

UNITED STATES PATENT AND TRADEMARK OFFICE
PATENT TRIAL AND APPEAL BOARD

HALLIBURTON ENERGY SERVICES, INC.
Petitioner

v.

U.S. WELL SERVICES, LLC
Patent Owner

Case No. IPR2021-01065
Patent No. 9,840,901

**PETITIONER'S AUTHORIZED REPLY TO PATENT OWNER'S
PRELIMINARY RESPONSE**

Submitted Electronically via the Patent Review Processing System

PETITIONERS' EXHIBIT LIST

Ex.	Description
1001	U.S. Patent No. 9,840,901 to Oehring and Hinderliter (filed Oct. 14, 2016 and issued Dec. 12, 2017) (“901 Patent” or “Challenged Patent”)
1002	Declaration of Dr. Robert A. Durham in Support of Petition for <i>Inter Partes</i> Review of U.S. Patent No. 9,840,901, with CV attached as Appendix A (“Durham”)
1003	File History of U.S Patent No. 9,840,901 (App. No. 15/293,681) (“901 Patent File History”)
1004	U.S. Patent Publication No. 2016/0326854 (filed as App. No. 15/202,085 on July 5, 2016 and published Nov. 10, 2016) (“085 App”)
1005	File History of U.S. Patent Provisional Application No. 62/242,566 (filed Oct. 16, 2015) (“Provisional”)
1006	U.S. Patent Publication No. 2015/0144336A1 to Hardin et al. (filed Nov. 28, 2014 and published May 28, 2015) (“Hardin”)
1007	U.S. Patent Publication No. 2008/0236818A1 to Dykstra et al. (filed Mar. 27, 2007 and published Oct. 2, 2008) (“Dykstra”)
1008	U.S. Patent Publication No. 2012/0255734 to Coli et al. (filed Apr. 6, 2012 and published Oct. 11, 2012) (“Coli”)
1009	U.S. Department of Labor, OSHA, “Hydraulic Fracturing and Flowback Hazards Other than Respirable Silica” (OSHA 3763-12 2014) (“OSHA 3763”), available at: https://www.osha.gov/sites/default/files/publications/OSHA3763.pdf
1010	U.S. Department of Labor, OSHA-NIOSH Hazard Alert: “Worker Exposure to Silica during Hydraulic Fracturing” (DSTEM 6/2012) (“OSHA-Silica”), available at: https://www.osha.gov/dts/hazardalerts/hydraulic_frac_hazard_alert.pdf

1011	RESERVED
1012	U.S. Department of Labor, OSHA News Release (dated June 21, 2012), available at: https://www.osha.gov/news/newsreleases/national/06212012
1013	U.S. Department of Labor, OSHA Homepage (archived July 22, 2012), available at: https://web.archive.org/web/20120722160756/https://www.osha.gov/
1014	U.S. Department of Labor, OSHA Industry/Hazard Alerts Index (archived August 1, 2012), available at: https://web.archive.org/web/20120801064838/http://www.osha.gov/hazardindex.html
1015	U.S. Department of Labor, OSHA-NIOSH Hazard Alert: Worker Exposure to Silica during Hydraulic Fracturing (archived August 8, 2012), available at: https://web.archive.org/web/20120808200919/http://www.osha.gov/dts/hazardalerts/hydraulic_frac_hazard_alert.html
1016	Center for Disease Control, NIOSH Numbered Publications (archived July 21, 2012), available at: https://web.archive.org/web/20120721180008/http://www.cdc.gov/niosh/pubs/all_date_desc_nopubnumbers.html
1017	U.S. Department of Labor, OSHA Homepage (archived April 6, 2015), available at: https://web.archive.org/web/20150406152927/https://www.osha.gov/
1018	U.S. Department of Labor, OSHA Publications (“All”) (archived June 26, 2015), available at: https://web.archive.org/web/20150626140537/https://www.osha.gov/pls/publications/publication.html
1019	U.S. Department of Labor, OSHA Publications (organized topically) (archived April 6, 2015), available at: https://web.archive.org/web/20150406054914/https://www.osha.gov/pls/publications/publication.AthruZ?pType=Industry

