently stayed pending our review. Paper 40, 1. The second infringement action, *DynaEnergetics GmbH & Co. KG v. Hunting Titan, Inc.*, Civil Action No. 4:19-cv-01611 (S.D. Tex.), was filed May 2, 2019, and later consolidated by the district court with the earlier action. *Id.* Also,

pending before this Office is a reissue application for the '422 patent—U.S. Patent Application No. 16/287,150, filed February 27, 2019. *Id.*

B. The '422 Patent

The '422 patent is directed to a perforating gun assembly used to perforate the cement lining and surrounding rock formation of an oil well bore so as to form a flow path for oil into the wellbore from the surrounding rock formation. Ex. 1001, 1:15–44. As described, the key feature of the perforating gun assembly is a “wirelessly-connectable” detonator assembly that can be “positioned or placed into [the] perforating gun assembly with minimal effort,” that is, “without the need of manually and physically connecting, cutting or crimping wires as required in a wired electrical connection.” *Id.* at 3:26–38. Indeed, DynaEnergetics acknowledges that “[c]onnecting a detonator using electrical contacts rather than manual wiring . . .” is the entire essence of the invention claimed in the '422 patent.” PO Sur-Reply 7–8 (citing Ex. 1001, 2:24–34).

C. The Challenged Claims

Of the challenged claims, claims 1, 5, and 12 are independent. Claim 1 recites a “wireless detonator assembly,” while claim 5 recites a “perforating gun assembly” that includes the limitations of the wireless detonator assembly of claim 1. Claim 12 recites a “method of assembling a perforating gun assembly” that includes many, if not all, of the limitations of both claims 1 and 5.

More specifically, each of the independent claims recites a “wireless” or “wirelessly-connectable” detonator assembly that is positioned within a perforating gun assembly “without using a wired electrical connection,” but rather forms the wireless electrical connection “merely by the contact” of the

detonator assembly with the perforating gun assembly. Ex. 1001, 8:39–61, 9:10–37, 10:12–36. Due to the overlapping nature of the independent claims, DynaEnergetics singles out claim 1 as “[r]epresentative.” PO Resp.

7. As reproduced below, claim 1 recites:

1. *A wireless detonator assembly* configured for being electrically contactably received within a perforating gun assembly *without using a wired electrical connection*, comprising:

a shell configured for housing components of the detonator assembly;

more than one electrical contact component, *wherein at least one of the electrical contact components extends from the shell* and further wherein the electrical contact component comprises an electrically contactable line-in portion, an electrically contactable line-out portion, and an electrically contactable ground portion, the ground portion in combination with the line-in portion and the line-out portion being configured to replace the wired electrical connection to complete an electrical connection merely by contact;

an insulator positioned between the line-in portion and the line-out portion, wherein the insulator electrically isolates the line-in portion from the line-out portion; and

means for selective detonation housed within the shell, [and]

wherein the detonator assembly is configured for electrically contactably *forming the electrical connection merely by the contact*.

Ex. 1001, 8:39–61 (emphases added).

D. The Asserted Grounds of Unpatentability

Hunting Titan asserts sixteen grounds of unpatentability, two based on anticipation under 35 U.S.C. § 102 and fourteen based on obviousness under 35 U.S.C. § 103. Pet. 4–5. To begin, Hunting Titan challenges claims 1–15

as anticipated by Schacherer.¹ In the alternative, Hunting Titan challenges claims 1–15 (or a subset thereof) either as anticipated by Lanclos² or as obvious over Schacherer and/or Lanclos in combination with various other references. *Id.* Because the first ground—anticipation by Schacherer—is dispositive as to all the challenged claims, we need not reach the other asserted grounds. *See SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1359 (2018) (holding a petitioner “is entitled to a final written decision addressing all of the claims it has challenged”).

Hunting Titan supports its petition with the testimony of Robert Parrott, an expert retained for purposes of this proceeding. *See* Exs. 1006, 1025, 1026. DynaEnergetics supports its opposition with the testimony of two experts—Robert Schaaf (Ex. 2003) and John Rodgers, Ph.D. (Exs. 2004, 2027). DynaEnergetics also submits the declaration of Frank H. Preiss, the first named inventor on the ’422 patent and “vice president and GM” for DynaEnergetics. Ex. 2001 ¶ 1.

II. ANALYSIS

A. *Level of Skill in the Art*

The parties agree that a person of ordinary skill in the art (“POSITA”) would have had a B.S. or M.S. degree in mechanical or electrical engineering and two-to-five years of experience designing and operating perforating tools for well-bores. *See* Pet 12; PO Resp. 14. We accept this skill level as an undisputed fact.

¹ U.S. Patent 9,689,223 B2, iss. June 27, 2017 (Ex. 1002, “Schacherer”).

² U.S. Patent 9,080,433 B2, iss. July 14, 2015 (Ex. 1003, “Lanclos”).

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