

**United States Court of Appeals
for the Federal Circuit**

HUNTING TITAN, INC.,
Appellant

v.

DYNAENERGETICS EUROPE GMBH,
Cross-Appellant

**ANDREW HIRSHFELD, PERFORMING THE
FUNCTIONS AND DUTIES OF THE UNDER
SECRETARY OF COMMERCE FOR
INTELLECTUAL PROPERTY AND DIRECTOR OF
THE UNITED STATES PATENT AND TRADEMARK
OFFICE,**
Intervenor

2020-2163, 2020-2191

Appeals from the United States Patent and Trademark
Office, Patent Trial and Appeal Board in No. IPR2018-
00600.

Decided: March 24, 2022

JASON SAUNDERS, Arnold & Saunders, LLP, Houston,
TX, argued for appellant. Also represented by GORDON
ARNOLD, CHRISTOPHER MCKEON.

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BARRY J. HERMAN, Womble Bond Dickinson (US) LLP, Baltimore, MD, argued for cross-appellant. Also represented by WILLIAM R. HUBBARD; CHRISTINE H. DUPRIEST, PRESTON HAMILTON HEARD, Atlanta, GA; LISA MOYLES, JASON ROCKMAN, Moyles IP, LLC, Shelton, CT.

SARAH E. CRAVEN, Office of the Solicitor, United States Patent and Trademark Office, Alexandria, VA, argued for intervenor. Also represented by THOMAS W. KRAUSE, ROBERT J. MCMANUS, MAUREEN DONOVAN QUELER, FARHEENA YASMEEN RASHEED.

Before PROST, REYNA, and HUGHES, *Circuit Judges*.

Opinion for the court filed by *Circuit Judge* HUGHES.

Concurring opinion filed by *Circuit Judge* PROST.

HUGHES, *Circuit Judge*.

Hunting Titan, Inc. petitioned for inter partes review of claims 1–15 of U.S. Patent No. 9,581,422, asserting 16 grounds of unpatentability based on theories of anticipation and obviousness, including allegations that the claims were anticipated by Schacherer, U.S. Patent No. 9,689,223. The Board instituted trial on all grounds and ultimately agreed with Hunting Titan, finding all of the original claims unpatentable.

After the petition was instituted, DynaEnergetics Europe GmbH, the patent owner, moved to amend the '422 patent to add proposed substitute claims 16–22. Hunting Titan opposed the motion to amend, advancing only obviousness grounds. Although Hunting Titan did not assert that Schacherer anticipated the proposed substitute claims, the Board determined that the original and proposed substitute claims alike were unpatentable as anticipated by Schacherer. DynaEnergetics requested rehearing and Precedential Opinion Panel review of the Board's

denial of the motion to amend. The Panel granted DynaEnergetics's request for rehearing, vacated the Board's decision denying DynaEnergetics's motion to amend, and then—after concluding that Hunting Titan had not proven by a preponderance of the evidence that proposed substitute claims 16–22 are unpatentable—granted the motion to amend the '422 patent to add the proposed substitute claims.

Hunting Titan appeals the Precedential Opinion Panel's vacatur of the Board's decision denying the motion to amend, and DynaEnergetics cross-appeals the Board's decision finding the original claims of the '422 patent anticipated by Schacherer. We affirm on both grounds.

I

DynaEnergetics owns the '422 patent, which is directed to a perforating gun used in an oil wellbore to penetrate the well lining and surrounding rock formation in order to provide a flow path for oil into the wellbore from the surrounding rock formation. '422 patent, 1:15–44. The perforating gun's key feature is a “wireless” and “selective” detonator assembly for detonating an explosive projectile charge within the perforating gun “without the need to attach wires to the detonator.” *Id.* 2:24–34. Claim 1 is representative and is reproduced below.

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

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

Id. 8:39–61.

A

Hunting Titan petitioned for inter partes review of claims 1–15 of the '422 patent, asserting 16 grounds of unpatentability based on theories of anticipation and obviousness. The Board instituted on the petition. Appx246. DynaEnergetics opposed the petition. It also filed a contingent motion to amend the '422 patent to add new claims 16–22, in the event the Board were to find original claims 5–11 unpatentable.

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Relevant to this appeal is Hunting Titan's first asserted ground of unpatentability that Schacherer, U.S. Patent No. 9,689,223, anticipates all of the '422 patent's original claims. DynaEnergetics maintained, in its Patent Owner Response, that Schacherer lacks several limitations of the claimed detonator assembly.

DynaEnergetics asserted that Schacherer does not teach or disclose the claimed “*wireless* detonator assembly.” Appx320 (emphasis added). According to DynaEnergetics, Schacherer “incorporate[s] an electrically wired detonator (38) into a tandem sub or connector,” *id.*, while the claimed detonator assembly “replace[s] [the] electrically wired detonator . . . with a wireless detonator 10 and house[s] the components of the detonator, including the means for selective detonation, within a shell (12).” Appx321. DynaEnergetics also argued that “Schacherer does not teach or suggest incorporating the selecting firing module (32) into the wired detonator (38),” but instead “describes a [tandem] sub for housing such components.” Appx322–23. Thus, according to DynaEnergetics, “Schacherer does not teach or suggest a shell configured for housing components of the detonator assembly.” Appx323.

Because these limitations, among others not relevant to this appeal, are allegedly not taught by Schacherer, DynaEnergetics argued that Hunting Titan failed to “show[] that Schacherer anticipates [any] of the challenged claims of the ’422 [p]atent.” Appx333. The Board disagreed with DynaEnergetics, concluding that each original claim is unpatentable as anticipated by Schacherer. Appx24.

Significant to this appeal, the Board first considered claim 1’s uncontested limitations and found these limitations fully supported by the record and “effectively admitted” by DynaEnergetics. Appx9. The Board accordingly concluded that Hunting Titan had met its burden of proving that Schacherer discloses a “detonator assembly” that is:

- (1) “received with a perforating gun,”
- (2) has “more than one electrical contact component, wherein at least one of the electrical contact components . . . comprises an electrically contactable line-in portion, . . . line-out portion[,] and . . . ground portion,” and

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