

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

BAKER HUGHES, A GE COMPANY, LLC and
BAKER HUGHES OILFIELD OPERATIONS, LLC,
Petitioner,

v.

PACKERS PLUS ENERGY SERVICES, INC.,
Patent Owner.

Case IPR2016-00650
Patent 6,907,936 B2

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

DEFRANCO, *Administrative Patent Judge*.

DECISION
Denying Petitioner's Request for Rehearing
37 C.F.R. § 42.71(d)

I. INTRODUCTION

Baker Hughes Incorporated and Baker Hughes Oilfield Operations, Inc. (collectively, “Baker Hughes”) filed a Petition (Paper 1, “Pet.”) to institute *inter partes* review of claims 14 and 17–26 of U.S. Patent No. 6,907,936 B2 (“the ’936 patent”).¹ After a trial on the merits, we issued a Final Written Decision, holding that Baker Hughes had not shown the challenged claims unpatentable by a preponderance of the evidence. Paper 48 (“Final Dec.”). Baker Hughes filed a Request for Rehearing of that decision. Paper 50 (“Rehearing Request” or “Reh’g Req.”). For the following reasons, we deny Baker Hughes’s Rehearing Request.

II. STANDARD OF REVIEW

A party requesting rehearing of a Board decision has the burden to show that the decision should be modified. Pursuant to 37 C.F.R. § 42.71(d), the rehearing request must identify, specifically, all matters the party believes the Board misapprehended or overlooked, and the place where each matter was previously addressed in a motion, an opposition, or a reply. When rehearing a decision on a petition, we review the decision for an abuse of discretion. 37 C.F.R. § 42.71(c). An abuse of discretion may arise if a decision is based on an erroneous interpretation of law, if a factual finding is not supported by substantial evidence, or if an unreasonable judgment is made in weighing relevant factors. *In re Gartside*, 203 F.3d 1305, 1315-16 (Fed. Cir. 2000).

¹ The ’936 patent is owned by Packers Plus Energy Services Inc., but is licensed exclusively by Rapid Completions LLC, a subsidiary of Acacia Research Group LLC, which in turn is a subsidiary of Acacia Research Corporation. *See* Paper 5.

III. ANALYSIS

Baker Hughes asserts several reasons for why it believes the Board should reconsider its Final Decision that Baker Hughes had not carried its burden of showing the claimed invention would have been obvious. Throughout its Rehearing Request, Baker Hughes maintains that we misapprehended its obviousness theories for the Thomson-Echols grounds by tying those grounds to Thomson’s “cemented casing.” Reh’g Req. 3 (citing Pet. 24–35, 42–45); *see also id.* at 9–12 (repeating same argument). According to Baker Hughes, Thomson’s cemented casing was “*not* part of the modified Thomson system” asserted in the Petition as rendering the claimed invention obvious. *Id.* We disagree.

In the Petition, Baker Hughes repeatedly references an annotated version of Thomson’s Figure 3 (Ex. 1002, 10) to show how Thomson’s configuration of sliding sleeves and packers meets the limitations of the challenged claims. *See, e.g.,* Pet. 25–26, 26, 34, 39 (depicting various annotations of Thomson’s Figure 3). Importantly, each of Baker Hughes’s annotations of Figure 3 depicts a cement casing as part of its proposed modification of the Thomson system. *See id.* Elsewhere, Baker Hughes relies expressly on Thomson’s cement casing in mapping “Thomson’s retrievable packers” to the claimed set of packers—“Compression of the packing elements causes them to extrude out to fill and seal the annulus between the tubing string *and the casing*, as in the above excerpt of Figure 3.” *Id.* at 39 (emphasis added); *see also* Ex. 1006 ¶ 71 (Baker Hughes’s expert testifying that “[a]s the packing elements [of Thomson] compress, they extrude outward to fill the annulus between the tubing string *and the casing* to seal against fluid flow past the packer”) (emphasis added).

But, while repeatedly relying on Thomson's Figure 3 in support of its obviousness theories, Baker Hughes fails to explain why a skilled artisan would have removed or ignored the casing shown in Thomson's Figure 3 in favor of using an open wellbore. That clear and unequivocal omission by Baker Hughes was critical to our finding of a lack of a reason to combine Thomson and Echols. Thus, we are not persuaded that we misapprehended Baker Hughes's obviousness contentions, which relied expressly on Thompson's casing as shown in Thomson's Figure 3.

