

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

KLX ENERGY SERVICES LLC,
Petitioner,

v.

SAFOCO, INC.,
Patent Owner.

CASE IPR2024-00197

PATENT 9,671,794 B1

**PATENT OWNER'S PRELIMINARY RESPONSE TO PETITION FOR
INTER PARTES REVIEW OF U.S. PATENT NO. 9,671,794 B1**

TABLE OF CONTENTS

	<u>Page</u>
TABLE OF AUTHORITIES	v
EXHIBIT LIST	viii
I. INTRODUCTION	1
II. BACKGROUND	2
A. The '794 Patent	4
B. Related Applications and their Prosecution History	6
C. The Prosecution History of the '794 Patent	8
D. The Challenged Claims	9
E. The Parallel Litigation.....	10
III. CLAIM CONSTRUCTION.....	11
IV. LEVEL OF ORDINARY SKILL IN THE ART	12
V. PETITIONER'S CITED REFERENCES.....	13
A. Tettleton (Ex. 1016)	13
B. Cotham (Ex. 1019).....	16
C. Tubel (Ex. 1021).....	18
VI. LEGAL STANDARDS	19
A. Anticipation	20
B. Obviousness.....	20
VII. PETITIONER HAS NOT DEMONSTRATED THAT THERE IS A REASONABLE LIKELIHOOD THAT AT LEAST ONE OF THE CHALLENGED CLAIMS IS UNPATENTABLE	23

A. Ground 1: Claims 1, 2, 5, 6, 9, 11, 12, 13, 16, 17, 18 and 21 are not anticipated by Tettleton	24
1. Independent Claim 1	24
2. Independent Claim 2	38
3. Dependent Claim 5	39
4. Dependent Claim 6	39
5. Dependent Claim 9	39
6. Dependent Claim 11	40
7. Dependent Claim 12	40
8. Independent Claim 13	40
9. Dependent Claim 16	41
10. Dependent Claim 17	41
11. Dependent Claim 18	41
12. Dependent Claim 21	42
B. No Motivation to Combine	42
C. Ground 2: Claims 3, 4, 7, 8, 14 and 15 are not obvious over the combination of Tettleton and Cotham	45
1. Dependent Claim 3	46
2. Dependent Claim 4	46
3. Dependent Claim 7	46
4. Dependent Claim 8	47
5. Dependent Claim 14	47
6. Dependent Claim 15	48

D. Ground 3: Claims 10, 19 and 20 are not obvious over the combination of Tettleton and Tubel	48
1. Dependent Claim 10	48
2. Dependent Claim 19	49
3. Dependent Claim 20	49
VIII. PETITIONER IS AWARE OF EVIDENCE OF SECONDARY CONSIDERATIONS THAT CONFIRMS NONOBVIOUSNESS	50
IX. THE BOARD SHOULD DENY INSTITUTION UNDER 325(D) BECAUSE THE SAME ART AND ARGUEMENTS WERE PRESENTED TO THE OFFICE AND PETITIONER HAS FAILED TO IDENTIFY EXAMINER’S ERRORS	51
A. The Office Considered the Same or Substantially the Same Art and Arguments	54
B. The Office Did Not Err in a Manner Material to Patentability	59
X. PETITIONER’S <i>FINTIV</i> ANALYSIS IS FLAWED	62
A. Factor 1: The Parallel Litigation is Not Stayed	62
B. Factor 2: The Trial in the Parallel Litigation is Set for 9 Months before the Board’s Projected Statutory Deadline for its Final Written Decision	63
C. Factor 3: The Parties Have Invested and Will Invest Significant Time and Money in the Parallel Litigation	64
D. Factor 4: Petitioner’s Stipulation is Not a Golden Ticket to Institution	65
E. Factor 5: The Parties are Identical	66
F. Factor 6: The Merits are Not Compelling	67
XI. CONCLUSION	69

TABLE OF AUTHORITIES

Cases

<i>Advanced Bionics, LLC v. Med-El Elektromedizinische Geräte GmbH,</i> IPR2019-01469 (PTAB Feb. 13, 2020)	passim
<i>Akamai Techs., Inc. v. Cable & Wireless Internet Servs., Inc.,</i> 344 F.3d 1186 (Fed. Cir. 2003)	20
<i>Apple Inc. v. Fintiv, Inc.,</i> IPR2020-00019 (PTAB Mar. 20, 2020)	passim
<i>Arendi S.A.R.L. v. Apple Inc.,</i> 832 F.3d 1355 (Fed. Cir. 2016)	22
<i>Bradium Techs. LLC v. Iancu,</i> 923 F.3d 1032 (Fed. Cir. 2019)	21
<i>Cisco Sys., Inc. v. Estech Sys., Inc.,</i> IPR2021-00333 (PTAB July 7, 2021)	62
<i>CommScope Tech v. Dali Wireless Decision,</i> IPR2022-01242 (PTAB Feb. 27, 2023)	67
<i>Cosmx Battery Co., Ltd. v. Ningde Amperex Technology Limited,</i> IPR2023-00587 (PTAB Sept. 22, 2023)	63, 64, 65, 67
<i>Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.,</i> 800 F.3d 1375 (Fed. Cir. 2015)	19
<i>Google LLC v. Kewazinga Corp,</i> IPR2021-00527 (PTAB Aug. 21, 2021)	55
<i>Graham v. John Deere Co.,</i> 383 U.S. 1 (1966)	20, 21

IPR2024-00197

Patent 9,671,794 B1

<i>Huawei Tech. Co. v. WSOU Inv., LLC</i> , IPR2021-00225 (PTAB June 14, 2021).....	67
<i>In re Kahn</i> , 441 F.3d 977 (Fed. Cir. 2006)	22
<i>In re Magnum Oil Tools Int’l, Ltd.</i> , 829 F.3d 1364 (Fed. Cir. 2016)	22
<i>In re NuVasive, Inc.</i> , 842 F.3d 1376 (Fed. Cir. 2016)	22
<i>Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.</i> , 821 F.3d 1359 (Fed. Cir. 2016)	21
<i>International Business Machines Corporation v. Digital Doors, Inc.</i> , IPR2023-00970 (PTAB Jan. 12, 2024).....	63, 64
<i>KSR Int’l Co. v. Teleflex Inc.</i> , 550 U.S. 398 (2007).....	20, 21, 22
<i>Meta Platforms, Inc. v. Eight KHZ, LLC</i> , IPR2023-01004 (PTAB Jan. 9, 2024).....	20
<i>Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.</i> , 851 F.3d 1270 (Fed. Cir. 2017)	20
<i>Rosco, Inc. v. Mirror Lite, Co.</i> , 304 F.3d 1373 (Fed. Cir. 2002)	20
<i>Samsung Elecs. Co., Ltd. v. California Inst. of Tech.</i> , IPR2023-00130 (PTAB May 4, 2023).....	67
<i>Sotera Wireless v. Masimo Corp.</i> , IPR2020-01019 (PTAB Dec. 1, 2020)	66
<i>Stryker Corp. v. KFX Medical, LLC</i> , IPR2019-00817 (PTAB Sep. 16, 2019).....	51

<i>TriVascular, Inc. v. Samuels</i> , 812 F.3d 1056 (Fed. Cir. 2016)	22
<i>Trover Grp., Inc. v. Dedicated Micros USA</i> , 2015 WL 1069179 (E.D. Tex. Mar. 11, 2015)	62
<i>Volvo Penta of the Ams., LLC v. Brunswick Corp.</i> , 81 F.4th 1202 (Fed. Cir. 2023)	50

Statutes

35 U.S.C. § 102	20, 66
35 U.S.C. § 103	52, 54, 56
35 U.S.C. § 314(a)	67, 69
35 U.S.C. § 325(d)	passim

Rules and Other Authorities

MPEP §609.02	55
USPTO Memorandum, Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation (June 21, 2022) ..	63, 67

EXHIBIT LIST

Petitioner's Exhibits

Exhibit	Description
1001	Complaint, <i>Safoco, Inc. v. KLX Energy Services, LLC.</i> , No. 2:22-cv-00437-JRG-RSP (E.D. Tex.)
1002	Affidavit of Process Server, <i>Safoco, Inc. v. KLX Energy Services, LLC.</i> , No. 2:22-cv-00437-JRG-RSP (E.D. Tex.)
1003	U.S. Patent No. 3,198,207
1004	U.S. Patent No. 1,151,661
1005	Russell W. Henke, Introduction to Fluid Power Circuits and Systems by R. Henke. Addison. (1970) (“Intro to Fluid Power Circuits and Systems”)
1006	U.S. Patent No. 4,920,811
1007	U.S. Patent No. 9,671,794 (“‘794 Patent”)
1008	U.S. Patent No. 9,671,794 Continuity Data
1009	U.S. Patent Application No. 13/480,704 Continuity Data
1010	March 10, 2017 Non-Final Office Action
1011	U.S. Patent No. 9,671,794 Patent Prosecution History
1012	March 24, 2015 Final Office Action (‘453 Patent)
1013	June 18, 2015 Office Action Response
1014	Office Action Response Claim Amendments
1015	Parallel Proceeding Docket Control Order
1016	U.S. Patent Publication No. 2008/0078586 (“Tettleton”)
1017	Definition of the term “Valve”
1018	Definition of the term “Assembly”
1019	U.S. Patent No. 5,335,730 (“Cotham”)
1020	E.P. Patent No. 0183482A2
1021	U.S. Patent No. 5,597,042 (“Tubel”)
1022	Declaration of G. Stevick
1023	Definition of the term “External”
1024	Definition of the term “Source”
1025	Definition of the term “Operational”
1026	Definition of the term “Characteristic”
1027	Chevron Corporation, Instrumentation and Control Manual § 1700 (1999).

1028	Safoco Interrog. Responses, Safoco, Inc. v. KLX Energy Services, LLC, Action No. 2:22-cv-00437-JRG-RSP, (E.D. Tex.).
1029	Hudson et al., A Brief History of Process System Management, Aecom. 1-8 (2021) (published by International Association of Hydrogen Safety at http://hysafe.info/uploads/papers/2021/146.pdf)
1030	OSHA Regulations: Part 1910
1031	Definition of the term “Or”

Patent Owner’s Exhibits

Exhibit	Description
2001	Declaration of Dr. Robert Durham
2002	Printout of Safoco Webpage for Safoco FRV
2003	Excerpts of SLB Energy Glossary
2004	Prosecution History of ’453 Patent
2005	KLX Opening Claim Construction Brief in Parallel Litigation
2006	U.S. Patent No. 6,796,321 (“Vicars”)
2007	Excerpts from D.G. Austin, Chemical Engineering Drawings Symbols
2008	Merriam-Webster Online Dictionary Definition of In-Line
2009	Declaration of Sean Mackiewicz
2010	U.S. Patent No. 4,774,980 (“Etheridge”)
2011	U.S. Patent Publication No. 2010/0154894 (“Kotapish”)
2012	USDC Caseload Statistics
2013	Docket Report for Parallel Litigation
2014	U.S. Patent No. 6,289,737 (“Kouketsu”)

I. INTRODUCTION

On the eve of the one-year deadline, Petitioner KLX Energy Services LLC (“KLX” or “Petitioner”) hurriedly filed its Petition for *Inter Partes* Review of Claims 1-21 (the “Challenged Claims”) of U.S. Patent No. 9,671,794 B1 (the “’794 Patent”) (the “Petition”) that is riddled with errors. The Board should deny institution for any one of the following reasons.

First, Petitioner KLX Energy Services LLC (“KLX” or “Petitioner”) has not demonstrated a reasonable likelihood of prevailing on at least one of the Challenged Claims—at least because the references fail to disclose claim limitations including, (1) a second fluid line in fluid communication with the first fluid line at a location downstream of the pump and configured to return fluid from the first fluid line to the fluid supply or another reservoir, (2) a safety valve in-line with the second fluid line, and (3) a valve with a gate.

Second, the Board should exercise its discretion to deny institution under 35 U.S.C. § 325(d) because the Petition presents the same or substantially the same prior art and arguments as those previously considered by the United States Patent and Trademark Office (“USPTO”) and the USPTO did not make material errors.

Finally, Petitioner’s analysis of the factors set out in *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential) (“*Fintiv*”) includes numerous inaccuracies, which only confirms the Board should deny institution.

II. BACKGROUND

Since its founding in 1993, Safoco, Inc. (“Safoco”) has become a leader in the oil and gas equipment industry, particularly for safety equipment for use in oilfield applications. One of Safoco’s innovative products is the “Safoco FRV” (pictured below)—a product for which Safoco has spent considerable resources researching, developing, and commercializing. As a result of these efforts, Safoco has a substantial patent portfolio, including the ’794 Patent, as well as U.S. Patent Nos. 9,890,609 (the “’609 Patent”) and 9,441,453 (the “’453 Patent”).



Ex. 2002.

The Safoco Fracturing Relief Valve (FRV) was not only a new product in the Safoco line of products, the Safoco FRV was a new product in the oil and gas market.

Prior to the Safoco FRV, the industry relied on mechanical products, such as burst disks and explosion panels, for emergency pressure relief.

During a hydraulic fracturing operation, a sand slurry is pumped at high pressure into fractures formed in a formation surrounding a wellbore. Ex. 2003; *see also* Ex. 1007 at 2:1-14. Sand in the sand slurry prevents the fractures from closing to allow oil and/or gas from the formation to flow into the wellbore. *Id.* Sometimes, the sand builds up across an area in the formation that substantially restricts flow of the sand slurry into the fractures, a condition known as “screen-out.” Ex. 2003. A sand slurry screen-out causes a spike in pressure and undesirable sand accumulation in flow lines through which the sand slurry is pumped. Ex. 2003. The pressure spike must be relieved quickly, and the sand must be flushed from the flow lines. *Id.*

The Safoco FRV is the only relief valve on the market proven to reseal after a sand slurry relief event. Ex. 2002. The Safoco FRV provides full bore pressure relief and complete valve reclose in less than 5 seconds. *Id.* This means that when screen-out conditions cause a pressure spike, the Safoco FRV will rapidly open, allow an operator to flush the flow lines at a high pressure, and then reclose immediately. *Id.*

The Safoco FRV product utilizes a gate valve and is controlled by a “fail open” hydraulic actuator. *Id.* Pressure is sensed by two pressure transducers. *Id.* The

pressure at which the gate valve opens and recloses are field programmable via a keypad interface. *Id.*

The gate valve is held in the closed position with hydraulic fluid supplied to the hydraulic actuator until an event causes the Safoco FRV to release the hydraulic fluid from the hydraulic actuator. *Id.* Electric controls read the pressure then release the hydraulic fluid. *Id.* The gate valve is forced into the open position immediately by the flow line pressure in the gate valve and an internal spring within the hydraulic actuator. *Id.* The Safoco FRV is completely self-contained, requiring no external power source. *Id.* The Safoco FRV is monitored and controlled by a human machine interface system in a data van that communicates with the Safoco FRV. The Safoco FRV records all pressure readings, settings, and events. *Id.*

The Safoco FRV is a revolutionary product that has improved safety in the oil and gas industry. Unsurprisingly, KLX and others have copied the revolutionary Safoco FRV.

