No. ____

IN THE Supreme Court of the United States

NST GLOBAL, LLC, D/B/A SB TACTICAL, Petitioner,

v.

SIG SAUER INC.,

Respondent.

ON PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

PETITION FOR A WRIT OF CERTIORARI

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April 12, 2023

QUESTIONS PRESENTED

The Federal Circuit summarily affirmed the Patent Trial and Appeal Board's decision to construe patent preambles as limiting, denying Patent Owner's rights and narrowing its property. The questions presented are as follows:

1. Whether the Federal Circuit's affirmance of the Patent Trial and Appeal Board's decision that results from the Board's *sua sponte* construction of a patent's preambles as limiting based on convoluted and conflicting preamble construction standards, impermissibly eliminates or shifts the burden to invalidate a patent from the patent challenger in an Inter Partes Review Proceeding in contravention of statutory requirements under 35 U.S.C. §§ 112, 282, and 316.

2. Whether the Federal Circuit's affirmance of the Patent Trial and Appeal Board's Decision violated Patent Owner's Due Process Rights and the Administrative Procedure Act where Patent Owner was not given notice that the Board was considering whether the language of a patent's preamble was limiting such as to invalidate patent claims nor given an opportunity to present argument or evidence that the preamble was not limiting.

3. Whether in appeals from the United States Patent and Trademark Office, the Federal Circuit's use of Federal Circuit Rule 36, which provides for a summary affirmance without opinion, violates constitutional guarantees, statutory protections under 35 U.S.C. § 144, and undermines public trust in the judicial system.

PARTIES TO THE PROCEEDINGS

All parties appear in the caption of this Petition.

RULE 29.6 CORPORATE DISCLOSURE STATEMENT

Petitioner NST Global, LLC d/b/a SB Tactical has no parent corporation and is a privately held company. No publicly held company owns 10% or more of NST Global, LLC's stock.

RELATED PROCEEDINGS

NST Global, LLC v. Sig Sauer Inc., No. 1:19-cv-00792, U.S. District Court for the District of New Hampshire, case stayed.

Sig Sauer Inc. v. NST Global, LLC, IPR2020-00423, Patent Trial and Appeal Board. Judgment entered June 22, 2021.

Sig Sauer Inc. v. NST Global, LLC, IPR2020-00424, Patent Trial and Appeal Board. Judgment entered June 22, 2021.

Sig Sauer Inc. v. NST Global, LLC DBA SB Tactical, No. 2021-2241, 2021-2242, 2021-2247, 2021-2248, U.S. Court of Appeals for the Federal Circuit. Judgment entered November 08, 2022.

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PETITION FOR A WRIT OF CERTIORARI

The integrity of the Inter Partes Review ("IPR") process, a cornerstone of the Leahy-Smith America Invents Act ("AIA"), hinges upon the adherence to procedural safeguards fundamental and the application of transparent and uniform patent analysis. However, when the Patent Trial and Appeal Board ("PTAB") introduces *sua sponte* preamble claim constructions to invalidate a patent owners' property without notice or opportunity for the parties to address the issue, and the United States Court of Appeals for the Federal Circuit ("CAFC") summarily affirms such constructions, the patent system is undermined.

The issues raised herein directly impact the rights of patent holders, the IPR and appellate processes' overall fairness, predictability. and consistency. This case presents an opportunity for this Court to resolve the confusion around preamble claim construction standards, reinforce the procedural and due process guarantees provided under the AIA and the Administrative Procedure Act ("APA"), and ensure PTAB and CAFC's actions align that with constitutional and statutory requirements.

NST respectfully petitions this Court for a writ of certiorari to review the judgment of CAFC, clarify convoluted preamble claim construction standards, correct due process violations, and constrain CAFC's use of Federal Circuit Rule 36 ("Rule 36") in patent proceedings.

OPINIONS AND ORDERS BELOW

Petitioner NST Global, LLC ("NST") filed a patent infringement suit against Sig Sauer, *NST Global, LLC v. Sig Sauer Inc.*, Case No. 1:19-cv-00792-PB (D.N.H.), alleging infringement of U.S. Patent Numbers 8,869,444 ("the '444 Patent") and 9,354,021 ("the '021 Patent"). The order granting a stay is available at 2020 WL 1429643.

Respondent Sig Sauer Inc. ("Sig") filed Petitions for IPR2020-00423 and IPR2020-00424, challenging all claims of the '444 Patent and the '021 Patent. PTAB granted the Petitions and instituted the IPRs. PTAB issued Final Written Decisions ("FWDs") in both IPRs invalidating claims 1, 3-6, 8-10, 13, and 14 of the '444 Patent and claim 1 of the '021 Patent under 35 U.S.C. § 103 and upholding claims 2, 7, 11, and 12 of the '444 Patent and claims 2-5 of the '021 Patent under 35 U.S.C. § 103. *Sig Sauer Inc. v. NST Global, LLC,* IPR2020-00423, 2021 WL 2562314 (PTAB June 22, 2021); *Sig Sauer Inc. v. NST Global, LLC,* IPR2020-00424, 2021 WL 2562387 (PTAB June 22, 2021) (unpublished).

CAFC's summary affirmance on November 08, 2022 without published opinion is available at 2022 WL 16754382. Pet. App. 1a. CAFC's order denying panel rehearing and rehearing en banc was issued January 12, 2023. Pet. App. 3a.

JURISDICTION

CAFC entered judgment on November 08, 2022 (Pet. App. 1a) and denied rehearing on January 12, 2023 (Pet. App. 3a). This Court has jurisdiction under 28 U.S.C. § 1254(1).

CONSTITUTIONAL, STATUTORY, AND REGULATORY PROVISIONS

Relevant provisions of the U.S. CONST. amend V (Pet. App. 166a), 5 U.S.C. §§ 554(b)-(c) (Pet. App. 167a-168a), 35 U.S.C. §§ 112 (Pet. App. 169a-170a), 141 (Pet. App. 171a-172a), 144 (Pet. App. 173a), 261 (Pet. App. 174a-175a), and 282 (Pet. App. 176a-178a), are reproduced in the Appendix, pursuant to Supreme Court Rule 14.1(f).

STATEMENT OF THE CASE

I. NST Invents the Pistol Stabilizing Brace.

A decade ago, start-up company NST revolutionized the firearms industry and created a new category of firearms accessories when it invented the Stabilizing Brace®, a forearm stabilizing attachment allowing marksmen to discharge pistols more precisely due to improved stabilization.

After expending time and valuable resources developing its forearm stabilizing attachment, NST disclosed the invention in patent applications granted as the '444 Patent and the '021 Patent (collectively, the "Patents"). The Patents disclose a stabilizing attachment for a handgun having a support structure extending rearwardly from the rear end of the handgun which permits a user to handle the handgun without straining the arm, hand, or wrist, and contemplates use by individuals with physical limitations. The stabilizing attachment is particularly useful for pistols with substantial weight located forward of the grip, causing users to strain to properly hold the handgun in correct firing position.

II. Sig's Infringement.

Recognizing NST's forearm stabilizing attachment and the Patents as "revolutionary," Sig quickly sought to be the exclusive distributor and licensee of the Stabilizing Brace®, a position it negotiated and held for the first several years. After termination of the agreement, Sig developed a brace that infringed on NST's Patents. In 2019, NST sued Sig for patent infringement in District Court. The District Court case is stayed pending the outcome of the IPRs and this appeal. *See NST Global, LLC v. SIG Sauer Inc.*, No. 1:19-cv-00792-PB (D.N.H. filed Jan. 22, 2019), 2020 WL 1429643.

III. PTAB Proceedings.

Under 35 U.S.C. § 315, Sig had one year from the commencement of the infringement suit to bring a challenge to the validity of NST's Patents. On January 23, 2020, Sig filed two Petitions for IPR challenging the validity of the patents' claims.¹ In a petition for inter partes review, patent challengers, like Sig, may request claim construction of terms that may need construction in order to resolve the parties' dispute. Preamble limitations are a creature of claim construction, but Sig's Petitions did not seek claim construction of **any** terms. Sig never addressed or requested preamble limitations in the IPRs.

PTAB granted both Petitions, as to all challenged claims and issued Institution Decisions on June 25, 2020. Consistent with Sig's Petitions, the Institution Decisions made no reference to the possibility that the preambles may be construed as limiting nor did it request that the parties brief any claim construction issue. Rather, the Institution Decisions stated the opposite, recognizing both parties contended no claim term needed to be expressly construed and that the terms of the challenged claims should be afforded their ordinary and customary meaning, thereby agreeing no claim construction was in dispute whatsoever. C.A. App. 1341, 1380. ("We agree-we need not expressly construe any claim term to resolve the parties' dispute."). Thus, the Institution Decisions made clear to the parties and PTAB that no claim construction, including whether to construe the preambles as limiting, was at issue in the IPRs.

¹ In IPRs, the petitioner files a Petition and patent owner responds in a Preliminary Response. PTAB may institute the IPR in an institution decision, and filings which follow are Patent Owner's Response, Petitioner's Reply, and Patent Owner's Sur-Reply.

Throughout the entire briefing process, neither party sought construction of any limitations to the preambles, and at no point in the proceeding from institution to conclusion did either party offer arguments for or against preamble limitations. In fact, the only claim construction in the IPRs was requested by NST post-institution in its Patent Owner's Response. C.A. App. 1417-21, 1482-86 (requesting express construction of claim terms "buffer tube" and "elastomeric material").

A complete surprise to both parties, PTAB itself first raised a possible preamble limitation theory in a singular question to Sig at the IPRs' Oral Hearing on March 23, 2021. PTAB asked Sig its "position as to whether the preamble of claim 1 ... is limiting or not." Sig responded, "I don't believe that is an issue that [the parties] have addressed in the briefing. But I will say ... it doesn't matter whether it's limiting or not." C.A. App. 3039-40.

Though it did not matter to Sig, who never raised the issue, notwithstanding it was Sig's burden to define the scope of the IPRs, it apparently mattered to PTAB. PTAB issued its FWDs on June 22, 2021, *sua sponte* construing the preambles of all claims of the Patents as limiting and employing that construction to find claims 1, 3-6, 8-10, 13, and 14 of the '444 Patent and claim 1 of the '021 Patent unpatentable under 35 U.S.C. § 103.

PTAB's reliance on its preamble limitation finding pervaded the obviousness analysis in the FWDs by way of the required secondary considerations analysis. Predicated on the unexpected construction that was raised *sua sponte* by PTAB at the Oral Hearing, PTAB found NST failed to establish a nexus on secondary considerations and faulted NST for failing to provide evidence commensurate with the claims as construed with the preamble limitations. Specifically, PTAB criticized NST for not establishing the number of products sold with the limiting elements in the preamble. This led to PTAB finding no presumption of nexus, no nexus entirely, and discounting NST's secondary considerations arguments and evidence.

Of course, NST was never given an opportunity to present such evidence, given PTAB raised the issue for the first time at Oral Hearing, depriving NST of notice that PTAB was considering this theory to invalidate the patents. In total, eleven of the Patents' claims were invalidated, and even the eight claims that withstood Sig's invalidity challenge were narrowed as a result of PTAB's construction of the surviving claims as limiting, despite Sig never requesting or arguing for this outcome.

Under the AIA, the petition for inter partes review "define[s] the scope of the litigation all the way from institution through to conclusion," a burden borne by Sig. See SAS Inst., Inc. v. Iancu, 138 S. Ct. 1348, 1357 (2018). In stark contrast here, PTAB eliminated Sig's burden, or shifted it to NST, relying on its own arguments and evidence to reach its decision to construe the preambles as limiting, a change of theories from those asserted by Sig. Sig Sauer Inc. v. NST Global, LLC, IPR2020-00423, 2021 WL 2562314 (PTAB June 22, 2021); *Sig Sauer Inc. v. NST Global, LLC,* IPR2020-00424, 2021 WL 2562387 (PTAB June 22, 2021) (unpublished).

The fact the parties did not reference or identify any such arguments or evidence in the IPRs demonstrates that PTAB unexpectedly placed at issue and ruled on limitations irrespective of Sig's burden to define the scope of the issues and without consideration of patent owner NST's due process rights to notice of the theories and issues being considered by PTAB or an opportunity to present argument and evidence thereon.

IV. CAFC Proceedings.

NST and Sig both timely appealed to CAFC. Pet. App. 1a. Sig appealed PTAB's claim constructions of the terms "buffer tube" and "elastomeric material." NST appealed on due process grounds, asserting PTAB deprived NST of notice and an opportunity to be heard on preamble limitations that negatively impacted PTAB's obviousness determination. Separately, NST argued PTAB's obviousness determination was not supported by substantial evidence.

While Sig recognized that preamble limitations were not briefed by the parties for the PTAB Oral Hearing, Sig argued that a lone sentence in its IPR petitions on the subject matter of the preamble sufficiently placed NST on notice of potential preamble construction and subsequent limitations. C.A. No. 2021-2241 Dkt. 26 at 23-24; C.A. App. 303940 (*"Forjot* discloses the preamble of claims 1, 6, and 10."). NST countered that whether the subject matter is met is a separate and distinct legal question with a different analysis from preamble limitations claim construction. Neither party placed at issue nor briefed the preamble construction, thereby depriving NST of notice and of an opportunity to present evidence on the limitation theories *sua sponte* raised by PTAB in its FWDs.

During Oral Argument, CAFC noted the "gap" in the evidence due to NST's failure to prognosticate PTAB's *sua sponte* preamble constructions but stated it did not see how reopening the record would impact the analysis, regardless of whether NST had notice and an opportunity to develop the record. Oral Argument at 17:16-20:38 ("I don't see how any second round of opening the record is going to help you, given that the record as is already indicates that regardless of how the claim is defined, there's a gap in the connection between the evidence submitted and the claim however it is construed.").

CAFC entered a judgment of affirmance without opinion on February 15, 2022, citing Federal Circuit Rule 36. NST petitioned for rehearing en banc, arguing the panel failed to follow precedent, citing *Dell Inc. v. Acceleron, LLC*, 818 F.3d 1293 (Fed. Cir. 2016) and *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375 (Fed. Cir. 2015), by summarily affirming PTAB's impermissible preamble claim construction not placed at issue by the parties, thereby violating NST's due process right to notice and an opportunity to submit evidence on the limitations. CAFC denied panel rehearing and rehearing en banc. App. B. NST requests this Court review CAFC's Judgment.

V. Statutory Framework.

The Fifth Amendment of the Constitution provides, "No person shall be.... deprived of life, liberty, or property, without due process of law." U.S. CONST. amend. V. The Patent Act provides that patents "shall have the attributes of personal property" and are "presumed valid." 35 U.S.C. § 261; 35 U.S.C. § 282(a).

Congress set forth inter partes review procedure for challenging patents before the United States Patent and Trademark Office's ("USPTO") PTAB. AIA § 7, 112 P.L. 29, 125 Stat. 284, 313–15. IPRs are governed by the APA, 5 U.S.C. § 551 et seq., providing due process guarantees. In an IPR, the "burden of establishing invalidity" is on the "party asserting such invalidity." 35 U.S.C. § 282. Congress granted CAFC exclusive jurisdiction over patent appeals, including IPRs and mandated CAFC "shall issue to the Director its mandate and opinion, which shall be entered of record in the Patent and Trademark Office and shall govern the further proceedings in the case." 35 U.S.C. § 144.

Federal Circuit Rule 36 provides, "[t]he court may enter a judgment of affirmance without opinion, citing this rule, when it determines that any of the following conditions exist and an opinion would have no precedential value . . ." FED. CIR. R. 36.

REASONS FOR GRANTING THE PETITION

This Court's intervention is necessary to ensure that the IPR process upholds the public's confidence in the patent system by adhering to fundamental principles of due process and promoting a transparent and predictable approach to patent analysis. This case presents the ideal vehicle for this Court to clarify the standards governing preamble claim construction in IPR proceedings, establish clear procedural safeguards for patent holders and the public, and ensure that PTAB and CAFC adhere to constitutional and statutory requirements.

PTAB introduced a limiting construction of the preambles without notice or opportunity for NST to address the issue. This case is representative of the growing number of cases impacted by convoluted preamble claim construction standards. While it is well settled that preamble limitations are claim construction matters, the standard to determine preamble limitations are not. See Cochlear Bone Anchored Sols. AB v. Oticon Med. AB, 958 F.3d 1348, 1354 (Fed. Cir. 2020). The numerous inconsistent preamble tests conflict with plain-language statutory interpretation and cause confusion, leaving patent owners, litigants, and the public unable to determine the metes and bounds of patent property. See Mark A. Lemley, Without Preamble, 100 B.U.L. Rev. 357, 386 (2020).

CAFC's affirmance of PTAB's *sua sponte* claim construction deprived NST of its due process rights under the Fifth Amendment and the procedural

APA. guarantees of the Continued summary affirmances. where an opinion would have precedential value or develop the body of case law, threaten the rights of patent holders and the whole of the IPR process. CAFC's decision to summarily affirm PTAB's sua sponte claim construction contravenes the congressional mandate under 35 U.S.C. § 144 to issue an opinion. Allowing CAFC's ruling to stand not only violates the procedural guarantees provided by the APA but also undermines the AIA's objectives of promoting fairness, predictability, and consistency in the patent system. This Court's review is necessary to ensure that CAFC adheres to the statutory framework established by Congress and properly exercises its appellate oversight, protecting the due process rights of patent holders and the integrity of the IPR process.

Our patent system fosters innovation and progress by safeguarding the intellectual endeavors of inventors and incentivizing the pursuit of groundbreaking discoveries for the betterment of society. The issues raised by this petition are of significant importance to the patent system and the IPR process as they directly implicate the due process rights of patent holders and the procedural protections afforded under the AIA and APA. CAFC's extensive use of summary affirmance compromises the integrity of and public trust in the patent system. CAFC's summary affirmance of PTAB's sua sponte preamble claim construction threatens to perpetuate uncertainty and unpredictability, undermining the

objectives of the AIA and the interests of patent holders and foreclosing public notice.

I. PTAB's Decision Narrows Patent Owner's Property and CAFC's Summary Affirmance Requires this Court's Review.

The Patent Act provides, "patents shall have the attributes of personal property." 35 U.S.C. § 261; see also Fla. Prepaid Postsecondary Educ. Expense Bd. v. College Sav. Bank, 527 U.S. 627, 643 (1999) ("Patents ... have long been considered a species of property"). Clear delineation of the limits of patent property is crucial to patent interpretation. See Motion Picture Patents Co. v. Universal Film Mfg. Co., 243 U.S. 502, 510 (1917) ("The scope of every patent is limited to the invention described in the claims contained in it, read in the light of the specification. These so mark where the progress claimed by the patent begins and where it ends that they have been aptly likened to the description in a deed, which sets the bounds to the grant which it contains. It is to the claims of every patent, therefore, that we must turn when we are seeking to determine what the invention is, the exclusive use of which is given to the inventor by the grant provided for by the statute . . .").

Under the Patent Act, an issued patent "shall be presumed valid." 35 U.S.C. § 282(a). Patentees bargain for this presumption by agreeing to exchange the public disclosure of their inventions for a timelimited monopoly. *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 730-31 (2002). Patent laws reward innovation with a temporary monopoly. U.S. CONST., art. I, § 8, cl. 8. The entire patent system is built around this quid pro quo because it facilitates the ultimate goal of "bring[ing] new designs and technologies into the public domain through disclosure." *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 151 (1989). "A patent holder should know what he owns, and the public should know what he does not." *Festo*, 535 U.S. at 731.

Our patent system is a system of public notice, which charges the public with constructive knowledge of patents and their claims. 35 U.S.C. § 271(a). To be effective, the precise bounds of patent property must be established and known, not only for the protection of the patentee's rights, but "the encouragement of the inventive genius of others, and the assurance that the subject of the patent will be dedicated ultimately to the public." *Markman v. Westview Instruments*, 517 U.S. 370, 390 (1996) ("[A] 'zone of uncertainty . . . would discourage invention only a little less than unequivocal foreclosure of the field,' and 'the public [would] be deprived of rights supposed to belong to it, without being clearly told what it is that limits these rights."") (citations omitted).

Patent claims define the scope of a patent owner's property to which it owns the time-limited monopoly. The elements of each claim must be considered separately, as each claim is individually protected under the law. See 35 U.S.C. § 282(a); Rosco, Inc. v. Mirror Lite Co., 304 F.3d 1373, 1379-80 (Fed. Cir. 2002). Claim construction is the process of interpreting patent claims to determine the meaning of the elements of each claim, starting with the preambles. *See, e.g., Markman*, 517 U.S. 370. Claim construction is a question of law for the court. *Id.* at 391. At issue in nearly every case, claim construction requires uniformity and a separate hearing in district courts. *Id.* at 386-91. No issue is more significant to patent interpretation and litigation than claim construction because it affects the scope, validity, and by extension the value of patent property. *Id.*

A. Inconsistent Preamble Limitation Standards Serve as the Undercurrent for PTAB's Error.

Patent preambles, introductory phrases that appear at the beginning of claims, have long served a vital role in the grant of exclusive rights to inventors. See U.S. Patent No. X1 (issued July 31, 1790) (including prefatory language "in the making of Pot ash and Pearl ash"). "Before the meaning of the claim can be established, it must first be determined whether a claim term appearing in the preamble should be considered a limitation on the scope of that claim." Anthony R. McFarlane, A Question of Claim Interpretation: When Does the Preamble Limit the Scope of A Claim?, 85. Pat. & Trademark Off. Soc'y (2003).

