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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

WEATHERFORD U.S., L.P.,
Petitioner,

v.

HALLIBURTON ENERGY SERVICES, INC.,
Patent Owner.

Case No. IPR2024-00990
U.S. Patent No. 11,333,007

AUTHORIZED RESPONSE TO DIRECTOR REVIEW REQUEST

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Petitioner Weatherford (“Petitioner”) respectfully requests that Patent Owner Halliburton’s (“PO”) Director Review Request (Paper 40, “Request”) of the Board’s Final Written Decision (Paper 38, “FWD”) determining original claim 14 and substitute claims 29-31 and 33 unpatentable be denied.

PO’s Request is an amalgamation of misrepresentations and cherry-picking of the record that does not withstand scrutiny. When considering the arguments and evidence the Board actually relied upon, the “Board’s obviousness determinations flow directly from its rejection of [PO’s] arguments, and the Board’s analysis is commensurate with [Petitioner’s] arguments,” and thus is sufficient. *See Paice v. Ford Motor Company*, 881 F.3d 894, 905-06 (Fed. Cir. 2018).

I. THE BOARD’S FINDINGS AND OBVIOUSNESS DETERMINATION WERE SOUND AND SUPPORTED BY THE RECORD

A. Original Claim 14 Is Unpatentable

Claim 14[c] recites a two-step method of “[1] determining a shunt tube system operating pressure associated with the distal end of the production zone and [2] selecting a low pressure shunt tube system based on the distal end determined pressure.” Pet., 65; FWD, 21-22. The Board found the first step met based on Mr. Chambers’ testimony that one of skill “understood the need to determine the shunt tube system operating pressure throughout the horizontal wellbore to confirm that the tools being selected could withstand that pressure,” FWD, 22 (quoting EX1003 ¶383), and by Figure 15 of Yeh² “which shows the expected pressure in transport

tubes along the entire length of a 5000 ft horizontal well,” FWD, 22 (citing Pet., 66).
PO does not challenge that finding.

The Board found the second step met by Petitioner’s assertion that “one of skill in the art would have selected eccentric screens for the distal end of the production zone ‘at any point at which the slurry pressure dropped below the pressure capacity of the eccentric screens shunt tubes.’” FWD, 22 (quoting Pet., 66). As the Board explained, “[K]nowing that the pressure decreases as you approach the toe, Yeh’s low-pressure rated eccentric screens could be used from some point prior to and covering the toe.” FWD, 22. Rejecting PO’s assertion that this selection is not based on the distal end determined pressure (at the toe), the Board found that “one of skill with this understanding of the system pressures would select a shunt tube system rated to not only address the distal end, but also to address the needs of the adjacent region, so long as the pressure rating supported such a selection.” FWD, 23 (citing, Pet., 65-67; EX1003 ¶¶385-88).

PO challenges the Board’s finding on the second step, effectively asking the Director to construe “selecting a low pressure shunt tube system based on the distal end determined pressure” to mean “selecting a low pressure shunt tube system based [*solely*] on the distal end determined pressure.” PO asserts that “selecting an eccentric screen for use ‘covering the toe’ is not the same as selecting it ‘based on the distal end determined pressure,’” Request, 3. In other words, even if the

distal end determined pressure is used to select the low pressure shunt tube system, if other pressures are also used, such as pressure upstream of the distal end, that somehow does not satisfy the limitation. PO does not explain its reasoning, especially given Claim 14's use of the open-ended transitional phrase "comprising." EX1001, 20:5-6 ("the method comprising:"); *Gillette Co. v. Energizer Holdings*, 405 F.3d. 1367, 1371 (Fed. Cir. 2005) ("The word 'comprising' transitioning from the preamble to the body signals that the entire claim is presumptively open-ended."). PO's attempt to read a limitation into the claims should be rejected. *See, e.g., Seachange Int'l v. C-COR*, 413 F.3d. 1361, 1376 (Fed. Cir. 2005) ("[I]t is improper to import a limitation into a claim where the limitation has no basis in the intrinsic record").