1020-1029	RESERVED
1030	Mary Ann Mullaney et al., “A Shift to Sand: Spotlight on Silica Use in Fracking,” Law360 (Aug. 2, 2012), available at: https://www.law360.com/articles/366057/a-shift-to-sand-spotlight-on-silica-use-in-fracking ; https://www.law360.com/articles/366057/print?section=energy
1031	Bernard Goldstein et al., “The Role of Toxicological Science in Meeting the Challenges and Opportunities of Hydraulic Fracturing,” TOXICOLOGICAL SCIENCES 139 (2), p. 271-283 (Apr. 4, 2014)
1032	Donna Heidel et al., “Safety and Health Management Aspects for Handling Silica-based Products and Engineered Nanoparticles in Sequences of Shale Reservoir Stimulations Operations” (SPE 18334), SPE International (2014)
1033	Henry Chajet et al., “OSHA Issues Alert on Non-Silica Fracking Hazards,” NAT’L LAW REVIEW (Jan. 30, 2015), available at: 2015 WLNR 2899814
1034	“OSHA Issues Hazard Alert for Fracking and Drilling,” INDUSTRIAL SAFETY & HYGIENE NEWS (ISHN) (Jan. 6, 2015), available at: https://www.ishn.com/articles/100386-osha-issues-hazard-alert-for-fracking-and-drilling
1035	Mike Soraghan, “OSHA Issues Hazard Alert for Fracking and Drilling,” ENVIRONMENTAL & ENERGY NEWS: ENERGYWIRE (Dec. 10, 2014), available at: https://www.eenews.net/energywire/stories/1060010241/search?keyword=osha+issues+hazard+alert+for+fracking+and+drilling
1036	RESERVED
1037	U.S. Patent No. 9,410,410 to Broussard et al., entitled “System for Pumping Hydraulic Fracturing Fluid Using Electric Pumps” (filed as App. No. 13/679,689)

1038	November 29, 2021 email from the Board authorizing preliminary reply and sur-reply
1039	Services, Clean Fleet, U.S Well Services, http://uswellservices.com/services/ (last visited Nov. 15, 2021)
1040	U.S. Well Services Press Release (dated Apr. 15, 2021), available at: https://ir.uswellservices.com/news-events/press-releases/detail/53/u-s-well-services-inc-files-suit-against-halliburton
1041	H.R. Rep. No. 112-98 (June 1, 2011)

Pursuant to the Board's email of Nov. 29, 2021 (Ex. 1038), Petitioner files this authorized reply to Patent Owner's ("PO") Prelim. Response (Paper 6, "POPR").

I. INSTITUTION IS PROPER UNDER § 314(A)

PO argues for the seven asserted patents that Petitioner waited *too long* to file IPR under *Fintiv*, but then argues that Petitioner did not wait *long enough* to file for the unasserted patents. For each of the unasserted patents challenged by Petitioner, Petitioner has filed a *single* petition. This is not the case of multiple attacks on the same patent, and Petitioner's IPR petitions align with the intent of the AIA.

A. PATENT OWNER CREATES A CATCH-22 SITUATION

PO initiated the dispute by filing a lawsuit on April 15, 2021 on seven patents, all purporting to trace priority to one pre-AIA application—U.S. Patent App. No. 13/679,689 filed Nov. 16, 2012 (referred to as "Broussard"). Petitioner challenged these patents, each with a *single* petition in IPR2021-01032 through IPR2021-01038. The petitions were filed *only two* months after PO filed the original complaint and three weeks *before* Petitioner received PO's infringement contentions identifying the asserted claims. *See, e.g.*, IPR2021-01032, Ex. 1042.

PO argues that Petitioner somehow waited too long under *Fintiv* to challenge the asserted patents. *See, e.g.*, IPR2021-01032, Paper 6. Yet now PO complains that Petitioner challenged "the validity of eight separate unasserted Patents within the USWS portfolio, including this Petition." POPR, 16. PO thus imposes a Catch-22:

file IPR after getting sued, and PO argues for denial under *Fintiv*; file IPR before getting sued, and PO argues for denial because the patent is unasserted. This dichotomy is untenable and not supported by the AIA. *See* 35 U.S.C. §315(b).

Petitioner should not need to sit idle against a looming cloud of other patents. The very same day PO sued Petitioner, PO issued a press release about the lawsuit it filed “against Halliburton Company and Cimarex Energy Co.,” accusing Petitioner of infringing “multiple U.S. Well Services patents.... U.S. Well Services currently has a portfolio of 42 patents granted” Ex. 1033. PO quoted its President and CEO touting the lawsuit and stating, “The defense of our intellectual property is paramount, *and we have and always will take whatever measures are necessary* to protect it.” Ex. 1040 (emphasis added). Petitioner should not be required to wait to challenge such patents while PO takes whatever measures it deems are necessary.