Whether a preamble is limiting or not is a claim construction matter. *Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc.*, 115 F. App'x 84, 87 (2004) ("Determining whether a preamble constitutes a limitation is a matter of claim construction that is likewise reviewed de novo."). Generally, preambles are not "intended to be a limiting factor in delineating boundaries of the scope of the invention as claimed." *PPC Broadband, Inc. v. Corning Optical Communs. RF, LLC*, 815 F.3d 747, 753 (Fed. Cir. 2016). Because they are generally not limiting, a party must request construction of the preambles, thereby giving the other party an opportunity to address the disputed construction. *See Eon Corp. IP Holdings v. Silver Spring Networks*, 815 F.3d 1314, 1319 (Fed. Cir. 2016) ("[A] district court's duty at the claim construction stage is . . . to resolve a dispute about claim scope.").

Once construed, preamble limitations persist, permanently narrowing the scope of the patent's claims, and hence the patent owner's property. "Whether to treat a preamble as a limitation is a determination resolved only on review of the entire[]. . . patent to gain an understanding of what the inventors actually invented and intended to encompass by the claim." Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc., 289 F.3d 801, 808 (Fed. Cir. 2002) (internal quotations and citations omitted) (collecting case law). "Whether a preamble stating the purpose and context of the invention constitutes a limitation of the claimed process is determined on the facts of each case in light of the overall form of the claim, and the invention as described in the specification and illuminated in the prosecution history." Applied Materials. Inc. v. Advanced Semiconductor Materials Am., Inc., 98 F.3d 1563, 1572-73 (Fed. Cir. 1996).

CAFC's jurisprudence for determining when a preamble may be limiting is utterly inconsistent and

creates unpredictable results. The conflicting standards have given rise to inter- and intra-circuit conflicts spawning divergent lines of case law. The absence of a standardized approach to preamble limitations undermines the uniformity required for a reliable and predictable patent system. Now is the time for this Court to provide clear guidance on the proper analytical framework.

Far from employing a bright-line rule or consistent canons of construction, some courts have considered various factors when determining whether a preamble is or is not limiting, including considering whether the preamble breathes life and meaning into the claims. *See Catalina I*, 289 F.3d at 808. Other cases state, a "preamble limits the invention if it recites essential structure or steps, or if it is necessary to give life, meaning, and vitality to the claim." *Id.* (internal quotations omitted).

In other decisions, a preamble is not limiting if the claim body describes a structurally "complete invention." *Eaton Corp. v. Rockwell Int'l Corp.*, 323 F.3d 1332, 1339 (Fed. Cir. 2003) ("If the body of the claim sets out the complete invention, then the language of the preamble may be superfluous."); *Catalina I*, 289 F.3d at 808-09 ("[A] preamble generally is not limiting when the claim body describes a structurally complete invention such that deletion of the preamble phrase does not affect the structure or steps of the claimed invention.").

Even within the structurally "complete invention" line of decisions, the tests vary. *Rowe v.*

Dror, states a preamble is not limiting "where a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention . . ." 112 F.3d 473, 478 (Fed. Cir. 1997) (citing *Bell Communs. Research, Inc. v. Vitalink Communs. Corp.*, 55 F.3d 615, 620 (Fed. Cir. 1995)).

Other decisions point to the grammar of the preamble and whether it is a complete phrase or selfcontained description. See Catalina I, 289 F.3d at 809 ("[A] preamble generally is not limiting when the claim body describes a structurally complete invention such that deletion of the preamble phrase does not affect the structure or steps of the claimed invention."); STX, LLC v. Brine, Inc., 211 F.3d 588, 591 (Fed. Cir. 2000) (self-contained description that could stand alone).

Yet a different line of case law relies on the word "said" and whether an antecedent basis has been used. See, e.g., Catalina I, 289 F.3d at 808 ("Dependence on a particular disputed preamble phrase for antecedent basis may limit claim scope because it indicates a reliance on both the preamble and claim body to define the claimed invention."); Eaton Corp., 323 F.3d at 1339 (holding that preamble limited body where preamble introduced "term" and body referred to "said term").

Beyond those tests, there are also tests that consider whether the language describes conventional or inventive uses or states the purpose or intended use of the invention. *See Cochlear Bone Anchored Sols.*, 958 F.3d at 1355 (citing *Arctic Cat Inc. v. GEP Power Prods.*, 919 F.3d 1320, 1329-30 (Fed. Cir. 2019) ("[a] personal recreational vehicle" was not a limiting preamble because it merely described conventional, rather than inventive aspects)); *Rowe*, 112 F.3d at 478 (purpose or intended use language).

The lack of a uniform analytical framework for preamble limitation analysis results in disparate treatment and outcomes; this Court and CAFC have recognized the need for predictable results. *Markman*, 517 U.S. at 387-90; Phillips v. AWH Corp., 415 F.3d 1303, 1330 (Fed. Cir. 2005) (en banc) ("This court was created for the purpose of bringing consistency to the patent field" and "to reinvigorate the patent and introduce predictability to the field") (Mayer, J., dissenting). The tests are abstruse, unworkable, and deny patent owners, litigants, and the public clear rules with uniform application for when a preamble may or may not be found limiting. "Increased uniformity would strengthen the United States patent system in such a way as to foster technological growth and industrial innovation." Markman, 517 U.S. at 390.

B. Convoluted Standards Do Not Provide Required Clarity or Public Notice of Property Rights.

Courts have struggled and failed to strike the delicate balance between relying on convoluted precedent around preamble limitations and establishing a workable test to clearly outline the metes and bounds of patent property. While judges and scholars repeatedly call for this Court to resolve this issue, it has never been addressed. See, e.g., Kyle Petaja, Claim Preambles and the Unassailable Patent Claim, 5 J. MARSHALL REV. INTELL. PROP. L. 121, 122 (2005) ("Present day treatment of a claim's preamble evolved out of a series of court decisions that have gradually intertwined themselves into an almost indecipherable mess."); see Lemley, 100 B.U.L. Rev. at 386 ("The Federal Circuit's rules for interpreting the preambles of patent claims are an incoherent mess. They aren't justified by history, logic, or policy. They hurt both patent owners and accused infringers in individual cases, and they hurt everyone by making it hard to understand what a patent covers. The Supreme Court (or the en banc Federal Circuit) should get rid of all these doctrines and simply hold that all the words of a patent claim matter.").

Section 112 of the Patent Act provides that a patent's "specification shall contain a written description of the invention, and of the manner and process of making and using it," sufficient "to enable any person skilled in the art . . . to make and use . . . the invention." 35 U.S.C. § 112(a). The Patent Act requires the patent specification "conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor [] regards as the invention." 35 U.S.C. § 112(b).

Clarity is of utmost importance in patent law to provide public notice. *Markman*, 517 U.S. at 373 (patents must afford clear notice of what their claims cover, "appris[ing] the public of what is still open to them"); *United Carbon Co. v. Binney & Smith Co.*, 317
U.S. 228, 236-237 (1942) ("claims must be reasonably clear-cut" otherwise there would be "[a] zone of uncertainty which enterprise and experimentation may enter only at the risk of infring[ing] claims").

The creation of a workable preamble limitation standard remains overlooked despite a Congressional mandate for CAFC to maintain a uniform body of patent law, the Patent Act's own definiteness requirement, and continued requests from the patent community for clarity. As a result, patent owners, litigants, and the public cannot reasonably discern the true metes and bounds of patent property rights. *See, e.g., Markman,* 517 U.S. at 373 (patent must be precise enough to afford clear notice of what is claimed).

C. Sua Sponte Preamble Limitations Finding Eliminates or Shifts Burden.

The complex web of preamble law empowered PTAB to eliminate or shift Sig's burden to identify claim construction issues that would invalidate the patents, including preamble limitations. PTAB's handling of these predicate preamble constructions that it raised, not Sig, either shifted the burden from Sig to NST or eliminated Sig's burden entirely. NST did not know that PTAB was considering theories of construction that limited the scope of the Patents, prevented the parties from submitting evidence and argument on the not-at-issue constructions, and narrowed the Patents' scope. Under this Court's precedent, in an IPR, the petition "guide[s] the life of the litigation" and the petitioner "define[s] the contours of the proceeding." *Iancu*, 138 S. Ct. at 1355-6. CAFC reaffirmed "it is the petition, not the Board's discretion, that defines the metes and bounds," "defines the scope of the IPR proceeding" and PTAB "must base its decision on arguments that were advanced by a party and to which the opposing party was given a chance to respond." *VLSI Tech. LLC v. Intel Corp.*, 53 F.4th 646, 654 (Fed. Cir. 2022).

"In an inter partes review ... the *petitioner shall have the burden* of proving a proposition of unpatentability by a preponderance of the evidence." 35 U.S.C. § 316(c) (emphasis added). Section 282 places the "burden of establishing invalidity" on the "party asserting such invalidity." 35 U.S.C. § 282. It is well established that an IPR petitioner, such as Sig, bears the burden of proving unpatentability of the challenged claims and that burden never shifts to a patent owner. *Dynamic Drinkware*, 800 F.3d at 1378, 1381-82 (Fed. Cir. 2015). Contrary to this established case law and statutory authority, PTAB failed to hold Sig to its burden and instead improperly eliminated or shifted that burden from Sig.

In an IPR, PTAB's "authority is not so broad that it allows [PTAB] to raise, address, and decide unpatentability theories never presented by the petitioner and not supported by record evidence." *In re Magnum Oil Tools Int'l, Ltd.,* 829 F.3d 1364, 1381 (Fed. Cir. 2016). PTAB may not "adopt arguments on behalf of petitioners that could have been, but were not, raised by the petitioner." *Id.* "Instead, [PTAB] must base its decision on arguments that were advanced by a party, and to which the opposing party was given a chance to respond." *Id.*

CAFC "a recently stated party must 'sufficiently request further construction of the relevant limitation' to 'raise an actual dispute." Kaufman v. Microsoft Corp., 34 F.4th 1360, 1369 (Fed. Cir. 2022) (citations omitted). See also Eon Corp., 815 F.3d at 1319 ("[A] district court's duty at the claim construction stage is . . . to resolve a dispute about claim scope that has been raised by the parties." (emphasis added) (citations omitted)). As such, PTAB was required to review each of the nineteen claims and each of the six separate preambles independently with no claim or preamble treated as representative or duplicative.

Sig did not seek any claim construction throughout the IPRs. PTAB's Institution Decisions were similarly silent on claim construction and did not mention the preambles or the possibility they were limiting. C.A. App. 0159-228, 1331-404. The first instance where PTAB alluded to a preamble limitation was when it asked Sig at Oral Hearing, "whether the preamble of claim 1 ... is limiting or not." Sig responded that the parties did not brief that issue. C.A. App. 3039-40.

In the FWDs, PTAB did not discuss the different claim terms in the six preambles, nor reference any facts or evidence submitted by the parties on the applicability of subject matter being

PTAB did not expand on the preamble met. construction during Oral Hearing and did not ask NST to address preamble construction. Ultimately, PTAB revealed its construction in the FWDs, without citation to party evidence, argument, or position. Pet. App. 30a-32a. Pet. App. 110a-112a. PTAB was clearly aware of the claim construction process as it carefully analyzed intrinsic and extrinsic evidence, weighing the parties' arguments with respect to the terms "elastomeric" and "buffer tube," which were properly placed at issue and briefed by the parties. C.A. App. 12-17; C.A. App. 80-85; C.A. App. 17-21; C.A. App. 85-89. Had PTAB followed the correct claim construction process, it would have reviewed each claim and each separate preamble independently.

By employing the preamble limitations, PTAB changed the unpatentability theories put forth by Sig, shifting or eliminating Sig's burden. At no time did Sig include in its theories a request to PTAB to construe *any* of the preambles. NST does "not have the burden of producing evidence" on an issue "until after" Sig, as the challenger, places that issue in dispute. *Dynamic Drinkware*, 800 F.3d at 1378, 1381. It is improper to eliminate Sig's burden or to place this burden on NST, because a "requirement for proof of the negative of all imaginable contributing factors would be unfairly burdensome, and contrary to the ordinary rules of evidence." *Demaco Corp. v. F. Von Langsdorff Licensing, Ltd.*, 851 F.2d 1387, 1394 (Fed. Cir. 1988).

On appeal, Sig argued it placed the preamble constructions at issue referring to its statement that

the subject matter of the preamble was met. C.A. No. 2021-2241 Dkt. 26 at 23-24. Whether the subject matter is met is not claim construction but rather a distinct legal analysis, which when applied properly does not result in preamble limitations. Shoes by Firebug LLC v. Stride Rite Children's Grp., LLC, 962 F.3d 1362, 1367 (Fed. Cir. 2020). "[A] claim preamble is considered to be a limiting part of the claim matters, inter alia, because, if it is not, the scope of the claim is broader, but the claim is vulnerable to more potentially-invalidating prior art." Id. Once construed, like other claim constructions, preamble limitations persist, permanently narrowing the scope of the patent's claims and the property rights afforded to the patent owner.

"Further confirming that the burden cannot shift to the patentee post institution, the IPR regulations do not require a patent owner to submit any response to the petition, either before or after institution." *FanDuel, Inc. v. Interactive Games LLC,* 966 F.3d 1334, 1342 (Fed. Cir. 2020). To foreclose PTAB's limitation, NST would have been forced to shoulder the burden and submit a response on the preamble, rather than for Sig to carry its burden.

In the end, as the parties stand today, even NST's surviving claims are permanently restricted. Practically, as NST returns to enforce its property, the metes and bounds of the property no longer allow for enforcement against a forearm stabilizing attachment. but only forearm stabilizing a attachment limited by PTAB's as preamble limitations.

PTAB, acting independently and presenting its own argument, unveiled its sua sponte preamble limitations in the FWDs. PTAB did not reference the Petition, Institution Decision, party argument, nor claim construction evidence to support its decision. Pet. App. 30a-32a. Pet. App. 110a-112a. With this sua *sponte* limitation, PTAB narrowed the scope of every claim in the patent, regardless of whether the claims were subsequently determined to be obvious and without either party requesting the construction. After the claim scope had already been improperly narrowed, in the obviousness analysis, PTAB then faulted NST for failing to establish evidence commensurate with the claims as constructed and criticized NST for not establishing products sold in light of PTAB's preamble limitations. Pet. App. 57a-63a. Pet. App. 113a-118a.

Had the preamble limitations been placed at issue by Sig, NST would have submitted additional evidence and presented argument commensurate with the construction, specifically taking into account the *ex post facto* limitations of each of the six preambles. For example, NST could have submitted evidence of sales of the attachment with and without a support structure or a handgun.

PTAB's invalidation of claims 1, 3-6, 8-10, 13, and 14 of the '444 Patent and claim 1 of the '021 Patent relied on the *sua sponte* preamble limitation constructions not at issue. Accordingly, NST has been unjustly deprived of its property rights on those claimed patents without adherence to the statutory burden framework. CAFC's summary affirmance of PTAB's decision gives credence to PTAB's erroneous decision. Here, the limitations of the preambles had a profound result; they were used to invalidate certain claims, disregard secondary considerations evidence, limit the remaining claims, and narrow patent owner NST's property rights.

II. CAFC's Summary Affirmance of Agency Action Denies Due Process.

"[A]n agency violates due process if it 'change[s] theories in midstream without giving respondents reasonable notice of the change."" *Regency Air, LLC v. Dickson*, 3 F.4th 1157, 1162 (9th Cir. 2021) (citations omitted). "Should an agency change theories, the opposing party must have 'the opportunity to present argument under the new theory of violation,' even if the outcome would be the same." *Id.* (citations omitted).

A. Patent Owner is Entitled to Due Process under the APA.

The APA requires that parties be afforded notice and an opportunity to be heard and "ensures the parties' right to present rebuttal evidence on all matters decided at the hearing." *Pub. Serv. Comm'n* of Ky. v. FERC, 397 F.3d 1004, 1012 (D.C. Cir. 2005) (Roberts, J.) (citations omitted). "[T]he notice provisions of the APA and our case law require that . . . '[p]ersons entitled to notice of a[] hearing shall be timely informed of . . . the matters of fact and law asserted,' and the agency 'shall give all interested parties opportunity for . . . the submission and consideration of facts [and] arguments." Nike, Inc. v. Adidas AG, 955 F.3d 45, 51-54 (Fed. Cir. 2020) (quoting 5 U.S.C. §§ 554(b)(3), 554(c)(1)).

New arguments presented by a petitioner after institution of IPRs violate the APA. In re NuVasive, Inc., 841 F.3d 966 (Fed. Cir. 2016). In NuVasive, CAFC held it was unable to review PTAB's obviousness findings because PTAB failed to adequately provide explanation or analysis. Id. NuVasive was not informed of the parts of prior art that would later become crucial to PTAB's decision, and PTAB's refusal to allow an opportunity to address the issue was an APA violation. Id. at 972-973.

PTAB's own guidance states, "no new evidence or arguments may be presented at the oral argument." Patent Trial and Appeal Board Consolidated Trial Practice Guide, 84 Fed. Reg. 64280 (Nov. 21, 2019); See also CBS Interactive Inc. v. Helferich Patent Licensing, LLC, Case IPR2013-00033, slip op. at 3 (PTAB October 23, 2013) (Paper 118) ("If certain testimony previously was not developed, discussed, or explained in a party's papers, it may not be developed, discussed, explained, or summarized, for the first time, in the form of demonstrative slides at final oral hearing."). CAFC has also held oral hearing is too late to constitute notice and opportunity. Dell, 818 F.3d at 1301 ("oral argument presented no opportunity for [patent owner] to supply evidence...").

In the context of claim construction, CAFC has held "it is unreasonable to expect parties to have briefed or argued, in the alternative, hypothetical constructions not asserted by their opponent." SAS Inst. v. ComplementSoft, 825 F.3d 1341, 1351 (Fed. Cir. 2016), rev'd and remanded sub nom. on other grounds, Iancu, 138 S. Ct. 1348.

Here, PTAB faulted NST for not supplying certain secondary considerations evidence. PTAB's predicate conclusion that the preambles were limiting was void of citation to party evidence supporting PTAB's own construction. C.A. App. 1-68; C.A. App. 69-135.

Sig explicitly acknowledged at Oral Hearing before PTAB that preamble limitations were not an issue the parties briefed. C.A. App. 3039-40. On appeal, Sig argued it placed the preamble construction at issue relying on its statement that the subject matter of the preamble was met. C.A. No. 2021-2241 Dkt. 26 at 23-24.

CAFC addressed PTAB's midstream theory change during its Oral Argument, indicating there was a gap in the evidence submitted given the record and how the claim was construed. Oral Argument at 17:16-20:38.² CAFC then stated it did not see how additional evidence would impact the analysis. Oral Argument at 17:16-20:38. CAFC overlooked the requirements of notice and opportunity. Notice is not satisfied by a mere passing reference to a preamble, nor a statement as to whether the subject matter of a

² Archive of Oral Argument in *Sig Sauer Inc. v. NST Global, LLC,* No. 2021-2241 (Fed. Cir.) at 17:16-20:38, available at https://cafc.uscourts.gov/home/oral-argument/listen-to-oralarguments (search "2021-2241").

preamble is met. Due Process and the APA require more.

CAFC seemed to fault NST for not supplying evidence in anticipation of PTAB's *ex post facto* limitations. By stating, "regardless of how the claim is defined ... however it is construed,"³ CAFC disregarded the importance of claim construction and its implications on unpatentability. NST could not have predicted PTAB's midstream unpatentability theory change and therefore, did not have notice commensurate with the law. CAFC cannot make assumptions about what NST would have introduced. CAFC's summary affirmance of PTAB placing preambles at issue without notice, asking for no supplemental briefing, and ruling with no party argument or evidence violated Due Process and the APA.

B. Patent Owner is Entitled to Due Process Under the Constitution.

The Due Process Clause provides, "No person shall be ... deprived of ... property, without due process of law." U.S. CONST. amend. V. Patents, as property rights, are entitled to due process protection. *Oil States Energy Servs.*, *LLC v. Greene's Energy Grp.*, *LLC*, 138 S. Ct. 1365, 1379 (2018).

Similar to the APA, the Constitution requires property deprivation "be preceded by notice and opportunity for hearing." *Mullane v. Cent. Hannover Bank & Tr. Co.*, 339 U.S. 306, 313 (1950). Such notice

³ Oral Argument at 19:26-19:35.

and opportunity must be "at a meaningful time and in a meaningful manner," which allows for the party to present argument before an impartial decisionmaker. *Mathews v. Eldridge*, 424 U.S. 319, 333 (1976).