PO next mischaracterizes Mr. Chambers' testimony upon which the Board relied in reaching its decision. Request, 4 (mischaracterizing EX1003 ¶¶385-88). Cobbling together a series of cropped quotations to attribute false assertions to Mr. Chambers, PO ultimately asserts that "according to Mr. Chambers, a POSITA would not have 'select[ed] a low pressure shunt tube system based on the distal end determined pressure,' because a POSITA would have selected commercial eccentric screens having a set pressure limit: 3,000 psi." Request, 4 (alteration in original). PO does not explain how the selection of the 3,000 psi low pressure shunt tube system to be used based on operating pressures less than 3,000 psi at the distal end

does not meet the claim. Indeed, Mr. Chambers opined, “A POSITA would have understood that Yeh’s recommended *transition to [3,000 psi rated] eccentric screens could thus occur* anywhere between 3,000 feet from the toe and *the toe of the horizontal wellbore,*” EX1003 ¶388 (emphases added), showing that use of eccentric screens could have started at the toe itself. PO offers no challenge to Mr. Chambers’ testimony.

B. Substitute Claims 29-31 Are Unpatentable

Claims 29-31 are proposed substitutes for Original Claims 11-12 and 14, respectively. RMTA (Paper 21), App., 4-5. Independent Claim 11 requires a first “shunt tube assembly with a first burst pressure” and a second “shunt tube assembly with a burst pressure less than the first burst pressure,” and dependent Claim 12 further requires that the first “shunt tube assembly of the first sand screen assembly is disposed to operate at pressures between 5000 psi and 10000 psi and the shunt tube assembly of the second sand screen assembly is disposed to operate at pressures no more than 5000 psi.” ’007 Patent (EX1001), 19:42-60.

PO conceded that Original Claims 11-12 would have been obvious, *see* FWD, 21 (determining “that Patent Owner has waived any request to maintain validity of these claims” (citing PO Resp. (Paper 10) at 2)). As discussed above, the Board found Claim 14 unpatentable. FWD, 23. To salvage them, PO proposed Claims 29 and 31, which further require that the first and second sand screens both have

eccentric orientation and Claim 30, which added limitations over Claim 12 not relevant to PO's Request. RMTA, App. 4-5.

1. The Board Properly Relied On Petitioner's Obviousness Combination

Petitioner's challenge to proposed substitute Claims 29 and 31 asserted that Yeh taught using "concentric sand screens near the heel because of their higher-pressure rating" and using "eccentric screens in lower-pressure distal regions." Opp. RMTA (Paper 26), 7-8; *see also id.*, 12, 16 (cross-referencing arguments for Claim 28[b] for Claims 29 and 31). Bonner disclosed a high-pressure eccentric screen. *Id.*, 8. Petitioner thus asserted one of skill would be motivated to replace Yeh's high pressure concentric screen with Bonner's high pressure eccentric screen based on: (1) Bonner's stated improvements: "improved pressure sealing, erosion resistance, ruggedness, improved rig assembly times, and system qualification"; (2) eliminating the need for Yeh's crossover tool between concentric and eccentric tools; and (3) ease and speed of installation due to Bonner's improvements. Opp. RMTA, 8-9. Petitioner also asserted that with a "known design need for a higher-pressure shunt tube system, selecting one of two identified, predictable solutions (Yeh's concentric or Bonner's eccentric screen) was at least obvious to try." *Id.*, 9. The Board found "the evidence supports Petitioner's position that one of skill in the art would use Bonner's eccentric sand screen assembly with Yeh's eccentric sand screen

assembly....” FWD, 30 (citing Opp. RMTA, 12).

