

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LIBERTY ENERGY, INC. AND LIBERTY OILFIELD SERVICES LLC,
Petitioners,

v.

U.S. WELL SERVICES, LLC,
Patent Owner.

IPR2025-00066
U.S. Patent No. 10,598,258 B2

PATENT OWNER'S SUR-REPLY TO PETITIONERS' REPLY

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PATENT OWNER'S EXHIBIT LIST

Exhibit No.	Description
2001	Dudley, Darle W., <i>Gear Handbook</i> , McGraw-Hill Book Co. ("Gear Handbook")
2002	Lynwander, Peter, <i>Gear Drive Systems</i> , Macrel Dekker, Inc., New York, 1983.
2003	About AGMA – American Gear Manufacturers Association, available at https://www.agma.org/membership/about-agma/ . ("About AGMA PDF")
2004	Member List – American Gear Manufacturers Association, available at https://www.agma.org/membership/member-list/ . ("Member List – AGMA PDF")
2005	Gear Engineering 50+ Years Of Experience, United Gear, Inc., available at https://www.ugaco.com/gear-engineering/ . ("United Gears PDF")
2006	Patent Case Scheduling Order, <i>U.S. Well Services, LLC, et al. v. Liberty Energy, Inc., et al.</i> , Dkt. 30, Case No. 4:24-cv-00839-KPE (S.D. Tex.).
2007	ZipRecruiter, <i>What is a Gear Design Engineer and How to Become One</i> , available at ziprecruiter.com/career/Gear-Design-Engineer/What-Is-How-to-Become .
2008	proconpump (New Smyrna Beach): Gear Design Engineer, available at https://join.com/companies/proconpump/13469702-gear-design-engineer . ("Proconpump job")
2009	Weiss, Shannon, <i>Mechanical Engineer-Gear Design & Automation</i> , August 3, 2017, available at https://www.cgimotion.com/mechanical-engineer-gear-design-automation/ . ("CGI job")
2010	Gear Design Engineer @ American Axle & Manufacturing-AAM JobzMall, available at https://www.jobzmall.com/american-axle-manufacturing-aam/job/gear-design-engineer . ("American Axle job")

2011	PTO Classification Definitions Class 475, <i>Planetary Gear Transmission Systems or Components</i> , February 2007.
2012	Excerpts from D. T. Jelaska, <i>Gears and Gear Drives</i> , John Wiley & Sons, 2012.
2013	Bachelor of Science in Electrical Engineering, Cullen College of Engineering, University of Houston. ("EE course requirements")
2014	Bachelor of Science in Petroleum Engineering, Cullen College of Engineering, University of Houston. ("Pet. Eng. course requirements")
2015	Bachelor of Science in Mechanical Engineering, Cullen College of Engineering, University of Houston. ("ME course requirements")
2016	MECE 4331 Design of Machine Elements, Spring 2025
2017	<i>Welcome to PEM</i> , Power Engineering and Mfg. ("PEM").
2018	<i>ITAMCO's Next Generation Gear Manufacturing Revolutionizes Fracking Efficiency in the Oil Industry</i> , Indiana Technology and Manufacturing Companies, January 29, 2024. ("website")
2019	Petitioner's invalidity contentions.
2020	<i>Best-Practice Gearbox Lubrication</i> , Gear Solutions Magazine, Jan. 1, 2010.
2021	Declaration of Dr. Robert A. Durham, <i>Liberty v. U.S Wells</i> , Case No. IPR2025-00105.
2022	<i>Fatigue Failure of a Helical Gear in a Gearbox</i> , Engineering Failure Analysis, available at https://www.sciencedirect.com/science/article/abs/pii/S1350630705001780 .
2023	Curriculum Vitae of Dr. Michael Nikolaou.
2024	Declaration of Dr. Michael Nikolaou regarding the 258 and 533 Patents.