CAFC was established to maintain uniformity in patent law and has the power to limit PTAB where a constitutional right has been violated. *Cuozzo Speed Techs., LLC v. Lee*, 579 U.S. 261, 275 (2016) ("[S]henanigans may be properly reviewable in the context of §319 and under the Administrative Procedure Act, which enables reviewing courts to 'set aside agency action' that is 'contrary to constitutional right...") (citations omitted). The preamble limitation that PTAB relied on was not an issue or theory advanced by either party. Pet. App. 30a-32a. Pet. App. 110a-112a.

PTAB violated NST's APA and constitutionally guaranteed due process rights by relying on a claim construction limiting the preambles introduced by PTAB without meaningful notice or opportunity to respond. CAFC summarily affirmed certain claims as unpatentable, violating NST's due process rights under the Constitution and APA. This Court should correct CAFC's affirmance, which squarely conflicts with precedent that an agency may not change theories midstream and Oral Hearing is too late to constitute requisite notice, ensuring NST and future patent litigants are not deprived of property rights without due process.

III. CAFC's Use of Summary Affirmance Leaves Litigants Puzzled and Contravenes Statutory Requirements.

With one-word affirmances, litigants and the public are left puzzled as to why seemingly sound arguments are rejected. CAFC may summarily affirm only when "an opinion would have no precedential value" and one of enumerated conditions exist, including where the judgment: (a) is based on findings that are not clearly erroneous; (b) warrants affirmance under the standard of review; or (c) was entered without an error of law. FED. CIR. R. 36(a)(1), (4)-(5). As demonstrated above, it is imperative CAFC rectify its errors and issue written opinions to satisfy its congressional mandate and articulate clear standards governing preamble limitation constructions. Requiring the court to "show its work" develops jurisprudence. facilitates meaningful judicial review, ensures correct outcomes, and fosters trust in the judicial system by revealing a court's decisions are the product of reason rather than caprice. Thomas E. Baker, A Review of Corpus Juris Humorous, 24 Tex. Tech L. Rev. 869, 872 (1993).

A. CAFC is Statutorily Mandated to Issue an Opinion in USPTO Appeals.

Congress dictated CAFC "*shall* issue ... its mandate and opinion" upon determination. 35 U.S.C. § 144 (emphasis added). When recently presented with similar statutory language from 35 U.S.C. § 318, this Court stated, "[t]he word 'shall' generally imposes a nondiscretionary duty" and found that the statutory provision "deliver[s] unmistakable commands." *Iancu*, 138 S. Ct. at 1354, 1358. The statute's clear language supports the issuance of an opinion as a nondiscretionary duty. *See also* 28 U.S.C. § 216 (1976) (CAFC's predecessor court was required to issue a written opinion in appeals from the Patent Office); *Comm'r v. Bedford's Est.*, 325 U.S. 283, 286 (1945) (distinguishing between opinions, judgments, and orders for mandate); *Black's Law Dictionary* 1265 (10th ed. 2014) (defining "opinion" as a "court's written statement explaining its decision in a given case").

Despite statutory mandate, CAFC routinely issues judgments without opinion in patent cases. Rule 36(a) begins, "Judgment of Affirmance Without Opinion," thereby reflecting that a summary affirmance is not an opinion. FED. CIR. R. 36. CAFC has also confirmed that a judgment affirmed under Rule 36 is not an opinion. *See Rates Tech., Inc. v. Mediatrix Telecom, Inc.*, 688 F.3d 742, 750 (Fed. Cir. 2012) ("[s]ince there is no opinion, a Rule 36 judgment ... does not endorse or reject any specific part of the [lower tribunal]'s reasoning" and "cannot establish 'applicable Federal Circuit law."").

CAFC's frequent issuance of judgment without opinion in USPTO appeals contradicts its statutory duty and undermines the integrity of the patent system. Requiring CAFC to issue reasoned opinions in patent cases will satisfy its statutory mandate and promote the development of a uniform system of patent law restoring public trust in the judicial process.

B. Summary Affirmances Undermine the Integrity of the Judicial System and Erode the Rule of Law.

Without an opinion from CAFC, the only Article III appellate court patent owners can access other than this Court, the complete constitutionality of IPRs is called into question. See Oil States, 138 S. Ct. at (relying on CAFC's review to establish 1379 constitutionality). Even before its founding, this country had a distrust of secret proceedings and a commitment to the protection of an open administration of justice. In re Oliver, 333 U.S. 257, 273 (1948); Keddington v. State, 19 Ariz. 457, 459 (1918). "[P]eople subjected to secret law are especially likely to be mistreated." Lian v. Ashcroft, 379 F.3d 457, 460 (7th Cir. 2004). The law champions written opinions and condemns unexplained agency action, because without explanation courts "can become a monster which rules with no practical limits on its discretion." Burlington Truck Lines v. United States, 371 U.S. 156, 167-68 (1962).

"Opinions are what courts do.... They are the substance of judicial action.... Written opinions are key to the operation of our system of stare decisis, and without them, the state of the law would be in confusion." Andrew Hoffman, *The Federal Circuit's Summary Affirmance Habit*, 2018 B.Y.U.L. Rev. 419, 432 (internal citations and quotations omitted).

CAFC's own members have opined that litigants are entitled to explanation. *In re Packard*, 751 F.3d 1307, 1314 (Fed. Cir. 2014) (Plager, J.,

concurring) ("[A] petitioner to this court seeking reversal of a decision is entitled to an explanation of why the arguments on which he relied for his appeal did not prevail."). Decisions without reasoned opinions have also been condemned by the larger community. See, e.g., United States v. Costa, 356 F. Supp. 606, 608 (D.D.C.), aff'd, 479 F.2d 921 (D.C. Cir. 1973) ("[t]he public has the right to know' the reasons which underlie decisions of those people to whom is granted the public trust"); Mel Dickstein, Why judges write opinions. MinnPost (Oct. 7. 2014), https://www.minnpost.com/community-

voices/2014/10/why-judges-write-opinions/. ("Imagine how terrifying our system of justice would be if judges made decisions without explanation"). CAFC's use of Rule 36 denies litigants, PTAB, and the courts an opportunity to develop case law to support arguments and opinions.

C. Despite Concerns, CAFC Consistently Invokes Rule 36, in Conflict with Other Circuits.

NST is far from alone in facing judgment without explanation; nearly half (43.47%, as of January 31, 2022) of all PTAB appeals are summarily affirmed. See Daniel F. Klodowski & Eric A. Liu, Federal Circuit PTAB Appeal Statistics Through January 31, 2022, Finnegan (Jason E. Stach & Elliot C. Cook eds., Feb. 28, 2022), https://www.finnegan.com/en/insights/blogs/at-theptab-blog/federal-circuit-ptab-appeal-statisticsthrough-january-30-2022.html. Nine circuits prohibit summary affirmances either through rule or practice. Only four circuits: CAFC, the Fifth, Eighth, and Tenth Circuits authorize this practice. *See* FED. CIR. R. 36(a); 5TH CIR. R. 47.6; 8TH CIR. R. 47B; 10TH CIR. R. 36. CAFC's use of Rule 36 to issue judgments without opinion outpaces the others. Ted L. Field, *Judicial Hyperactivity in the Federal Circuit: An Empirical Study*, 47 U.S.F. L. Rev. 721, 746 (2012) ("The Federal Circuit was the only one of the circuits studied that uses summary affirmances in any appreciable amount.").

In the wake of the AIA, CAFC appeals have increased. The Government has acknowledged CAFC Rule 36 "more frequently," arguing emplovs permissibility "in light of the court's docket," which "skyrocketed" due to an exponential increase in USPTO appeals. See Brief for the Federal Respondent in Opposition, Specialty Fertilizer Products, LLC v. Shell Oil Co., No. 17-1243, pp. 11-13, cert. denied, 138 2678(2018). Members of CAFC S. Ct. also acknowledge affirmance summary insulates judgment from meaningful review. See Memorylink Corp. v. Motorola, Inc., 676 F.3d 1051, 1052 (Fed. Cir. 2012) (O'Malley, J., dissenting) ("parties should not be discouraged from asking the entire court to assess the propriety of those judgments").

There are continued calls for this Court's guidance. See, e.g., Nelson Indus. v. Donaldson Co., 62 F.3d 1433 (Fed. Cir. 1995), cert. denied, 516 U.S. 1072 (1996); Bobcar Media, LLC v. Aardvark Event Logistics, Inc., 839 F. App'x 545 (Fed. Cir. 2021), cert.

denied, 142 S. Ct. 235 (2021). "This Court may exercise its inherent supervisory power to ensure that these local rules are consistent with 'the principles of right and justice." *Frazier v. Heebe*, 482 U.S. 641, 645 (1987) (citation omitted). The time is ripe for guidance and resolving this important question of law.

Invalidating claims 1, 3-6, 8-10, 13, and 14 of the '444 Patent and claim 1 of the '021 Patent using not-at-issue preamble limitations and without providing meaningful notice or an opportunity to be heard, PTAB deprived NST of due process and violated the APA. NST's patentable claims, which withstood the subject matter test of non-obviousness are narrowed by PTAB's sua sponte preamble limitations. If CAFC's decision is upheld, NST property rights are severely limited. NST is left with fewer, narrower property rights notwithstanding that Sig did not carry its burden and did not seek a determination of whether the preambles were Court must This address limiting. summary affirmance and the convoluted preamble limitation tests. Despite CAFC's cursory treatment of the merits, this case presents the ideal opportunity for this Court to decide exceptional issues raised in this Petition. NST, litigants, and the public have no place to turn other than this Court. Intervention is direly needed.

CONCLUSION

The Petition for Writ of Certiorari should be granted.

Respectfully Submitted.

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APPENDIX

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APPENDIX A — JUDGMENT OF THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT, FILED NOVEMBER 8, 2022

Note: This disposition is nonprecential

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

SIG SAUER INC.,

Appellant,

v.

NST GLOBAL, LLC, DBA SB TACTICAL,

Cross-Appellant.

2021-2241, 2021-2242, 2021-2247, 2021-2248

Appeals from the United States Patent and Trademark Office, Patent Trial and Appeal Board in Nos. IPR2020-00423, IPR2020-00424.

JUDGMENT

ERIC G.J. KAVIAR, Burns & Levinson LLP, Boston, MA, argued for appellant. Also represented by LAURA CARROLL, JOSEPH M. MARAIA.

BRITTANY J. MAXEY-FISHER, Maxey-Fisher, PLLC, St. Petersburg, FL, argued for cross-appellant. Also represented by STACEY TURMEL.

Appendix A

THIS CAUSE having been heard and considered, it is ORDERED and ADJUDGED:

PER CURIAM (REYNA, SCHALL, and CHEN, Circuit Judges).

AFFIRMED. See Fed. Cir. R. 36.

ENTERED BY ORDER OF THE COURT

November 8, 2022 Date <u>/s/ Peter R. Marksteiner</u> Peter R. Marksteiner Clerk of Court

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APPENDIX B — ORDER OF THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT, FILED JANUARY 12, 2023

Note: This order is nonprecedential

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

SIG SAUER INC.,

Appellant,

v.

NST GLOBAL, LLC, DBA SB TACTICAL,

Cross-Appellant.

2021-2241, 2021-2242, 2021-2247, 2021-2248

Appeals from the United States Patent and Trademark Office, Patent Trial and Appeal Board in Nos. IPR2020-00423, IPR2020-00424.

ON PETITION FOR REHEARING EN BANC

Before Moore, *Chief Judge*, Newman, Lourie, Schall¹, Dyk, Prost, Reyna, Taranto, Chen, Hughes, Stoll, Cunningham, and Stark, *Circuit Judges*.

^{1.} Circuit Judge Schall participated only in the decision on the petition for panel rehearing.

Appendix B

PER CURIAM.

ORDER

NST Global LLC filed a petition for rehearing en banc. The petition was first referred as a petition for rehearing to the panel that heard the appeal, and thereafter the petition for rehearing en banc was referred to the circuit judges who are in regular active service.

Upon consideration thereof,

IT IS ORDERED THAT:

The petition for panel rehearing is denied.

The petition for rehearing en banc is denied.

The mandate of the court will issue January 19, 2023.

For the Court

January 12, 2023 Date <u>/s/ Peter R. Marksteiner</u> Peter R. Marksteiner Clerk of Court

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APPENDIX C — FINAL WRITTEN DECISION OF THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE PATENT TRIAL AND APPEAL BOARD, DATED JUNE 22, 2021

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SIG SAUER INC.,

Petitioner,

 \mathbf{V} .

NST GLOBAL, LLC,

Patent Owner.

IPR2020-00423 Patent 8,869,444 B2

Date: June 22, 2021

Before PATRICK R. SCANLON, JAMES J. MAYBERRY, and ALYSSA A. FINAMORE, *Administrative Patent Judges*.

MAYBERRY, Administrative Patent Judge.

JUDGMENT Final Written Decision Determining Some Challenged Claims Unpatentable 35 U.S.C. § 318(a)

I. INTRODUCTION

A. Background and Summary

SIG SAUER Inc. ("Petitioner"), filed a Petition ("Pet.") requesting *inter partes* review of claims 1–14 (the "Challenged Claims") of U.S. Patent No. 8,869,444 B2 (Ex. 1001, the "444 patent"). Paper 1. We instituted trial on all Challenged Claims and grounds. Paper 10.

NST Global, LLC ("Patent Owner") filed a Patent Owner Response. Paper 20. Patent Owner filed a motion to correct certain typographical errors in its Patent Owner Response. Paper 46; *see* Paper 24 (authorizing the motion). We granted Patent Owner's unopposed motion. Paper 48. In this Final Written Decision, we cite to Paper 46, Exhibit A as the Patent Owner Response ("PO Resp.").¹

Petitioner filed a Reply to the Patent Owner Response. Paper 28 ("Reply"). Patent Owner filed a Sur-reply to the Reply. Paper 30 (Sur-reply").

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^{1.} Paper 20 and Exhibit A of Paper 46 differ in their references to certain exhibits. Exhibit A of Paper 46 corrects references to Exhibit 2007 in Paper 20 to Exhibit 2009, and corrects references to Exhibit 2008 in Paper 20 to Exhibit 2011.

Petitioner filed motions to exclude evidence. Papers 36, 37. Patent Owner opposed these motions. Papers 39, 40. Petitioner replied to these oppositions. Papers 41, 42.

We conducted an oral hearing on March 25, 2021, and the record includes a copy of the transcript of that hearing. Paper 47 ("Tr.").

The Board has jurisdiction under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons that follow, we conclude that Petitioner demonstrates, by a preponderance of the evidence, that claims 1, 3–6, 8–10, 13, and 14 are unpatentable. We conclude that Petitioner fails to demonstrate, by a preponderance of the evidence, that claims 2, 7, 11, and 12 are unpatentable.

B. Real Parties in Interest

Petitioner identifies itself, "its parent company SIG SAUER US Holding LP, and that company's parent companies, L&O Finance GmbH and SIG SAUER Management LLC" as real parties in interest. Pet. 28. Patent Owner identifies itself as the sole real party in interest. Paper 6, 1.

C. Related Matters

Petitioner identifies NST Global, LLC v. Ewer Enterprises LLC, No. 8:15-cv-00935 (M.D. Fla.), NST Global, LLC v. SIG SAUER Inc., No. 1:19-cv-00121 (D. Del.), and NST Global, LLC v. SIG SAUER Inc., No. 1:19cv-00792 (D. N.H.), as matters related to the '444 patent.

Pet. 28. Petitioner also identifies an *inter partes* review petition challenging U.S. Patent No. 9,354,021 B2 (the "021 patent"), a patent related to the '444 patent.² Id. at 29.

Patent Owner identifies civil action No. 1:19-cv-00792 and the *inter partes* review challenging the '021 patent as the only related matters. Paper 6, 1.

D. The '444 Patent

The '444 patent, titled "Forearm-Gripping Stabilizing Attachment for a Handgun," issued October 28, 2014, from an application filed February 25, 2013, and claims priority to a provisional application, filed November 27, 2012. Ex. 1001, codes (54), (45), (22), (60), 1:7–9. The '444 patent is directed to "a forearm-gripping stabilizing attachment for a handgun that secures to a rearward end of the handgun frame and engages a user's forearm." *Id.* at 1:14–17. We reproduce Figures 1 and 2 from the '444 patent below.



2. This proceeding is IPR2020-00424. We issue a Final Written Decision in IPR2020-00424 concurrent with our Final Written Decision in this proceeding.



Figure 1 depicts "a side elevation view of the forearmgripping stabilizing attachment for a handgun . . . , illustrating the stabilizing attachment in use and attached to a handgun." Ex. 1001, 2:46–50. Figure 2 depicts "a partial rear elevation view of the forearm gripping stabilizing attachment for a handgun of F[igure] 1." *Id.* at 2:51–52. Stabilizing attachment 10 includes unitary body 14 having upper body portion 20 and lower body portion 22. *Id.* at 3:32–40.

Upper body portion 20 includes passage 24 that, in the embodiment of Figure 1, extends completely through upper body portion 20. Ex. 1001, 3:46–48; *cf. id.* at Fig. 4 (depicting passage 24 not extending completely through upper body portion 20). "Passage 24 provides for the telescopic insertion of a portion of . . . handgun 12 therein to secure or mount the stabilizing attachment 10 to the handgun." *Id.* at 3:48–51. Passage 24 may retain buffer tube 26³ by friction. *Id.* at 3:62–65.

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^{3.} The '444 patent also associates reference numeral "16" with the buffer tube. See Ex. 1001, 3:62-65. We understand from

Lower body portion 22 includes opposed flaps 28, 30. Ex. 1001, 3:66–67. The flaps are spaced to form gap 32, which receives a user's forearm 34. *Id.* at 4:1–4. "Flaps 28 and 30, being of the semi-rigid elastomeric material, conform to the user's forearm 34." *Id.* at 4:4–6.

Strap 36 encircles flaps 28, 30 and the user's forearm to secure stabilizing attachment 10 to the user. Ex. 1001, 4:10–12. The strap of Figure 1 encircles the flaps but not passage 24. *Id.* at 4:15–17, Figs. 1, 2. Other embodiments describe other strap configurations, including configurations that encircle the flaps and passage 24. *See, e.g., id.* at Figs. 5, 6 (depicting strap 36 encircling flaps 28, 30 and passage 24).

E. Illustrative Claims

Of the Challenged Claims, claims 1, 6, and 10 are independent claims. Ex. 1001, 5:66–6:16, 6:29–46, 6:54–7:3. Claim 1, reproduced below, is representative.

1. A forearm-gripping stabilizing attachment for a handgun, the handgun having a support structure extending rearwardly from the rear end of the handgun, the forearmgripping stabilizing attachment, comprising:

a body having a front end, a rear end, an upper portion, a lower portion, and a passage

the figures and description that item "16" is the forward end of body 14 and item "26" is the buffer tube. *See id.* at 3:35–36, 3:51–53, Fig. 1.

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longitudinally extending within said upper portion and at least through said front end of said body, the support structure of the handgun being telescopically receivable by said passage;

said lower portion being bifurcated so as to define a pair of spaced flaps between which a user's forearm is received when securing the stabilizing attachment to the user's forearm; and

a strap connected to said body, said strap securing said spaced flaps to retain the user's forearm between said spaced flaps when the stabilizing attachment is secured to a user's forearm.

Id. at 5:66–6:16. Claim 6 differs from claim 1 in that it recites a support structure in the body of the claim. *Id.* at 6:29–46. Claim 10 recites similar subject matter as claim 1. *Id.* at 6:54–7:3.

Claims 2 and 11 require the spaced flaps to be "constructed of an elastomeric material." Ex. 1001, 6:16–20, 7:4–6. Claim 7 requires the support structure to be "a buffer tube." *Id.* at 6:46–47.

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F. Prior Art and Asserted Grounds

Petitioner asserts that the Challenged Claims are unpatentable based on four grounds:

| Claims | 35 U.S.C. § | References/Basis |
|------------|-------------|------------------------------|
| Challenged | | |
| 1–14 | 103(a) | Forjot^4 |
| 1–14 | 103(a) | Forjot, Morgan ⁵ |
| 1–14 | 103(a) | Forjot, Baricos ⁶ |
| 1–14 | 103(a) | Forjot, Deckard ⁷ |

Petitioner relies on the declaration testimony of Mr. John Nixon. Exs. 1002, 1022. Patent Owner relies on testimony from Dr. Joshua Harrison. Exs. 2001, 2009.

The following subsections provide a brief description of the asserted prior art references.

^{4.} Forjot, FR 899,565, published June 5, 1945 (Ex. 1008, "Forjot"). Exhibit 1008 is a certified English translation of Exhibit 1007. *See* Ex. 1008, 1.

^{5.} Morgan, US 6,016,620, issued January 25, 2000 (Ex. 1010, "Morgan").

^{6.} Baricos, et al., US 5,852,253, issued December 22, 1998 (Ex. 1009, "Baricos").