A. The '794 Patent

On June 6, 2017, the USPTO issued the '794 Patent, entitled "Safety Valve Control System and Method of Use," which is owned by Safoco. The '794 Patent relates to a new and improved safety valve control system for oil and gas wells that is self reliant, can be remotely operated and monitored real-time, and can

automatically shut in and/or relieve a wellhead system in the event of an emergency or when desired. Ex. 1007 at 2:14-18.

As shown in FIG. 14 (reproduced below), the '794 Patent discloses a well control system 800 for use when conducting a wellbore operation, such as a fracturing operation. *Id.* at 23:4-6. The well control system 800 has a self-contained emergency shut down (“ESD”) control system (200, 300, 700) configured to actuate an in-line safety valve 120, which is normally maintained in a closed position. *Id.* at 23:24-29. The in-line safety 120 valve has a hydraulically actuated, spring return actuator configured to open and close a sliding gate valve. *Id.* at 23:45-49; *see also* FIG. 14; 11:62-67; 12:1-4. When pressurized fluid flow through adjoining flow lines exceeds a predetermined pressure, the in-line safety valve 120 moves into an open position to relieve pressure in the flow lines. *Id.* at 24:2-15. The pressurized fluid is directed back into a fluid supply or another reservoir to prevent over pressurization. *Id.* After any remedial operations, the safety valve 120 moves back into the closed position to continue wellbore operation. *Id.* at 24:16-20. Advantages of the ESD control system include the ability to relieve high fluid volume, flow, and pressure quickly, efficiently, and repeatedly to prevent failure, as well as the ability to remotely monitor and control the system. *Id.* at 24:20-24.

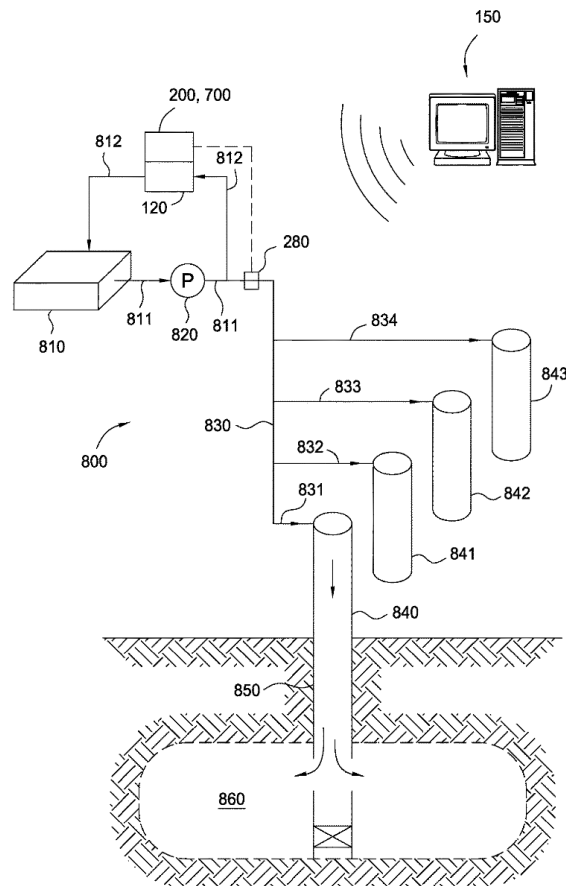


FIG. 14

B. Related Applications and their Prosecution History

The '794 Patent is a continuation of U.S. Patent Application Serial No. 15/262,642, filed September 12, 2016, now U.S. Patent No. 9,890,609, which claims benefit of U.S. Patent Application Serial No. 13/480,704, filed May 25, 2012, now U.S. Patent No. 9,441,453, which claims benefit of U.S. Provisional Patent Application Serial No. 61/551,319, filed October 25, 2011. Additionally, the '453 Patent is a continuation-in-part of U.S. Patent Application Serial No. 13/195,662, filed August 1, 2011, which claims benefit of U.S. Provisional Patent Application

Serial No. 61/415,238, filed November 18, 2010, and U.S. Provisional Patent Application Serial No. 61/370,721, filed August 4, 2010, the disclosures of which were incorporated by reference in their entirety into the '794 Patent. *See* Ex. 1008.

The same Examiner, William M. McCalister, examined all of the related, non-provisional applications. Ex. 2001 ¶ 43. In doing so, the Examiner considered a host of alleged prior art references, some of which Petitioner cites in the Petition, and arguments related thereto over the course of several office actions and continued examination requests, which only proves the Examiner did more than a cursory review, as Petitioner suggests. *Id.*

For example, during prosecution of the parent '453 Patent, the Examiner rejected the then-pending claims, which were directed to similar subject matter as the Challenged Claims, as obvious in view of the following references in a variety of combinations: Wailes, Moore, Vinegar, Cotham, Ohtsuka, Etheridge, Kouketsu, and Kotapish. *Id.*; *See* Ex. 2004 ('453 Patent prosecution history). The Examiner considered Safoco's arguments and requests for continued examination, and the claims of the '453 Patent were allowed. Petitioner's cited references, Tettleton and Tubel, are nothing more than cumulative of those considered by the Examiner during prosecution of this family of patent applications. Ex. 2001 ¶ 44.

C. The Prosecution History of the '794 Patent

With his examination of the related applications in mind, and after performing another detailed search, the Examiner examined the application leading to the '794 Patent and issued a Non-Final Office Action dated March 10, 2017. Ex. 1011 at Page 57-65. In the Office Action, (1) Claims 1-22 were rejected on the grounds of nonstatutory double patenting, (2) Claim 22 was rejected under 35 U.S.C. 102(b) as being anticipated by Wailes (US 3,776,249), and (3) Claim 22 was rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Vinegar (US 2003/0051881) in view of Cotham (US 5,335,730), both of which are used in KLX's Petition. *Id.*

Petitioner incorrectly argues, "Vinegar and Cotham were only listed in an IDS and were not cited against the claims in a rejection during prosecution; i.e., no arguments were made during prosecution citing the Vinegar or Cotham References." Pet. at 13-14; Ex. 2001 ¶ 46. Petitioner also incorrectly argues, "the Examiner merely initialed the IDS forms having the Vinegar and Cotham references, which is not an indication the references were substantively considered by the Examiner." *Id.*

Contrary to Petitioner's argument, the Examiner listed Cotham, which Safoco cited in the applications to which the '794 Patent claims priority, on the Examiner's List of Cited References. *Id.* ¶ 47; *Contra* Pet. at 13-14 with Ex. 1011 at 66.

In fact, the Examiner used Cotham in a specific obviousness rejection of then-pending Claim 22. *See* Ex. 1010 at 7 (Non-Final Rejection; "Claim 22 is/are rejected

under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Vinegar (US 2003/0051881) in view of Cotham (US 5,335,730).”); Ex. 1011 at 63. In order to reject Claim 22, the Examiner had to review the substance of Cotham and indeed decided not to rely on Cotham for rejecting the Challenged Claims. Ex. 2001 ¶ 48.

Certainly, the Examiner substantively considered Cotham but allowed the Challenged Claims over Cotham and other references at least because “the prior art fails to teach a control system including the claimed arrangement of a fluid supply, a first line, a pump, and a second line, along with the claimed arrangement of the safety valve, valve actuator, controller, valve assembly and fluid drive assembly.” *Id.* ¶ 49; Ex. 1011 at 14 (reasons for allowance).

D. The Challenged Claims

The Challenged Claims relate to both control systems (Claims 1-12) and methods (Claims 13-21) for controlling fluid flow through a flow line at a wellsite. Ex. 2001 ¶ 55.

All of the Challenged Claims share common elements, including, a fluid supply, a first fluid line in fluid communication with the fluid supply, a pump in fluid communication with the first fluid line, a second fluid line in communication with the first fluid line, and “a safety valve in-line with the second fluid line.” *Id.*; *See* Ex. 1007 at 26:1-11.

E. The Parallel Litigation

Safoco and KLX are direct competitors in the oil and gas equipment industry for fracturing relief safety valves. As set forth above, Safoco sells/leases its “Safoco FRV.” KLX sells/leases its “KLX Frac Relief Valve System”, which is marketed as and called the “FRV” or “FRVS.”

In 2017, Safoco attended and exhibited its FRV at an industry trade show in San Antonio, Texas. Ex. 1001 at 7. During the trade show, a group of Safoco employees were approached by a former KLX employee who informed them KLX had intentionally copied the Safoco FRV when developing its infringing KLX FRV. *Id.* The former employee stated, “KLX is infringing on [Safoco’s patents]. I’m the engineer who designed it, so I know.” *Id.* At that same trade show, Dave Lymberopoulos, the CEO of Safoco, introduced himself to the on-site KLX Energy representatives, including a company Vice-President, and notified KLX of its infringement. *Id.*

Nonetheless, KLX continued to willfully infringe and, on November 11, 2022, Safoco filed its Original Complaint alleging infringement of the ’794 Patent and the ’609 Patent, as well as false advertising and unfair competition. *See Safoco, Inc. v. KLX Energy Services, LLC*, Case No. 2:22-cv-00437 (E.D. Tex.) (“the Parallel Litigation”).

KLX moved to dismiss or transfer Safoco’s case. The district court, at the magistrate judge’s recommendation, denied KLX’s motion. KLX then answered Safoco’s complaint and asserted as a defense that “one or more claims of the patents-in-suit are invalid and/or unenforceable for failure to comply with one or more of the conditions and requirements of the patent laws of the United States, including but not limited to, 35 U.S.C. §§ 101, 102, 103 and/or 112, as well as the rules, regulations, and laws pertaining to those provisions.” Ex. 2013.

Since then, the parties have exchanged infringement and invalidity contentions (in which KLX identified Tettleton and Cotham), exchanged initial disclosures, submitted claim construction briefs, the only issue in which is KLX’s argument that the Challenged Claims are indefinite, and submitted the joint claim construction chart to the district court.

The Parallel Litigation is set for trial on August 19, 2024—just six months away. *See* Ex. 1015; Ex. 2013.

III. CLAIM CONSTRUCTION

In the Parallel Litigation, Petitioner argues certain claim terms are indefinite—“The Scope of the Claim Language is Not Reasonably Certain” and “The Specifications and Prosecution History Create Additional Uncertainty.” Ex. 2005 (KLX Opening Claim Construction Brief). Yet, Petitioner argues here that “the claim terms of the ’794 Patent should be afforded their plain and ordinary

meaning as understood by a POSITA consistent with *Phillips*” and allegedly maps the purportedly indefinite claim terms to the alleged prior art. Pet. at 20. Petitioner’s arguments here are at odds with its arguments to the district court.

In any event, for purposes of this Preliminary Response, Safoco agrees the claim terms should be given their plain and ordinary meaning. Ex. 2001 ¶ 72.

IV. LEVEL OF ORDINARY SKILL IN THE ART

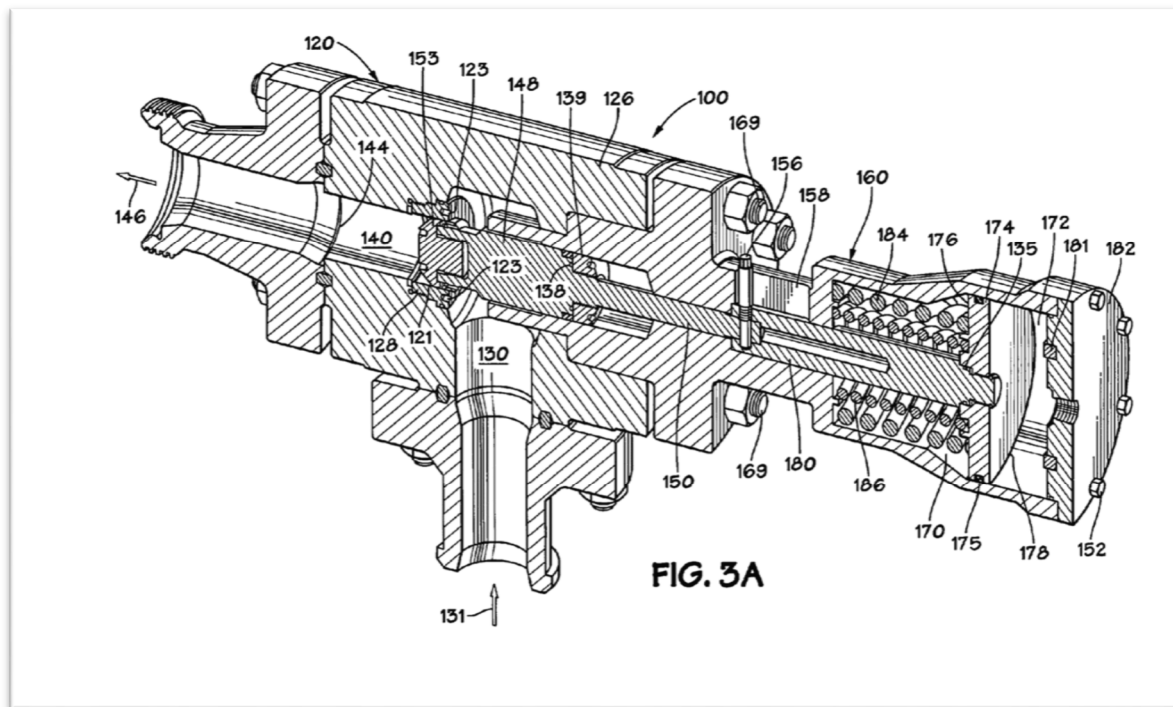
For purposes of this Preliminary Response, Safoco utilizes Petitioner’s definition of a Person of Ordinary Skill in the Art (“POSITA”): “A person of ordinary skill in the art (‘POSITA’) would have a working knowledge of system(s) having one or more actuators and one or more safety valve for pressure relief in fluid lines including methods and their applications. In addition, a POSITA would have a working knowledge of fluid system(s) in the oil and gas industry. The working knowledge would have been gained via an undergraduate education in engineering (electrical, mechanical, petroleum, or the like) or a related field of study, along with relevant experience studying or developing pressure relief safety valves in industry or academia. This description is approximate; varying combinations of education and practical experience also would be sufficient.” Pet. at 11 (internal citations omitted); Ex. 2001 ¶ 40.

V. PETITIONER'S CITED REFERENCES

Petitioner's grounds include three references, Tettleton, Cotham, and Tubel, which are summarized below.