2025	USPTO Recission of Memorandum Addressing Discretionary Denial Procedures.
2026	Order Terminating Inter Partes Review in IPR2025-00105.
2027	Notice of Markman Hearing Set for April 30, 2025.
2028	<i>Liberty Energy Inc. and Liberty Energy Services LLC v. U.S. Well Services Holdings, LLC</i> , No. IPR2025-00778, Paper 1 (PTAB Mar. 28, 2025)

I. INTRODUCTION

In response to Petitioners' reply ("Reply") (Paper No. 8) to Patent Owner's preliminary response ("POPR") (Paper No. 7), Patent Owner respectfully submits that the *Fintiv* factors strongly favor discretionary denial and Petitioners' arguments about alleged inconsistent statements are meritless, as shown below.

II. THE *FINTIV* FACTORS FAVOR DISCRETIONARY DENIAL

Factor 1: Petitioners moved for a stay (EX-1051) but admit that "the Board has declined to speculate whether the district court would grant a stay." Reply at 1. The Court has not granted—and indeed may not grant—a stay. Moreover, the Board recently terminated one of the IPR proceedings mentioned in Liberty's motion to stay as prematurely filed. *Compare* EX-2026, *with* EX-1051, 3–4 (listing IPR2025-00105). Although Liberty recently filed another IPR petition challenging the 533 Patent, *see* EX-2028, it is unclear how the Court will treat Liberty's mistake requiring it to file another IPR, which affects the issues addressed in its stay motion. This factor either is neutral or weighs slightly in favor of denial, given the potential for the district court to exercise its discretion to deny a stay.

Factor 2: Trial in the related district court proceeding has been scheduled for February 2, 2026. EX-2006, 4. Patent Owner amended its complaint but noted that it "will not affect any deadlines on the schedule related to claim construction, with the *Markman* hearing currently scheduled for February 20, 2025." EX-1038, 6; *see*

id. (“[T]he amendment would not affect the discovery in the case ... or any other scheduling deadlines.”). The *Markman* hearing has been rescheduled to April 30, 2025, EX-2027, and the trial date is still scheduled for February 2, 2026. If the Board issues its institution decision in May 2025, the statutory deadline for the final written decision will be May 2026—three months after the scheduled trial date. Even assuming a day-for-day slip in schedule due to the rescheduled *Markman* hearing—despite the scheduled February 2, 2026 trial date to the contrary—the Board’s final written decision would still be one month after the scheduled trial date. *See Apple Inc. v. Fintiv Inc.*, IPR2020-00019, Paper No. 11, at 9 (PTAB Mar. 20, 2020) (precedential) (“If the court’s trial date is earlier than the projected statutory deadline, the Board generally has weighed this factor in favor of authority to deny institution under *NHK*.”). Thus, *Fintiv* factor 2 favors denial.

Factor 3: Petitioners’ Reply rehashes many of the same arguments that it presented in its Petition. The *Markman* hearing is scheduled for April 30, 2025, EX-2027, and the Court anticipates issuing a ruling “within 6 weeks after the *Markman* hearing.” *See* EX-2006, 3. By the time the Board issues an institution decision (estimated no later than May 23), the parties will have already invested significant time and resources in the district court to favor denial. Similarly, the Court will have invested significant resources in hearing oral argument at *Markman* and preparing a claim construction order. *Fintiv*, at 10 (finding that

significant time invested in parallel proceedings favors denial when district court issues a claim construction order).

Petitioners fail to address the significant resources already expended by the time the Board decides whether to institute. Instead, Petitioners focus on their alleged diligence in filing a petition. Reply at 2. But even if true, that does not negate the significant resources invested by the parties or the Court, as shown by the inapposite cases cited in Petitioners' Reply. *Corning Optical Comm'ns LLC v. Dali Wireless, Inc.*, IPR2021-00762, Paper 8, at 9–10 (PTAB Oct. 13, 2021) (noting “no *Markman* hearing was necessary,” so the record did not show that “the district court’s investment” had “been substantial”); *Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12, at 13, 17 (PTAB Dec. 12, 2020) (noting all *Markman* deadlines were vacated, including the hearing, and excusing petitioner for its belated filing because it faced a “large number of patents and claims challenged,” resulting in “the increased difficulty in preparing the Petitions due to concurrent office closures” due to the COVID pandemic); *Samsung Elecs. Co. v. Harbor Island Dynamic, LLC*, IPR2024-01405, Paper 9, at 35–36 (PTAB Mar. 24, 2025) (*Markman* hearing scheduled for four months after institution decision; incomparable case investment factors); *Kia Corp. v. Emerging Automotive LLC*, IPR2024-01167, Paper 14, at 14 (applying rescinded “*Fintiv* Guidance,” see EX-2025). This factor is neutral or weighs in favor of denial.