^{7.} Deckard, US 3,793,759, issued February 26, 1974 (Ex. 1011, "Deckard").

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1. Forjot

Forjot, titled "Cuff and stabilizing plate to improve the use and firing of underwater weapons," published June 5, 1945 from a grant on August 28, 1944. Ex. 1008, 1.⁸ We reproduce Forjot's Figures 1 and 2, below.



Figure 1 (a portion of which is reproduced above), depicts "the respective positions of the cuff [and] the stabilization plate on an underwater pistol or rifle." Ex.

^{8.} We refer to the page number of the patent disclosure of Exhibit 1008 (which has two pages of disclosure and three pages of drawings) when referencing Forjot. Page 1 of the patent appears on page 2 of Exhibit 1008, with page 1 being the translator's declaration. When appropriate, we also include the line numbers in our citation, in the form page: lines.

1008, 1:45–47. Figure 2 depicts "a front view of the cuff." *Id.* at 1:48. Cuff 1, "preferably made of stainless steel and of a suitable thickness to obtain a certain elasticity . . . is intended to make [a] weapon integral with the arm" of a user. *Id.* at 2:3–6.

Cuff 1 is attached to butt 5 of the gun through tube 2 and joint 6. Ex. 1008, 2:6–11. Screw 3 is used to tighten cuff 1 to tube 2 and to adjust opening 4. *Id.* at 2:6–9.

2. Morgan

Morgan, titled "Arm and Hand Gun Support Apparatus," issued January 25, 2000. Ex. 1010, codes (54), (45). Morgan is directed to "a support that is mounted onto the arm to steady the aim of a hand gun user." *Id.* at 1:9–10. We reproduce Morgan's Figures 1, 7, and 8, below.



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Figure 1 depicts "a perspective illustration of the preferred embodiment of [Morgan's] arm and hand gun support apparatus." Ex. 1010, 3:52–53. Figures 7 and 8 depict "a frontal view of the wrist support" and "a frontal view of the forearm support," respectively. *Id.* at 4:1–2. Wrist support 136 and forearm support 138 are made of a rigid plastic. *Id.* at 5:51–53. Each support includes a pair of straps 142, with one end of the strap (end 146) attached to the support and the other end (end 144) having fastener 152. *Id.* at 5:53–58.

3. Baricos

Baricos, titled "Personal Firearm System," issued December 22, 1998. Ex. 1009, codes (54), (45). We reproduce Baricos's Figures 1 and 2, below.



FIG.1

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Figure 1 depicts "a diagrammatic perspective view of a firearm system in accordance with [Baricos's] invention carried beneath the forearm of a user," and Figure 2 depicts "a diagrammatic longitudinal axial section view of a firearm system." Ex. 1009, 1:54–58. Relevant to our analysis, Baricos's firearm system includes forearm or elbow cradle 230 having strap 232. *Id.* at 2:36–37, 2:47–49. "[S]trap 232 [is] designed to surround the user's forearm, in front of the elbow, as can be seen in F[igure] 1." *Id.* at 2:48–49.

4. Deckard

Deckard, titled "Concealed Pistol Mounting," issued February 26, 1974. Ex. 1011, codes (54), (45). We reproduce Deckard's Figures 1 and 4, below.


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Figure 1 depicts "a front view of [Deckard's] device in the released mode." Ex. 1011, 1:45–46. Figure 4 depicts a "cross-section of the device taken at line 4—4 of F[igure] 1." Relevant to our analysis, mounting unit 10 includes straps 13, 14, which fasten mounting unit 10 to forearm 26, by encircling the user's arm. *Id.* at 1:61–62.

II. ANALYSIS

A. Level of Ordinary Skill in the Art

The level of skill in the art is "a prism or lens" through which we view the prior art and the claimed invention. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). Petitioner contends that a person having ordinary skill in the art at the time of the invention "would typically have a bachelor's degree in mechanical engineering and 2-3 years of experience in handgun use, procurement, repair, design, or manufacturing." Pet. 10–11 (referencing Ex. 1002 ¶ 37). Patent Owner contends that the level of ordinary skill in the art pertaining to the '444 patent

is that of a designer or experienced user of modern firearms accessories. The requisite

knowledge and experience could be obtained through completion of a bachelor's degree in an engineering field, followed by some relevant experience designing or using accessories for modern firearms, for example. Alternatively, the same or an equivalent level of skill in the art could be obtained by nonprofessional firearms owners, users, or collectors who have substantial experience configuring and shooting modern firearms and related accessories, even without the benefit of any college education.

PO Resp. 2 (referencing Ex. 2009 ¶ 11).

We understand Patent Owner to contend that the level of ordinary skill may be obtained through an engineering degree and some experience in designing or using firearm accessories and that same level of skill could, alternatively, be achieved through additional experience without having a degree.

On the complete trial record, we find that the level of ordinary skill in the art of the '444 patent is a bachelor's degree in mechanical (or similar type of) engineering and 2 to 3 years of experience in handgun use, procurement, repair, design, or manufacturing, and that an equivalent level of skill may be obtained with additional experience without an engineering degree. This definition is consistent with the prior art of record and the skill reflected in the Specification of the '444 patent. *See, e.g.*, Ex. 1001, 4:19–22 (indicating that a person having ordinary skill in the art would appreciate the function of a securement strap and

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how the strap may be arranged); 5:36–40 (indicating that a person having ordinary skill in the art would appreciate mounting brackets to mount a support structure); Ex. 1010, 6:9–16 (indicating that a person having ordinary skill in the art would understand how to optimize the size, materials, dimensions, and form of Morgan's hand gun support).

We note that our findings and conclusions in this Final Written Decision would be the same if we applied either Petitioner's or Patent Owner's definition of the level of ordinary skill.

B. Claim Construction

In *inter partes* reviews, we interpret a claim "using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b)." 37 C.F.R. § 42.100(b) (2019). Under this standard, we construe the claim "in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent." *Id*.

We determine that we must address two claim terms to resolve certain of the parties' disputes—"buffer tube" and "elastomeric material." *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017). We also address whether the preambles of independent claims 1, 6, and 10 are limiting.

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1. "buffer tube"

Claim 7 depends directly from independent claim 6 and recites "wherein said support structure is a buffer tube." Ex. 1001, 6:46–47. Patent Owner contends that the term "buffer tube" is a term of art, and "is well known to refer specifically to a cylindrical lower receiver extension that houses the buffer assembly (sliding buffer and action spring components) of a firearm." PO Resp. 6 (referencing Ex. 2009 ¶ 42).

Patent Owner argues that Exhibit 2010, a U.S. Army technical manual, uses the term "buffer" consistent with Patent Owner's construction. PO Resp. 6 (referencing Ex. 2010, 25, 95–98, 196–197, 200; Ex. 2009 ¶ 43). Patent Owner adds that Petitioner's declarant, Mr. Nixon, uses the term "buffer tube" consistent with the proposed construction as well. PO Resp. 6 (referencing Ex. 1002 ¶ 4). Patent Owner also directs us to deposition testimony of Mr. Nixon that is consistent with Patent Owner's construction. *Id.* at 6–7 (referencing Ex. 2011, 12:15–13:6, 16:17, 17:11–21; Ex. 2010, 25, 95–98, 196–197, 200; Ex. 2009 ¶ 45).

Patent Owner explains that "the purpose of the buffer assembly in a firearm is to store (and partially damp) recoil energy from the backwards motion of the bolt carrier group when the gun is fired, and then to use the stored energy to return the bolt into battery while chambering the next round." PO Resp. 7 (referencing Ex. 2009 ¶ 47). Patent Owner adds that:

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The mass of the buffer and the stiffness of the action spring controls the timing of the return motion of the bolt carrier group, and therefore also affects the proper operation of the firearm. No tube that is unrelated to the foregoing bolt return function can be properly understood to be a "buffer tube."

Id. (referencing Ex. 2009 ¶ 47).

Petitioner argues that the intrinsic record does not support Patent Owner's proposed construction; instead, Patent Owner's construction relies solely on extrinsic evidence. Reply 3. Petitioner argues that the only disclosure in the intrinsic record is that of "cylindrical extension 26." *Id.* Petitioner argues that, based on this intrinsic evidence, the proper construction of the term "buffer tube" is "a cylindrical lower receiver extension from the rear of the handgun that provides support for the stabilizing attachment." *Id.* at 4.

Patent Owner replies that Petitioner's proposed construction eliminates the word "buffer" from the term. Sur-reply 2, 18. Patent Owner argues that Petitioner's construction departs from how a person having ordinary skill in the art would understand the term "buffer tube." *Id.*

In addition, Patent Owner argues that Petitioner "incorrectly described element 26 in Figures 1, 2, and 7 as a 'cylindrical extension," which "is defined in the Specification as a 'buffer tube." Sur-reply 2–3 (referencing

Ex. 1001, 3:52–57, 4:46, 5:15). Patent Owner argues that a "cylindrical extension" as used by Petitioner is more analogous to tubular member 62, which is a support structure other than a buffer tube. *Id.* at 3.

Patent Owner explains that the internal structure of a buffer tube is not described in the Specification of the '444 patent as the internal structure is implied by using the term "buffer tube." Sur-reply 3. Patent Owner adds that Petitioner's declarant testified that buffer tubes are distinct from other tubular members. *Id.* (referencing Ex. 2011, 16:15–17:23).

We conclude, on the complete record, that Patent Owner has the better position. We turn first to the intrinsic record. In construing the term, we start with the language of the claims. *See, e.g.*, *Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005) (en banc) ("[T]he context in which a term is used in the [claim at issue] can be highly instructive."). Claim 7 requires that the "support structure" recited in claim 6 be "a *buffer* tube." Ex. 1001, 6:46–47 (emphasis added). That is, the support structure of claim 6 is more than a tube; it is a specific type of tube—a *buffer* tube.

The language of other claims can also inform a construction. *See Phillips*, 415 F.3d at 1314 ("Other claims of the patent in question . . . can also be valuable sources of enlightenment as to the meaning of a claim term."). Claim 8 depends from claim 6 and requires that the "support structure" recited in claim 6 be "other than a buffer tube." Ex. 1001, 6:49–50. This language at least makes clear that a buffer tube is a unique type of support structure.

"[T]he specification 'is always highly relevant to the claim construction analysis." Phillips, 415 F.3d at 1315. As Petitioner notes, the Specification does not describe what is meant by the term "buffer tube." Reply 3-4. The Specification does characterize a buffer tube as a support structure that is present on a certain type of handgun. See, e.g., Ex. 1001, 5:14-20 ("[H]andgun 12 includes an integral buffer tube 26 that provides a suitable support upon which the stabilizing brace 10 may be attached But not every handgun is provided with a suitable tubular support or similar structure that rearwardly extends from the handgun to which the stabilizing brace 10 may be attached."). The Specification explains that for handguns without buffer tubes, a tubular member may be attached to the handgun using a bracket. Id. at 5:21–29. This characterization suggests a distinction between a buffer tube and other cylindrical lower receivers that extend from the rear of a handgun and provide support for a stabilizing attachment.

We are not directed to anything in the prosecution history that sheds additional light on the meaning of "buffer tube."

We now turn to the extrinsic evidence. Although extrinsic evidence, when available, may be useful when construing claim terms under our claim construction standard, extrinsic evidence should be considered in the context of the intrinsic evidence. *Phillips*, 415 F.3d at 1317. Still, "[t]he Board may properly rely on expert testimony 'to explain terms of art." *Bradium Techs. LLC v. Iancu*, 923 F.3d 1032, 1043 (Fed. Cir. 2019).

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Dr. Harrison, Patent Owner's declarant, testifies that "[t]heterm 'buffer tube' is well known to refer specifically to a cylindrical lower receiver extension that houses the buffer assembly of a firearm." Ex. 2009 ¶ 42. Dr. Harrison bases this testimony on his experience and the use of the term "buffer" in a 1996 U.S. Army technical manual. *Id.* at ¶ 43 (referencing Ex. 2010, 25, 95–98, 196–197, 200).⁹

In his direct testimony, Mr. Nixon declares, although not in the context of claim construction, that "[t]he '444 [p]atent is clearly aimed at the AR15 'pistol' market, the front page illustration, and Figure 1, showing a generic AR15 with characteristic buffer tube at the rear. Figure 7 illustrates an AK47 type firearm with an AR15 style buffer tube attached to the rear to enable mounting of the claimed invention." Ex. 1002 ¶ 4 (emphasis added); cf. Ex. 1022 (providing a supplemental declaration by Mr. Nixon in response to certain of Patent Owner's positions, but not addressing the construction of "buffer tube"). Mr. Nixon also testifies about buffer tubes in his deposition. For example, he states that the buffer tube of an AR15 "contains a spring and when you use the rifle the spring is compressed when the bolt moves backward and then the spring pushes the cartridge forward from the magazine and reloads the gun." Ex. 2011, 12:15-20; see also id. at 12:21–13:6 (testifying that the buffer tube includes a spring and weight), 14:2-12 (testifying that the 1918 Browning BAR rifle also included a buffer tube similar

^{9.} Patent Owner and Dr. Harrison refer to this manual as a "1987 manual." Exhibit 2010 indicates that it is "current as of December 1996, and supersedes the version dated August 1987. Ex. 2010, 1, 2–17 (providing dated changes to subsequent versions).

to that of the AR15). When asked if "[i]n a firearm would all tubular members be referred to as buffer tubes," Mr. Nixon answered, "No." *Id.* at 16:15–17.

On the complete record, we find that the term "buffer tube" is a term of art. We conclude that a person having ordinary skill in the art would understand this term to mean "a cylindrical lower receiver extension that houses the buffer assembly of a firearm." We credit Dr. Harrison's unrebutted testimony. First, we find that his testimony is consistent with the evidence of record. Exhibit 2010, a U.S. Army technical manual, describes a buffer assembly. Ex. 2010, 25, 95–98, 196–197, 200. Although directed to a 5.56 millimeter M16A2 Rifle, a 5.56 millimeter M4 Carbine, and a 5.56 millimeter M4A1 Carbine, rather than a handgun, the use of the term "buffer assembly" provides some corroborating evidence for Dr. Harrison's testimony.

Second, and more significantly, Mr. Nixon's testimony supports Dr. Harrison's testimony regarding the use of "buffer tube" as a term of art and what that term means. *See* Ex. 2011, 12:15–20, 12:21–13:6, 14:2–12; Ex. 1002 ¶ 4.

Also, we conclude that our construction is consistent with the intrinsic record, which indicates that a buffer tube is a unique structure that is distinct from a generic cylindrical extension from the rear of a handgun.

In summary, we conclude that the term "buffer tube" means "a cylindrical lower receiver extension that houses the buffer assembly of a firearm."

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2. "elastomeric material"

Claim 2 depends directly from independent claim 1 and recites "wherein said spaced flaps are constructed of an elastomeric material and at least partially conform to and grip a user's forearm when the user's forearm is disposed between said spaced flaps." Ex. 1001, 6:17–20. Similarly, claim 11 depends directly from independent claim 10 and recites "wherein said pair of spaced flaps are constructed of an elastomeric material." *Id.* at 7:5–6.

Patent Owner argues that a person having "ordinary skill in the engineering arts and sciences understands that the ordinary meaning of the term elastomer or 'elastomeric material' refers to a rubber-like polymer with a large range of elastic deformation and low rigidity." PO Resp. 7–8 (referencing Ex. 2009 ¶ 40; Ex. 2011, 30:10–14). Patent Owner argues that its proposed construction is supported by the Specification of the '444 patent, which states that the flaps may "be made of an elastomer or elastomeric material that can substantially conform to the shape of the shooter's forearm." PO Resp. 8 (referencing Ex. 1001, 4:4-6). Patent Owner adds that "the '444 [p]atent itself differentiates between a rigid material and an elastomeric material in describing a non-limiting example where 'the upper portion 20 could be formed of a rigid or non-elastomeric material and the lower portion 22 could be formed of a resilient material." Id. (quoting Ex. 1001, 4:27-31); see also id. at 8-9 (referencing Ex. 1001, 5:44-47).

Petitioner replies that Patent Owner's construction is "unduly narrow and includes vague terms of degree." Reply 4. Petitioner argues that Patent Owner's construction "is more appropriately associated with the noun 'elastomer." *Id.* Petitioner argues that the claim term includes the suffix "ic," which changes the term to an adjective. *Id.* Petitioner argues that, as such, the claim merely requires that the recited material be polymer-like. *Id.* at 4–5 (referencing Ex. 1022 ¶ 7).

Petitioner directs us to a dictionary definition of elastomeric, which defines the term as "[a]ny material having the properties of being able to return to its original shape after being stressed." Reply 5 (referencing Ex. 1023). Petitioner argues that the intrinsic record for the '444 patent "indicates no intention to depart from" this dictionary definition. *Id*.

Patent Owner replies that Petitioner's proposed construction ignores the final clause of the definition from Exhibit 1023—"such as a roofing material that can expand and contract without rupture." Sur-reply 4 (emphasis omitted); *see* Ex. 1023. Patent Owner argues that Petitioner's definition is from an architectural dictionary, which is not probative of how a person having ordinary skill in the art of the '444 patent would understand the term. Sur-reply 4.

Patent Owner also argues that Petitioner's grammatical analysis is flawed, as the use of a word as an adjective "should not transform the use of the term entirely outside the accepted definition of its noun form 'elastomer." Sur-reply 5.

Based on the complete record, we construe the term "elastomeric material" to require the material of the spaced flaps to be made of an elastomer.¹⁰ Again, we start with the words of the claims. Claim 2 requires the "spaced flaps" to be "constructed of an elastomeric material" and also requires the spaced flaps to "at least partially conform to and grip a user's forearm when the user's forearm is disposed between" the flaps. Ex. 1001, 6:17–20. Claim 11 merely requires the "pair of spaced flaps" to be "constructed of an elastomeric material." *Id.* at 7:5–6.

We agree with Petitioner that the word "elastomeric" is used as an adjective in claims 2 and 11—modifying the word "material" in both claims. As such, the plain language of the claims requires the material of the spaced flaps to be made of an elastomer. Claim 2 supports this

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^{10.} An elastomer is a polymer with properties similar to natural rubber. Larranaga, Michael D., Richard J. Lewis, and Robert A. Lewis, Hawley's Condensed Chemical Dictionary (16th ed.) (2016), John Wiley & Sons (Ex. 3001, 3); accord Daintith, John, Oxford Dictionary of Chemistry (6th ed.), Oxford Univ. Press (2008) (Ex. 3002, 3); Phillips, 415 F.3d at 1318 ("Because dictionaries, and especially technical dictionaries, endeavorto collect the accepted meanings of terms used in various fields of science and technology, those resources have been properly recognized as among the many tools that can assist the court in determining the meaning of particular terminology to those of skill in the art of the invention."); cf. Ex. 2009 ¶ 40 ("One of ordinary skill in the engineering arts and sciences understands that the ordinary meaning of the term elastomer or "elastomeric material" refers to a rubberlike polymer"); Ex. 2011, 30:10-14 (Mr. Nixon defining elastomer as "a polymer material which could be deformed and recovered to its original shape").

understanding, as it requires the spaced flaps to at least partially conform to and grip the user's arm. That is, the material of the spaced flaps must have sufficiently low rigidity to conform to the user's arm.

The Specification supports our construction. The Specification states that flaps 28 and 30 are made of a "semi-rigid elastomeric material," such that the flaps "conform to the user's forearm 34." Ex. 1001, 4:4–6; *see also id.* at Fig. 2 (showing flaps 28, 30). The Specification describes body 14 of the preferred embodiment, including flaps 28 and 30, as made of a semi-rigid, elastomeric material, such as "rubber, foam rubber or the like material." *Id.* at 3:32–35; *cf. id.* at 4:23–34 (describing an alternative embodiment, with upper portion 20 of body 14 being made of a rigid, non-elastomeric material, and the flaps made of a resilient material, so that the flaps at least partially conform with the user's forearm).

The prosecution history also supports our construction. During prosecution, the applicant amended pending claim 10 (which issued as claim 2), to distinguish it from the prior art, by replacing "a resilient material" with "an elastomeric material." Ex. 1003, 166, 173–174. As such, the applicant narrowed the scope of claim 2 from covering a resilient material to the narrower, elastomeric material. That is, the material is not merely like an elastomer (which would include a resilient material), but is made of an elastomer.

We give very little weight to Petitioner's extrinsic evidence. As Patent Owner argues, Petitioner's dictionary

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definition is from the architectural arts. See Ex. 1023, 1 (providing two similar definitions, one from the "Illustrated Dictionary of Architecture" and one from the "McGraw-Hill Dictionary of Architecture and Construction"). Also, Petitioner's dictionary definitions would encompass any resilient material. As such, the definition contradicts the applicant's narrowing of the claim. See Phillips, 415 F.3d at 1322–23 ("[J]udges are free to consult dictionaries . . . when construing claim terms, so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents."); see also id. at 1322 ("Moreover, different dictionaries may contain somewhat different sets of definitions for the same words. A claim should not rise or fall based upon the preferences of a particular dictionary editor, or the court's independent decision, uninformed by the specification, to rely on one dictionary rather than another.").