Next, Baker Hughes argues that, because the claims themselves do not require a casing, it could not possibly have asserted in the Petition that a casing was part of the modified Thomson system. Reh'g Req. 4 (citing Paper 34 ("Reply") at 1). We addressed this argument in our Final Decision, and, thus, did not overlook it. Nor did we misapprehend it. As we said then,

Regardless of what the claims require, we are persuaded that Thomson discloses using its tubing string in a cased wellbore. For example, Thomson discloses that "[b]efore running the completion, each well was perforated with tubing-conveyed perforating (TCP) guns." Ex. 1002, 3. Thomson also discusses "installation into the horizontal section of *the liner*," and admonishes that "[t]he well in general *and liner in particular* needs to be properly cleaned and conditioned. This is essential for running ten packers in a horizontal liner." These disclosures indicate that Thomson's system includes a cement liner in the wellbore. Figure 3 of Thomson, reproduced above, appears to show the wellbore *with a cement liner*. Consistent with these disclosures, Packers Plus's expert, Mr. McGowen, testifies that "Thomson describes fracturing through perforations in *cemented casing*." Ex. 2003, 15:1 (emphasis added). Baker Hughes does not dispute this testimony by Packers Plus's expert.

Final Dec. 15–16 (first, second, and third emphases added).

To be clear, that the claims do not require a casing does not diminish the fact that Thomson does use a casing and that Baker Hughes needed to address that fact in combining the teachings of Echols with Thomson. Rather than address the fact of Thomson's casing, Baker Hughes ignores it, despite relying repeatedly on Thomson's Figure 3 and its depiction of a cased wellbore. *See* Pet. 24–35 (relying repeatedly on Ex. 1002, Fig. 3).

Moreover, after Packers Plus highlighted the failure of Baker Hughes to explain why a skilled artisan would have removed Thomson's casing in favor of using Echols's multiple sleeve configuration in an uncased wellbore, Baker Hughes attempted, improperly so, to shift the burden of proof by arguing that Packers Plus “failed to contend” that Thomson's modified system “would have had no utility” in an uncased wellbore (Reply 1–2), which directly contravenes Federal Circuit case law that the petitioner must prove a reasonable expectation of success that any asserted modification of the prior art would operate in the manner claimed. Thus, this argument is no more persuasive now than it was when we addressed it in our Final Decision.

Baker Hughes also contends that we misapprehended or overlooked that its proposed modifications to Thomson's system “were directed to adding injection points for getting fluid into the annulus between the modified Thomson system and the surrounding wellbore.” *Reh'g* Req. 5–6. While Baker Hughes made this argument in its Petition and Reply (*see* Pet. 32–34; Reply 1–3), and we addressed it in our Final Decision (Final Dec. 16–18), Baker Hughes

now modifies its reason for why a skilled artisan would have added injection points to Thomson's system—"getting stimulation fluid into the annulus in a longer zone *takes less time* when there are more openings through which fluid can be injected into the annulus . . . a longer zone of like diameter has a greater volume, which plainly can be filled *more quickly* with more injection points." Reh'g Req. 6 (emphasis added). This argument, advanced by Baker Hughes for the first time as a reason to add Echol's sleeves to Thomson's system, is directed to improving the efficiency by which Thomson's system operates. That Baker Hughes's argument is new is shown by the simple fact that Baker Hughes fails to identify the place where this argument was previously made in its Petition or Reply. *See id.*

Indeed, as expressed in the Petition and Reply, the reason given for adding injection points to Thomson's system was "to provide additional fractures . . . to improve porosity and thus production from the formation." Pet. 33 (citing Ex. 1006 ¶ 79); Reply 1 (same). Nowhere in either of those papers does Baker Hughes mention efficiency in filling the annulus as a reason to modify Thomson. Thus, we could not have misunderstood or overlooked an argument not previously made, nor must we consider this new argument on rehearing. *See* 37 C.F.R. § 42.71(d) ("The request must specifically identify . . . the place where each matter was previously addressed in a motion, an opposition, or a reply.").

But even were we to consider Baker Hughes's new argument, it does not persuade us that we should modify our Final Decision. Notably, Baker Hughes's argument of improving the efficiency of flow into the annulus is

similar to an argument Baker Hughes offered for the first time at the oral hearing, namely, that a skilled artisan would have added Echols's sleeve configuration to Thomson's cased system so as "to get the stimulation fluid into the annulus . . . more quickly," in other words, "to increase the rate of fluid flow into the annulus." *See* Tr. 18:3–21. In addressing that argument in our Final Decision, we explained that

the evidence indicates that Thomson's single sleeve arrangement suffices for flow rate. For example, figure 3 of Thomson states expressly that only one sliding sleeve (i.e., MSAF tool) is required per zone—"1 REQ PER ZONE"—which indicates that additional sleeves, as Baker Hughes proposes, would be superfluous to increasing flow rate. Ex. 1002, Fig. 3. Notably, Thomson adds that this single sleeve arrangement "proved that the system was not only feasible but highly efficient, both from an operational standpoint and from a reservoir treatment standpoint." *Id.* at 5. Those descriptions suggest that Thomson's system already operates efficiently and effectively with a single sliding sleeve, thereby counseling against Baker Hughes's rationale of adding Echols's sleeves to provide the benefit of an increased flow rate in Thomson's system.