Factor 4: Relying on the rescinded Guidance, *see* EX-2025, Petitioners offered a *Sotera* stipulation. *See* Reply at 3. But a *Sotera* stipulation is no longer enough to escape discretionary denial. *See* EX-2025, 4 (rescinding guidance stating “the PTAB will not discretionarily deny institution in view of parallel district court litigation where a petitioner presents a [*Sotera*] stipulation”); *see id.*, 8–9; *Motorola Sols. v. Stellar, LLC*, IPR2024-01205, Paper 19, *on director review* (Mar. 28, 2005) (vacating institution and denying institution, and holding that a *Sotera* stipulation did not outweigh the significant investment in parallel proceedings).

Factor 5: Petitioners admit factor 5 favors discretionary denial. Reply at 3.

Factor 6: Petitioners' attempts to fix the Petition's deficiencies are meritless.

First, Petitioners argue the unsupported citations to Buckley are entitled to the Buckley provisional's priority date because they are not relied upon for disclosure of a planetary gearbox. Pet. at 4. Petitioners fail to address several portions of Buckley relied on by the Petition and instead focus on Figures 2 and 9 as “the subject matter of Buckley” relied on by the Petition. Reply at 4. Neither figure, however, appears in Buckley's provisional, which fails to provide “written description support for the specific portions of the patent specification identified and relied on” by the Petition. *In re Riggs*, No. 2022-1945, 2025 WL 889905, at *5 (Fed. Cir. Mar. 24, 2025). Further, Petitioners do not address that Figure 2 in Buckley lacks written description support by being merely an obvious variant of

Figure 2 in Buckley's provisional. Resp. at 23–24. Buckley is therefore not entitled to the provisional application's priority date.

Second, Petitioners' demonstrably false "inconsisten[cy]" argument as discussed in Section III is merely a red herring to draw attention away from Petitioners' flawed motivation to combine Bergan, Yi, and Buckley, given the complexities in planetary-system gear design as Patent Owner illustrated. POPR at 25–59. Accordingly, the merits of those Grounds are not "compelling" but instead are (at best for Petitioners) "a closer call" favoring denial. *Fintiv*, at 15. Factor 6 thus favors denying institution.

III. PATENT OWNER'S POSITIONS ARE NOT INCONSISTENT, AND PETITIONERS' ARGUMENT EMPHASIZES THE FLAW IN THEIR OBVIOUSNESS THEORY

Petitioners' arguments concerning Patent Owner's supposed inconsistent statements are incorrect for at least two reasons.

A. Petitioners' accusation of inconsistency is baseless because Patent Owner's positions address fundamentally different issues.

Petitioners' inconsistency argument is baseless because Patent Owner has addressed two fundamentally different issues: (1) claim construction addressing the term "selection of a gear ratio of a planetary gear train" in the district court litigation and (2) whether the Petition provides a sufficient explanation of how a

POSITA¹ would have been motivated to combine the prior art without using the challenged patent as a guide (i.e., improper hindsight).