A. Tettleton (Ex. 1016)

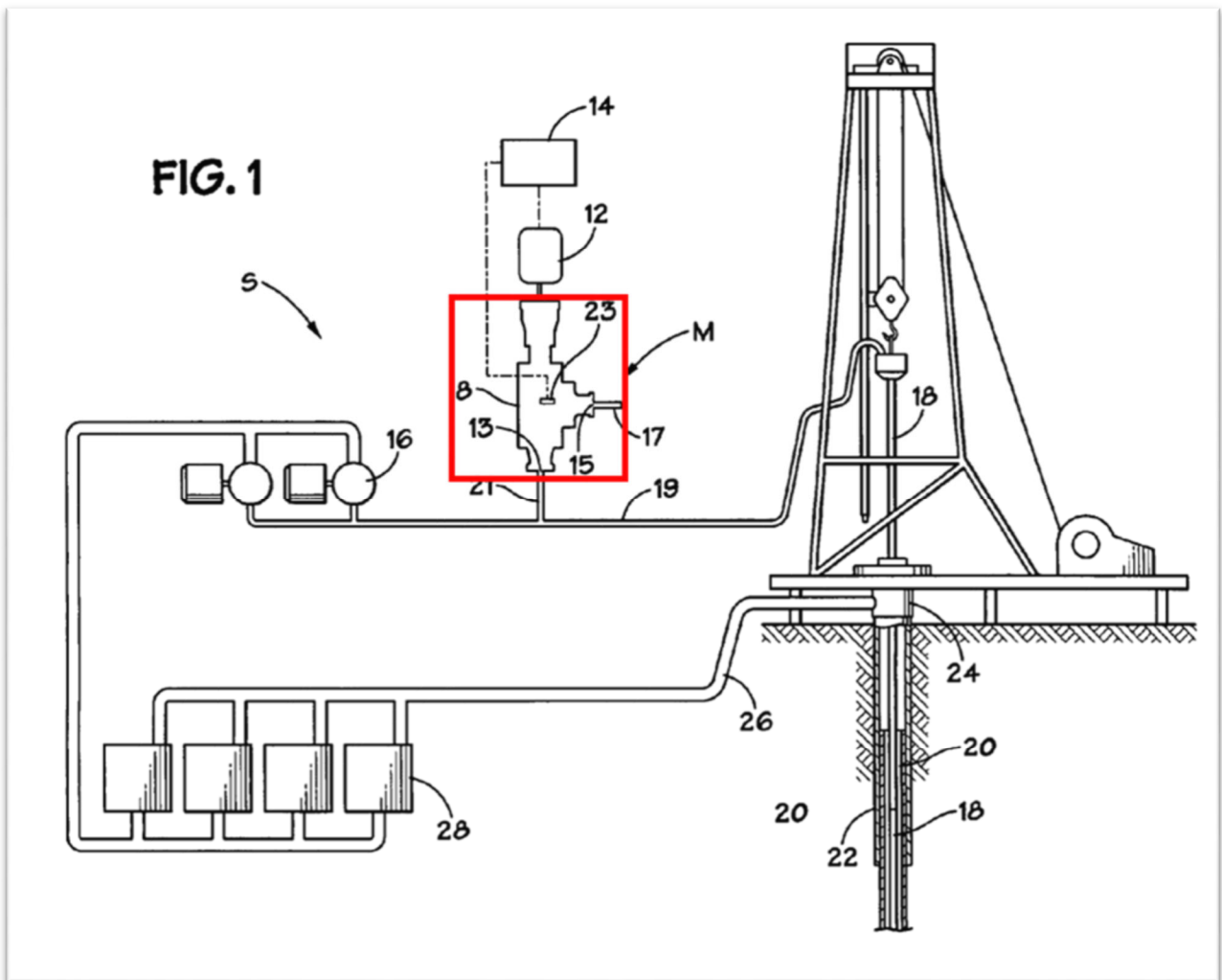
Tettleton describes “a pressure relief valve assembly useful for relieving fluid pressure in a pressurized device.” Ex. 1016 at Abstract; Ex. 2001 ¶ 74. Tettleton further describes certain characteristics of its pressure valve assembly including “a valve body with an inlet passageway in fluid communication with an outlet passageway, a valve member for selectively controlling fluid flow from the inlet passageway, [and] a wear member around a portion of an entrance end of the outlet passageway.” *Id.* Tettleton further describes certain characteristics of the wear member including certain positions and attachments of the wear assembly. *Id.* Tettleton describes “FIG. 3A is a perspective cutaway view of the relief valve according to the present invention.” *Id.*; Ex. 1016 at [0027]. FIG. 3A is duplicated below:



Ex. 2001 ¶ 74.

Tettleton further describes the purported invention relates to “drilling fluid or “mud” systems; to relief valves for such systems; and to apparatus, systems and methods for relieving fluid pressure in pressurized systems.” Ex. 1016 at [0002]; Ex. 2001 ¶ 75. Tettleton describes several characteristics of its pressure relief valve including “a valve body with an inlet passageway in fluid communication with an outlet passageway”, a “valve member movable into the outlet passageway to prevent fluid flow”, a “wear member having an interior surface” and “an angle-body valve having a valve piston disposed therein and being movable between at least one closed position and at least one open position.” Ex. 1016 at [0009]-[0010]; Ex. 2001 ¶ 75. While Tettleton’s primary focus is on the design and construction of the angle-

body valve itself, Tettleton also discloses its angle-body valve in a system to control pressure in a drilling mud system. *Id.* ¶ 76. Fig. 1 of Tettleton discloses such a system, with the purportedly improved valve annotated in red. *Id.*



Tettleton describes “a system S according to the present invention includes a mud system M with mud pits 28 for containing and storing drilling fluid; mud pumps 16 for pumping the drilling fluid to drillstring 18 and back to the mud pits 28; and a relief valve 8 according to the present invention for relieving pressure in the system.”

Id. ¶ 77; Ex. 1016 at [0040]-[0041]. Tettleton further teaches “[w]hen the mud pressure exceeds the pre-selected pressure, the valve 8 [*sic*] opens and the mud that was previously flowing to the drill stem 18 flows through the inlet 13 of the valve 8 and exits through an outlet 15 into an exit line 17.” *Id.* Tettleton describes controlling valve 8 with changes to air supply to the valve. *Id.*

Tettleton does not disclose returning the fluid to a reservoir or fluid line, does not disclose an in-line safety valve, and does not disclose a gate valve.

B. Cotham (Ex. 1019)

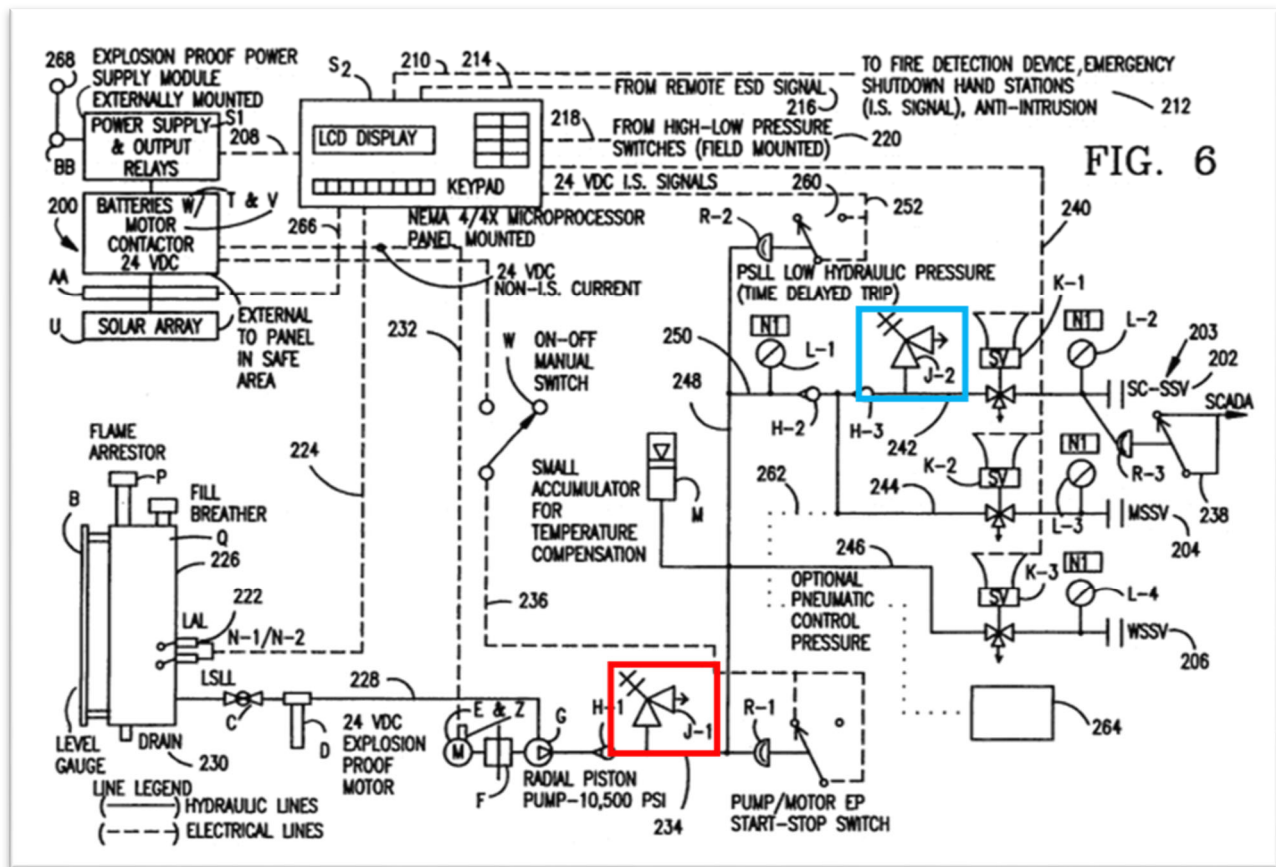
Cotham, which was cited during prosecution of the '794 Patent, describes “a method for controlling a wellhead having a plurality of two or more valves, including a downhole valve in the well that controls flow of well fluid from the well to the surface.” Ex. 1019 at 2:34-38.

Cotham is primarily directed towards control panels used to control oil and gas production valves. Ex. 2001 ¶ 79. Cotham describes a method for “providing power to a system for controlling a well head from a self-contained stand-alone power source.” *Id.*; Ex. 1019 at Abstract. Cotham’s method includes “using various valves to control flow of fluids from within the well and from the well in one or more flow lines and monitoring various parameters [] including but not limited to fluid pressures and emergency conditions, and shutting in the well in response.” *Id.* Cotham is primarily directed to “a safe wellhead and wellhead control system that is

operable by other than pneumatic power” and is “solar powered.” Ex. 2001 ¶ 79; Ex. 1019 at 2:17-20.

Cotham’s method is used “for controlling a wellhead having a plurality of two or more valves, including a downhole valve in the well that controls flow of well fluid from the well to the surface and at least one surface valve that controls flow of the fluid in one or more flowlines from the wellhead to a location” other than the wellhead. Ex. 2001 ¶ 80; Ex. 1019 at 2:35-43. The valve control system is powered “with an integral stand-alone self-contained power producer.” *Id.* One alleged advantage of Cotham’s method is that it is “useful in extremely remote areas at which other forms of power are not available” through the use of “solar power.” Ex. 2001 ¶ 80; Ex. 1019 at 5:57-62.

Cotham further describes two angle-body relief valves within the system, “relief valve J-1 [annotated in red] provides overpressure protection” (Ex. 1019 at 9:7-8) and “relief valve J-2 [annotated in blue] relieves thermal pressure.” Ex. 2001 ¶ 81; Ex. 1019 at 10:24-25. Cotham states “FIG. 6 is a schematic view of a system according to the present invention.” Ex. 2001 ¶ 81; Ex. 1019 at 6:54-55. FIG. 6 is duplicated below:



According to Cotham, valves J-1 and J-2 are “Relieve valve, ¼” NPT SST, 10,000 PSI, Poppet Type” valves. Ex. 2001 ¶ 81.

Cotham does not disclose, among other things, an in-line safety valve.

C. Tubel (Ex. 1021)

Like Cotham, Tubel is directed towards controlling producing hydrocarbon wells, rather than controlling systems at those wells during the drilling or completion stage. Ex. 2001 ¶ 83. Tubel describes a “downhole control system for a production well is association with permanent downhole formation evaluation sensors.” *Id.*; Ex. 1021 at Abstract. These sensors may include “neutron density, gamma ray porosity

and resistivity sensors” for evaluation of “formation parameters including [] water entering the production tubing.” *Id.* Additionally, Tubel’s system “will monitor actual downhole parameters (such as pressure, temperature, flow, gas influx etc.) and automatically execute control instructions when the monitored downhole parameters are outside a selected operating range” indicating an unsafe condition. Ex. 2001 ¶ 83; Ex 1021 at 4:57-62. This information allows Tubel’s system to “automatically control[] downhole tools in response to sensed selected downhole parameters.” Ex. 2001 ¶ 83; Ex 1021 at 4:45-47. Control is accomplished by causing “an electromechanical control device (such as a valve) to actuate a suitable tool (for example, actuate a sliding sleeve or packer, or close a pump or other fluid flow device).” Ex. 2001 ¶ 83; Ex 1021 at 4:62-65. According to Tubel, one alleged advantage of its system is “the automatic control is initiated downhole without an initial control signal from the surface or from some other external source.” Ex. 2001 ¶ 83; Ex 1021 at 4:47-49.

Tubel does not disclose, among other things, an in-line safety valve.

VI. LEGAL STANDARDS

Petitioner bears the burden of persuasion to prove unpatentability of the claims challenged in the Petition, and that burden never shifts to Patent Owner. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015).

A. Anticipation

A claim is unpatentable under 35 U.S.C. § 102 “if each and every [claim] limitation is found either expressly or inherently in a single prior art reference.” *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 851 F.3d 1270, 1273 (Fed. Cir. 2017) (citation omitted). “A claim limitation is inherent in the prior art if it is necessarily present in the prior art, not merely probably or possibly present.” *Akamai Techs., Inc. v. Cable & Wireless Internet Servs., Inc.*, 344 F.3d 1186, 1192 (Fed. Cir. 2003) (citing *Rosco, Inc. v. Mirror Lite, Co.*, 304 F.3d 1373, 1380 (Fed. Cir. 2002)).

B. Obviousness¹

A claim is unpatentable for obviousness if “the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains.” 35 U.S.C. § 103; *see KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including “the scope and content of the prior art”; “differences

¹ Standard from *Meta Platforms, Inc. v. Eight KHZ, LLC*, IPR2023-01004, Paper 9 at 9-11 (PTAB Jan. 9, 2024).

between the prior art and the claims at issue”; and “the level of ordinary skill in the pertinent art.” *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). Additionally, secondary considerations, such as “commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. As indicia of obviousness or nonobviousness, these inquiries may have relevancy.” *Id.* When conducting an obviousness analysis, we consider a prior art reference “not only for what it expressly teaches, but also for what it fairly suggests.” *Bradium Techs. LLC v. Iancu*, 923 F.3d 1032, 1049 (Fed. Cir. 2019).

A patent claim “is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” *KSR*, 550 U.S. at 418. An obviousness determination requires finding “both ‘that a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so.’” *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1367–68 (Fed. Cir. 2016); *see KSR*, 550 U.S. at 418 (for an obviousness analysis, “it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does”). Also, “[t]hough less common, in appropriate circumstances, a patent can be obvious in light of a single prior art

reference if it would have been obvious to modify that reference to arrive at the patented invention.” *Arendi S.A.R.L. v. Apple Inc.*, 832 F.3d 1355, 1361 (Fed. Cir. 2016).