Final Dec. 17.

Our reasoning with respect to Baker Hughes's argument during the oral hearing applies equally to Baker Hughes's new argument in its Rehearing Request because both arguments are directed to improving efficiency at which the annulus in Thomson's system is filled. But Baker Hughes makes no effort in its Rehearing Request to explain why our reasoning in the Final Decision that Thomson's system only requires a single sleeve to operate efficiently is in error. Thus, Baker Hughes has not met its burden to show that we should modify our Final Decision. 37 C.F.R. § 42.71(d).

Finally, Baker Hughes contends that our Final Decision misapprehended that the additional injection points proposed for the Thomson apparatus were “openings in the formation in which the apparatus could be used,” as opposed to openings in the modified apparatus itself. Reh’g Req. 7. We disagree. Baker Hughes mischaracterizes our findings. *See id.* at 7–8. Nowhere does our Final Decision equate the additional injection points proposed by Baker Hughes to be “points *at which fluid enters the formation*,” as Baker Hughes contends. *Id.* at 8. Rather, our Final Decision makes clear our understanding that the points at which fluid enters into the formation are “the perforations in [Thomson’s] casing.” Final Dec. 14–15. In contrast, we understood Baker Hughes’s proposed modification of adding injection points to be the addition of Echols’s sleeves to Thomson’s apparatus itself—“*by adding*’ Echols’s sleeves in front of Thomson’s sliding sleeves (i.e., MSAF tools).” *Id.* at 13. Indeed, we expressly equated Baker Hughes’s proposed addition of injection points to “increasing the number of sleeves in each zone” of Thomson’s system, while also finding that increasing the number of sleeves in Thomson’s system “would *not* equate to an increase of injection points in the formation.” *Id.* at 14–15 (emphasis added). Thus, we are not persuaded that we misapprehended Baker Hughes’s obviousness theory of adding Echols’s dual-sleeves to Thomson’s system.

Instead, the Rehearing Request fails to apprehend the explanation in our Final Decision that Baker Hughes did not provide persuasive evidence or reasoning of a benefit that would have led a skilled artisan to modify Thomson with additional injection points. *See* Final Dec. 14–17. In its Reply, Baker Hughes asserted that “Petitioners explained that a [person of

ordinary skill in the art] would have expected the additional injection points in zones with larger thicknesses ‘to provide additional fractures or porosity at both sleeves to improve porosity and thus production from the formation.’” Reply 1 (citing Ex. 1006 ¶ 79). But, as we explained in our Final Decision, Baker Hughes did not provide persuasive evidence that adding injection points inside Thomson’s perforated casing, without increasing the number of injection points into the formation, would have generated more fractures or porosity to increase production. Final Dec. 14–17. As noted above, Petitioner argued for the first time at the oral hearing that additional injection points would increase the efficiency of flow into the annulus. But, as we explained in our Final Decision, Thomson already operated successfully and efficiently with a single sleeve per zone, thereby obviating the need for any further sleeves. *Id.* at 17.

Given that Baker Hughes never provided persuasive evidence of a reason that a skilled artisan would have perceived an advantage from modifying Thomson with additional injection points, we maintain that Baker Hughes did not demonstrate by a preponderance of the evidence that it would have been obvious to so modify Thomson. That Baker Hughes now contends that the proposed additional injection points would have been obvious because a skilled artisan would have recognized that they could be added does not, in our view, support a conclusion of obviousness.

Metalcraft of Mayville, Inc. v. The Toro Co., 848 F.3d 1358, 1366 (Fed. Cir. 2017) (“[I]t is insufficient to simply conclude the [prior art] combination would have been obvious without identifying any reason why a person of skill in the art would have made the combination.”); *see Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1073 (Fed. Cir. 2015) (emphasis added) (citation

omitted) (“[O]bviousness concerns whether a skilled artisan not only *could have made* but *would have been motivated to make* the combinations or modifications of prior art to arrive at the claimed invention”).

For the above reasons, Baker Hughes’s Request for Rehearing is *denied*.

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