B. PTAB REVIEW WAS SET UP TO PROTECT PUBLIC FROM BAD PATENTS

Discretionary denial would be contrary to the purpose of the AIA, designed to “weed out bad patent claims efficiently.” *Thryv, Inc. v. Click-To-Call Techs., LP*, 140 S. Ct. 1367, 1374 (2020). Congress enacted the AIA because “questionable patents are too easily obtained and are too difficult to challenge” in district court. H.R. Rep. No. 112-98, at 39 (2011) (Ex. 1041). Thus, Congress recognized the need for a “more efficient system for challenging patents that should not have issued,” without subjecting those parties to the burden of lengthy and expensive district court

litigation. *Id.* at 39-40.

USWS complains that Petitioner has challenged multiple unasserted patents. But as Petitioner demonstrated in its petition, USWS obtained the '901 Patent through inappropriate continuations-in-part applications, despite no entitlement to such priority claims. PO's errors in priority date have materially affected prosecution of patents claiming priority from Broussard. Such a course of conduct by PO to obtain multiple invalid patents only highlights the need for access to the IPR process.

C. USWS CITES NO PTAB CASES DENYING IN SIMILAR CIRCUMSTANCES

Petitioner has not engaged in "follow-on" petitions that challenge the same patent. *See Consolidated Trial Practice Guide* p. 56 (Nov. 2019). Nor do "different petitioners challenge the same patent." *Id.* at 57 n.1. And despite there being "a dispute about priority date," there has only been a *single* petition against the '901 Patent. *See id.* at 65. PO cites no cogent rationale for denying institution.

II. INSTITUTION IS PROPER UNDER § 325(D)

Hardin (Ex. 1006): PO acknowledges, but does not dispute, "Petitioner's proposed priority date of October 14, 2016." POPR, 7. But during prosecution, the Examiner applied "pre-AIA first to invent provisions," adopting PO's asserted priority date of Nov. 16, 2012. Ex. 1003, 95; Pet. at 9. Examiners do not make priority findings as a matter of course during prosecution. *PowerOasis, Inc. v. T-Mobile USA, Inc.*, 522 F.3d 1299, 1305 & n.4 (Fed. Cir. 2008); M.P.E.P. §201.08.

Thus, the Examiner would not have substantively reviewed *Hardin* (filed Nov. 28, 2014). Based on PO's prosecution missteps, the Examiner "erred in a manner material to the patentability of the challenged claims" by not rejecting the claims over *Hardin*. *Advanced Bionics, LLC v. Med-El Elektromedizinische Gerate GMBH*, IPR2019-01469, Paper 6 at 8 (P.T.A.B. Feb. 13, 2020); Pet. at 9-10.

Coli (Ex. 1008): *Coli* is "cited on the face" of the '901 Patent, but the "Examiner did not rely upon [it] to reject the claims or otherwise substantively discuss" the reference. See *Collective Minds Gaming Co. v. Ironburg Inventions Ltd.*, IPR2018-00356, Paper No. 11 at 8 (P.T.A.B. June 7, 2018) (declining to exercise discretion to deny institution). Indeed, *Coli* is among **over 180 other cited references** in the '901 Patent. See *Group III Int'l, Inc. v. Targus Int'l LLC*, IPR2021-00371, Paper 21 at 33 (P.T.A.B. July 9, 2021) (declining to exercise discretion when asserted references "were submitted to the Office during prosecution [and] included as part of an IDS disclosing 174 references ... The Examiner did not discuss these references nor use them in the rejection of any claim."). Unlike the *Husky* case cited by PO, nothing in the "prosecution record" of the '901 Patent contains a "search report" that explains "why the claims would have been obvious ... similar to the explanation set forth in the Petition." *Husky Injection Molding Sys., Ltd. v. Plastipak Packaging, Inc.*, IPR2020-00435, Paper 23 at 19 (P.T.A.B. July 28, 2020).

***Dykstra* (Ex. 1007), *OSHA-3763* (Ex. 1009), *OSHA-Silica* (Ex. 1010):**

These references were *not cited* on the cover of the '901 Patent. The Petition therefore presents different prior art than that in front of the Office. Pet., 9.