“Although the *KSR* test is flexible, the Board ‘must still be careful not to allow hindsight reconstruction of references . . . without any explanation as to how or why the references would be combined to produce the claimed invention.’” *TriVascular, Inc. v. Samuels*, 812 F.3d 1056, 1066 (Fed. Cir. 2016). Further, an assertion of obviousness “cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR*, 550 U.S. at 418 (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)); accord *In re NuVasive, Inc.*, 842 F.3d 1376, 1383 (Fed. Cir. 2016) (stating that “conclusory statements” amount to an “insufficient articulation[] of motivation to combine”; “instead, the finding must be supported by a ‘reasoned explanation’”); *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016) (“To satisfy its burden of proving obviousness, a petitioner cannot employ mere conclusory statements. The petitioner must instead articulate specific reasoning, based on evidence of record, to support the legal conclusion of obviousness.”).

VII. PETITIONER HAS NOT DEMONSTRATED THAT THERE IS A REASONABLE LIKELIHOOD THAT AT LEAST ONE OF THE CHALLENGED CLAIMS IS UNPATENTABLE

Petitioner challenges the patentability of the Challenged Claims based on three references: Tettleton, Cotham, and Tubel, used in three grounds. Tettleton serves as the primary reference. Petitioner then combines Tettleton with Cotham and then Tubel in an unsuccessful effort to reconstruct the Challenged Claims. The following table lists the Challenged Claims and Petitioner's. Independent claims are identified in bold font.

Ground	Claims	Basis
1	1, 2, 5, 6, 9, 11, 12, 13, 16, 17 18, 21	Anticipated by U.S. Patent Publication No. 2008/0078586 (“Tettleton”)
2	3, 4, 7, 8, 14, 15	Obvious over Tettleton in view of U.S. Patent No. 5,335,730 (“Cotham”)
3	10, 19, 20	Obvious over Tettleton in view of U.S. Patent No. 5,597,042 (“Tubel”)

As set forth below, Petitioner has not demonstrated there is a reasonable likelihood it will prevail with respect to a single Challenged Claim. The Board should deny institution.

A. Ground 1: Claims 1, 2, 5, 6, 9, 11, 12, 13, 16, 17, 18 and 21 are not anticipated by Tettleton

Petitioner cites Tettleton as anticipating Claims 1, 2, 5, 6, 9, 11, 12, 13, 16, 17, 18, and 21 of the '794 Patent. However, Tettleton does not disclose each and every element of these claims. Ex. 2001 ¶ 84.

1. Independent Claim 1

Tettleton fails to teach all of the claim elements of Claim 1 either explicitly or inherently. *Id.* ¶ 85. Because not all of the claim elements are disclosed by Tettleton, Tettleton cannot anticipate Claim 1. *Id.* Certain claim limitations and elements which are not disclosed, either explicitly or inherently, by Tettleton are discussed below. *Id.*

a) Claim 1(d)²

Tettleton does not disclose “a second fluid line in fluid communication with the first fluid line at a location downstream of the pump and configured to return fluid from the first fluid line to the fluid supply or another reservoir.” *Id.* ¶ 86. Petitioner claims “Tettleton also discloses a method by which the system regulates pressure within the system by releasing fluid into a different reservoir when the pressure exceeds a predetermined threshold.” *Id.*; Pet. at 21. However, Petitioner’s

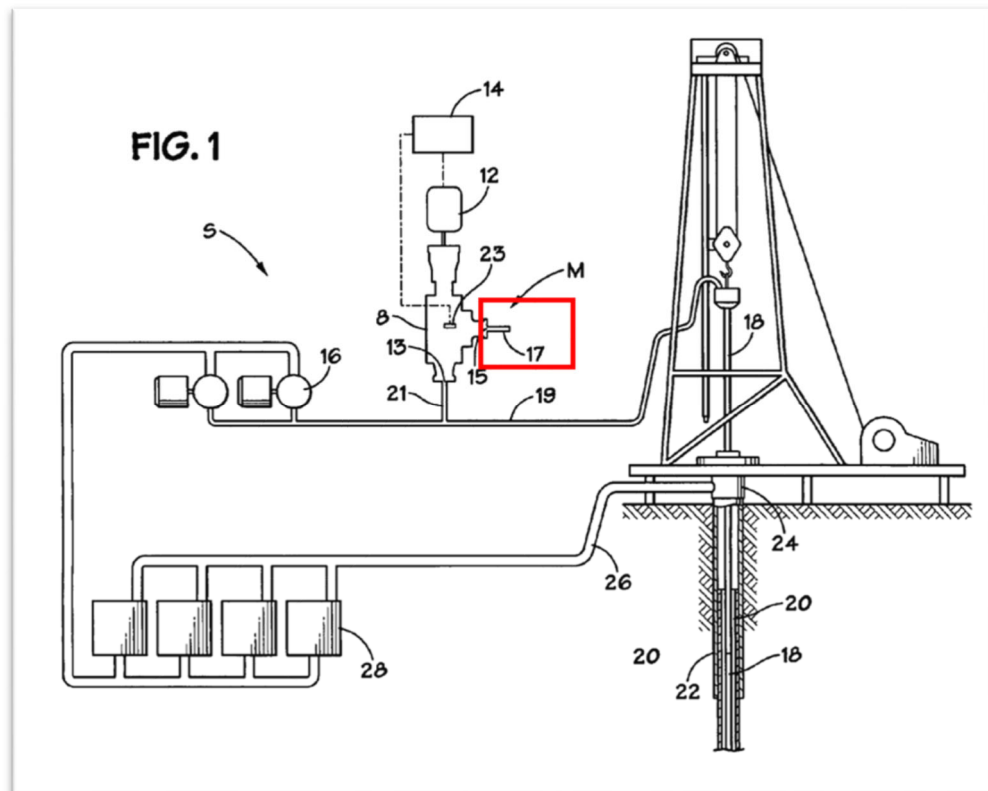
² See Ex. 2001 ¶ 54 for claim element chart.

expert Dr. Stevick contradicts this claim: “Tettleton does not explicitly disclose that fluid is transferred to a reservoir as a result of the pressure relief valve being actuated.” Ex. 2001 ¶ 86; Ex. 1022 ¶ 47. Further, there is no teaching in Tettleton that the fluid line is “configured to return fluid from the first fluid line to the fluid supply.” Ex. 2001 ¶ 86; Ex. 1016 at [0040] – [0041], FIGS. 1 and 3.

Dr. Stevick goes on to state that transferring fluid to a reservoir as a result of the pressure relief valve being actuated “is inherent to the reduction of pressure within the otherwise closed system that is explicitly disclosed by Tettleton.” Ex. 2001 ¶ 87; Ex. 1022 ¶ 47. Further, Dr. Stevick states “fluid must be redirected to a different location than the closed fluid line system. This alternative location would be either back to the fluid supply or another reservoir.” *Id.* Dr. Stevick’s statement is conclusory, incorrect, and inconsistent with the teaching of Tettleton and other references. *Id.*

Tettleton teaches an “exit line 17” (Ex. 1016 at [0042]) that Petitioner points to as the second fluid line of Claim 1. Ex. 2001 ¶ 88. Tettleton teaches “[w]hen the mud pressure exceeds the pre-selected pressure, the valve 10 opens and the mud that was previously flowing to the drill stem 18 flows through the inlet 13 of the valve 8 and exits through an outlet 15 into an exit line 17.” *Id.*; Ex. 1016 at [0041]. FIG. 1 of Tettleton is “a schematic view of a system according to the present invention with a relief valve according to the present invention.” Ex. 2001 ¶ 88; Ex. 1016 at [0025].

FIG. 1 is duplicated below with “exit line 17” annotated in red. Ex. 2001 ¶ 88. Other than the single sentence in [0041] and FIG. 1, Tettleton does not address “exit line 17” or its connections. *Id.*



As can be seen in FIG. 1, Tettleton shows exit line 17 connected to the outlet 15 of valve 8 on one end and not connected on the other end. *Id.* ¶ 89. There is simply no teaching in Tettleton of exit line 17 returning fluid to anything, much less the fluid supply or another reservoir. *Id.* Further, a POSITA reading *Tettleton* would have understood that *Tettleton* is teaching that exit line 17 is open-ended, and the relieved fluid would be undirected as to location (i.e., directed to the atmosphere).

Id. A POSITA would have understood this was a common practice in oil and gas operations. *Id.*

As another example, US Patent 6,796,321 to Berton Vicars (“*Vicars*”) filed June 19, 2002 and issued September 28, 2004 addresses a pressure relief valve used in oil and gas fracturing operations. *Id.* ¶ 90; Ex. 2006. According to *Vicars*, when the fluid pressure in the system exceeds a threshold, the pressure relief valve will open and “[f]luid may now pass from the pumping chamber 18 through cage 12 and out to the atmosphere.” Ex. 2001 ¶ 90; Ex. 2006 at 4:47-48. Accordingly, despite Dr. Stevick’s conclusory statement, it is not inherent for the second fluid line to be configured to return fluid from the first fluid line to the fluid supply or another reservoir. *Id.*

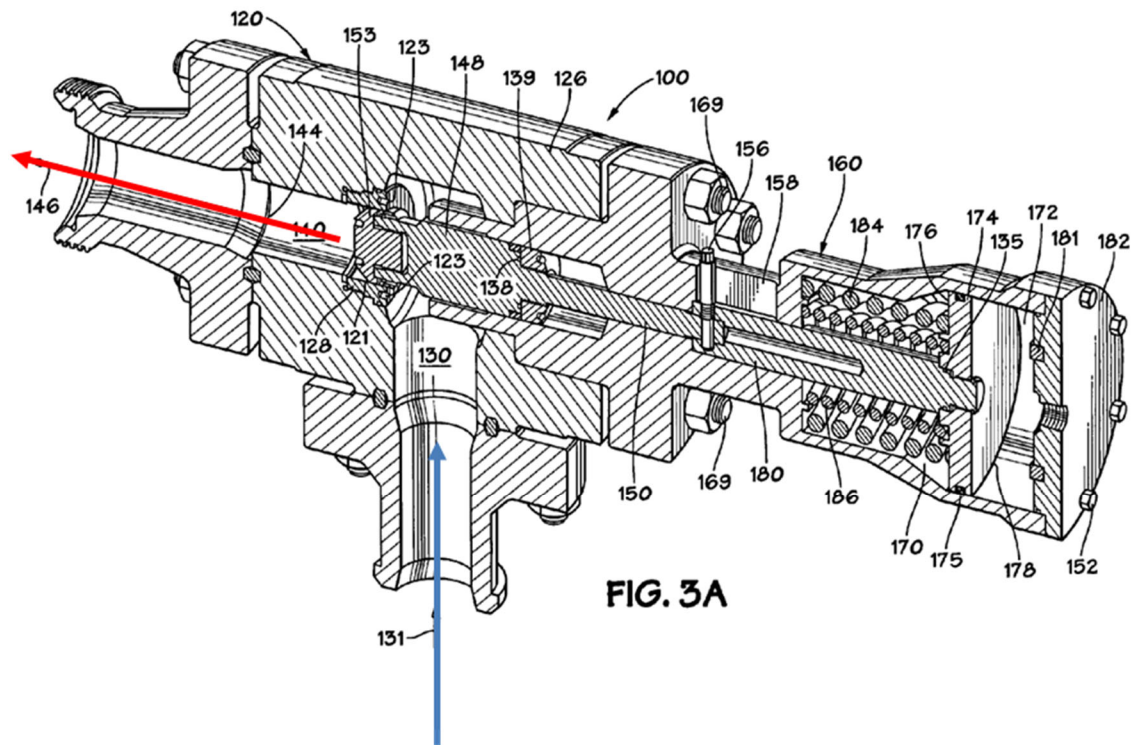
Petitioner states, in footnote 6 “For the element of independent claim 1 to be disclosed it is not necessary for Tettleton to disclose the second fluid line in fluid communication with the first fluid line at a location downstream of the pump and configured to return fluid from the first fluid line back to the fluid supply or another reservoir.” *Id.* ¶ 91; Pet. at 25 n.6. Patent Owner disagrees. Because it is not inherent for the second fluid line to be configured to return fluid back to the fluid supply or another reservoir, Tettleton must disclose the entire claim limitation for Claim 1 to be disclosed by Tettleton. Ex. 2001 ¶ 91. Tettleton does not.

b) Claim 1(e)

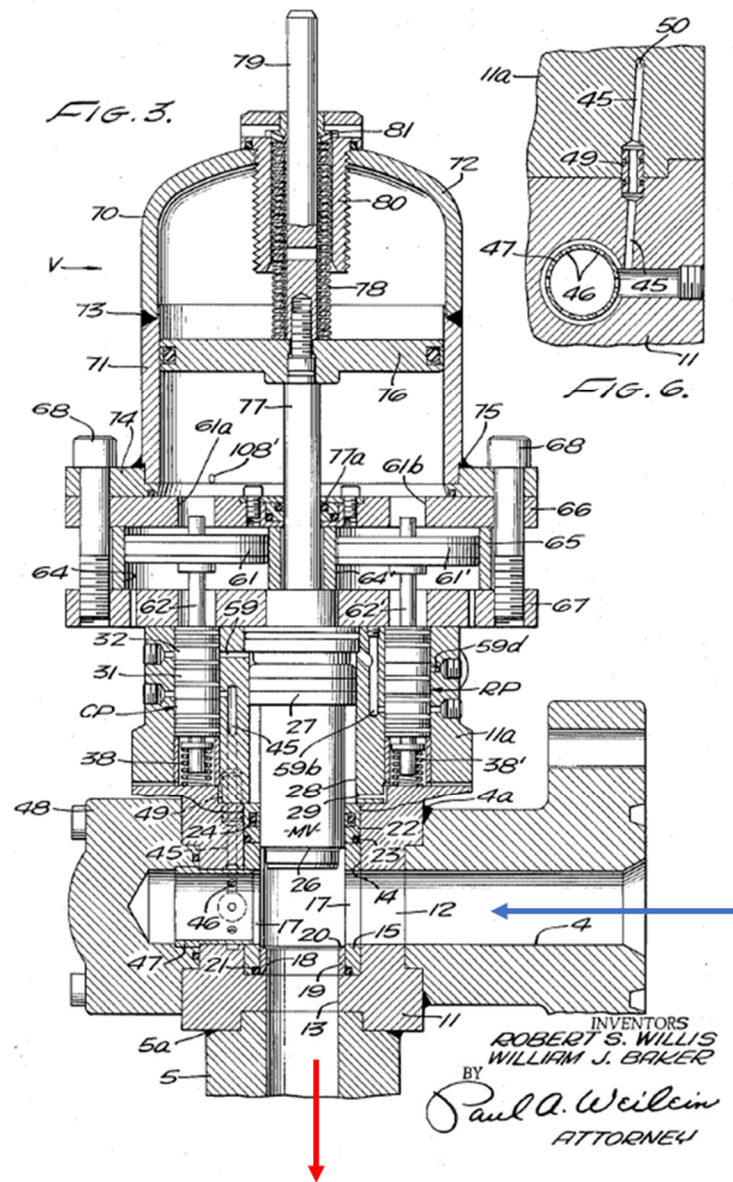
Tettleton does not disclose “a safety valve in-line with the second fluid line.” *Id.* ¶ 92. In fact, Tettleton teaches against such a configuration. *Id.* Further, Tettleton does not disclose a “gate normally maintained in a closed position to close fluid flow through a second fluid line.” *Id.*

Neither Dr. Stevick’s declaration nor the Petition even address the “safety valve in-line” claim term. *Id.* ¶ 93. Dr. Stevick’s declaration jumps straight from a discussion of the discharge line limitation to a discussion of the “gate” limitation, which will be discussed below in this section. *Id.*; Ex. 1022 at ¶ 47-48. The Petition similarly ignores this claim element. Ex. 2001 ¶ 93. It is unsurprising that Petitioner and Dr. Stevick ignore this claim element—because Tettleton teaches against it.