PO first (and later in a new section) asserts that the “FWD raises a new combination of the *Yeh* and *Bonner* references” based on its assertion that the Board sua sponte “proposes a combination of three screens”—Yeh’s concentric, Bonner’s eccentric, and Yeh’s eccentric—instead of Petitioner’s two—Bonner’s eccentric and Yeh’s eccentric. Request, 4-5, 11-12. Even if PO’s characterization were true, it does not even assert, much less show, that the Board’s alleged amendment of Petitioner’s argument would be error. *See* 37 C.F.R. § 42.121(d)(3) (“[T]he Board may exercise its discretion to grant or deny a motion to amend or raise a new ground of unpatentability in connection with a proposed substitute claim.”); *Nike v. Adidas*, 955 F.3d 45, 51 (Fed. Cir. 2020) (“We hold today that the Board may sua sponte identify a patentability issue for a proposed substitute claim based on the prior art of record.”). PO does not explain its reliance on de-designated *Hunting Titan v. DynaEnergetics*, No. IPR2018-00600, Paper 67 (P.T.A.B. July 6, 2020), in the face of the later-adopted rule, 37 C.F.R. § 42.121(d)(3), that eliminates the “only for reasons supported by readily identifiable and persuasive evidence of record” standard asserted by PO in its Request, and such reliance is legally baseless. Request, 11-12.

However, rather than raise a new ground, the Board merely offered this scenario in response to PO’s argument that eliminating Yeh’s crossover tool

“fundamentally alters Yeh’s principle of operation.” FWD, 31 (quoting PO Reply, 2). The Board properly found “neither the claim nor Petitioner’s argument prevents a crossover tool from being used.... [T]here is nothing in the proposed rejection to suggest that they could not still be used to meet the needs of a particular wellbore.” *Id.* The Board was not stating a new ground of rejection because the crossover tool is not required to meet any claim limitation.

Moreover, the Board further found in the alternative that “Petitioner also identifies other core teachings of Yeh such as the need for higher rated sand screens and the need to place the higher pressure rated components at an upstream location ..., which are clearly consistent with Petitioner’s argument.” *Id.* PO does not address the Board’s alternate findings further undermining its assertion of error. *See* Request, 4-5. And PO’s assertion that the Board’s three-screen scenario removes **one** of Petitioner’s motivations to combine—elimination of the crossover tool—does not address the remaining motivations or the Board’s alternate findings of additional core teachings in Yeh that support Petitioner’s combination. PO’s myopic arguments are contrary to the axiom that a prior art reference should be considered “for everything that it teaches.” *See CRFD Rsch. v. Matal*, 876 F.3d 1330, 1349 (Fed. Cir. 2017) (citation omitted).

Similarly, PO’s assertion that the Board “improperly flipped the burden to motivate the *Yeh-Bonner* combination” based on the Board’s “reasoning that nothing

‘prevents a crossover tool from being used,’” Request, 6-7 (quoting FWD, 31), is baseless because it does not purport to place any burden on PO. Similarly, PO’s assertion that it was Petitioner’s burden to establish that a POSITA “‘would’ have used a crossover tool,” Request, 7, ignores that the crossover tool is irrelevant to whether Petitioner’s proposed Bonner-Yeh two-screen combination satisfies Claims 29 and 31. *See, e.g.*, Opp. RMTA, 11-12; FWD, 31 (providing alternative reasons apart from use of a crossover tool why the two-screen combination is supported by Yeh’s “core teachings”), 32 (addressing Claim 31).

PO’s next assertion that “*the Board merely assumes a combination* and finds it meets the claims,” Request, 5, is without merit. As discussed above, the Board credited Petitioner’s asserted motivations: “[T]he evidence supports Petitioner’s position that one of skill in the art would use Bonner’s eccentric sand screen assembly with Yeh’s eccentric sand screen assembly....” FWD, 30 (citing Opp. RMTA, 12). Thus, as noted above, many reasons for combining exist. *See* Opp. RMTA, 7-9 (Claim 28[b] arguments), 12, 16 (Claims 29 and 31 cross-referencing arguments for Claim 28[b]). PO’s assertion that “[a]t best, the FWD describes a need to select sand screens that ‘withstand’ the operating pressure in the wellbore,” Request, 6, concedes the FWD’s sufficiency where Bonner teaches an eccentric sand screen that can withstand the “operating pressure in the wellbore,” FWD, 30 (“Patent Owner implicitly acknowledges that Bonner’s eccentric sand screen assembly has a

