

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

BAKER HUGHES INCORPORATED and
BAKER HUGHES OILFIELD OPERATIONS, INC.,
Petitioners,

v.

PACKERS PLUS ENERGY SERVICES, INC.,
Patent Owner.

Case IPR2016-01506
Patent 7,861,774 B2

Before SCOTT A. DANIELS, NEIL T. POWELL and
CARL M. DEFRANCO, *Administrative Patent Judges*.

DEFRANCO, *Administrative Patent Judge*.

DECISION TO INSTITUTE
37 C.F.R. § 42.108

I. INTRODUCTION

This is a preliminary proceeding to decide whether *inter partes* review of U.S. Patent No. 7,861,774 B2 (“the ’774 patent”) should be instituted under 35 U.S.C. § 314(a). Packers Plus Energy Services Inc. (“Packers Plus”) is the owner of the ’774 patent. Baker Hughes Incorporated and

Baker Hughes Oilfield Operations, Inc. (“Baker Hughes”) filed a Petition (“Pet.”) seeking *inter partes* review of claims 1–16 of the ’774 patent. Rapid Completions LLC, the exclusive licensee of the ’774 patent, filed a Preliminary Response (“Prelim. Resp.”). After considering the Petition and Preliminary Response, we determine that Baker Hughes has demonstrated a reasonable likelihood of proving at least independent claim 1 of the ’774 patent to be unpatentable. Accordingly, we authorize *inter partes* review to proceed on *all* of the challenged claims.

II. BACKGROUND

A. *The ’774 Patent*

The ’774 patent describes a tubing string for treating and stimulating flow from particular segments of an oil or gas well formation while sealing off other segments. Ex. 1001, Abstract. Typically, a tubing string is run into a wellbore as a conduit for oil and gas products to flow to the surface. *Id.* at 1:28–48. But when natural formation pressure is insufficient, a well “stimulation” technique is employed, which involves injecting fracturing fluids into the formation to enlarge existing channels and thereby improve inflow into the wellbore. *Id.* at 1:35–39. And, because a wellbore may cross multiple zones within an oil or gas formation, only some of which contain desirable products, the ability to isolate and stimulate certain zones within the formation is key to controlling and optimizing production from the well. Ex. 1003, 2–3, Figs. 7, 11.

As described in the ’774 patent, the tubing string includes a series of ports along its length, with a ball-actuated sliding sleeve mounted over each port, for selectively permitting the release of fluid from certain segments of the tubing string. Ex. 1001, 2:39–65, 6:37–7:31. Special sealing devices,

called “solid body packers,” are mounted along the length of the tubing string downhole and uphole of each port. *Id.* at 2:39–65, 6:4–36. The solid body packers are disposed about the tubing string and seal the annulus between the tubing string and the wellbore wall, thereby dividing the wellbore into a series of isolated segments. *Id.* at 6:18–24. When the sliding sleeve over a particular port is activated to an open position, fluid can pass into one segment of the wellbore but is prevented from passing into adjacent segments by the packers positioned on either side of the port. *Id.* at 6:50–57.

B. Related Cases

The ’774 patent is involved in a concurrent district court action, *Rapid Completions LLC v. Baker Hughes Incorporated*, No. 6:15-cv-00724 (E.D. Tex.), filed July 31, 2015. Paper 5. It is also the subject of a co-pending *inter partes* review proceeding, IPR2016-00598 (“the related -598 IPR”), which was instituted on August 22, 2016, and involves the identical claims challenged here.

C. Challenged Claims

Of the challenged claims, only claim 1 is independent. It recites a “method for fracturing a hydrocarbon-containing formation accessible through a wellbore.” As paraphrased below, the method steps include essentially:

(1) “running a tubing string into an open hole and uncased, non-vertical section of the wellbore,” with the tubing string comprising”

“a first port” and “a second port” in the wall of the tubing string,

“a first sliding sleeve having a seat with a first diameter” and “a second sliding sleeve having a seat with a second diameter smaller than the first

diameter,” with both being positioned and moveable relative to their respective ports between closed and open positions,

“a first solid body packer,” “a second solid body packer,” and “a third solid body packer” mounted between and on either side of the first and second ports “to seal about the tubing string and against a wellbore wall,”

(2) “expanding radially outward the first, second and third solid body packers” until each “seals against the wellbore wall in the open hole and uncased, non-vertical section of the wellbore” to “create a first annular wellbore segment” and “a second annular wellbore segment” between the solid body packers that are “substantially isolated from fluid communication” with each other,

(3) “conveying a fluid conveyed sealing device through the tubing string to pass through the first sliding sleeve and to land in and seal against the seat of the second sliding sleeve moving the second sliding sleeve to the open port position permitting fluid flow through the second port,” and

(4) “pumping fracturing fluid through the second port and into the second annular wellbore segment to fracture the hydrocarbon-containing formation.”

Ex. 1001, 13:60–15:6.

D. The Asserted Grounds

In challenging claims 1–16, Baker Hughes raises essentially two grounds of obviousness under 35 U.S.C. § 103.¹ Pet. 5. First, Baker Hughes asserts that claims 1–16 are unpatentable over the combined teachings of

¹ Baker Hughes asserts a third ground that additionally challenges claims 4 and 6 on the same prior art as in the first ground, as well as “the knowledge of a person of ordinary skill in the art.” Pet. 6. We consider this ground as being no different than the first ground, which, as a matter of law, must also account for the knowledge that a skilled artisan brings to the table.

Lane-Wells² and Ellsworth.³ *Id.* Second, Baker Hughes asserts that claim 15 is also unpatentable as obvious over the combination of Lane-Wells and Ellsworth, like the first ground, as well as Hartley.⁴ *Id.* As additional evidence, Baker Hughes proffers the Declaration of Ali Daneshy, Ph.D. (Ex. 1005).

III. ANALYSIS

In this preliminary proceeding, we determine whether Baker Hughes has demonstrated a reasonable likelihood that “at least 1 of the claims challenged in the petition” is unpatentable. 35 U.S.C. § 314(a). As always, our goal is “the just, speedy, and inexpensive resolution” of the validity of the challenged claims. 37 C.F.R. § 42.1(b).

A. *Claim Construction*

In the Petition, Baker Hughes asks for a construction of three claim terms—“solid body packer,” “fracturing fluid,” and “plug.” Pet. 24–26. Packers Plus responds that it “intends to dispute” the various constructions proposed by Baker Hughes but “there is no need for the Board to address these disputes now.” Prelim. Resp. 9–10. Instead, Packers Plus proposes a different term in need of construction—“the second annular wellbore segment.” *Id.* at 10–11. That term, however, was not addressed by Baker Hughes in its Petition.

² Lane-Wells Company, *Tomorrow’s Tools—Today!* Catalog No. 56, COMPOSITE CATALOG OF OIL FIELD AND PIPE LINE EQUIPMENT, 21st Ed. (1955-56), World Oil, The Gulf Publishing Company, Vol. 2 (“Lane-Wells”) (Ex. 1002).

³ B. Ellsworth et al., *Production Control of Horizontal Wells in a Carbonate Reef Structure*, © 1999 CIM 1999 Horizontal Well Conference (“Ellsworth”) (Ex. 1003).

⁴ U.S. Patent No. 5,449,039, iss. Sep. 12, 1995 (“Hartley”) (Ex. 1004).

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