Tettleton describes its safety relief valve as having “an angle-body configuration and/or a fluid flow path with approximately a ninety degree turn.” Ex. 1016 at [0008]; *see also* [0010], [0013], and [0043]. According to Tettleton, “[i]n an “angle-body” valve, the axis of the first passageway 130 is not concentric or coaxial with [] the axis of the second passageway 140.” *Id.* at [0043]. This is visually evident in the figures of Tettleton, of which FIG. 3A is exemplary. In the figure below the “first passageway” is shown with a blue arrow and the “second passageway” is shown with a red arrow.

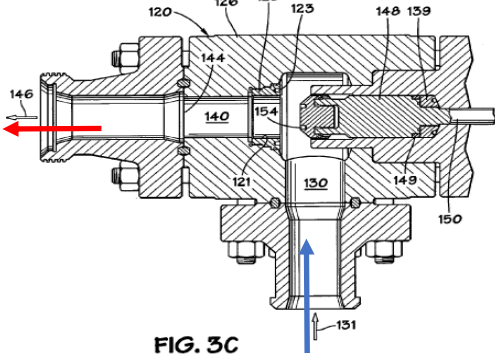
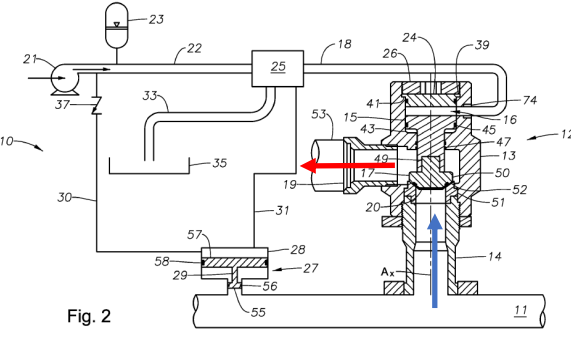
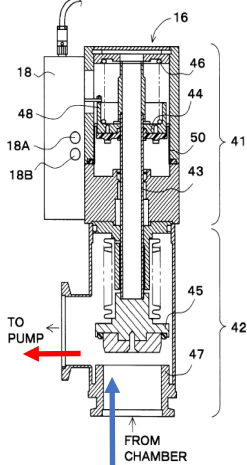
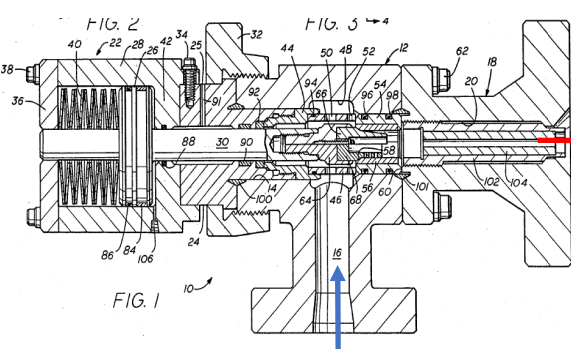


This is the “normal” configuration for pressure relief valves, as pressure relief valves have been “plug” type valves, as the Tettleton valve is. This angle-body configuration is shown in, for example, FIG. 3 of Ex. 1003.

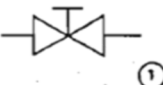
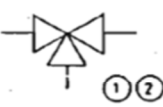
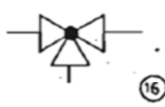
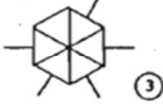
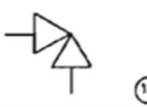
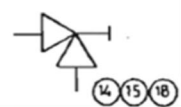


Ex. 1003, FIG. 3

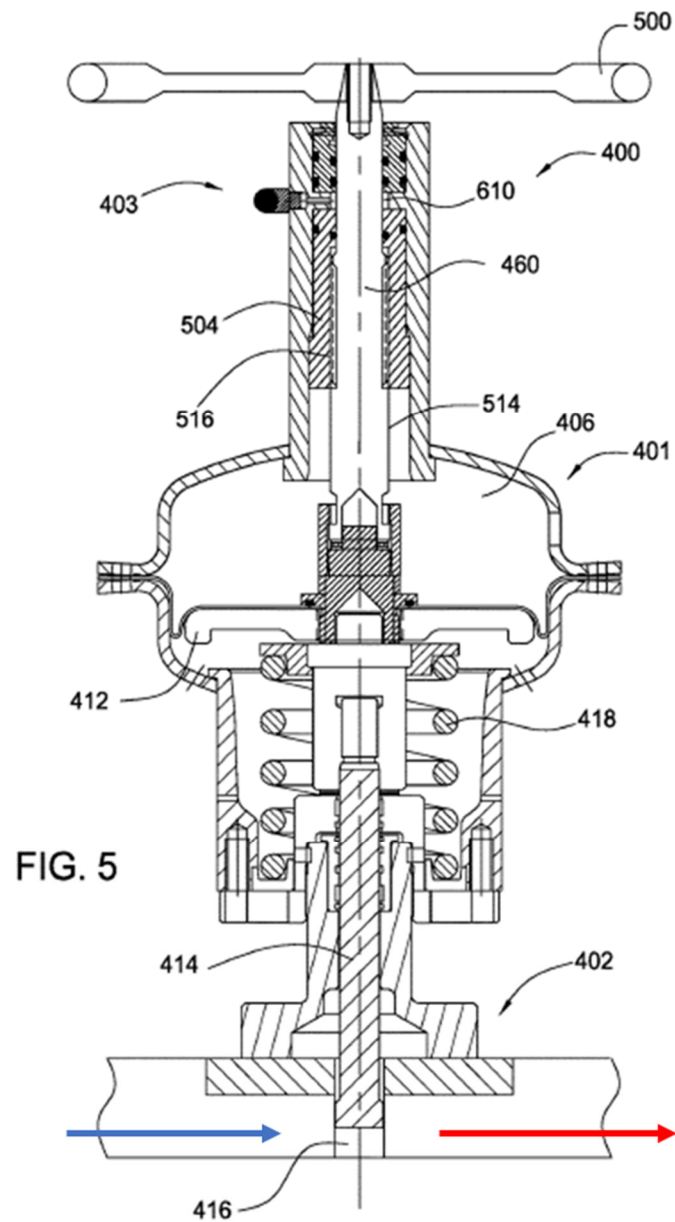
This angle-body configuration is also shown in Kotapish, Kouketsu, and Etheridge, which are listed on the face of the '794 Patent and indicated as being “cited by examiner.”

Tettleton Figure 3C – angle body valve  FIG. 3C	Kotapish Figure 2 – angle body valve  Fig. 2
Kouketsu Figure 4 – angle body valve  FIG. 4	Etheridge Figure 1 – angle body valve  FIG. 1

Further, as evidenced by *Chemical Engineering Drawing Symbols* (“*Drawing Symbols*”; Ex. 2007), a POSITA would have understood the fundamental difference between “in-line” valves, such as claimed in the ’794 Patent, and “angle valves”, such as taught in Tettleton. For example, page 77 of *Drawing Symbols* shows both in-line valves (annotated in red) and angle valves (annotated in blue).

	BS	ANSI(ASA)	Alternative	Alternative
In-line valve (any type or pattern)	 basic ① ② ③ ⑥	 basic ⑩		
Straightway valve			 ⑫	
Simple screwdown valve	 ①			
Three-way valve	 ① ②		 ⑫	
Four-way valve	 ① ②			
Multi-way valve <i>Show as many leads as are required, one to each side of hexagon.</i> Illustrated: 5-way valve.	 ③			
Angle valve	 ① ③ ⑥	 ⑩	 ⑫	 ⑭ ⑮ ⑯

As would have been clear to a POSITA, in-line valves have inlet and outlet ports “in-line” or concentrically or coaxially organized. In contrast, angle valves have the inlet and outlet ports not concentrically or coaxially organized (i.e., the inlet and outlet ports have an angle between them). The valve in the Challenged Claims, and described elsewhere in the ’794 Patent, is in-line and not an angle valve. For example, FIG. 5 of the ’794 Patent is exemplary.



Ex. 1003 Fig. 5

The '794 Patent discloses “Fig. 5 is a sectional view of the gate valve in an open position” and shows the inlet and outlet ports concentrically and coaxially positioned. Ex. 1007 at 4:47-48.

Lastly, according to Merriam-Webster's online dictionary from the time of the filing of the '794 Patent, the ordinary and customary meaning of "in-line" is "having the parts or units arranged in a straight line." Ex. 2001 ¶ 103; Ex. 2008. Based on this definition, a POSITA would discern the ordinary and customary meaning of "safety valve in-line" as being in-line valves with inlet and outlet ports being arranged in a straight line, i.e. concentrically or coaxially arranged, and not angle valves that have inlet and outlet ports at an angle relative to each other (i.e., not concentrically or coaxially arranged). Ex. 2001 ¶ 104.

In a system with highly abrasive fluid streams, such as drilling mud or fracturing slurry, an in-line valve would have benefits in terms of wear and erosion of the internal components of the valve. *Id.* ¶ 105. In an angle valve, the slurry must change direction (around 90°), as shown in the figures. *Id.* The highly abrasive slurry would strike the "back wall" of the inlet port and cause erosion. *Id.* Significant turbulence would also be created (more than an in-line valve), leading to further erosion of the valve's interior components. *Id.* Additionally, an in-line valve has a lower pressure drop than an angle valve, allowing for easier upstream pressure relief. *Id.*

c) Tettleton does not disclose a valve with a gate

In addition to teaching against the use of in-line valves, Tettleton teaches against the use of gate valves. *Id.* ¶ 106. Dr. Stevick states "Tettleton discloses a

valve piston 148 and cap 153, which act as a gate (blocking and unblocking flow) within the valve. [] This piston operates as a “gate” as it prevents or restricts the flow of fluid in the second fluid line.” *Id.*; Ex. 1022 at ¶ 48. However, a close examination of Tettleton shows that this statement is incorrect. Ex. 2001 ¶ 106.

Tettleton teaches “a valve member within the valve body for selectively controlling fluid flow from the inlet passageway to the outlet passageway, the valve member having a first end and a second end[]the first end of the valve member movable into the outlet passageway to prevent fluid flow from the inlet passageway through the outlet passageway.” *Id.* ¶ 107; Ex. 1016 at [0009]. In the section that Dr. Stevick is presumably referencing (though no reference is given), Tettleton teaches “[t]he valve piston 148 has a removable cap 153 [[o]ptionally the cap 153 has an inclined or bevelled end surface 151 with holes 154 for facilitating piston installation. Ex. 2001 ¶ 107. An exterior surface 157 of the cap 153 abuts an interior surface 121 of a seal insert 128.” *Id.*; Ex. 1016 at [0046].

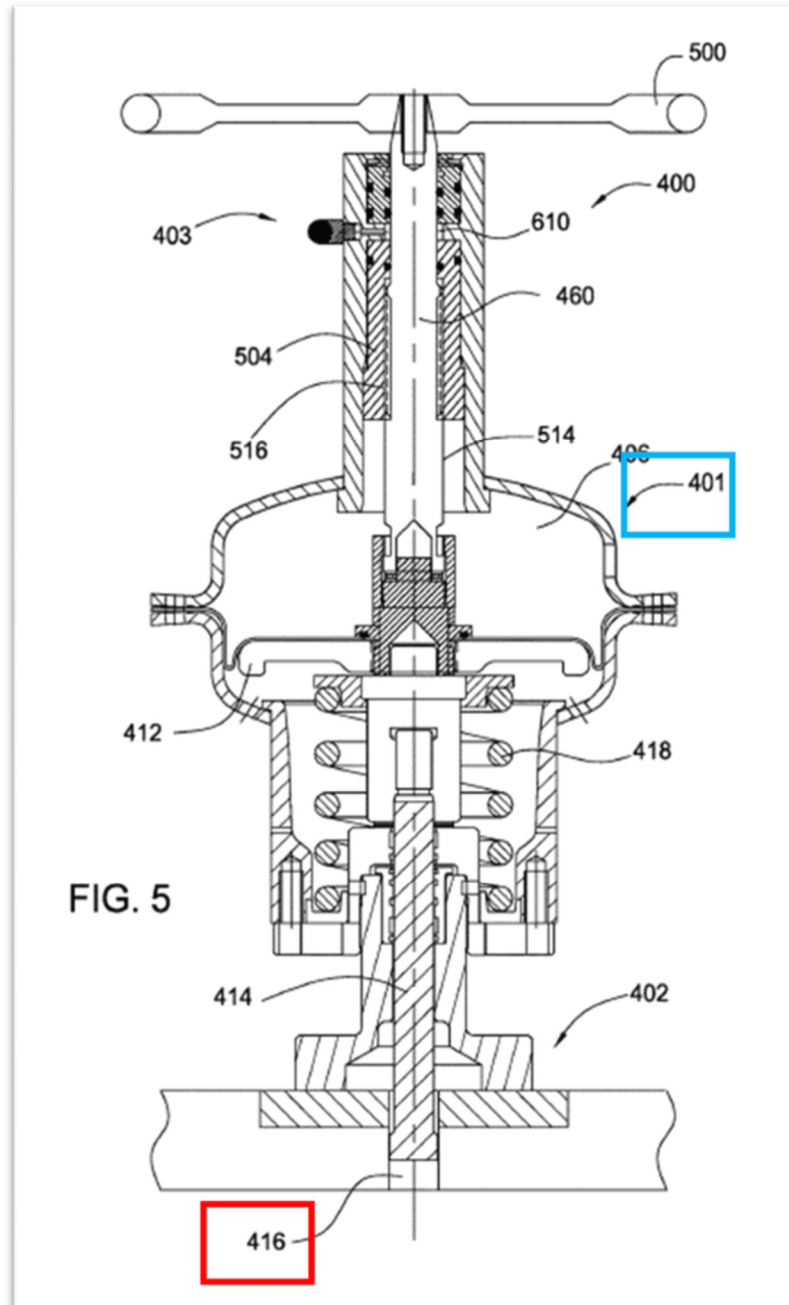
Further, Tettleton shows the piston, cap, and seal insert in, for example, FIG. 3A. Ex. 2001 ¶ 108. FIG. 3A is shown below with the piston annotated in red, the cap annotated in blue, and the seal insert annotated in green. *Id.*



A POSITA would have recognized this description, and the figure, as a type of “globe valve” and not a “valve with a gate” (i.e., gate valve) as claimed in Claim 1. *Id.* ¶ 109. The Schlumberger Energy Glossary describes a globe valve as “A valve whose closure element is a flat disc or conical plug sealing on a seat that is usually parallel to the flow axis. The tortuous flow path produces a relatively high pressure loss.” *Id.*; Ex. 2003. In the teaching of Tettleton, the plug sealing on the seat is not parallel to the flow axis, but it is still a conical plug (beveled cap 153) sealing on a seat (128). Ex. 2001 ¶ 109.