‘working pressure of at most 3,333-3,760 psi’ which is greater than an eccentric sand screen assembly rated for a 3,000-psi working pressure/3000 ft.” (quoting PO Reply, 4-5)). PO’s assertion that the cited evidence shows “the need to use a *concentric* screen,” Request, 6, ignores its own concessions and the asserted motivations to substitute Bonner’s screen.

And PO previously argued the opposite. In reference to Original Claims 21-23, PO asserted: “Regardless of whether eccentric screens were rated to 3,000 psi or 5,000 psi, *Yeh* unambiguously teaches to extend their use relative to concentric screens.” PO Sur-reply (Paper 20), 25 (citing EX1005, 30:20-32). PO cannot have it both ways.

PO’s final attempt to characterize Bonner as disclosing a conventional eccentric screen limited to 3,000 psi fails. Request, 7-8. PO ignores the Board’s reliance on its own admission that Bonner’s working pressure range was above 3,000 psi at “3,333-3,760 psi” (applying Bonner’s 1.33 safety factor to its 5,000 psi pressure rating ($5,000 \text{ psi} / 1.33 = 3,759 \text{ psi}$)) to support its finding that a skilled artisan “would use Bonner’s eccentric sand screen assembly along with *Yeh*’s eccentric sand screen assembly along a horizontal wellbore, as long as Bonner’s screen was positioned at a location requiring a higher pressure.” FWD, 30 (citing Opp. RMTA, 12 (citing EX1044 ¶¶79-80)). Moreover, Bonner expressly disclosed “that its new eccentric sand screen design ‘improved pressure sealing...’,” Opp.

RMTA, 8 (quoting EX1016, 1), proving that Bonner’s disclosure that its eccentric screen was “functionally the same as existing industry-proven designs,” Request, 7 (citing Pet., 27-28), was not in reference to its pressure rating but to other characteristics, as acknowledged in the Petition, Pet., 27 (citing EX1003 (Chambers’ First Decl.) ¶¶153-54).

2. The Board Correctly Found Claims 29-31 Were Obvious To Try

As explained above, Petitioner asserted that with a known design need for higher-pressure shunt tube systems, it would have been obvious to try an eccentric screen as one of only two design choices—concentric or eccentric. Opp. RMTA, 9. As discussed above, the Board correctly found “the evidence supports Petitioner’s position.” FWD, 30. PO asserts that the Board “finds the claims obvious to try, after finding PO ‘does not directly address’ whether the claims were obvious to try.” Request, 8 (quoting FWD, 30). But in the cited passage, the Board was addressing an alternative argument Petitioner offered that “it would have been obvious to try Bonner’s eccentric sand screen assembly *with thicker walls to increase the pressure rating*.” FWD, 30 (emphasis added); *see also* Opp. RMTA, 10-11 (“[O]ne of skill would increase Bonner’s rectangular shunt tube wall thickness to accomplish the needed higher-pressure rating for a 5,000-foot gravel pack.”). The Board correctly observed that “[PO] does not directly address this obvious to try argument or contest

that thicker walls would allow Bonner’s eccentric sand screen assembly to achieve an even higher pressure rating.” FWD, 30. It cannot fault the Board for not adopting an argument it never made.

Nevertheless, PO asserts and in a separate section re-asserts that Petitioner failed to identify “a design need or market pressure to solve a problem” because “the Board rejected Petitioner’s ostensible design needs: removing *Yeh’s* crossover tool and reducing installation times.” Request, 8-9, 12-13. Aside from the fact that the Board adopted those proposed motivations and more as discussed above, PO overlooks Petitioner’s stated design need “for a higher-pressure shunt tube system.” Opp. RMTA, 9; *see also id.*, 10 (“Bonner’s screen could not withstand the 6,500-psi pressure needed to gravel pack a 5,000-foot-long interval, according to Yeh.”). The Board credited this need. FWD, 30 (finding one of skill would use Bonner’s eccentric screen “as long as Bonner’s screen was positioned at a location requiring a higher pressure”).