Patent Owner has consistently pointed out that the design of gear systems—as opposed to gear-ratio selection, which is one aspect of such design—is a complex process. POPR at 26 (“Petitioner has not shown that a POSITA as defined, without the benefit of the 258 Patent, would have the required knowledge and experience to understand gear system design from the prior art to combine the references in the way that the Petition proposes, much less to be able to select gear ratios and motor speeds in the way specified in the claims.”), 27 (“[T]he *design of gear systems* for specified applications is a complex field that requires specialized knowledge[.]”) (emphasis added). Consistent with its district court positions, Patent Owner draws the distinction between complex gear-system design and the subtask of gear-ratio choices. POPR at 47 (“These differences show it is *more complex to incorporate Bergan’s planetary gear system* ... into the Bergan and Yi

¹ Petitioners’ arguments about POSITA qualifications or its expert, Reply at 6–8, do not undermine Patent Owner’s arguments, because the prior art and the challenged patents have different disclosures. As shown below, *see infra* Section III.B, a POSITA would glean different teachings from the 258 Patent than the prior art.

systems than *simply making ‘appropriate changes to gear sizes’* as Petitioner asserts.”) (emphasis added). Patent Owner’s claim construction positions are not inconsistent; rather, Patent Owner merely presented evidence² that the term “a gear ratio” is understandable to a POSITA. EX-1054, 16 (“But the experts agree, a gear ratio is readily understandable to a POSITA and requires no further construction.”). Patent Owner’s claim construction position that the term “gear ratio” is readily understandable does not contradict its position here that overall gear system design is a complex process beyond the skill of a POSITA.

B. Petitioners’ attacks on the 258 Patent show that its prior-art combinations are flawed.

Unlike the 258 Patent, Petitioners’ Bergan–Buckley–Yi obviousness combinations fail to demonstrate how “the prior art, taken as a whole, [] enable[s] a skilled artisan to make and use the claimed invention.” *Raytheon Techs. Corp. v. Gen. Elec. Co.*, 993 F.3d 1374, 1380 (Fed. Cir. 2021). As explained below, the 258 Patent includes a key feature—missing from the Petition—that Petitioners’ expert admits is required.

² Patent Owner used defendant’s expert Dr. Hilbert’s testimony to show he was familiar with gear ratios—nothing more. *See* EX-1054, 16 (“Dr. Hilbert showed in his deposition his familiarity with gear ratios[.]”).

Petitioners' attacks on supposed "scant descriptions" in the 258 Patent emphasize the Petition's flaw. Reply at 6–7. Petitioners' own expert admitted the prior-art combination needed August's star-arrangement gear to connect Bergan's ring gear with Buckley's fracturing crankshaft. *See* POPR at 45. Petitioners' expert's annotated drawing from a different IPR proceeding requires August's gear to connect Bergan's planetary gear system with Buckley's pump crankshaft:

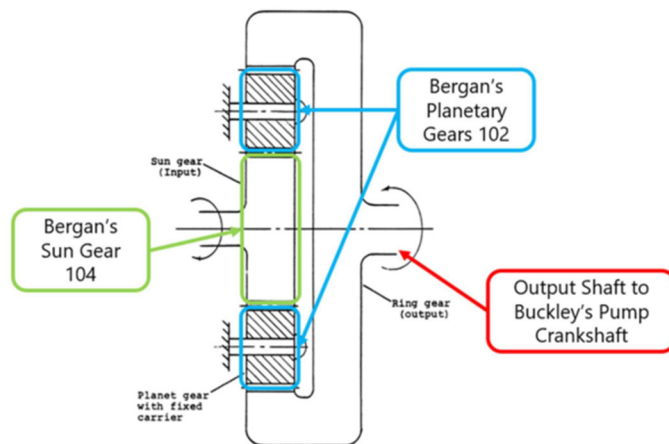


Figure B-1 - Star Arrangement

EX-2021, ¶ 249. Unlike Petitioners' combination, Figure 1 of the 258 Patent includes the necessary final drive gear 110 missing from Petitioners' proposed combination. EX-1001, Fig. 1. Without the August gear or any explanation of how to connect Bergan's planetary gear with Buckley–Yi's crankshaft, the Petition fails to show how "the prior art, taken as a whole, [] enable[s] a skilled artisan to make and use the claimed invention" without further modification or hindsight guidance from the 258 Patent. *Raytheon*, 993 F.3d at 1380.

Dated: April 11, 2025

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on this 11th day of April, 2025, I caused to be served a true and correct copy of the foregoing "Patent Owner's Sur-Reply to Petitioners' Reply" and accompanying exhibits by electronic mail on the following:

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