In contrast with the valve element disclosed in Tettleton, a gate valve has a much different configuration. *Id.* ¶ 110. A gate valve is “[a] type of valve that has a sliding gate to block fluid flow.” *Id.*; Ex. 2003. This is the type of valve claimed in

Claim 1 and shown, for example in FIG. 5 of the '794 Patent, with the gate 416 annotated in red. Ex. 2001 ¶ 110.



'794 Patent FIG. 5 annotated

The '794 Patent teaches that “operation of the actuator 401 [annotated in blue] moves the sliding gate 416 [annotated in red] of the gate valve 402.” *Id.*; Ex. 1007 at 12:1-2.

Accordingly, Tettleton does not disclose a “valve with a gate” which would have been known to a POSITA as a gate valve. Ex. 2001 ¶ 111. Further, Tettleton teaches the use of a beveled cap which seals against a seal insert, which would have been known to a POSITA as a type of globe valve. *Id.* Thus, Tettleton does not disclose and teaches against this claim element.

2. Independent Claim 2

As discussed below, not all of the claim elements of Claim 2 are disclosed by Tettleton either explicitly or inherently. *Id.* ¶ 112. Because not all of the claim elements are disclosed by Tettleton, Tettleton does not anticipate Claim 2. *Id.* Certain claim limitations and elements which are not disclosed, either explicitly or inherently, by Tettleton are discussed below. *Id.*

a) 2(e)

As discussed above regarding claim limitation 1(e), Tettleton does not disclose “a safety valve in-line with the second fluid line.” *Id.* ¶ 113. The valve of Tettleton is “an angle-body configuration and/or a fluid flow path with approximately a ninety degree turn.” *Id.*; Ex 1016 at [0008], [0010], [0013], [0043]. According to Tettleton, “[i]n an ‘angle-body’ valve, the axis of the first passageway

130 is not concentric or coaxial with [] the axis of the second passageway 140.”
Ex. 2001 ¶ 113; Ex. 1016 at [0043]. Accordingly, Tettleton does not disclose, and actually teaches against, a safety valve in-line with the second fluid line for the same reasons as those discussed above regarding Claim 1(e) in Section VII.A.1.b.
Ex. 2001 ¶ 113.

3. Dependent Claim 5

Claim 5 depends from Claim 2, and contains all of the limitations of Claim 2.
Id. ¶ 114. As discussed above, Tettleton fails to disclose all of the elements of Claim 2. *Id.* Accordingly, Tettleton fails to disclose all of the elements of Claim 5. *Id.* Tettleton, therefore, fails to anticipate Claim 5. *Id.*

4. Dependent Claim 6

Claim 6 depends from Claim 2, and contains all of the limitations of Claim 2.
Id. ¶ 115. As discussed above, Tettleton fails to disclose all of the elements of Claim 2. *Id.* Accordingly, Tettleton fails to disclose all of the elements of Claim 6. *Id.* Tettleton, therefore, fails to anticipate Claim 6. *Id.*

5. Dependent Claim 9

Claim 9 depends from Claim 2, and contains all of the limitations of Claim 2.
Id. ¶ 116. As discussed above, Tettleton fails to disclose all of the elements of Claim 2. *Id.* Accordingly, Tettleton fails to disclose all of the elements of Claim 9. *Id.* Tettleton, therefore, fails to anticipate Claim 9. *Id.*

6. Dependent Claim 11

Claim 11 depends from Claim 2, and contains all of the limitations of Claim 2. *Id.* ¶ 117. As discussed above, Tettleton fails to disclose all of the elements of Claim 2. *Id.* Accordingly, Tettleton fails to disclose all of the elements of Claim 11. *Id.* Tettleton, therefore, fails to anticipate Claim 11. *Id.*

7. Dependent Claim 12

Claim 12 depends from Claim 2, and contains all of the limitations of Claim 2. *Id.* ¶ 118. As discussed above, Tettleton fails to disclose all of the elements of Claim 2. *Id.* Accordingly, Tettleton fails to disclose all of the elements of Claim 12. *Id.* Tettleton, therefore, fails to anticipate Claim 12. *Id.*

8. Independent Claim 13

As discussed in the sections below, not all of the claim elements of Claim 13 are disclosed by Tettleton either explicitly or inherently. *Id.* ¶ 119. Because not all of the claim elements are disclosed by Tettleton, Tettleton does not anticipate Claim 13. *Id.* Certain claim limitations and elements which are not disclosed, either explicitly or inherently, by Tettleton are discussed below. *Id.*

a) 13(e)

As discussed above regarding claim limitation 1(e), Tettleton does not disclose “a safety valve in-line with the second fluid line.” *Id.* ¶ 120. The valve of Tettleton is “an angle-body configuration and/or a fluid flow path with

approximately a ninety degree turn”. *Id.*; Ex. 1016 at [0008], [0010], [0013], [0043]. According to Tettleton, “[i]n an “angle-body” valve, the axis of the first passageway 130 is not concentric or coaxial with [] the axis of the second passageway 140.” Ex. 2001 ¶ 120; Ex. 1016 at [0043]. Accordingly, Tettleton does not disclose and teaches against a safety valve in-line with the second fluid line for the same reasons as those discussed above regarding Claim 1(e) in Section VII.A.1.b. Ex. 2001 ¶ 120.

9. Dependent Claim 16

Claim 16 depends from Claim 13, and contains all of the limitations of Claim 13. *Id.* ¶ 121. As discussed above, Tettleton fails to disclose all of the elements of Claim 13. *Id.* Accordingly, Tettleton fails to disclose all of the elements of Claim 16. *Id.* Tettleton, therefore, fails to anticipate Claim 16. *Id.*

10. Dependent Claim 17

Claim 17 depends from Claim 13, and contains all of the limitations of Claim 13. *Id.* ¶ 122. As discussed above, Tettleton fails to disclose all of the elements of Claim 13. *Id.* Accordingly, Tettleton fails to disclose all of the elements of Claim 17. *Id.* Tettleton, therefore, fails to anticipate Claim 17. *Id.*

11. Dependent Claim 18

Claim 18 depends from Claim 13, and contains all of the limitations of Claim 13. *Id.* ¶ 123. As discussed above, Tettleton fails to disclose all of the elements of

Claim 13. *Id.* Accordingly, Tettleton fails to disclose all of the elements of Claim 13. *Id.* Tettleton, therefore, fails to anticipate Claim 13. *Id.*

12. Dependent Claim 21

Claim 21 depends from Claim 13, and contains all of the limitations of Claim 13. *Id.* ¶ 124. As discussed above, Tettleton fails to disclose all of the elements of Claim 13. *Id.* Accordingly, Tettleton fails to disclose all of the elements of Claim 21. *Id.* Tettleton, therefore, fails to anticipate Claim 21. *Id.*

B. No Motivation to Combine

Neither the Petition nor the declaration of Dr. Stevick provide any rationale for a motivation to combine the references in the way that Petitioner argues. Indeed, there is no such motivation to combine the references. Ex. 2001 ¶ 125.

The Petition summarizes several references and then relies on Dr. Stevick's declaration as to how a POSITA would have understood these references. Pet. at 55-57. Dr. Stevick's declaration contains no rationale for why a POSITA would have been motivated to combine the references. Ex. 2001 ¶ 126. Dr. Stevick merely asserts conclusory statements. *Id.* ¶ 126-130; Ex. 1022 ¶ 56-57. Further, Paragraphs 58 – 60 provide summaries and quotations from various sources. Ex. 2001 ¶ 129. However, the Petition is devoid of analysis of why these quotes and summaries would have led a POSITA to combine the references, much less combine them in the manner the Petitioner alleges. *Id.* ¶ 131.

The Petition further unsuccessfully attempts to bolster its argument by relying on “government regulations known at filing.” Pet. at 56. Petitioner claims that “the regulations illustrate the ‘background knowledge, creativity, and common sense of the person of ordinary skill [in the art].’” *Id.* However, the regulations are not applicable to the field of the ’794 Patent. *Id.* The art Petitioner relies on explicitly states it does not apply to “oil or gas well drilling or servicing operations.” Ex. 2001 ¶ 133; Ex. 1030 at 2. However, the ’794 Patent is clearly related to “oil or gas well drilling or servicing operations.” *Id.* ¶ 134; Ex. 1007 at 1:23-24. Accordingly, a POSITA would not have relied on any teachings of the “government regulations” when looking at art related to the ’794 Patent because it teaches against using it in this field. Ex. 2001 ¶ 134.

Further, the references themselves are in different fields of endeavor. *Id.* ¶ 135. Tettleton describes drilling fluid or “mud” systems as well as pressure relief valves and systems. *Id.*; Ex. 1016 at [0002]. Further, a POSITA would have understood Tettleton teaches assemblies for removing pressure from a drilling system by *opening* valves to allow venting or release of fluid from the closed drilling mud system to the atmosphere. Ex. 2001 ¶ 135.

Neither Tubel nor Cotham are directed to pressure relief systems, nor are they directed to drilling systems. *Id.* ¶ 136. Instead, Tubel and Cotham address closing in

an otherwise open and flowing wellhead line to contain the pressure downhole rather than releasing it into the production flow line or the atmosphere. *Id.*

Cotham describes “using various valves to control flow of fluids” and monitoring “fluid pressures and emergency conditions, and shutting-in the well in response.” *Id.* ¶ 137; Ex. 1019 at Abstract. Accordingly, a POSITA would have understood Cotham to discuss methods to “shut in” the well by *closing* valves rather than opening them as disclosed in Tettleton. Ex. 2001 ¶ 137.

Similarly, Tubel directs production operations (as opposed to drilling operations) and shuts in wells to contain the pressurized fluid in the wellbore and the formation. *Id.* ¶ 138. Tubel describes sensors that are located beneath the surface of the earth to measure “downhole parameters (such as pressure[]).” *Id.*; Ex. 1021 at 4:57-58. When these downhole parameters are outside the operating ranges, the well is shut in by causing “an electromechanical control device (such as a valve) to [] close a pump or other fluid flow device.” Ex. 2001 ¶ 138; Ex. 1021 at 4:62-65. Accordingly, Tubel discloses a distinct closing device rather than an opening device as stated in Tettleton. Ex. 2001 ¶ 138.

Additionally, Cotham describes valves that would be incompatible with the intended purpose of Tettleton. Ex. 2001 ¶ 137. Cotham describes two angle body “ $\frac{1}{4}$ ” NPT SST, 10,000 PSI, Poppet Type” valves. *Id.* Valves of this type would not be suitable for venting or releasing high-pressure well fluid. *Id.* The very small

orifice contained in the valves of Cotham would become plugged with drilling mud, which has a relatively high weight and viscosity as compared with hydraulic fluid. *Id.* Further, the ¼” valves would not relieve significant pressure from a drilling mud system as the volume of fluid in a drilling mud system is orders of magnitude higher than that of a system containing merely hydraulic lines. *Id.* Common drilling mud systems provide wellbores of around 10” diameter for tens of thousands of feet underground. *Id.* Typical hydraulic systems comprise hundreds of feet (or less) of hydraulic line, typically around 1” or smaller. *Id.* Thus, the small valves of Cotham would be incompatible with the intended purpose of Tettleton. *Id.*

Accordingly, not only has the Petition failed to assert any evidence that a POSITA would have combined the teachings of Tettleton, Cotham, and Tubel, but also the evidence disclosed by the Patent Owner shows that a POSITA would have no motivation to combine these conflicting pieces of art. *Id.* ¶ 139.

C. Ground 2: Claims 3, 4, 7, 8, 14 and 15 are not obvious over the combination of Tettleton and Cotham

Petitioner cites Tettleton in combination with Cotham, which was considered during prosecution, as rendering Claims 3, 4, 7, 8, 14 and 15 obvious. Not so. Tettleton and Cotham, alone and in combination, fail to disclose all of the elements of Claims 3, 4, 7, 8, 14 and 15. In addition, one of ordinary skill in the art would not have been motivated to combine Tettleton and Cotham as asserted by Petitioner.

Accordingly, the combination of Tettleton and Cotham fails to render Claims 3, 4, 7, 8, 14 and 15 obvious.

1. Dependent Claim 3

Claim 3 depends from Claim 2, and contains all of the limitations of Claim 2. *Id.* ¶ 140. Petitioner simply referenced arguments that Tettleton discloses all of the elements of Claim 2. *Id.* As discussed above, Tettleton fails to disclose all of the elements of Claim 2. *Id.* Petitioner points to no portion of *Cotham* that fills in the missing elements, as discussed above regarding Claim 2. Accordingly, the combination of Tettleton and Cotham, therefore, fails to render Claim 3 obvious. *Id.*

2. Dependent Claim 4

Claim 4 depends from Claim 3, which further depends from Claim 2 and contains all of the limitations of Claim 2 and Claim 3. *Id.* ¶ 141. Petitioner simply referenced arguments that Tettleton discloses all the elements of Claim 2. *Id.* As discussed above, Tettleton fails to disclose all the elements of Claim 2. *Id.* Petitioner points to no portion of *Cotham* that fills in the missing elements, as discussed above regarding Claim 2. Accordingly, the combination of Tettleton and Cotham, therefore, fails to render Claim 4 obvious. *Id.*

3. Dependent Claim 7

Claim 7 depends from Claim 2, and contains all of the limitations of Claim 2. *Id.* ¶ 142. Petitioner simply referenced arguments that Tettleton discloses all of the

elements of Claim 2. *Id.* As discussed above, Tettleton fails to disclose all of the elements of Claim 2. *Id.* Petitioner points to no portion of *Cotham* that fills in the missing elements, as discussed above regarding Claim 2. Accordingly, the combination of Tettleton and Cotham, therefore, fails to render Claim 7 obvious. *Id.*

4. Dependent Claim 8

Claim 8 depends from Claim 2, and contains all of the limitations of Claim 2. *Id.* ¶ 143. Petitioner simply referenced arguments that Tettleton discloses all of the elements of Claim 2. *Id.* As discussed above, Tettleton fails to disclose all of the elements of Claim 2. *Id.* Petitioner points to no portion of *Cotham* that fills in the missing elements, as discussed above regarding Claim 2. Accordingly, the combination of Tettleton and Cotham, therefore, fails to render Claim 8 obvious. *Id.*

5. Dependent Claim 14

Claim 14 depends from Claim 13, and contains all of the limitations of Claim 13. *Id.* ¶ 144. Petitioner simply referenced arguments that Tettleton discloses all of the elements of Claim 13. *Id.* As discussed above, Tettleton fails to disclose all of the elements of Claim 13. *Id.* Petitioner points to no portion of *Cotham* that fills in the missing elements, as discussed above regarding Claim 2. Accordingly, the combination of Tettleton and Cotham, therefore, fails to render Claim 14 obvious. *Id.*

6. Dependent Claim 15

Claim 15 depends from Claim 13, and contains all of the limitations of Claim 13. *Id.* ¶ 145. Petitioner simply referenced arguments that Tettleton discloses all of the elements of Claim 13. *Id.* As discussed above, Tettleton fails to disclose all of the elements of Claim 13. *Id.* Petitioner points to no portion of *Cotham* that fills in the missing elements, as discussed above regarding Claim 2. Accordingly, the combination of Tettleton and Cotham, therefore, fails to render Claim 15 obvious. *Id.*

D. Ground 3: Claims 10, 19 and 20 are not obvious over the combination of Tettleton and Tubel

Petitioner cites Tettleton in combination with Tubel as rendering Claims 10, 19, and 20 obvious. Not so. Tettleton and Tubel, alone and in combination, fail to disclose all of the elements of Claims 10, 19, and 20.