In summary, we construe the term "elastomeric material" to require the material of the spaced flaps to be made of an elastomer.

3. Preambles of claims 1, 6, and 10

The preamble of claim 1 recites "[a] forearm-gripping stabilizing attachment for a handgun, the handgun having a support structure extending rearwardly from the rear end of the handgun, the forearm-gripping stabilizing attachment." Ex. 1001, 5:66–6:2. Claim 10 has an identical preamble. *Id.* at 6:54–57. The preamble of claim 6 recites "[i]n combination a forearm-gripping stabilizing attachment and a handgun." *Id.* at 6:29–30. "[A] preamble

limits the invention if it recites essential structure or steps, or if it is 'necessary to give life, meaning, and vitality' to the claim." Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc., 289 F.3d 801, 808 (Fed. Cir. 2002) (quoting Pitney Bowes, Inc. v. Hewlett-Packard Co., 182) F.3d 1298, 1305 (Fed. Cir. 1999)). "[W]hen the limitations in the body of [a] claim 'rely upon and derive antecedent basis from the preamble, then the preamble may act as a necessary component of the claimed invention." Bicon, Inc. v. Straumann Co., 441 F.3d 945, 952 (Fed. Cir. 2006) (quoting Eaton Corp. v. Rockwell Int'l Corp., 323 F.3d 1332, 1339 (Fed. Cir. 2003)). "Whether to treat a preamble as a limitation is a determination 'resolved only on review of the entire []... patent to gain an understanding of what the inventors actually invented and intended to encompass by the claim." Catalina Mktg. Int'l, Inc., 289 F.3d at 808 (alterations in original) (quoting Corning Glass Works v. Sumitomo Elec. U.S.A., Inc., 868 F.2d 1251, 1257 (Fed. Cir. 1989)).

We conclude that the preambles of claims 1, 6, and 10 are limiting. Each preamble recites "essential structure" for the claim. *See Catalina Mktg. Int'l, Inc.*, 289 F.3d at 808. The preamble of each of claims 1 and 10 recites a handgun and a support structure extending rearwardly from the handgun. The body of each of these claims requires that, when the stabilizing attachment (recited in the preamble) is attached to a user's forearm, a strap secures flaps to the user's forearm. The body of each of these claims also recites that the support structure is telescopically receivable by the passage in the upper portion of the forearm-gripping stabilizing attachment.

The body of claim 6 recites a support structure extending rearwardly outward *from the handgun*, which is recited in the preamble.

Supporting our conclusion is that the support structure and stabilizing attachment receive antecedent bases from the preamble of each of claims 1 and 10 and the handgun and stabilizing attachment receive antecedent bases from the preamble of claim 6. Also, in reviewing the Specification, we find that what the inventor invented was a forearm-gripping stabilizing attachment that attaches to a support structure at the rear of a handgun. See, *e.g.*, Ex. 1001, Fig. 1 (depicting the invention), 1:44–47 ("Embodiments of the present invention ... provid[e] a new and specially designed stabilizing attachment that secures to the rearward end of a handgun and which grips a user's forearm"); PO Resp. 3 ("The '444 [p]atent discloses and claims a stabilizing attachment for a handgun that has a support structure extending rearwardly from the rear end of the handgun.").

In summary, we conclude that the preambles of claims 1, 6, and 10 are "necessary to give life, meaning, and vitality' to the claim[s]," and, as such, are limiting. *See Catalina Mktg. Int'l, Inc.*, 289 F.3d at 808.

C. Applicable Law Governing Unpatentability

In *inter partes* reviews, a petitioner bears the burden of proving unpatentability of the challenged claims, and the burden of persuasion never shifts to the patent owner. *Dynamic Drinkware*, *LLC v. Nat'l Graphics*,

Inc., 800 F.3d 1375, 1378 (Fed. Cir. 2015). To prevail in this proceeding, Petitioner must support its challenge by a preponderance of the evidence. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d). Accordingly, all of our findings and conclusions are based on a preponderance of the evidence standard.

Petitioner's asserted grounds of unpatentability are based on obviousness under 35 U.S.C. § 103(a).

Section 103(a) forbids issuance of a patent when "the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains."

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: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) when available, objective evidence, such as commercial success, long felt but unsolved needs, and failure of others. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

"[O]bviousness must be determined in light of *all the facts*, and . . . a given course of action often has simultaneous advantages and disadvantages, and this does not necessarily obviate motivation to combine" teachings

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from multiple references. *Medichem*, S.A. v. Rolabo, S.L., 437 F.3d 1157, 1165 (Fed. Cir. 2006) (emphasis added); see also PAR Pharm., Inc. v. TWI Pharms., Inc., 773 F.3d 1186, 1196 (Fed. Cir. 2014) ("The presence or absence of a motivation to combine references in an obviousness determination is a pure question of fact.").

We must always consider, as part of an obviousness inquiry, objective evidence of non-obviousness, or secondary considerations evidence, when present. Transocean Offshore Deepwater Drilling, Inc. v. Maersk Drilling USA, Inc., 699 F.3d 1340, 1349 (Fed. Cir. 2012). Notwithstanding what the teachings of the prior art would have suggested to one with ordinary skill in the art at the time of the patent's invention, the totality of the evidence submitted, including objective evidence of nonobviousness, may lead to a conclusion that the challenged claims would not have been obvious to one with ordinary skill in the art. In re Piasecki, 745 F.2d 1468, 1471-72 (Fed. Cir. 1984). Secondary considerations may include long-felt but unsolved need, failure of others, unexpected results, commercial success, copying, licensing, and praise. See Graham, 383 U.S. at 17–18; Leapfrog Enters., Inc. v. Fisher-Price, Inc., 485 F.3d 1157, 1162 (Fed. Cir. 2007).

We address Petitioner's ground contending that the Challenged Claims are unpatentable as obvious over Forjot and Morgan (Ground 3) first, then address Petitioner's other three asserted grounds.

D. Ground 3: Claims 1–14 as Allegedly Obvious Over Forjot and Morgan

Petitioner contends that Forjot, in combination with Morgan, renders obvious the subject matter of independent claims 1, 6, and 10 and dependent claims 2–5, 7–9, and 11–14. Pet. 2, 16–25, 26–27.¹¹ In the subsections below, we discuss the scope and content of the prior art and any differences between the claimed subject matter and the prior art, on a limitation-by-limitation basis. We also discuss Patent Owner's objective evidence of nonobviousness.

1. Independent claims 1, 6, and 10

a) Claim 1

(1) Preamble

The preamble of claim 1 recites "[a] forearm-gripping stabilizing attachment for a handgun, the handgun having a support structure extending rearwardly from the rear end of the handgun." Ex. 1001, 5:66–6:2. Petitioner contends that Forjot's cuff corresponds to the recited forearm-gripping stabilizing attachment and that Forjot's

^{11.} Petitioner incorporates its contentions with respect to its first ground, that the combination of Forjot with the knowledge of a person having ordinary skill in the art renders obvious the Challenged Claims, into its ground relying on the combined teachings of Forjot and Morgan. Pet. 26. Accordingly, we address Petitioner's contentions with respect to Ground 1 as part of our analysis of Ground 3.

cuff is for a handgun. Pet. 16–17 (referencing Ex. 1008, 2:3–7, 2:51–52; Ex. 1002 ¶¶ 45–46). Petitioner adds that Forjot's cuff is attached to a tube, corresponding to the recited support structure. *Id.* at 17; *see also* Ex. 1008, Fig. 1 (depicting tube 2 extending rearwardly from a gun).

We have reviewed Petitioner's contentions and find, on the complete record, that Petitioner has demonstrated, by a preponderance of the evidence, that Forjot discloses the subject matter of the preamble of claim 1. See Ex. 1008, 2:3–7 (disclosing cuff 1, which attaches to the rear end of tube 2 extending from butt 5 of the gun), 2:51–52 (indicating that Forjot's invention can be applied to landbased weapons), Fig. 1 (depicting cuff 1 gripping an arm and attached to tube 2). Patent Owner does not dispute Petitioner's contentions with respect to the subject matter of the preamble of claim 1.

(2) Body limitation

Claim 1 also recites "a body having a front end, a rear end, an upper portion, a lower portion, and a passage longitudinally extending within said upper portion and at least through said front end of said body, the support structure of the handgun being telescopically receivable by said passage." Ex. 1001, 6:3–7 (the "body" limitation of claim 1). Petitioner contends that Forjot discloses the subject matter of the "body" limitation of claim 1 and provides an annotated version of a portion of Forjot's Figure 1 in support of its contention. Pet. 18 (referencing Ex. 1002 ¶ 49). We reproduce this annotated figure, below.

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This annotated figure provides a portion of Forjot's Figure 1 depicting cuff 1 and tube 2, with annotations pointing to the recited components of the "body" limitation. Petitioner adds that "Fig[ure] 1 of *Forjot* also shows 'the support structure of the handgun [tube 2] telescopically receivable by said passage." *Id.* (second alteration in original) (referencing Ex. 1008, 2:6–7; Ex. 1002 ¶ 50).

We have reviewed Petitioner's contentions and find, on the complete record, that Petitioner has demonstrated, by a preponderance of the evidence, that Forjot discloses the subject matter of the "body" limitation of claim 1. We find that Petitioner's annotated characterization of Forjot's cuff 1, reproduced above, appropriately identifies the recited components in the "body" limitation of claim 1. We also find that Figure 1 shows that tube 2 is telescopically received in the identified passage in the upper portion of cuff 1, as illustrated by the dashed lines in the figure. *See also* Ex. 1008, Fig. 2 (showing a front view of cuff 1).

Patent Owner does not dispute Petitioner's contentions with respect to the subject matter of the "body" limitation of claim 1.

(3) Lower portion limitation

Claim 1 also recites "said lower portion being bifurcated so as to define a pair of spaced flaps between which a user's forearm is received when securing the stabilizing attachment to the user's forearm." Ex. 1001, 6:8–11 (the "lower portion" limitation). Petitioner contends that Forjot's cuff 1 includes a bifurcated lower portion defining flaps that receive a user's forearm. Pet. 18–19 (referencing Ex. 1008, 2:27–31, Fig. 2; Ex. 1002 ¶¶ 51–52); *compare* Ex. 1008, Fig. 2 (showing a view of cuff 1 from the front of the cuff), *with* Ex. 1001, Fig. 2 (showing a rear elevation view of an exemplary embodiment having a bifurcated lower portion that defines flaps).

We have reviewed Petitioner's contentions and find, on the complete record, that Petitioner has demonstrated, by a preponderance of the evidence, that Forjot discloses the subject matter of the "lower portion" limitation of claim 1. Forjot's cuff 1 includes a bifurcated lower portion for receiving a user's forearm. *See* Ex. 1008, Fig. 2 (showing the bifurcated lower portion, with spaced flaps), Fig. 1 (showing a user's forearm received in the cuff), 2:6–9 (describing that screw 3 adjusts opening 4), 2:25–32 (describing that a user bends the ends of the cuff to secure the cuff to the user's arm).

Patent Owner does not dispute Petitioner's contentions with respect to this limitation.

(4) Strap limitation

Finally, claim 1 recites "a strap connected to said body, said strap securing said spaced flaps to retain the user's forearm between said spaced flaps when the stabilizing attachment is secured to a user's forearm." Ex. 1001, 6:12–15 (the "strap" limitation). Petitioner acknowledges that Forjot does not disclose the recited strap. Pet. 19, 26. Petitioner contends that "[u]sing straps to secure a firearm support to a user's forearm, however, was known and obvious at the time the '444 patent was filed." *Id.* at 19 (referencing Ex. 1002 ¶ 53). Petitioner contends that:

It would have been obvious to add a strap to *Forjot* in view of Morgan because *Morgan* teaches using a pair of straps 142 in conjunction with wrist support 136 and forearm support 138 to secure a handgun support member 12, and it would have been obvious to use a strap in the same way in *Forjot* to better secure the cuff 1 to the forearm, which is a goal of *Forjot*.

Id. at 26 (referencing Ex. 1002 ¶ 59).

Petitioner explains that "[f]orearm support 138 of *Morgan* and cuff 1 of *Forjot* are also similarly shaped, making the addition of a similar strap to the cuff of *Forjot* even more straightforward." Pet. 26 (referencing Ex. 1002 ¶ 59). Petitioner adds that "[i]t would also have

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been obvious to combine these teachings because both references have the same goal, to better aim a pistol." *Id.* (referencing Ex. 1008, 2:67–68; Ex. 1010, 1:7–8; Ex. 1002 ¶ 59).

Mr. Nixon declares that "[s]traps have been used in firearms throughout history." Ex. 1002 ¶ 40. Mr. Nixon explains that "[r]ifle shooters are trained to wrap their rifle sling (strap) around their support arm (left arm for a right handed shooter) to enhance the support that they give to the rifle, thereby minimizing perturbations, and maximizing accuracy." *Id.*; *see also id.* ¶ 43 (discussing Morgan); Ex. 1013 (U.S. Marine Corp. Rifle Marksmanship manual); Ex. 1010, 1:34–35 ("[T]he purpose of providing a support that is mounted onto the arm [is] to steady the aim of a handgun user.").

Mr. Nixon also testifies that Morgan's two-piece strap would benefit Forjot's cuff "[b]ecause you can tighten the strap and that's all you need to do." Ex. 2011, 70:12–21; *see also* Ex. 1010, 5:60–62 ("The plurality of straps of each of the arm supports secures the arm of the hand gun user to the elongated support member. In use the wrist support goes over the wrist with the straps."), 6:1–4 ("The apparatus will help to prevent movement of the arm and wrist while holding and firing the hand gun. The arm and hand gun support apparatus is mounted onto the arm of the user.").

Further in support of its position, Petitioner argues that the '444 patent Specification "acknowledges" that straps to secure a firearm support to a user's forearm

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were known and obvious, with the Specification stating, "[o]ne of ordinary skill in the art will readily appreciate the function of strap 36 and recognize many suitable arrangements for the purpose of securing the body 14 about a user's forearm." Pet. 19–20 (quoting Ex. 1001, 4:19–22). Petitioner explains that the patentee added the "strap" limitation during prosecution to overcome Owen¹². *Id.* at 20.

Petitioner reasons that:

Forjot is concerned with the same goal as the '444 patent, *i.e.*, to stabilize and aim a handgun.... It would have been obvious to one having ordinary skill in the art to add a strap to *Forjot* because it was well known to use straps in general to mechanically secure one element to another, and the use of straps to secure guns and gun supports to a user were notoriously well known. It would have been a simple task to add a strap to *Forjot* The use of straps to secure firearms has been known for centuries and the stated goal of *Forjot* is to "rigidly hold the forearm." The motivation for the modification is suggested by *Forjot* and the added strap is being used for its known purpose.... This is simply using a well-known structure in a wellknown way and therefore obvious.

^{12.} Owen, Jr., US 4,196,742, issued April 8, 1980 (Ex. 1005, "Owen").

Pet. 20–21 (citations omitted) (referencing Ex. 1002 ¶¶ 55–56; Ex. 1008, 2:57).

(a) Arguments addressing motivation to combine generally

Patent Owner responds that:

Forjot's solution provides for more precise aim of the speargun once the hunter has his/ her "forearm, **easily and quickly engaged** in the cuff by bending these ends, forming a clamp" because "he/she will have thus achieved **a perfect connection** of the weapon with his/ her arm." "Therefore, the invention essentially resides upon the absolute connection of the pistol or rifle weapon by the cuff 1 to the arm" allowing for better targeting of prey "by connecting the arm of the hunter with his/her weapon in an extremely rigid way."

PO Resp. 20 (citations omitted) (quoting Ex. 1008, 2:25–31, 2:35–45).

Patent Owner argues that a person having ordinary skill in the art "would not be motivated to modify the cuff taught by *Forjot* by adding a strap, because doing so would frustrate *Forjot*'s expressly taught objective that the hunter's forearm be 'easily and quickly engaged in the cuff by bending [the] ends, forming a clamp." PO Resp. 21 (alteration in original) (referencing Ex. 2009

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¶ 23). Patent Owner adds that adding a strap would make engaging Forjot's cuff with the user's "forearm more difficult and time-consuming." *Id.* (referencing Ex. 2007 ¶ 23). Patent Owner argues that "[t]he mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the *desirability* of the modification." *Id.* at 22 (quoting *In re Gordon*, 733 F.2d 900, 902 (Fed. Cir. 1984)).

Patent Owner argues that "[b]ecause *Forjot* describes the invention as already providing the more secure attachment in an absolute and perfect way, there would be no motivation . . . to add [Morgan's] strap to the device. PO Resp. 42 (referencing Ex. 2009 ¶ 35).

Petitioner replies that "Forjot provides motivation to use a strap (aiming and providing a rigid, integral connection with the forearm) and that motivation is directly tied to a well-known purpose of a strap in the art that is demonstrated by . . . Morgan." Reply 7–8. Petitioner argues that Forjot's use of the phrase "perfect connection" would not discourage the proposed modification. Id. at 8–9 (referencing testimony of Mr. Nixon (Ex. 1022 ¶¶ 2–3) and Dr. Harrison (Ex. 1021, 38:21–39:2)). Petitioner adds that, as Mr. Nixon declares, Forjot's open cuff design would experience slipping. Id. at 9 (referencing Ex. 1022 ¶ 4). Petitioner argues that Dr. Harrison agrees that the cuff slipping is a potential problem of Forjot, and that a strap would prevent slipping. Id. at 10 (referencing Ex. 1021, 41:6–9, 42:9).

Petitioner argues that Patent Owner has not demonstrated that one of Forjot's primary purposes is to

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quickly engage cuff 1 or that using a strap would be difficult and time consuming. Reply 10–11. Petitioner argues that Forjot's primary objectives are to have improved aim without shouldering a weapon and to form a rigid, integral connection between the user's arm and weapon. Id. at 11. Petitioner argues that Patent Owner's declarant, Dr. Harrison, confirms that a strap would not frustrate these principle objectives. Id. (referencing Ex. 1021, 47:23–24). Petitioner argues that Patent Owner provides no support for its contention that employing a strap would be difficult and time consuming. Id. Petitioner adds that "Mr. Nixon notes that Velcro straps and releasable buckles have been used extensively in the firearm industry prior to the priority date of the '444 patent." Id. at 11-12 (referencing Ex. 1022 ¶ 5). Petitioner concludes that a person having ordinary skill in the art would have "trade[d] off the tiny increase in the time to engage the forearm to improve the connection with the forearm, provide a more secure interface, and prevent slippage." Id. at 12 (referencing Ex. 1022 ¶ 5).

Patent Owner replies that "Forjot's express use of the term 'perfect' [when referring to the connection between the cuff and user's forearm] indicates the connection is not an area of concern for a [person having ordinary skill in the art] looking to improve *Forjot*." Sur-reply 10.

With respect to Petitioner's reasoning directed to slipping, Patent Owner argues that Dr. Harrison expressly testified in his deposition that adding a strap would not prevent slipping "in a way that would be compatible with Forjot's teaching of quick and easy connection." Sur-reply

11 (referencing Ex. 1021, 43:4–12). Patent Owner also argues that Forjot expressly discloses a desire for easy and quick engagement of the cuff with the user's arm, which discourages adding a strap. *Id.* at 12 (referencing Ex. 1021, 43:4–12). Patent Owner argues that any additional time to connect a strap would be undesirable and discourage the proposed modification. *Id.* at 12–13. Patent Owner adds that "there needs to be a quick and easy engagement that is faster than shouldering the weapon, but integral enough with the arm to provide the same stability when firing." *Id.* at 13 (referencing (Ex. 2009 ¶ 22).

(b) Arguments addressing the operation of Forjot's screw 3

Next, Patent Owner argues that Petitioner's declarant, Mr. Nixon, misunderstands the teachings of Forjot and, as a result, undermines Petitioner's obviousness analysis. PO Resp. 23. Patent Owner argues that Mr. Nixon fails to appreciate that screw 3 functions to tighten cuff 1 to the user's arm. *Id.* (referencing Ex. 2011, 41:1–23, 43:2– 19, 51:2–12). Patent Owner argues that Forjot teaches that screw 3 adjusts opening 4, which is the opening through which a user places his or her forearm. *Id.* at 24 (referencing Ex. 1008, 2:5–9; Ex. 2009 ¶ 21). Patent Owner argues that Mr. Nixon's position that it would have been obvious to add a strap to Forjot's cuff is based on the faulty assumption that tightening screw 3 does not tighten the cuff to the user's arm. *Id.* (referencing Ex. 2009 ¶ 24).