PO next asserts that the prior art did not “indicate a high-pressure eccentric screen was within a POSITA’s ‘technical grasp.’” Request, 9. But aside from Petitioner’s overwhelming evidence, PO’s own expert conceded this point. PO’s expert testified that a skilled artisan would know to increase wall thickness to achieve a higher pressure rating even for rectangular tubes in eccentric screens, thus rendering such a solution predictable. *See* Opp. RMTA, 10 (citing EX1043, 93:18-

94:6, 123:7-14); *see also* FWD, 30 (citing Opp. RMTA, 9-10, 12 (citing EX1044 ¶¶68-73, 79-80)); *see also id.*, 31-32 (citing Opp. RMTA, 13-15); EX2002 ¶103.

C. Substitute Claim 33 Is Unpatentable

Claim 33 recites in part, “wherein a packing tube of the high pressure shunt tube system is interconnected to a shunt tube junction block of the low pressure shunt tube system.” RMTA, App., 6. In the Final Written Decision, the Board stated:

Petitioner characterizes Patent Owner’s position as stating that “‘interconnected’ requires a direct connection between the *distal end* of the upstream packing tube and the downstream junction block.” Pet. Sur-reply 6. We agree with Petitioner that the plain language does not require us to read these additional features into the claim.

FWD, 33. The Board was correct because the claim language does not recite any specific means of interconnection. *See* RMTA, App., 6.

PO relied on both Figures 2 and 3 for written description support for Claim 33, RMTA, 15-16, and Figure 3 plainly shows no direct connection between the distal end of the first packing tube and the junction block of the second sand screen despite the specification describing the shunt tube assemblies as “interconnected,” Pet. Sur-reply (Paper 33), 6-7 (quoting EX1001, 8:38-59). PO’s proposed narrow interpretation of Claim 33 would exclude Figure 3, despite its description as “interconnected” and despite PO’s reliance on Figure 3 as written description support for the claim. PO’s only response is, “Claim 33 is not limited to Figure 3,”

Request, 15, which does not address the contradiction. PO must explain how Claim 33 could include Figure 3 under its narrow interpretation, which it made no effort to do, thus conceding that Claim 33 cannot be interpreted as narrowly as it proposes.

Ignoring Figure 3, which definitively proves PO's narrow construction is incorrect, PO attempts to rely solely on Figure 2. But as Petitioner stated, Figure 2 does not contain a junction block. *See* Request, 14; EX1001, Fig. 2. PO contends that the specification states that shunt tube assemblies 220 of Figure 2 “generally include ... a junction block.” Request, 14 (quoting EX1001, 6:47-51). But PO does not attempt to point to them in Figure 2 because they are not shown. *See id.* Thus, Figure 2 does not show any direct connection between a distal end of a packing tube and a downstream junction block and cannot support PO's narrow interpretation.

PO does not dispute that the prior art shows packing tubes interconnected to downstream junction blocks under the correct construction. *See* Request, 13-15; *see also* FWD, 33 (“As argued by Petitioner, the transport tubes in the prior art interconnect the packing tube of the high pressure shunt tube system to a shunt tube junction block of the low pressure shunt tube system, as required.”).

II. CONCLUSION

Petitioner respectfully submits the Request should be denied.

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Patent No. 11,333,007 – IPR2024-00990

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CERTIFICATE OF SERVICE

The undersigned certifies that pursuant to 37 C.F.R. § 42.6(e), a true copy of the foregoing **AUTHORIZED RESPONSE TO DIRECTOR REVIEW REQUEST** is being served electronically on February 23, 2026 to the following counsel for Patent Owner to the following email addresses:

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