1. Dependent Claim 10

Claim 10 depends from Claim 2, and contains all of the limitations of Claim 2. Ex. 2001 ¶ 146. Petitioner simply referenced arguments that Tettleton discloses all of the elements of Claim 2. *Id.* As discussed above, Tettleton fails to disclose all of the elements of Claim 2. *Id.* Accordingly, the combination of Tettleton and Tubel, therefore, fails to render Claim 10 obvious. *Id.*

2. Dependent Claim 19

Claim 19 depends from Claim 13, and contains all of the limitations of Claim 13. *Id.* ¶ 147. Petitioner simply referenced arguments that Tettleton discloses all of the elements of Claim 13. *Id.* As discussed above, Tettleton fails to disclose all of the elements of Claim 13. *Id.* Accordingly, the combination of Tettleton and Tubel therefore, fails to render Claim 19 obvious. *Id.*

3. Dependent Claim 20

Claim 20 depends from Claim 13, and contains all of the limitations of Claim 13. *Id.* ¶ 148. Petitioner simply referenced arguments that Tettleton discloses all of the elements of Claim 13. *Id.* As discussed above, Tettleton fails to disclose all of the elements of Claim 13. *Id.* Accordingly, the combination of Tettleton and Tubel therefore, fails to render Claim 20 obvious. *Id.*

For at least these reasons, the information presented in the Petition fails to shows a reasonable likelihood that Petitioner would prevail in establishing unpatentability of any of the Challenged Claims. The Board should deny institution. Moreover, as set forth below, there are additional reasons—beyond these substantive failures—the Board should deny institution.

VIII. PETITIONER IS AWARE OF EVIDENCE OF SECONDARY CONSIDERATIONS THAT CONFIRMS NONOBVIOUSNESS

As Petitioner’s own arguments make clear, Petitioner is aware of evidence of secondary considerations, including copying. *See* Pet. at 58 (citing Ex. 1028 – Safoco’s Interrogatory Responses describing (1) the commercial success of the Safoco FRV; (2) the long-felt need for such a device; (3) commercial acquiescence; (4) copying by others; (5) failed attempts by others; (6) praise by others; and (7) industry approval, and including specific reference to prior litigations)). Copying is strong evidence of nonobviousness. *Volvo Penta of the Ams., LLC v. Brunswick Corp.*, 81 F.4th 1202 (Fed. Cir. 2023). Yet, Petitioner ignores it.

Sean Mackiewicz, a former KLX employee, observed that Petitioner’s FRV was a virtual copy of the Safoco FRV. He pointed that out to KLX management in 2015-2016 and suggested that Petitioner redesign the unit rather than continue with a product that was essentially a copy of Safoco’s FRV product. Petitioner’s management rejected his suggestion. *See* Ex. 2009.

As KLX also knows, since it cited Safoco’s interrogatory responses (Ex. 1028), “[c]ompetitors in the industry, as well as their customers, strongly desired a device with the features of the Safoco FRV. Companies, including TE3CO and Bulldog Frac Rentals and later KLX Energy, quickly and intentionally copied the features and technology embodied in the Safoco FRV in an effort to compete with

Safoco. TE3CO knew about the Asserted Patents; TE3CO had full and unfettered access to the Safoco FRV and all of the underlying proprietary and confidential design information; and TE3CO then developed a competing product that was virtually identical in form and function. Bulldog Frac Rentals, which was later purchased by KLX Energy, had access to and obtained a Safoco FRV and developed a virtual copy which was then further developed and released by KLX Energy. Telos developed and deployed a copied version of the Safoco FRV.” Ex. 1028. KLX ignores these instances of copying.

It is Petitioner’s burden to address this known evidence of secondary considerations. *See, e.g., Stryker Corp. v. KFX Medical, LLC*, IPR2019-00817, Paper 10 at 28-29 (PTAB Sep. 16, 2019) (citing a string of cases confirming that petitioners must address known evidence of secondary considerations). Petitioner failed to do so. Petitioner’s conclusory attorney arguments are not enough and institution should be denied.

IX. THE BOARD SHOULD DENY INSTITUTION UNDER 325(D) BECAUSE THE SAME ART AND ARGUEMENTS WERE PRESENTED TO THE OFFICE AND PETITIONER HAS FAILED TO IDENTIFY EXAMINER’S ERRORS

The Board has discretion to deny institution under 35 U.S.C. § 325(d) where, as here, “the same or substantially the same prior art or arguments previously were

presented to the Office.” In determining if a petition should be denied, the Board uses the two-step *Advanced Bionics* framework:

- (1) whether the same or substantially the same art previously was presented to the Office **or** whether the same or substantially the same arguments previously were presented to the Office; and
- (2) if either condition of first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims.

Advanced Bionics, LLC v. Med-El Elektromedizinische Geräte GmbH, IPR2019-01469, Paper 6 at 7 (PTAB Feb. 13, 2020) (precedential) (emphasis added).

Regarding the first step of *Advanced Bionics*, the Office considered the same or substantially the same art and arguments during prosecution of the '794 Patent. Ex. 2001 ¶ 50. In fact, the Office expressly considered Cotham during prosecution of the '794 Patent, contrary to Petitioner's assertion. *Id.* ¶ 49; Pet. at 13. Cotham was the basis of a §103 rejection in a Non-Final Office Action. Ex. 1010 at 7. Thus, Cotham was not merely given “cursory consideration”, as Petitioner contends, but rather was substantively considered by the Examiner in order to form the basis of a rejection of the '794 Patent's claims. Ex. 2001 ¶ 48-51; Pet. at 14. Further, the Office considered substantially the same art as Tettleton and Tubel during prosecution of the '794 Patent's parent application, the '453 Patent. Ex. 2001 ¶ 52-53.

Tettleton is cumulative to other art previously considered by the Office disclosing a) an angle-body pressure relief valve for use in a system for controlling fluid flow and pressure at a well site; b) a valve that may be in a closed or open position, wherein a valve actuator may determine the position; and c) a pressure measuring device that monitors pressure within the system. *Id.* ¶ 52; Pet. at 15.

Tubel is cumulative of other art previously considered by the Office disclosing a) a system for regulating flow of fluid from a well using actuation to drive a wellhead valve; and b) a system having a pipe, a flow sensor for sensing flow of process fluid through the pipe, an electrical power source, and a wellhead valve for regulating the flow of process fluid through collection pipe. Ex. 2001 ¶ 53; Pet. at 16. Further, Petitioner fails to assert any arguments that the Office failed to consider. Thus, the Office did consider the same or substantially the same prior art and arguments that Petitioner asserts during prosecution of the '794 Patent.

Regarding the second step of *Advanced Bionics*, there is no evidence that the Examiner committed material error during his review of the prior art during prosecution. Rather, regarding Cotham, the Examiner performed a comprehensive evaluation of the prior art as evidenced by the assertion of the references in a Non-Final Office Action. Ex. 2001 ¶ 51. Additionally, the art that is substantially similar to Tettleton and Tubel also formed the basis of rejections in Office Actions issued during prosecution of the parent application. *Id.* ¶ 52-53. Thus, Tettleton and Tubel

were substantively considered by the Office during prosecution. Further, Petitioner asserted that the Office's error was its failure to assert Tettleton and Tubel, but it has failed to address any error the Office made in considering Cotham or art substantially similar to Tettleton and Tubel.

In view of the Office's prior consideration of the same or substantially the same art and arguments and Petitioner's failure to identify errors made by the Office, the Board should exercise its discretion and deny the IPR petition under 35 U.S.C. § 325(d).

A. The Office Considered the Same or Substantially the Same Art and Arguments

The same or substantially the same art and arguments were previously presented to the Office, contrary to Petitioner's assertion. *Advanced Bionics*, Paper 6 at 8. Petitioner's grounds rely on three references—Tettleton, Cotham, and Tubel—to show obviousness of the Challenged Claims.

Further, Petitioner's contention that Cotham was not presented to the Office is incorrect. Petitioner stated "Cotham [was] only listed in an IDS and [was] not cited against the claims in a rejection during prosecution." Pet. at 13. However, Cotham was the basis of a §103 rejection in a Non-Final Office Action. Ex. 1010 at 6. Accordingly, Petitioner's assertion is factually incorrect. Cotham was not only cited in an IDS, but also was cited against then-pending claims in a rejection. Clearly, the

Office substantively considered the same art, Cotham, when prosecuting the '794 patent.

Further, the Office considered substantially similar art as the Tettleton and Tubel references. Etheridge and Kotapish, cited on the face of the '794 Patent and cited by the Examiner in Office Actions of the similar claimed subject matter in the parent '453 Patent, disclose each of the limitations Petitioner alleges are disclosed by Tettleton and Tubel. Ex. 2001 ¶ 52-53. Assuming the Examiner only considered Etheridge and Kotapish in the parent application, the Examiner still presumptively considered these references in the child 15/397,488 application, which matured into the '794 Patent. *See* MPEP §609.02 (“The examiner will consider information which has been considered by the Office in a parent application... A listing of the information need not be resubmitted in the continuing application unless the applicant desires the information to be printed on the patent.”). Additionally, both the parent application and the child application had the same Examiner. *See Google LLC v. Kewazinga Corp*, IPR2021-00527, Paper 16, at 11(PTAB Aug. 21, 2021) (denying institution where the same Examiner conducted the examinations for the parent application and the challenged patent). Thus, Etheridge and Kotapish were considered by the Office during prosecution of the '794 Patent.

Petitioner contends that the Office did not consider Tettleton, and thus overlooked art disclosing a) a pressure relief valve for use in a system for controlling

fluid flow and pressure at a well site; b) a valve that may be in a closed position or open position, wherein the position may be determined by a valve actuator; and c) a pressure measuring device that monitors pressure within the system. Pet. at 15. However, Etheridge and Kotapish disclose a pressure relief valve for use in a system for controlling fluid flow and pressure at a well site. Ex. 2001 ¶ 52-53; *See* Table 1, row 1 *infra*. Additionally, these references disclose a valve that may be in a closed position or an open position. *See* Table 1, row 2 *infra*. Finally, these references also disclose a pressure measuring device that monitors pressure within the system. *See* Table 1, row 3 *infra*.

**Table 1: Etheridge and Kotapish Disclose the Same Teachings
Petitioner Contends Tettleton Discloses.**

Tettleton	Etheridge	Kotapish
A pressure relief valve for use in a system for controlling fluid flow and pressure at a well site;	“A high pressure relief valve 216 is connected to the discharge of pump 208 in conduit 206c. A remotely actuated blocking valve 218 is connected into conduit 206 at 206c and 206b to block flow through conduit 206.” Ex. 2010 at 5: 50-54, Fig. 5.	“[T]he pressure relief system 10 includes a relief valve 12 connected to the discharge line 11 and to the relief valve 12.” Ex. 2011 at [0016].
A valve that may be in a closed position or an open position;	“By-pass valve 220 is switched to open position for by-pass when high pressure of a prescribed magnitude switches the valve 222 which in turn switches the	“[A] selectively openable dump valve in pressure communication with the low pressure side of the piston, and opening the dump valve, when the pressure in the pumping

	valve 220 from the close to the opened by-pass position.” Ex. 2010 at 5:58-62.	circuit reaches a set point.” Ex. 2011 at [0005].
A pressure measuring device that monitors pressure within the system.	“[S]witch valves 228 and 222, therefore provides for manipulation of the control valve 12 in response to the pressure sensed in the product stream 204.” Ex. 2010 at 7:2-4.	“The sequence valve 32 may be selectively adjustable to open at a pre-determined pressure at the side in fluid communication with the sensing unit 27 []. A pressure indicator 60 may be used in conjunction with the sequence valve 32 to establish the opening pressure.” Ex. 2011 at [0027].

All elements that Petitioner contends Tettleton discloses are disclosed by at least Etheridge and Kotapish. Ex. 2001 ¶ 52. Accordingly, the Office considered prior art substantially the same to Tettleton during prosecution of the ’794 Patent when it considered Etheridge and Kotapish.

Further, Petitioner contends that the Office did not consider Tubel, and thus overlooked art disclosing a) a system for regulating flow of fluid from a well using actuation to drive a wellhead valve; and b) a system having a pipe, a flow sensor for sensing flow of process fluid through the pipe, an electrical power source, and a wellhead valve for regulating the flow of process fluid through collection pipe. Pet. at 16. However, Etheridge discloses a system for regulating flow of fluid from a well using actuation to drive a wellhead valve. Ex. 2001 ¶ 53; *See* Table 2, row 1 *infra*. Further, Etheridge discloses a system having a pipe, a flow sensor for sensing flow

of process fluid through the pipe, an electrical power source, and a wellhead valve for regulating the flow of process fluid through collection pipe. Ex. 2001 ¶ 53; *See* Table 2, rows 2-5 *infra*.

Table 2: Etheridge Discloses the Same Teachings Petitioner Contends Tubel Discloses.

Tubel	Etheridge
A system for regulating flow of fluid from a well using actuation to drive a wellhead valve;	“[C]ontrol system which actuates the control valve 10. The valve 10 is connected into a wellhead or other piping 202 which brings product from a well bore through the valve and out through a product line 204.” Ex. 2010 at 5:38-42.
A system having a pipe,	“[P]roduct pipe downstream of the flow control valve.” Ex. 2010 at 2:68.
a flow sensor for sensing flow of process fluid through the pipe,	“[S]witch valves 228 and 222, therefore provide for manipulation of the control valve 12 in response to the pressure sensed in the product stream 204.” Ex. 2010 at 7:2-4.
an electrical power source, and	“[A]ll of the switching as described could be performed electrically [] whereby the valves 230, 218, and 220 would be switched electrically.” Ex. 2010 at 7: 11-14.
a wellhead valve for regulating the flow of process fluid through collection pipe.	“[T]he valve 10 is usually equipped with the valve member 66 shown in FIG. 2, when initially placed on a wellhead to control the initial and new flow of product from the well.” Ex. 2010 at 7:50-53.