Patent Owner argues that Forjot's screw 3 is offset from tube 2 and, as such, a person having ordinary skill

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in the art would have understood that "after the screw 3 is tightened sufficiently to close the cuff 1 tightly around the tube 2 to attach the cuff 1 to the tube 2, further tightening of the screw 3 will adjust the opening 4 of the lower part of the cuff 1 to be narrower." PO Resp. 24–25 (referencing Ex. 2009 ¶¶ 24–25). Patent Owner argues that screw 3 together with the stiffness of cuff 1 allows the cuff to clamp a wide range of forearm sizes. Id. at 25 (referencing Ex. 2009 ¶ 26). Patent Owner argues that Forjot teaches that cuff 1 has elasticity and is secured to a user's forearm by bending the ends of the cuff to form a clamp. Id. (referencing Ex. 1008, 2:27-29; Ex. 2009 ¶ 26). Patent Owner concludes that "one of ordinary skill in the art would recognize that the amount of bending deflection required for the opening 4 of the cuff 1 to flex around a forearm of a particular size can be adjusted by tightening or loosening the screw 3." Id. (referencing Ex. 2009 ¶¶ 26–27).

Patent Owner reasons that screw 3 allows cuff 1 to provide an "absolute connection of the . . . weapon . . . to the arm" and provide "extremely rigid" clamping without a strap. PO Resp. 26 (referencing Ex. 1008, 2:35–43; Ex. 2009 ¶ 28).

Petitioner replies that Patent Owner's assessment that screw 3 is used to tighten the cuff to the user's arm is contrary to Patent Owner's assertion that Forjot requires quick engagement, as tightening the screw and bending the cuff would be difficult and time consuming. Reply 13–14. Petitioner argues that Mr. Nixon's assessment is the "sensible" reading of Forjot—that the user employs

screw 3 to tighten the cuff to tube 2, and then screw 3 is not adjusted further. *Id.* at 14 (referencing Ex. 1022 ¶ 8). Petitioner adds that the express disclosure in Forjot states that engaging the cuff to the user's arm is accomplished by bending the ends of the cuff and does not mention screw 3. *Id.* (referencing Ex. 1008, 3:27–29).

Patent Owner replies that Forjot's statement about bending the ends of the cuff begins with the phrase "[f]rom the forgoing," which is a reference to the operation of screw 3. Sur-reply 15. Patent Owner argues that "it is apparent that both the screw and elastic bending of the cuff to accommodate the forearm provide the adjustability to form an adequate connection with various forearm sizes," which "obviates any need for a strap." *Id.* at 15–16.

> (c) Arguments addressing whether proposed modification renders Forjot inoperable for its intended purpose

Next, Patent Owner additionally responds that adding a strap would render Forjot inoperable for its intended purpose—"allowing for a quick engagement between the user and speargun to achieve integration." PO Resp. 27 (referencing Ex. 2009 ¶ 22). Patent Owner argues that the proposed modification "would frustrate *Forjot's* express teaching about the desirability of 'easily and quickly engaged in the cuff by bending [the] ends, forming a clamp' in order to arrive at the rigid connection and integration of the user's arm and speargun." *Id.* at 28 (alteration in original) (referencing Ex. 1008, 2:27–29). Patent Owner

argues that "[a]dding a strap to the cuff of Forjot would add sufficient delay in achieving the connection, thereby frustrating the purpose of the 'fast' connection." *Id.* (referencing Ex. 1008, 1:19–20).

Petitioner replies that adding a strap to Forjot would not render Forjot inoperable for its intended purpose as a strap does not change the basic principles of operation of Forjot. Reply 12–13. Petitioner argues that Forjot's primary goals "are better aiming, avoiding shouldering, and forming a rigid, integral connection with the shooter's arm." *Id.* at 11 (referencing Paper 10 ("Dec. on Inst."), 17; Ex. 1022 ¶ 6). Petitioner argues that Dr. Harrison admits that adding a strap would not frustrate these objectives. *Id.* Petitioner also argues that Patent Owner does not support its position that using a strap would be difficult and time consuming. *Id.*

Patent Owner replies that "the ability of the forearm to be 'quickly and easily engaged in the cuff,' to make the weapon integral with the arm without shouldering is an intended purpose of *Forjot*. Sur-reply 14 (referencing Ex. 1008, 2:25–31).

(d) Arguments addressing whether using straps to secure a firearm was known

Next, Patent Owner responds that the language in the '444 patent on which Petitioner relies does not support the contention that using straps to secure a firearm support to a user's forearm was known. PO Resp. 28

(addressing Pet. 19; Ex. 1001, 4:19–22). The disclosure at issue states: "One of ordinary skill in the art will readily appreciate the function of strap and recognize many suitable arrangements for the purpose of securing the body 14 about a user's forearm." Ex. 1001, 4:19–22. Patent Owner argues that this passage merely provides that the disclosure in the '444 patent "is sufficient for one of ordinary skill in the art to appreciate the function and suitable alternative arrangements – claimed or unclaimed – of the disclosed strap 36 in the context of the other features disclosed by the '444 [p]atent." PO Resp. 28–29.

(e) Arguments addressing "most likely result" of combined teachings

Finally, Patent Owner responds that Petitioner fails to explain adequately why a person having ordinary skill in the art would combine Morgan's teachings of a strap to Forjot's cuff rather than add Forjot's cuff to Morgan's brace, as such a modification would "be the most likely result" of the combined teachings of Forjot and Morgan. PO Resp. 43. Patent Owner also argues that Petitioner's proposed modification discards Morgan's teachings of a U-shaped barrel rest. *Id.* at 44. Patent Owner also argues "that supporting the U-shaped barrel rest of *Morgan* under the minor weight of a handgun barrel does not require much force, and that the cuff of *Forjot* already clamps to the shooter's forearm sufficiently for that purpose." *Id.*

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Petitioner replies that Patent Owner's position as to the "most likely result" of combining Forjot and Morgan ignores the claimed invention. Reply 14. That is, the obviousness analysis under *Graham* looks at the differences between the prior art and the claimed invention. *Id.* Petitioner argues that Patent Owner fails to cite to any authority to support its "most likely result" theory, which is contrary to the law. *Id.* at 15.

Patent Owner replies its "most likely result" analysis illustrates that "the [P]etition failed in its burden to justify its specific combinations of cherry-picked subsets of elements selected from [Forjot and Morgan], at the exclusion of other unselected elements." Sur-reply 16; *see id.* at 16–17 (citing *Unigene Labs., Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1360 (Fed. Cir. 2011)). Patent Owner argues that "Petitioner fails to consider the motivation required to combine specific elements of references to arrive at" the invention of claim 1. *Id.* at 17.

(f) Analysis of the parties' arguments

We have evaluated Petitioner's and Patent Owner's arguments and weighed the supporting evidence. We find that Petitioner had demonstrated, by a preponderance of the evidence, that a person having ordinary skill in the art would have had reason to combine Morgan's teaching of straps for its forearm support with Forjot's cuff. Specifically, we find that a person having ordinary skill in the art would have added a strap to Forjot's cuff to better secure cuff 1 to a user's forearm. *See* Pet. 26; Ex. 1002 ¶ 59.

We find that Petitioner's reasoning is supported by rational underpinnings. *See KSR Int'l*, 550 U.S. at 418. First, we find that Morgan itself suggests the modification. As Petitioner contends, Morgan discloses a handgun support with a similarly shaped structure for receiving a user's forearm and that structure is secured to the forearm using straps. *See* Pet. 26; *see also* Ex. 1010, 5:51–6:4, Figs. 1, 7. Morgan expressly discloses that its arm support "help[s] to prevent movement of the arm . . . while holding and firing the hand gun." Ex. 1010, 5:66–6:2.

We credit Mr. Nixon's Declaration and deposition testimony, in part, because it is consistent with Morgan's teachings. *See* Ex. 1002 ¶ 59; Ex. 2011, 70:12–21. For example, Morgan discloses that each strap has a "pile-type fastener," that is, hook and loop type fastener, which can be simply secured. *See* Ex. 1001, 5:54–58; Reply 11–12; Ex. 1022 ¶ 5.

Second, we give weight to Dr. Harrison's deposition testimony that a strap would prevent a user's forearm from slipping out of Forjot's cuff. See Ex. 1021 43:4–12 ("Adding a strap would prevent it slipping out, but it wouldn't prevent it in a way that would be compatible with Forjot's teaching of quick and easy connection."). We appreciate that Dr. Harrison prefaced his statement with: "Forjot teaches to avoid [the forearm slipping out] by tightening the screw 3 enough to where [a strap is] unnecessary, so that you can maintain the quick and easy connection." *Id.* We find, however, that this prefacing statement overstates Forjot's teachings. Forjot does disclose that screw 3 adjusts opening 4, but does not go so far as to say that

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tightening screw 3 would prevent a forearm from slipping out of cuff 1.

Third, we find that the level of ordinary skill in the art is sufficiently high— a bachelor's degree in mechanical engineering and 2 to 3 years of experience in handgun use, procurement, repair, design, or manufacturing— to appreciate the role Morgan's straps play in securing its support to a user's arm. *See KSR Int'l*, 550 U.S. at 417 ("[I]f a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.").

We are not persuaded that Petitioner's proposed modification would render Forjot inoperable for its intended purpose. As Petitioner asserts, Forjot's intended purpose is to "give [an] underwater pistol and rifle the rigidity sought after to ensure aim, but . . . without using the shoulder" or "make [a] weapon integral with the arm." Reply 11; see Ex. 1008, 1:32–36 ("[I]f one could give the underwater pistol and rifle the rigidity sought after to ensure aim, but of course without using the shoulder, one would obtain a very great advantage in the use of these weapons."), 2:5-6 ("This cuff is *intended* to make the weapon integral with the arm." (emphasis added)). Although quick engagement may be a feature of Forjot's design—a feature that we weigh in our analysis—it is not the invention's intended purpose. A strap would provide the requisite rigidity to allow the weapon to be aimed without shouldering the weapon. We credit Mr. Nixon's
testimony, as it is consistent with the evidence of record. See Ex. 1022 ¶ 6 ("The strap would improve on [Forjot's] objectives by preventing the forearm from slipping out of the cuff, and providing a tighter connection than the cuff alone could achieve, simply by cinching the strap tight."); Ex. 1021 43:4–12; Ex. 1010, 5:60–62, 6:1–4); see also Ex. 1021, 47:5–49:10 (including the testimony "Q. And the . . . advantages [of 'improving aiming' and providing a 'rigid attachment to the arm'] would not be frustrated by adding a strap? A. Correct.").

Also, we do not find that Forjot teaches away from the proposed modification. "A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant." In re Gurley, 27 F.3d 551, 553 (Fed. Cir. 1994); see, e.g., In re Fulton, 391 F.3d 1195, 1201 (Fed. Cir. 2004) (holding that, to teach away, the prior artmust "criticize, discredit, or otherwise discourage the solution claimed"). Patent Owner does not direct us to any persuasive disclosure in Forjot that would *discourage* a person having ordinary skill in the art from employing a strap to further secure Forjot's cuff, or otherwise criticize or discredit the proposed modification. Again, although quick engagement may be a feature of Forjot's design, we do not discern anything in Forjot's disclosure that rises to the level of teaching away from adding a strap to further secure the cuff.

In weighing the evidence, we do assign some weight to Forjot's disclosure that its design achieved an "absolute"

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or "perfect connection" between the *weapon* and the user's forearm. See PO Resp. 20; Ex. 1008, 2:25-32; Polaris Indus., Inc. v. Arctic Cat, Inc., 882 F.3d 1056, 1069 (Fed. Cir. 2018) ("But even if a reference is not found to teach away, its statements regarding preferences are relevant to a finding regarding whether a skilled artisan would be motivated to combine that reference with another reference."). However, in weighing all of the evidence, we find that this disclosure in Forjot is insufficient to outweigh the evidence supporting Petitioner's reasoning. Forjot expressly characterizes the connection between the weapon and the user's arm as "perfect," suggesting that it is the overall configuration of how cuff 1 and plate 7 interact with both the user's arm and the weapon to "extend[the arm] ... to the end of the barrel." See Ex. 1008, 2:3–32. Also, we afford Dr. Harrison's testimony little weight. Dr. Harrison declared that "adding a strap to Forjot clamp would make engagement to the forearm more difficult and time consuming," thus "frustrate[ing] Forjot's expressly taught objective that the hunter's forearm be 'easily and quickly engaged in the cuff.'" Ex. 2009 ¶ 23. Dr. Harrison provides no support for this testimony. See 37 C.F.R. 42.65(a) ("Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight.").

Further, Patent Owner's assertions with respect to the advantage of quick engagement of the cuff with the user's arm presumes that the weapon is repeatedly engaged with the user's arm, rather than engaged with the arm initially, then maintained while hunting. Patent Owner does not direct us to disclosure in Forjot that persuasively supports

this position. See Tr. 35:16-37-4. At oral hearing, Patent Owner's counsel directed us to the following in Forjot: "to quickly target the prey, to maintain this line of sight by connecting the arm of the hunter with his/her weapon in an extremely rigid way, thus giving more freedom to the hand to actuate the trigger and to attain the targeted prey with an almost absolute security." Tr. 36:23-37:4; Ex. 1008, 3:41–45. We interpret this passage, however, to not necessarily say that the "connecting" takes place after the prey is targeted. Instead, this passage can be read to mean that the targeting takes place while the arm is already connected to the weapon, such that the line of sight formed by the rigid connection between the arm and weapon allows for targeting and attaining the prey. We also note that Forjot expressly states that his invention may be employed for land-based hunting. Ex. 1008, 3:51–52. As such, the effects of slowed movement in the water would be diminished. See, e.g., Ex. 1021, 46:5–9 ("Q. And Forjot says he's applicable to land-based weapons as well. How long would it take to attach a Velcro strap if Forjot was used on land? A. It would take less time than in water.").

Accordingly, we afford some, but not substantial weight, to any advantage for quick engagement for Forjot's cuff with the user's forearm against Petitioner's proposed combination.

Finally, we are not persuaded that Petitioner cherrypicked features from Morgan—features that would not have led to the most likely result of combining the references as a whole. We agree with Petitioner that, as

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part of our obviousness analysis, we must determine the scope and content of the prior art and any differences *between the claimed subject matter and the prior art. See Graham*, 383 U.S. at 17–18. Here, we have ascertained the scope and content of Forjot and Morgan and also found that Forjot differs from the subject matter of claim 1 in that Forjot does not disclose the subject matter of the strap limitation. Petitioner then proposes to modify Forjot with Morgan's teachings of a strap, and Petitioner has provided reasons to support the proposed modification.

Patent Owner's reliance on Unigene Laboratories, Inc. is unavailing. Indeed, Unigene Laboratories, Inc. states that "obviousness requires the additional showing that a person of ordinary skill at the time of the invention would have selected and combined those prior art elements in the normal course of research and development to yield the claimed invention." 655 F.3d at 1360. This showing is exactly what Petitioner has done—providing reasons for why a person having ordinary skill in the art would have combined Morgan's strap with Forjot's cuff.

Accordingly, for the reasons above, we find, on the complete record, that Petitioner has demonstrated, by a preponderance of the evidence, that the combination of Forjot and Morgan discloses the subject matter of the "strap" limitation of claim 1. Also, we find that Petitioner has demonstrated, by a preponderance of the evidence, that a person having ordinary skill in the art would have been motivated to modify Forjot's cuff by adding a strap as taught by Morgan.

(5) Objective evidence of nonobviousness

Patent Owner presents objective evidence that purports to demonstrate commercial success, copying, and licensing. *See* PO Resp. 54; *see id.* at 49–56 (providing secondary considerations analysis). We must always consider, as part of an obviousness inquiry, this type of objective evidence, or secondary considerations evidence, when present. *Transocean Offshore Deepwater Drilling*, *Inc.*, 699 F.3d at 1349.

"For objective evidence to be accorded substantial weight, its proponent must establish a nexus between the evidence and the merits of the claimed invention." In re GPAC Inc., 57 F.3d 1573, 1580 (Fed. Cir. 1995). The Board uses a two-step analysis in evaluating nexus between the claimed invention and objective evidence. Lectrosonics, Inc. v. Zaxcom, Inc., IPR2018-01129, Paper 33 at 33 (PTAB Jan. 24, 2020) (precedential). We first consider whether the patent owner has demonstrated "that its products are coextensive (or nearly coextensive) with the challenged claims," resulting in a rebuttable presumption of nexus. Id. If not, that "does not end the inquiry into secondary considerations"; "the patent owner is still afforded an opportunity to prove nexus by showing that the evidence of secondary considerations is the 'direct result of the unique characteristics of the claimed invention." Id. (quoting Fox Factory, Inc. v. SRAM, LLC, 944 F.3d 1366, 1373-75 (Fed. Cir. 2019)). The patent owner may do so by demonstrating that the objective evidence is the result of some aspect of the claim (not already in the

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prior art) or the claimed combination as a whole. *Id.* (citing *In re Kao*, 639 F.3d 1057, 1068–69 (Fed. Cir. 2011); *WBIP*, *LLC v. Kohler Co.*, 829 F.3d 1317, 1331 (Fed. Cir. 2016)).

(a) Nexus

"Whether a product is coextensive with the patented invention, and therefore whether a presumption of nexus is appropriate in a given case, is a question of fact." *Fox Factory*, 944 F.3d at 1373.

Patent Owner contends that "[a]ll of the elements of each of the independent claims in the '444 [p]atent read on the SB15 pistol stabilizer that is and has been sold by" Patent Owner. PO Resp. 50 (referencing Ex. 2012 (Bosco¹³ Declaration) ¶ 53); see also Ex. 2012, Exhibit R (providing claims charts for how the SB15 stabilizer corresponds to claims 1–14 of the '444 patent). Patent Owner continues that the SB15 pistol stabilizer was the basis for the Specification. PO Resp. 50.

Petitioner replies that Patent Owner has not met its burden that its objective evidence is entitled to a nexus. Reply 18–24. Petitioner argues that any success in the SB15 pistol stabilizer is attributed to the fact that users can (and do) shoulder the stabilizer, without the weapon being characterized as a short-barreled rifle. *Id.* at 19–21, 23–24; *see, e.g.*, Ex. 2012, 114 (indicating that pistol braces "have become popular replacements for standard AR-15

^{13.} Mr. Bosco is the Chief Executive Office of Patent Owner, NST Global, LLC dba SB Tactical. Ex. 2012 ¶ 2.

stock systems for reasons having nothing to do with their intended purpose"). Petitioner explains that, initially, the U.S. Bureau of Alcohol, Tobacco, Firearms and Explosives ("BATFE") concluded, in 2015, that an AR15 pistol fitted with a stabilizer was classified as a short-barreled rifle, triggering more onerous licensing requirements. Reply 21–22 (referencing Ex. 1017; Ex. 1015, 19:1-10). Petitioner argues that Patent Owner "worked tirelessly for more than two years' to reverse the ruling." *Id.* at 22 (referencing Ex. 1019; Ex. 1015, 39:12–15, 44:6–15). Petitioner does not address whether Patent Owner's commercial product is coextensive with one or more claims of the '444 patent.

Patent Owner replies that BATFE's approval supports a finding of nexus, as BATFE was trying to prevent shouldering of the weapon and the claimed features allow the weapon to be secured to the forearm. Sur-reply 22. Patent Owner also argues that there are other, cheaper, braces on the market that would allow shouldering, yet Patent Owner's products "still dominate the market." *Id.* at 22–23.

We find that Patent Owner has not met its burden of proving a nexus between the SB15 stabilizer and the claimed invention. Patent Owner has not demonstrated that it is entitled to a presumption of nexus. The claims of the '444 patent recite "a handgun" and "a support structure extending rearwardly from the rear of the handgun." *See* Ex. 1001, 5:66–6:15, 6:29–46, 6:54–7:3. Patent Owner has not established how many products sold included these elements. As such, the evidence of record does not include how many of the products sold are *coextensive* with claim

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1. See Tr. 52:24–53:13 (Patent Owner's counsel stating that she does not know how many of the units sold included a support structure or handgun, that is, how many sales, if any, are for a product that is coextensive with the claims); *cf. Polaris Indus., Inc.*, 882 F.3d at 1073 ("Moreover, the Board did not point to any limitation it found missing in the RZR vehicles."). Mr. Bosco's testimony is directed to the total number of "stabilizers" sold, without explaining persuasively that these sales include products coextensive with claim 1. See Ex. 2012 ¶¶ 21–31.

Also, the evidence of record is replete with products that differ from the SB15 stabilizer. See, e.g., Ex. 2012, 33–38 (referencing the SB Tactical SBM4, SBA3, SB PDW, FS1913), 51 (stating that SB Tactical has "an extensive catalog of brace configurations"), 75–77 (referencing the SOB47 stabilizer), 90–91 (referencing the SB Tactical Mini stabilizer). Patent Owner fails to explain adequately if these different models of stabilizer are configured the same as the SB15 stabilizer and how many of the sales about which Mr. Bosco testifies are associated with the SB15 stabilizer as compared to these other models. See Ex. 2012 ¶ 21 (claiming that over 2,000,000 units were sold covered by at least one claim of the '444 patent, but not providing any support for this testimony or how stabilizers other than the SB15 satisfy a claim).

Accordingly, we find that Patent Owner has not established how many, if any, of the products sold (as identified in Mr. Bosco's Declaration) are coextensive with the claimed subject matter, such that Patent Owner is entitled to a presumption of nexus.