PO contends that *Dykstra* is cumulative of *Heilman* (Ex. 2001), but *Heilman* is buried among more than 180 references cited on the cover of the '901 Patent. The “Examiner did not rely upon” *Heilman* “to reject the claims or otherwise substantively discuss” the reference. See *Collective Minds*, IPR2018-00356, Paper No. 11 at 8. Second, *Dykstra* provides additional motivations to combine. Unlike *Heilman*, *Dykstra* discloses monitoring vessel levels in order to achieve a level that is “neither too low nor overflowing.” Ex. 1007, ¶[0027]. A POSITA would have been motivated to use the cameras in *Hardin* to ensure that these levels are being controlled correctly. Pet., 58-59, 65-66. Thus, *Dykstra* is not cumulative of *Heilman*.

OSHA-Silica and *OSHA-3763* are relied upon as prior-art references in Grounds 2 and 5 in combination with *Hardin*. Pet. at 26. *Hardin* discloses the majority of claim limitations in these grounds; and, due to PO’s missteps with priority date, the Examiner erred by not rejecting the claims over *Hardin*. Moreover, unlike the references cited during prosecution, *OSHA-3763* and *OSHA-Silica* provide additional motivations to combine. For example, OSHA has “jurisdiction over the health and safety of workers, including ... upstream oil and gas operations.” Pet. at 57. The *OSHA* references identifies areas of potential hazard to workers, and thus directs a POSITA as to where to place the cameras of *Hardin*. Pet. at 57-58.

III. PO HAS NOT DEMONSTRATED NEXUS TO SUPPORT SECONDARY CONSIDERATIONS

“[S]econdary considerations of nonobviousness ... simply cannot overcome a strong prima facie case of obviousness.” *Wyers v. Master Lock Co.*, 616 F.3d 1231, 1246 (Fed. Cir. 2010). Here, PO’s untested secondary considerations should be given no weight, because PO cannot meet its burden to demonstrate nexus.

“For objective indicia of nonobviousness to be accorded substantial weight, *its proponent* must establish nexus between the evidence and the merits of the claimed invention.” *Lectrosonics, Inc. v. Zaxcom, Inc.*, IPR2018-01129, Paper 33 at 32 (P.T.A.B. Jan. 24, 2020) (emphasis added); *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373 (Fed. Cir. 2019) (“patentee bears the burden of showing that a nexus exists”). A “nexus” means “‘a legally and factually sufficient connection’ between the evidence and the patented invention.” *Fox Factory*, 944 F.3d at 1373. “Applying *Fox Factory*, the Board uses a two-step analysis in evaluating nexus between the claimed invention and the evidence of secondary considerations.” *Godbersen-Smith Construction Co. v. Guntert & Zimmerman Const. Div., Inc.*, IPR2021-00136, Paper 19 at 44 (P.T.A.B. May 21, 2021). PO has not met its burden to demonstrate nexus.

A. NO PRESUMPTION OF NEXUS APPLIES UNDER STEP ONE OF *FOX FACTORY*

Under step one, a rebuttable presumption of nexus applies if “patentee shows that the asserted evidence is tied to a specific product and that the product ‘*is the invention disclosed and claimed,*’ ...that the asserted objective evidence is tied to a

specific product and that the product ‘embodies the claimed features, and is coextensive with them.’” *Fox Factory*, 944 F.3d at 1373 (emphasis in original). PO has not “tied” secondary considerations to *any* specific product. To the extent USWS seeks to tie the ’901 Patent to Clean Fleet (discussed in the Background, but not Secondary Considerations section), there is no presumption of nexus.

USWS asserts that the “USWS patent portfolio, including the ’901 Patent, covers the Clean Fleet® product and systems.” POPR, 4. PO has not demonstrated Clean Fleet is coextensive with the ’901 Patent. For example, the *same* Clean Fleet product discussed in this POPR is relied upon by PO in the POPR for the ’410, ’601, and ’308 Patents, which name *entirely non-overlapping* inventors with the ’901 Patent. *See* IPR2021-1032, -1033, -1034. This eviscerates the presumption of nexus. *Fox Factory*, 944 F.3d at 1375 (“[T]he patentee was not entitled to a presumption of nexus because the product embodied at least two patented inventions, and the burden thus remained on the patentee to show that the product’s success was due to the invention claimed in the *patent asserted in the case.*”) (emphasis added).

Assuming PO’s untested allegations are true that Clean Fleet practices the ’901 Patent (and dozens of others, *see* Ex. 1039), that confirms the secondary considerations are *not* coextensive with the ’901 Patent. Unlike the ’901 Patent, the ’410, ’601, and ’308 Patents each claim a “variable frequency drive.” *See* IPR2021-01032, Exs. 1001-1003. “[B]ecause there are one or more features not claimed by

the [Challenged Patent] that materially impact the functionality” of Clean Fleet, then “nexus may not be presumed.” *Fox Factory*, 944 F.3d at 1376.