All elements that Petitioner contends Tubel discloses are disclosed by at least Etheridge. Ex. 2001 ¶ 53. Thus, the Office considered prior art substantially the same to Tubel during prosecution of the '794 Patent when it considered Etheridge. Petitioner hurriedly rushed to the conclusion that the Office did not consider prior

art substantially the same to Tettleton and Tubel when Petitioner failed to thoroughly examine the prosecution history of the '794 Patent.

Further, Petitioner has failed to prove that the same or substantially the same arguments were not presented to the Office. Rather, Petitioner makes a conclusory statement, “this petition does not present patentability arguments that are the same or substantially the same as those previously presented to the Office.” Pet. at 27. Petitioner relies on their assertion that “Tettleton and several additional references relied on in this petition were not cited by the Examiner of the Patent Owner during prosecution of the ‘794 Patent.” Pet. at 27. However, as discussed above, the same art and substantially the same art were presented to the Office when the Office considered Etheridge and Kotapish among other references during prosecution of the '794 Patent. Thus, Petitioner has failed to assert any factual argument that the Office failed to consider.

Therefore, the Board should find that the prior art and arguments relied on in the Petition are the same or substantially the same as the art and arguments that were previously presented to the Office.

B. The Office Did Not Err in a Manner Material to Patentability

Because the Office previously considered the same (or substantially same) prior art and arguments, the Board should deny the Petition unless the Petitioner shows material error in the Office’s prior consideration. *Advanced Bionics* at 8-9.

Petitioner's argument for error is premised on the belief that the Office overlooked Tettleton's and Tubel's disclosures of more than one claim limitation. Pet. at 15-16. However, this assertion is incorrect because, as discussed above, the Office considered substantially the same art. *See* discussion *supra* Part IX.A. The Examiner addressed Etheridge and Kotapish in detail when issuing a rejection in the parent 13/480,704 application and the Examiner would have been aware of that analysis when he examined the 15/397,488 application that issued as the '794 Patent.

Petitioner cites no evidence to support a finding that the Examiner overlooked the art disclosed by Tettleton or Tubel. In other cases, petitioners have avoided denial under §325(d) "by showing that the Examiner misapprehended or overlooked specific teachings in the relevant prior art such that the error by the Office was material to the patentability of the challenged claims." *Advanced Bionics*, IPR2019-01469, Paper 6 at 21. Here, Petitioner fails to identify teachings of Tettleton or Tubel that were not previously presented in other references, such as Etheridge and Kotapish. Instead, Petitioner identifies teachings of Tettleton and Tubel that were referenced in Office Actions during the prosecution history of the '794 Patent, and its related applications. *See* discussion *supra* Part IX.A. Thus, the Petitioner has failed to prove that the Office erred in a manner material to patentability when considering art substantially similar to Tettleton, Tubel, or their teachings.

Further, Petitioner fails to state whether the Office erred in a manner material to patentability when considering Cotham. Rather, Petitioner is silent on the second prong of the *Advanced Bionics* framework in relation to Cotham and only asserts that it was not considered by the Examiner. Pet. at 13. However, as discussed above, Cotham was indeed cited by the Examiner in a Non-Final Office Action, and thus appropriately considered by the Office. *See* discussion *supra* Part IX.A. Accordingly, the Office did not err in a manner material to patentability as it relates to Cotham because Cotham was considered by the Office and the Petitioner has failed to prove the Office erred when considering Cotham.

The Office considered substantially the same art as Tettleton and Tubel when issuing Non-Final Office Actions citing Etheridge and Kotapish. Ex. 2001 ¶ 52-53. Additionally, Petitioner is incorrect in its assertion that Cotham was not considered by the Office during prosecution of the '794 Patent because Cotham was used as the basis for a rejection in an Office Action. Further, the Petitioner has failed to prove that the Office erred when considering Tettleton, Tubel, or Cotham because it has not identified teachings of these references that were not previously presented to the Office and is completely silent in relation to whether the Office erred in its examination of Cotham. Therefore, the Board should deny institution under 35 U.S.C. § 325(d).

X. PETITIONER’S *FINTIV* ANALYSIS IS FLAWED

As set forth above, KLX has not presented compelling evidence of unpatentability. Safoco acknowledges Petitioner’s purported stipulation. Pet. at 19. However, Petitioner’s *Fintiv* analysis is flawed as discussed below.

A. Factor 1: The Parallel Litigation is Not Stayed

Fintiv factor 1 weighs against institution, or at worst, is neutral. Where a stay has not been granted, and it is unknown whether the presiding court would grant a stay if the Board institutes IPR, this factor is neutral. *See Cisco Sys., Inc. v. Estech Sys., Inc.*, IPR2021-00333, Paper 12 at 10 (PTAB July 7, 2021) (*Fintiv* factor 1 neutral after “declin[ing] to speculate on the likelihood of a stay.”).

As noted by Petitioner, neither party has requested a stay in the Parallel Litigation. Pet. at 17. Moreover, Eastern District of Texas judges have declined to stay the parallel litigation when the defendant waited nearly a year after the complaints were served to file its petition for *inter partes* review five days before the statutory deadline. *See, e.g., Trover Grp., Inc. v. Dedicated Micros USA*, 2015 WL 1069179, *3 (E.D. Tex. Mar. 11, 2015) (Bryson, J.). In this case, Petitioner filed its Petition one day before the statutory deadline—which decreases the likelihood of a stay in the Parallel Litigation.

Thus, *Fintiv* factor 1 weighs in favor of denial or is neutral.

B. Factor 2: The Trial in the Parallel Litigation is Set for 9 Months before the Board’s Projected Statutory Deadline for its Final Written Decision

Fintiv factor 2 weighs heavily in favor of discretionary denial. By any measure, the trial in the Parallel Litigation should occur well before the Board’s final written decision would be due. Specifically, the projected statutory deadline for issuance of final written decision in this proceeding is late May 2025. As noted by Petitioner, the Parallel Litigation is set for trial on August 19, 2024—about 9 months before the statutory deadline. *See* Ex. 1015 (ECF No. 23; Docket Control Order). As the Board recently held, “[a] trial date about eight months before our statutory due date weighs heavily in favor of discretionary denial.” *Cosmx Battery Co., Ltd. v. Ningde Ampere Technology Limited*, IPR2023-00587, Paper 12 at 11 (PTAB Sept. 22, 2023).

Moreover, the median time from filing to disposition for civil cases in the Eastern District of Texas is 8.4 months. The median time from filing to trial for civil cases in the Eastern District of Texas is 19.0 months. *See* Ex. 2012; *see also* USPTO Memorandum, Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation (June 21, 2022) (suggesting consideration of median time to trial). Under the median time from filing to trial, the trial in the Parallel Litigation would occur in June 2024—11 months before the statutory deadline, which is even earlier than the set trial date. *See International*

Business Machines Corporation v. Digital Doors, Inc., IPR2023-00970, Paper 7 at 10-11 (PTAB Jan. 12, 2024) (“Because the evidence presented by the parties suggests that, by any measure, a trial in the parallel district court litigation is likely to occur before the due date of our final written decision if we were to institute an *inter partes* review, this factor favors exercising our discretion to deny the Petition.”).

Certainly, *Fintiv* factor 2 weighs heavily in favor of discretionary denial.

C. Factor 3: The Parties Have Invested and Will Invest Significant Time and Money in the Parallel Litigation

Fintiv factor 3 weighs heavily in favor of discretionary denial. Petitioner argues “there has been minimal investment in the Parallel Proceeding by the court and the parties.” Pet. at 17-18. Not so. Moreover, “the pertinent inquiry concerns the investment in the parallel proceeding by the court and the parties ‘at the time of the institution decision.’” *Cosmx Battery*, IPR2023-00587, Paper 12 at 13 (citing *Fintiv*, Paper 11 at 9)—a fact Petitioner ignores.

To date, the parties have: briefed KLX’s Motion to Dismiss or Transfer, which the court denied consistent with a full report and recommendation prepared by the magistrate judge; prepared for and attended a scheduling and case management conference; served infringement and invalidity contentions; negotiated a discovery order; negotiated a protective order; served amended infringement contentions;

served initial disclosures; completed claim construction briefing; and submitted the joint claim construction chart. *See* Ex. 2013 (Docket Report).

Indeed, before the Institution Decision, the parties will have: substantially completed document production; exchanged privilege logs; completed claim construction briefing; attended the *Markman* hearing before the court on February 23, 2024; submitted opinion of counsel defenses; served expert disclosures; completed fact discovery; served rebuttal expert disclosures; completed expert discovery; filed dispositive motions; and filed motions to strike expert testimony. *See* Ex. 1015 (ECF No. 23; Docket Control Order). *See Cosmx Battery*, IPR2023-00587, Paper 12 at 13 (“We conclude that this factor heavily favors denial of institution, because the district court proceeding has already advanced beyond fact discovery to the completion of initial expert reports.”). In fact, at the time of the Board’s institution decision, almost all that will be left to do in the Parallel Litigation will be pretrial disclosures in advance of the August 19, 2024 trial setting—which will then be less than 3 months away.

Certainly, *Fintiv* factor 3 weighs heavily in favor of discretionary denial.

D. Factor 4: Petitioner’s Stipulation is Not a Golden Ticket to Institution

Under the fourth *Fintiv* factor, the Board weighs potential inefficiencies and conflicting determinations where more than one tribunal considers the validity of the

same patent claims, especially where the same invalidity theories are advanced. KLX “stipulates and shall file a stipulation in the Parallel Proceeding stating that it will not pursue in the Parallel Proceeding the same grounds of unpatentability as those raised herein or any other ground that could have reasonably been raised in this proceeding,” Pet. at 19, which may weigh in favor of institution. However, KLX’s stipulation does not track the *Sotera* language exactly. *Contra Sotera Wireless v. Masimo Corp.*, IPR2020-01019, Paper 12 (PTAB Dec. 1, 2020) (“will not pursue in this case the specific grounds . . . [in] the instituted inter parties [sic] review petition, or on any other ground . . . that was raised or could have been reasonably raised **in an IPR** (i.e., any ground that could be raised under §§ 102 or 103 on the basis of prior art patents or printed publications”) (emphasis added).

In any event, given the deficiencies of the Petition, and that all the other *Fintiv* factors weigh heavily against institution, the Board should exercise its discretion to deny institution.

E. Factor 5: The Parties are Identical

Fintiv factor 5 weighs heavily in favor of discretionary denial. As noted by the Petitioner, “the parties to this proceeding and the Parallel Proceeding are the same.” Pet. at 18. This factor has been found to weigh against institution where, as here, the gap between the trial date and the final written decision deadline is large. *See Samsung Elecs. Co., Ltd. v. California Inst. of Tech.*, IPR2023-00130, Paper 10

at 20 (PTAB May 4, 2023). Even more recently, “[t]he Board has found that ‘this factor favors denial if trial precedes the Board’s Final Written Decision and favors institution if the opposite is true.’” *See Cosmx Battery*, IPR2023-00587, Paper 12 at 16 (citing *Huawei Tech. Co. v. WSOU Inv., LLC*, IPR2021-00225, Paper 11 at 14 (PTAB June 14, 2021)).

Thus, because trial in the Parallel Litigation is likely to precede the final written decision in this case by a significant period of time (9-11 months) as discussed above, *Fintiv* factor 5 favors denial of institution under § 314(a).

F. Factor 6: The Merits are Not Compelling

Fintiv factor 6 weighs in favor of discretionary denial. Under factor 6, the Board considers the merits, and any other relevant circumstances, of a petitioner’s challenge when determining whether to institute in view of parallel litigation. *See* USPTO Memorandum. The compelling merits standard is a higher standard than the standard for institution set by statute. *See CommScope Tech v. Dali Wireless Decision*, IPR2022-01242, Paper 23 (PTAB Feb. 27, 2023). Where, as here, the information presented at the institution stage is at best merely sufficient to meet the statutory institution threshold (Patent Owner contends Petitioner does not even do that), the Board has the authority to exercise discretion to deny institution in view of the other *Fintiv* factors.

As the Petition itself makes obvious, Petitioner hurriedly filed at the eleventh hour. In doing so, the Petitioner cited cases incorrectly, used inconsistent language, ignore claim elements, and otherwise failed to build a compelling case. For example, Petitioner cites “*See Amazon.com v M2M Sols*, IPR2020-00921, Paper 9 at 11 (PTAB Nov. 16, 2020).” Pet. at 28. However, this is not the correct cite for the case. The AIA review number, IPR2020-00921, corresponds to *Philip Morris Products S.A. v. RAI Strategic Holdings, Inc.* Further, there are nine distinct *Amazon.com v M2M Sols.* cases. (IPR2017-01891, IPR2017-01892, IPR2017-01893, IPR2017-01894, IPR2017-01895, IPR2017-01896, IPR2019-01204, IPR2019-01205, IPR2022-00260). It is unknown which of these cases Petitioner is referring to, if any, and it is not the Board’s burden to investigate.

Further, Petitioner failed to appropriately investigate the prosecution history of the ’794 Patent. Petitioner claimed Cotham was not cited by the Examiner. However, as discussed, Cotham was the basis of the only Office Action of the ’794 Patent. A prepared petitioner would have at least read the prosecution history of the patent at issue to see what prior art the Office already considered. Clearly, Petitioner was not prepared. The Board should not have to expend its time reading arguments that were hurriedly prepared and are factually incorrect.

These errors will unduly burden the Board and waste time and resources attempting to verify the Petitioner’s arguments, which are already scheduled to be

presented to a jury in a few months. There is no need for the Board to duplicate the district court's efforts at the expense of the Board's time and resources. Even with the Petitioner's purported stipulation, the deficiencies of this Petition and all other *Fintiv* factors accentuate the value of denying institution under 35 U.S.C. § 314(a).

<i>Fintiv</i> Factor	Weighs
1	Against institution (Neutral)
2	Against institution
3	Against institution
4	For institution (if the Board accepts Petitioner's stipulation)
5	Against institution
6	Against institution

The Board should exercise its discretion to deny institution under 35 U.S.C. § 314(a).

XI. CONCLUSION

For any one of the aforementioned reasons, the Board should deny institution of an *inter partes* review of the Challenged Claims of the '794 Patent.

Dated: February 23, 2024

Respectfully submitted,
/B. Todd Patterson/

IPR2024-00197
Patent 9,671,794 B1

CERTIFICATE OF SERVICE

I hereby certify that on February 23, 2024, I caused a true and correct copy of the foregoing to be served upon counsel of record via email:

Dated: February 23, 2024

Respectfully submitted,
/B. Todd Patterson/

CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. § 42.24(d), the undersigned hereby certifies that this brief complies with the type-volume limitation of 37 C.F.R. § 42.24 because this brief contains 13,992 words, excluding the parts of the brief exempted by 37 CFR § 42.24(a).

Dated: February 23, 2024

Respectfully submitted,
/B. Todd Patterson/