As we indicate above, our analysis does not end with a finding that Patent Owner is not entitled to a presumption of nexus—Patent Owner may establish a nexus by demonstrating that the objective evidence is the result of some aspect of the claim (not already in the prior art) or the claimed combination as a whole. For the reasons below, we find that Patent Owner has not adequately made such a showing.

As set forth above, Patent Owner has not established how many SB15 stabilizers (that is, the specific stabilizer identified in Mr. Bosco's Declaration) were sold with a handgun and a support structure extending rearwardly from the rear of the handgun, which the claims of the '444 patent require. See Tr. 52:24–53:13 (Patent Owner's counsel stating that she does not know how many of the units sold included a support structure or handgun); Ex. 1001, 5:66-6:15, 6:29-46, 6:54-7:3. Nonetheless, considering the SB15 stabilizer used with a handgun and a support structure extending rearwardly from the rear of the handgun, Patent Owner has not sufficiently shown that the objective evidence of non-obviousness is the result of some aspect of the claim (not already in the prior art) or the claimed combination as a whole. As we found in our analysis of the Graham factors, the prior art (Forjot) differs from the claimed invention in that it fails to disclose a strap to secure its cuff to a user's forearm. Patent Owner has not demonstrated adequately that the strap limitation or the claimed combination as a whole (including the handgun and support structure) is the reason for the commercial success.

Significantly, we agree with Petitioner that the evidence of record supports a finding that any commercial success is likely attributable, at least in large part, to the ability to shoulder an AR15 pistol using Patent Owner's brace. Reply 18–24. That is, the objective evidence is more the result of some aspect of the claim that is already in the prior art, rather than a unique feature (the strap) or the recited combination as a whole. See Lectrosonics, Inc., IPR2018-01129, Paper 33 at 33. Industry articles in the record identify the ability to shoulder or cheek an automatic pistol fitted with the stabilizer as a main feature of the product. See, e.g., Ex. 2012, 29-30 (discussing shouldering), 48 ("The reactions [to the brace] were mixed. However, a few enterprising purchasers decided not to use the SB-15 as intended, and they promptly should ered their brace-equipped AR pistols."), 49 ("With the ability of the SB-15 braced AR pistols to be should red, the market responded."), 77 ("Long story short, you can shoulder your AR-15 pistol without any issues, so shoulder away!"), 114 ("Pistol braces are awesome, but the first thing you need to know about them is that very few people actually use pistol braces as pistol braces."), 119 ("You can also find most of the popular firearms YouTubers shouldering pistol braces regularly."), 127-128 (discussing the impact of stabilizing braces on AR15 pistol popularity and the use of the brace to shoulder the weapon), 157 (depicting user shouldering weapon with brace), 167 ("Basically, if an SB Tactical pistol stabilizing brace is attached by the end user to an AR pistol buffer tube, it can legally be shouldered and fired without being considered [a short-barreled rifle] under the [National Firearms Act]."); Ex. 2014, 4 (depicting use of brace to shoulder weapon); Ex. 2005, 4

(depicting brace used to cheek weapon).¹⁴ Forjot's prior art cuff would provide that same capability. *See, e.g.*, Ex. 1008, Fig. 1 (depicting a structure, without a strap, that could be shouldered, rather than attached to a forearm). That is, as we discuss above, the differences between the claimed invention of claim 1 and the prior art is the strap limitation.

(b) Conclusion as to secondary considerations

Because we find that Patent Owner has not established a nexus between its objective evidence of non-obviousness and the claimed invention of claim 1, we find that this evidence is not entitled to substantial weight. *See In re GPAC Inc.*, 57 F.3d at 1580.

(6) Conclusion as to claim 1

For the reasons provided above, we conclude, on the complete record, that Petitioner demonstrates, by a preponderance of the evidence, that claim 1 is unpatentable under 35 U.S.C. § 103(a) over Forjot and Morgan.

b) Independent claims 6 and 10

Both Petitioner and Patent Owner treat independent claims 6 and 10 the same as claim 1. See Pet. 16–21, 26;

^{14.} Although many of these articles address SB Tactical's stabilizing braces generally, that is, without reference to a specific model, these articles support a finding that the ability to shoulder the brace would span across different models.

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PO Resp. 23–30 (addressing Ground 1), 41–45 (addressing Ground 3). We agree that the scope and content of the prior art and differences between the prior art and claimed invention for claims 6 and 10 are the same as for claim 1. For the reasons provided above, in connection with our analysis of claim 1, we conclude, on the complete record, that Petitioner demonstrates, by a preponderance of the evidence, that claims 6 and 10 are unpatentable under 35 U.S.C. § 103(a) over Forjot and Morgan.

c) Dependent claims 2, 11, and 12

Dependent claims 2, 11, and 12 require, in relevant part, that the flaps be made of an elastomeric material. Ex. 1001, 6:16–20 (claim 2), 7:4–6 (claim 11), 7:7–10 (claim 12, which depends from claim 11). Petitioner argues that "it would have been obvious to use known elastomeric materials" given Forjot's teaching that its cuff "obtain[s] a certain elasticity" to receive a user's arm. Pet. 22 (referencing Ex. 1008, 2:4–5; Ex. 1002 ¶ 62).

Petitioner also argues that Morgan discloses that its forearm supports are made of plastic. Pet. 22 (referencing Ex. 1010, 5:53; Ex. 1002 ¶ 63). Petitioner argues that "[p]lastics having elasticity include 'elastomeric materials,' and the use of elastomeric materials for forearm accessories was well known in the art." *Id.* (referencing Ex. 1002 ¶ 63; Ex. 1012). Petitioner reasons that "[u]sing elastomeric materials instead of a metal having elastic properties is a 'mere substitution of one element for another known in the field' to 'yield a predicable result' and therefore obvious." *Id.* at 22–23 (quoting *KSR Int'l*,

550 U.S. at 416). Petitioner argues that "[a]rmed with the teaching in *Forjot* that the cuff has a 'certain elasticity,' one skilled in the art would have been taught by *Forjot* and *Morgan* to use elastomeric materials for the cuff of *Forjot*." *Id.* at 26–27 (referencing Ex. 1002 ¶ 63). Petitioner adds that "[s]uch a choice could have been motivated by the cost or availability of materials, ease of manufacture, user comfort, or the more resilient characteristics of elastomers versus stainless steel." *Id.* at 23 (referencing Ex. 1002 ¶ 64).

Patent Owner responds that Forjot neither discloses nor suggests that its "cuff be fabricated from an elastomeric material." PO Resp. 32. Patent Owner argues that Forjot discloses that its cuff is preferably made of metal. *Id*. Patent Owner argues that Forjot teaches away from an elastomeric material for its cuff. *Id*.

Patent Owner also argues that Morgan does not disclose a cuff made of an elastomeric material, as Morgan's cuff is made of a rigid plastic. PO Resp. 33. Patent Owner explains that the Specification of the '444 patent distinguishes between a rigid material and an elastomeric material. *Id*.

Petitioner replies that Forjot discloses a cuff made of an elastomeric material, as Petitioner construes that term. Reply 16. Petitioner argues that, even if Forjot's stainless steel cuff is not an elastomeric material, such materials were well known in the firearms art. *Id.* Petitioner adds that Dr. Harrison testified that "'[i]t's really common' to use elastomeric materials in firearms." *Id.* Petitioner

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argues that *"Forjot* expressly provides a motivation to use 'elastic' materials." *Id.*

Patent Owner replies that "[e]lastic does not mean elastomeric." Sur-reply 18. Patent Owner argues that Petitioner mischaracterizes Dr. Harrison's testimony concerning elastomeric material, which he testified is commonly used for grips on handguns. *Id.* (referencing Ex. 1021, 76:13–17).

Again, we construe the term "elastomeric material" to require the material of the spaced flaps to be made of an elastomer. As such, we find Forjot does not disclose a cuff made from an elastomeric material. Forjot's cuff is preferably made of stainless steel. Ex. 1008, 2:3-5. We also find that Morgan does not disclose a cuff made of an elastomeric material. As Patent Owner argues, Morgan discloses that its supports 136, 138 "are each made of a *rigid* plastic." Ex. 1010, 5:51–53 (emphasis added); PO Resp. 33. The rigid characteristic takes Morgan's cuff material outside the scope of an elastomeric material, which has properties similar to natural rubber, including the ability to return to its original shape after being stretched. See PO Resp. 33 (explaining that "[t]he specification of the '444 [p]atent itself differentiates between a rigid material and an elastomeric material").

We also find that Petitioner has not demonstrated, by a preponderance of the evidence, that it would have been obvious to a person having ordinary skill in the art to modify Forjot's cuff to construct it of an elastomeric material. Petitioner's sole rationale for this modification is

that, because Forjot discloses that its cuff has a "certain elasticity," a person having ordinary skill in the art would have modified Forjot's stainless steel cuff with an elastomeric material. Pet. 22 (referencing Ex. 1002 ¶ 62). In support of this reasoning, Mr. Nixon declares that Forjot's teaching that its cuff obtains a certain elasticity "alone is sufficient to suggest to one of ordinary skill in the art to use elastomeric materials." Ex. 1002 ¶ 62. We do not agree.

Forjot's disclosure as to obtaining a "certain elasticity" is directed to the thickness of the stainless steel cuff. Ex. 1008, 2:3–5. Forjot also teaches that a user would bend the flaps to engage the user's forearm, forming a clamp over the forearm. *Id.* at 2:25–29. Neither Petitioner nor Mr. Nixon adequately explained how this disclosure suggests using an elastomeric material, which has properties similar to natural rubber, instead of stainless steel.

In support of our finding, we agree with Patent Owner and Dr. Harrison that "[e]lastic does not mean elastomeric." Sur-reply 18; Ex. 2009 ¶ 40 ("Still, the terms 'elastic' and 'elastomer' refer to very different concepts."). Indeed, as Forjot itself teaches, a metal can have elastic properties. Ex. 1008, 2:3–5; *see also* Ex. 2009 ¶ 40 ("[A] metal can behave elastically and resiliently in a small range of deformation."). Although we recognize that an elastomeric material has properties similar to natural rubber, including elasticity, we find elasticity alone insufficient to serve as the sole basis for why a person having ordinary skill in the art would substitute an elastomeric material for Forjot's stainless steel cuff, as

the evidence of record demonstrates that other materials have elastic properties.

Petitioner's reliance on Troncoso¹⁵ is unavailing. Petitioner states that "[p]lastics having elasticity include 'elastomeric materials,' and the use of elastomeric materials for forearm accessories was well known in the art." Pet. 22 (referencing Ex. 1002 ¶ 63; Ex. 1012). Mr. Nixon provides, with reference to Troncoso, similar testimony-"the use of elastomeric materials for forearm accessories was well known in the art." Ex. 1002 ¶ 63. Troncoso's reference to elastomeric material, however, is directed to material added to fork 32b to provide a snug fit between the barrel fork and the barrel of a gun. Ex. 1012, 4:1–11; see also id. at Fig. 5 (depicting elastomeric material layer 76 on tines 72, 74, of fork 32b). As such, Troncoso's use of elastomeric material is not directed to a forearm accessory as Petitioner and Mr. Nixon imply. Neither Petitioner nor Mr. Nixon adequately explained how this disclosure in Troncoso demonstrates that using elastomeric materials for forearm accessories was well known in the art or otherwise suggests replacing Forjot's stainless steel with an elastomeric material.

For the reasons above, on the complete record, we find that Petitioner fails to demonstrate, by a preponderance of the evidence, that a person having ordinary skill in the art would have been motivated to modify Forjot's stainless steel cuff by making it out of an elastomeric material. Accordingly, Petitioner fails to demonstrate,

^{15.} Troncoso, Jr. US 5,180,874, issued Jan. 19, 1993 (Ex. 1012).

by a preponderance of the evidence, that claims 2, 11, and 12 are unpatentable under 35 U.S.C. § 103(a) over Forjot and Morgan

d) Dependent claims 3 and 13

Dependent claims 3 and 13 require, in relevant part, that the recited passage extend entirely through the recited body. Ex. 1001, 6:21–23 (claim 3), 7:11–13 (claim 13). Petitioner contends that Forjot discloses a passage that extends entirely through its cuff's body. Pet. 23 (referencing Ex. 1008, Fig. 2; annotated version of Forjot's Fig. 1 at Pet. 18). In his Declaration, Mr. Nixon annotates Forjot's Figure 1 to identify the passage, which shows dashed lines (representing tube 2 within the identified passage) extending the length of the passage. Ex. 1002 ¶ 49; Ex. 1008, Fig. 1.

We have reviewed Petitioner's contentions and find, on the complete record, that Petitioner has demonstrated, by a preponderance of the evidence, that Forjot discloses a passage that extends entirely through the upper portion of cuff 1. See Ex. 1008, Fig. 1 (depicting a dashed line representing tube 2 extending to the end of the upper portion of cuff 1), Fig. 2 (showing tube 2 in phantom, such that the passage in the upper portion of cuff 1 is shown to extend through the entire cuff); Ex. 1002 ¶ 49. Patent Owner does not dispute these contentions in the Patent Owner Response.

Accordingly, we conclude, on the complete record, that Petitioner demonstrates, by a preponderance of the

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evidence, that claims 3 and 13 are unpatentable under 35 U.S.C. § 103(a) over Forjot and Morgan.

e) Dependent claims 4, 5, and 14

Dependent claim 4 requires the strap to encircle the flaps, and claims 5 and 14 require the strap to encircle the flaps and passage. Ex. 1001, 6:24-27 (claims 4 and 5), 7:14–16 (claim 14). Petitioner contends that "[u]sing the strap as a belt to encircle the entire cuff body including the passage and cinch the ends of the straps together would be the simplest way to apply the strap." Pet. 23–24 (referencing Ex. 1002 ¶ 66). Petitioner also relies on the language in the '444 patent Specification at column 4, lines 19 to 22 to support its position. *Id*.

We have reviewed Petitioner's contentions and find, on the complete record, that Petitioner has demonstrated, by a preponderance of the evidence, that encircling the entire cuff represents a simple implementation of a strap, and that such a configuration would satisfy the additional limitations of claims 4, 5, and 14. See Ex. 1002 ¶ 66. We credit Mr. Nixon's testimony that a person having ordinary skill in the art would appreciate how to use a strap. We base our crediting of this testimony, in part, on the relatively high level of ordinary skill in the art. See also Ex. 1011, Fig. 1 (depicting straps going entirely around Deckard's device and the user's forearm). Patent Owner does not dispute these contentions in the Patent Owner Response.

Accordingly, we conclude, on the complete record, that Petitioner demonstrates, by a preponderance of the evidence, that claims 3 and 13 are unpatentable under 35 U.S.C. § 103(a) over Forjot and Morgan.

f) Dependent claims 7 and 8

Dependent claim 7 requires the recited support structure of claim 6 be a buffer tube, and claim 8 requires the support structure to be something other than a buffer tube. Ex. 1001, 6:47–50. In the Petition, Petitioner contends that Forjot's tube 2 corresponds to the recited buffer tube. Pet. 24. Petitioner contends, with respect to claim 8, "[t]here are hundreds if not thousands of ways to provide a support structure on a firearm that is 'other than a buffer tube." *Id.* (referencing Ex. 1002 ¶ 68; Ex. 1009, 2:20; Ex. 1010, 4:25; Ex. 1011, 1:61). Petitioner argues that it would have been "obvious to choose any of these known structures according to their intended use." *Id.* (referencing Ex. 1002 ¶ 68).

Patent Owner responds that "[n]o tube that is unrelated to the . . . bolt return function [of the handgun] can be properly understood to be a 'buffer tube." PO Resp. 37 (referencing Ex. 2009 ¶ 48; and relying on Patent Owner's proposed construction of the term "buffer tube"). Patent Owner argues that Forjot's tube 2 is not a buffer tube as that term is properly construed. *Id*.

Petitioner replies that, under its proposed construction, Forjot's tube 2 corresponds to the recited buffer tube. Reply 16. Petitioner adds that, even under Patent Owner's

construction, "attaching Forjot's stabilizing member to an AR-15 pistol buffer tube would be obvious." Id. (referencing Ex. 1022 ¶ 9). Petitioner reasons that "AR-15 pistols with buffer tubes . . . were known prior to the invention." Id. Petitioner adds that "Patent Owner's expert testified it was well-known to attach stocks to AR-15 buffer tubes." Id. (referencing Ex. 1021, 78:20-25 ("It is definitely true that buffer tubes -- that stocks were attached to buffer tubes in 2012, and that was well known, and in that regard the buffer tube supported the stock, yes.")). Petitioner concludes that "[i]t would have been obvious to use the stabilizer of *Forjot* with an AR-15 pistol since *Forjot* discloses attaching a stabilizing cuff to the same structure, i.e., a cylindrical lower receiver extension from the rear of a handgun, and suggests applying its invention to 'land-based weapons." Id. at 16-17 (referencing Ex. 1022 ¶ 9). Mr. Nixon testifies that Forjot's statement that its invention can be applied to land-based weapons provides a motivation for the modification. Ex. $1022 \P 9$.

Patent Owner does not address Petitioner's obviousness position presented, for the first time, in the Reply in response to Patent Owner's construction. *See* Sur-reply 18 (addressing Petitioner's construction of "buffer tube").

With respect to claim 7, Petitioner states "Forjot also uses 'tube 2' as the support structure and therefore discloses this limitation." Pet. 24 (referencing Ex. 1002 ¶ 67). Mr. Nixon provides the exact same statement, without further explanation, in his Declaration. See Ex. 1002 ¶ 67. That is, this statement is the sole support for Petitioner's position. Neither the Petition nor Mr. Nixon provides a construction

of the term "buffer tube" or explains how Forjot's tube 2 corresponds to a buffer tube. *See* Pet. 24; Ex. 1002 ¶ 67; *cf.* 37 C.F.R. § 42.104(b)(3) (requiring, in a petition, a statement of "[h]ow the challenged claim is to be construed"); Ex. 2011, 16:15–17 (Mr. Nixon answering "[n]o," when asked if, "[i]n a firearm would all tubular members be referred to as buffer tubes"). As we state above, we construe the term "buffer tube" to mean "a cylindrical lower receiver extension that houses the buffer assembly of a firearm." As such, Petitioner fails to demonstrate, by a preponderance of the evidence, that Forjot discloses a buffer tube.

We do not consider Petitioner's new obviousness theory presented, for the first time, in the Reply. A petitioner may not bolster its original case-in-chief with new theories and evidence in its reply brief. To do so would violate 37 C.F.R. § 42.23(b), which forbids the introduction of new arguments on reply. See Intelligent Bio-Sys., Inc. v. *Illumina Cambridge Ltd.*, 821 F.3d 1359, 1369 (Fed. Cir. 2016) ("It is of the utmost importance that petitioners in the IPR proceedings adhere to the requirement that the initial petition identify 'with particularity' the 'evidence that supports the grounds for the challenge to each claim.""). Here, Petitioner chose not to offer a construction of "buffer tube" in the Petition, and did not provide any explanation as to why tube 2 constituted the recited "buffer tube." Petitioner cannot properly shift its claim construction obligation on to Patent Owner, then present an entirely new obviousness theory based on that construction. See Henny Penny Corp. v. Frymaster LLC, 938 F.3d 1324, 1330-31 (Fed. Cir. 2019) ("[A]n IPR petitioner may not raise in reply "an entirely new rationale" for why a claim would have been obvious.").

Accordingly, we conclude, on the complete record, that Petitioner fails to demonstrate, by a preponderance of the evidence, that claim 7 is unpatentable under 35 U.S.C. § 103(a) over Forjot and Morgan.

We also conclude, on the complete record, that claim 8 is unpatentable under 35 U.S.C. § 103(a) over Forjot and Morgan. As we discuss above, based on our construction of "buffer tube," we find that Forjot's tube 2 is not a buffer tube and, as such, satisfies the subject matter of claim 8—a support structure other than a buffer tube. Accord Ex. 2009 ¶ 48 ("[O]ne of ordinary skill in the art would recognize that the tube 2 disclosed by Forjot is not a 'buffer tube' because it is unrelated to any bolt return function, and does not have any buffer components inside of it."); cf. Dec. on Inst. 26 (putting the parties on notice by stating "that we read claims 7 and 8 to require the support structure to be either a buffer tube or not. As such, to the extent that evidence during trial supports a finding that Forjot's tube 2 is not a buffer tube, that evidence would seem to equally support a finding that tube 2 satisfies the requirement of claim 8"). Patent Owner does not address claim 8 in the Patent Owner Response.

g) Dependent claim 9

Claim 9 depends from claim 6 and additionally recites a "bracket secured to said handgun and said support structure secured to said bracket." Ex. 1001, 6:51–53. Petitioner contends that Forjot discloses that tube 2 is attached to butt 5 by any known means, either with or without ajoint. Pet. 25. Petitioner argues that "[b]rackets

and joints have been used for centuries to mechanically connect parts of firearms together. It would have been obvious to substitute a bracket for a joint to hold tube 2 in *Forjot.*" *Id.* (referencing Ex. 1002 ¶ 69). Petitioner continues that "[t]his is the substitution of one known element for another according to its known function and is obvious." *Id.* at 25 (referencing Ex. 1002 ¶ 69).