B. PO CANNOT DEMONSTRATE NEXUS UNDER STEP TWO

Under the second step of *Fox Factory*, “the patent owner is still afforded an opportunity to prove nexus by showing that the evidence of secondary considerations is the ‘direct result of the unique characteristics of the claimed invention.’” *Id.* at 1373-74. PO cannot do that here.

a. The ’410 file history does not provide secondary considerations

PO argues that “petitioner failed to address the critical evidence of the objective indicia of nonobviousness presented during prosecution of the ’410 Patent—the grandparent of the ’901 Patent.” POPR, 49. But the ’410 Patent (App. No. 13/679,689) published more than one year before ’901 Patent’s priority date, so it qualifies as prior art to the ’901 Patent. *See* Pet. at 5-7; Ex. 1037. Thus, any secondary considerations are *not* attributable to the claimed invention of the ’901 Patent, but instead to the prior art. “Where the offered secondary consideration actually results from something other than what is both claimed and *novel* in the claim, there is no nexus to the merits of the claimed invention,” meaning that “there must be a nexus to some aspect of the claim not already in the prior art.” *Lectrosonics*, IPR2018-01129, Paper 33 at 33 (emphasis in original).

b. The copying allegations are irrelevant.

PO seeks to litigate an unrelated trade secrets case in its POPR, asserting nexus between copying and “the claimed invention as a whole,” because “the named inventor Jared Oehring, a former employee of USWS, collaborated ... to actively steal designs and copy USWS’s technologies and products.” POPR, 51. These untested allegations should be given no weight. Rather than cite *evidence*, PO rehashes *allegations* from a preliminary-injunction motion filed in a trade-secrets lawsuit against a company that is *not* a party to this IPR. The motion was filed *months after* the IPR petition against the ’901 Patent was filed. Ex. 2008. “At this stage of the proceeding, Patent Owner’s evidence has not been sufficiently developed, and Petitioners have not yet had an opportunity to adequately test such evidence.” *Assoc. Brit. Foods PLC v. Cornell Research Found., Inc.*, IPR2019-00577, Paper 25 at 20 (PTAB July 25, 2019).

Taking PO’s copying allegations at face value—that the inventor of the ’901 Patent (Oehring) copied from himself—“a showing of copying is only equivocal evidence of non-obviousness in the absence of more compelling objective indicia of other secondary considerations.” *Ecolochem, Inc. v. S. Calif. Edison Co.*, 227 F.3d 1361, 1380 (Fed. Cir. 2000). Here, the nebulously identified trade-secrets that were allegedly copied are wholly untethered to the ’901 Patent and are irrelevant:

- (i) USWS customers’ power load curves and pricing/financial information, (ii) USWS’s switchgear connection voltages, (iii) USWS’s emission load rates for VoltaGrid’s emissions calculator, (iv) USWS’s energy storage technologies, (v) USWS’s Clean Fleet® power

consumption data, and (vi) USWS's prior turbine purchase prices in, at least, VoltaGrid business models, pricing models, technical designs, and competitive bids

Ex. 2008, Page 23 of 311. For example, Exhibit 2008 says nothing about the '901 Patent, such as "proppant" (or "sand"), "slurry," "remote monitoring," "real time images," and many other claim limitations. Further, the '901 Patent issued in 2017, years before the alleged trade-secret theft. *See id.*, Page 14 of 311. Either the issuance of the '901 Patent destroyed PO's alleged trade secrets, or its trade-secret allegations are unmoored from the '901 Patent. See, e.g., *Water Techs. Corp. v. Calco, Ltd.*, 850 F.2d 660, 670 (Fed. Cir. 1988) ("Those patents issued ... *before* Gartner's disclosure to Calco, so that the information 'misappropriated' could not possibly be a trade secret.").

PO's trade-secret allegations do not establish nexus, and certainly not at the pre-institution phase when Petitioner has been unable to take depositions on them.

Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned hereby certifies on this 8th day of December 2021, a true and correct copy of the foregoing **PETITIONER'S AUTHORIZED REPLY TO PATENT OWNER'S PRELIMINARY RESPONSE and EXHIBITS 1038-1041**, were served to Patent Owner via electronic mail to:

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