We find, on the complete record, that Petitioner demonstrates, by a preponderance of the evidence, that a person having ordinary skill in the art would have modified Forjot's apparatus to include a bracket to hold tube 2. Mr. Nixon's unrebutted testimony provides that "a bracket is a type of joint." Ex. 1002 ¶ 69. Mr. Nixon adds that "brackets and joints have been used for centuries to mechanically connect parts of firearms." *Id.* Neither Patent Owner nor Dr. Harrison addressed Petitioner's position or Mr. Nixon's testimony.

Accordingly, we conclude, on the complete record, that Petitioner demonstrates, by a preponderance of the evidence, that claim 9 is unpatentable under 35 U.S.C. § 103(a) over Forjot and Morgan.

E. Grounds 1, 2, and 4: Claims 1–14 as Allegedly Obvious Over Forjot alone, or Forjot in combination with and Baricos or Deckard

Petitioner contends that Forjot, alone (Ground 1) or Forjot in combination with Baricos or Deckard (Grounds 2 and 4), renders obvious the subject matter of independent claims 1, 6, and 10 and dependent claims 2–5, 7–9, and 11–14. Pet. 16–26, 27–28.

Because we conclude that Petitioner demonstrates, by a preponderance of the evidence, that independent claims 1, 6, and 10, and dependent claims 3–5, 8, 9, 13, and 14 are obvious over Forjot and Morgan, we need not address these claims for Grounds 1, 2, and 4.

With respect to claims 2, 7, 11, and 12, we address Petitioner's contentions with respect to Grounds 1 and 3 above, in connection with our analysis of these claims for Ground 3. Petitioner does not provide any additional contentions with respect to these claims for Grounds 2 and 4. See Pet. 25–26, 27–28. Accordingly, we conclude that Petitioner fails to demonstrate, by a preponderance of the evidence, that claims 2, 7, 11, and 12 are unpatentable under 35 U.S.C. § 103(a) over Forjot alone, or over the combinations of Forjot and Baricos or Forjot and Deckard.

III. PETITIONER'S MOTIONS TO EXCLUDE EVIDENCE

Petitioner files two motions to exclude evidence. Papers 36, 37. We address each motion in turn, below.

A. Petitioner's Motion to Exclude Certain Exhibits

Petitioner moves to exclude certain exhibits, each of which "has been relied on by Patent Owner to show that secondary considerations of non-obviousness support a finding that the claimed invention is patentable." Paper 37, 1 (listing Exhibits 2003–2005; Exhibit 2012, Exs. C-P; Exhibit 2013, Exs. A-D; Exhibit 2014, Ex. A; Exhibit 2015,

Ex. A; and Exhibit 2016, Ex. A). Because we do not give substantial weight to Patent Owner's objective evidence of non-obviousness, we dismiss this motion as moot.

B. Petitioner's Motion to Exclude Dr. Harrison's Declaration

Petitioner seeks to exclude Dr. Harrison's direct testimony because "Dr. Harrison is not an expert in firearms and did not use reliable principles and methods when preparing his opinions." Paper 36, 1. Petitioner argues that Dr. Harrison "has no technical experience to draw from to offer expert testimony that could assist the Board." *Id.* For the reasons discussed below, we disagree, and we deny Petitioner's motion.

First, Petitioner argues that allowing Dr. Harrison to testify "opens the doors for other full-time patent attorneys to hold themselves out as experts." Paper 36, 2–3. Petitioner argues that "admitting such testimony 'serves only to cause mischief and confuse the factfinder." *Id.* at 3 (quoting *Sundance, Inc. v. DeMonte Fabricating Ltd.*, 550 F.3d 1356, 1362 (Fed. Cir. 2008); and also citing *Proveris Sci. Corp. v. Innovasystems, Inc.*, 536 F.3d 1256 (Fed. Cir. 2008)). Petitioner adds that "allowing additional attorney argument under the guise of expert opinion would permit a party to evade the Board's page limits for legal briefing." *Id.*

Patent Owner responds that "Petitioner proposes a rule and misstates law by asserting an otherwise qualified expert becomes unqualified by later becoming a

patent attorney." Paper 40, 5. Patent Owner argues that "Petitioner cites to case law where expert witnesses were excluded not because they testified on the law, but because they testified regarding invalidity and validity issues related to a field of invention to which he did not have the requisite skill in the art." *Id*. Patent Owner adds that "Dr. Harrison has extensive experience related to the use of firearms, and he is not simply a patent attorney testifying on a field to which he has no experience." *Id*. at 6.

Petitioner replies that "Dr. Harrison could only qualify as an independent 'expert' in this proceeding if he possessed *specialized* knowledge that is *relevant* to an issue the Board might require help understanding." Paper 42, 1 (citing *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 590 (1993); Fed. R. Evid. 702; 37 C.F.R. § 42.62(a)). Petitioner argues that Patent Owner "has not presented anything but general education and firearm shooting/ instruction experience to support that Dr. Harrison is an 'expert' on the subject of designing forearm braces for pistols." *Id.* Petitioner adds that "Dr. Harrison's general training and experience using firearms is not evidence that he has technical knowledge relevant to an issue in this case." *Id.* at 2.

We are not persuaded by Petitioner that Dr. Harrison's testimony should be excluded under Rule 702. Rule 702 serves "a 'gatekeeping role,' the objective of which is to ensure that expert testimony admitted into evidence is both reliable and relevant." *Sundance*, 550 F.3d at 1360; *see Daubert*, 509 U.S. at 593 ("The initial question of whether expert testimony is sufficiently reliable is to

be determined by the court, as part of its gatekeeper function."). The policy considerations for excluding expert testimony, such as those implemented by the gatekeeping framework established by the Supreme Court in *Daubert*, however, are less compelling in bench proceedings such as *inter partes* reviews than in jury trials because, unlike a lay jury, the Board by statutory definition has competent scientific ability (35 U.S.C. § 6) and has significant experience in evaluating expert testimony. *See Nestle Healthcare Nutrition, Inc. v. Steuben Foods, Inc.*, IPR2015-00249, Paper 76 at 23 (PTAB June 2, 2016). Accordingly, the danger of prejudice in this proceeding is considerably lower than in a conventional district court trial in front of a lay jury.

As an initial matter, to the extent that Petitioner argues that a patent attorney can never be a technical expert, the law does not support such a *per se* rule. Also, the risks of causing "mischief and confus[ing] the factfinder" are greatly reduced given the nature of the Board. *Cf. Sundance*, 550 F.3d at 1362. Also, based on our review of Dr. Harrison's Declaration, we do not find that it amounts to attorney argument, such that it constitutes additional briefing by Patent Owner. The mere fact that an expert is also an attorney does not convert that expert's testimony into attorney argument.

We also find Petitioner's reliance on *Sundance* and *Proveris Scientific* unpersuasive. As Patent Owner argues, the experts in each of these cases were found to have *no* experience in the relevant field. *Sundance, Inc.*, 550 F.3d at 1361–1362; *Proveris Scientific Corp.*, 536 F.3d

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at 1256. We agree with Patent Owner that Dr. Harrison has sufficient experience in the field of firearms to help the Board "to understand the evidence or to determine a fact in issue." See Fed. R. Evid. 702(a); Paper 40, 4; see also Ex. 2009 ¶ 7 ("I earned the Masters of Science and the Ph.D. degrees in mechanical engineering from the University of California, San Diego......"), ¶ 5 ("I am presently certified by the California Dept. of Justice as a firearms safety instructor, and presently certified by the National Rifle Association as a pistol instructor, and am presently licensed to carry a concealed handgun in the State of California."); Ex. 2002 (providing curriculum vitae, including military training and experience).

Indeed, as we find, a person having ordinary skill in the art would have a bachelor's degree in mechanical (or similar type of) engineering and 2 to 3 years of experience in handgun use, procurement, repair, design, or manufacturing. Dr. Harrison has a *Ph.D.* in mechanical engineering. Ex. 2009 ¶ 7. Further, our definition (as initially provided by Petitioner) requires experience in *handgun use*, procurement, repair, design, *or* manufacturing. Dr. Harrison has served 23 years in the military, and has owned and used firearms for over 40 years. *Id.* ¶¶ 3–4. He is a certified firearms instructor. *Id.* ¶ 5. These facts support a finding that he is a person of at least ordinary skill, if not extraordinary skill, as we have defined the level of ordinary skill in the art, at least as to firearms *use*.

Petitioner focuses on Dr. Harrison's lack of experience in design of handguns or forearm support systems. Paper

36, 5. But such experience is not required to serve as an expert, or even to qualify as a person of ordinary skill in the art of the '444 patent. Cf. Flex-Rest, LLC v. Steelcase, Inc., 455 F.3d 1351, 1360-61 (Fed. Cir. 2006) (determining that a district court did not abuse its discretion for excluding an expert with no keyboard design experience in a case where the court *expressly found* that a skilled artisan was a keyboard *designer*). Instead, the consideration is whether Dr. Harrison is "qualified in the pertinent art" so as to help the Board understand the evidence and reach factual findings. See Sundance, Inc., 550 F.3d at 1363-64; Consolidated Trial Practice Guide 34 (Nov. 21, 2019) ("CTPG")¹⁶ (stating that an expert's testimony is not precluded as long as the testimony "is helpful to the Board," and "the expert's experience provides sufficient qualification in the pertinent art"); cf. Mytee Prods., Inc. v. Harris Research, Inc., 439 F. App'x 882, 886-87 (Fed. Cir. 2011) (non-precedential) (upholding admission of the testimony of an expert who "had experience relevant to the field of the invention," despite admission that he was not a person of ordinary skill in the art). We find that Dr. Harrison is sufficiently qualified in the firearms arts to assist this panel. See CTPG 34 ("There is, however, no requirement of a perfect match between the expert's experience and the relevant field." (citing SEB S.A. v. Montgomery Ward & Co., 594 F.3d 1360, 1373 (Fed. Cir. 2010)).

^{16.} Available at https://www.uspto.gov/sites/ default/files/documents/tpgnov.pdf.

Next, Petitioner argues that we should exclude Dr. Harrison's Declaration because certain of his opinions "attack[] Petitioner's expert's opinion on legal grounds." Paper 36, 7; *see also id.* at 7–8 (providing examples). Patent Owner responds that "[t]o the extent the Board finds particular assertions of Dr. Harrison to be impermissible legal conclusions, the Board is 'capable of discerning from the testimony, and the evidence presented, whether the witness' testimony should be entitled to any weight, either as a whole or with regard to specific issues."" Paper 40, 6 (quoting *Daiichi Sankyo Co., Ltd. v. Alethia Biotherapeutics, Inc.*, IPR2015-00291, Paper 75 at 24 (PTAB June 14, 2016)).

We agree with Patent Owner—the Board is capable of disregarding any testimony that goes to matters of the law, rather than technical considerations.

Petitioner's additional concerns are also unavailing. Petitioner argues that Dr. Harrison admitted in his deposition that certain declaration statements were wrong (Paper 36, 9–10); Dr. Harrison's obviousness analysis is contrary to the law (Paper 36, 10–11); Dr. Harrison lacks knowledge about how a person having ordinary skill in the art would understand the term "buffer tube" (Paper 36, 11); Dr. Harrison's testimony adds structural limitations to the claim (Paper 36, 11–12); and Dr. Harrison's opinions on secondary considerations lack proper foundation (Paper 36, 12–13). Patent Owner responds, in part, that these concerns go to the weight of testimony, not its admissibility. *See* Paper 40, 7, 11, 13.

We agree with Patent Owner that these concerns go to the weight of the testimony, not its admissibility. We have taken into account all of the facts and circumstances, including the underlying bases for Dr. Harrison's testimony and his cross-examination deposition, in weighing his testimony and arriving at our findings and conclusions in this Final Written Decision. Indeed, "[v]igorous cross-examination [and] presentation of contrary evidence . . . are the traditional and appropriate means of attacking shaky but admissible evidence," (*Daubert*, 509 U.S. at 595), not a motion to exclude the evidence.

IV. CONCLUSION

After considering all the evidence and arguments in the complete record, we conclude that Petitioner demonstrates, by a preponderance of the evidence, that independent claims 1, 6, and 10, and dependent claims 3–5, 8, 9, 13, and 14 are unpatentable over Forjot and Morgan.¹⁷ We also conclude that Petitioner fails to demonstrate, by a preponderance of the evidence, that claims 2, 7, 11, and 12 are unpatentable, for any asserted ground.

^{17.} Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this Decision, we draw Patent Owner's attention to the April 2019 Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding. *See* 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. *See* 37 C.F.R. § 42.8(a)(3), (b)(2).

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In summary:

| Claims ¹⁸ | 35 U.S.C. § | References | Claims Shown Unpaten- table | Claims Not shown Unpaten- table |
|----------------------|----------------|--------------------|--------------------------------------|---|
| 1–14 | 103(a) | Forjot, Morgan | 1, 3–6, 8–10, 13, 14 | 2, 7, 11, 12 |
| 1–14 | 103(a) | Forjot | | 2, 7, 11, 12 |
| 1–14 | 103(a) | Forjot, Baricos | | 2, 7, 11, 12 |
| 1–14 | 103(a) | Forjot, Deckard | | 2, 7, 11, 12 |
| Overall Outcome | | | 1, 3–6, 8–10, 13, 14 | 2, 7, 11, 12 |

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, claims 1, 3–6, 8–10, 13, 14 are shown to be unpatentable under 35 U.S.C. § 103(a) over Forjot and Morgan;

^{18.} We did not reach a conclusion as to claims 1, 3–6, 8–10, 13, and 14 for the grounds based on Forjot alone, or Forjot in combination with Baricos or Deckard.

ORDERED that, claims 2, 7, 11, and 12 *are not shown to be unpatentable* under 35 U.S.C. § 103(a) over Forjot alone, or over the combination of Forjot with Baricos, Morgan, or Deckard; and

FURTHER ORDERED that because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

FOR PETITIONER:

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APPENDIX D — FINAL WRITTEN DECISION OF THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE PATENT TRIAL AND APPEAL BOARD, DATED JUNE 22, 2021

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SIG SAUER INC.,

Petitioner,

v.

NST GLOBAL, LLC,

Patent Owner.

IPR2020-00424 Patent 9,345,021 B2

Before PATRICK R. SCANLON, JAMES J. MAYBERRY, and ALYSSA A. FINAMORE, *Administrative Patent Judges*.

MAYBERRY, Administrative Patent Judge.

JUDGMENT

Final Written Decision Determining Some Challenged Claims Unpatentable 35 U.S.C. § 318(a)

Appendix D

I. INTRODUCTION

A. Background and Summary

SIG SAUER Inc. ("Petitioner"), filed a Petition ("Pet.") requesting *inter partes* review of claims 1–5 (the "Challenged Claims") of U.S. Patent No. 9,354,021 B2 (Ex. 1001, the "'021 patent"). Paper 1.

NST Global, LLC ("Patent Owner") filed a Patent Owner Response. Paper 21. Patent Owner filed a motion to correct certain typographical errors in its Patent Owner Response. Paper 47; *see* Paper 25 (authorizing the motion). We granted Patent Owner's unopposed motion. Paper 49. In this Final Written Decision, we cite to Paper 47, Exhibit A, as the Patent Owner Response ("PO Resp.").¹

Petitioner filed a Reply to the Patent Owner Response. Paper 29 ("Reply"). Patent Owner filed a Sur-reply to the Reply. Paper 31 (Sur-reply").

Petitioner filed motions to exclude evidence. Papers 37, 38. Patent Owner opposed these motions. Papers 40, 41. Petitioner replied to these oppositions. Papers 42, 43.

We conducted an oral hearing on March 25, 2021, and the record includes a copy of the transcript of that hearing. Paper 48 ("Tr.").

^{1.} Paper 21 and Exhibit A of Paper 47 differ in their references to certain exhibits. Exhibit A of Paper 47 corrects references to Exhibit 2007 in Paper 21 to Exhibit 2009, and corrects references to Exhibit 2008 in Paper 21 to Exhibit 2011.

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The Board has jurisdiction under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons that follow, we conclude that Petitioner demonstrates, by a preponderance of the evidence, that claim 1 is unpatentable. We conclude that Petitioner fails to demonstrate, by a preponderance of the evidence, that claims 2-5 are unpatentable.

B. Real Parties in Interest

Petitioner identifies itself, "its parent company SIG SAUER US Holding LP, and that company's parent companies, L&O Finance GmbH and SIG SAUER Management LLC" as real parties in interest. Pet. 26. Patent Owner identifies itself as the sole real party in interest. Paper 6, 1.

C. Related Matters

Petitioner identifies NST Global, LLC v. Ewer Enterprises LLC, No. 8:16-cv-02404 (M.D. Fla.), NST Global, LLC v. SIG SAUER Inc., No. 1:19- cv-00121 (D. Del.), NST Global, LLC v. SIG SAUER Inc., No. 1:19-cv-00792 (D. N.H.), and NST Global, LLC v. Strike Industries, No. 8-18-cv-01664 (C.D. Cal.), as matters related to the '021 patent. Pet. 26–27. Petitioner also identifies an *inter partes* review petition (IPR2020-00423) challenging U.S. Patent No. 8,869,444 B2 (the "444 patent"), a patent related to the '021 patent.² Id. at 27.

^{2.} This proceeding is IPR2020-00423. We issue a Final Written Decision in IPR2020-00423 concurrent with our Final Written Decision in this proceeding.
Patent Owner identifies civil action No. 1:19-cv-00792 and the *inter partes* review challenging the '444 patent as the only related matters. Paper 6, 1.

D. The '021 Patent

The '021 patent, titled "Forearm-Gripping Stabilizing Attachment for a Handgun," issued May 31, 2016, from an application filed October 20, 2014, and claims priority to a provisional application, filed November 27, 2012. Ex. 1001, codes (54), (45), (22), (60), 1:7–12. The application that matured into the '021 patent is purportedly a continuation of an application that is a continuation of the application that matured into the '444 patent. *Id.* at code (63).

The '021 patent is directed "to a forearm-gripping stabilizing attachment for a handgun that secures to a rearward end of the handgun frame and engages a user's forearm." Ex. 1001, 1:17–20. We reproduce Figures 1 and 2 from the '021 patent below.



Figure 1 depicts "a side elevation view of the forearmgripping stabilizing attachment for a handgun ...,

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illustrating the stabilizing attachment in use and attached to a handgun." Ex. 1001, 2:54–58. Figure 2 depicts "a partial rear elevation view of the forearm gripping stabilizing attachment for a handgun of F[igure] 1." *Id.* at 2:59–60. Stabilizing attachment 10 includes unitary body 14 having upper body portion 20 and lower body portion 22. *Id.* at 3:40–48.

Upper body portion 20 includes passage 24 that, in the embodiment of Figure 1, extends completely through upper body portion 20. Ex. 1001, 3:54–56; *cf. id.* at Fig. 4 (depicting passage 24 not extending completely through upper body portion 20). "Passage 24 provides for the telescopic insertion of a portion of ... handgun 12 therein to secure or mount the stabilizing attachment 10 to the handgun." *Id.* at 3:56–59. Passage 24 may retain buffer tube 26³ by friction. *Id.* at 4:3–6.

Lower body portion 22 includes opposed flaps 28, 30. Ex. 1001, 4:7–8. The flaps are spaced to form gap 32, which receives a user's forearm 34. *Id.* at 4:9–12. "Flaps 28 and 30, being of the semi-rigid elastomeric material, conform to the user's forearm 34." *Id.* at 4:12–14.

Strap 36 encircles flaps 28, 30 and the user's forearm to secure stabilizing attachment 10 to the user. Ex. 1001, 4:18–20. The strap of Figure 1 encircles the flaps but not passage 24. *Id.* at 4:23–25, Figs. 1, 2. Other

^{3.} The '021 patent also associates reference numeral "16" with the buffer tube. *See* Ex. 1001, 4:4–6. We understand from the figures and description that item "16" is the forward end of body 14 and item "26" is the buffer tube. *See id.* at 3:43–44, 3:59–61, Fig. 1.

embodiments describe other strap configurations, including configurations that encircle the flaps and passage 24. *See, e.g., id.* at Figs. 5, 6 (depicting strap 36 encircling flaps 28, 30 and passage 24).

E. Illustrative Claims

Of the Challenged Claims, claims 1, 3, and 5 are independent claims. Ex. 1001, 6:12–27, 31–46, 49–60. Claim 1, reproduced below, is representative.

1. A forearm-gripping stabilizing attachment for a handgun, the handgun having a support structure extending rearwardly from the rear end of the handgun, the forearm-gripping stabilizing attachment, comprising:

a body having a front end, a rear end, an upper portion, a lower portion, and a passage longitudinally extending within said upper portion and at least through said front end of said body, the support structure of the handgun being telescopically receivable by said passage;

said lower portion having at least one flap extending from said upper portion;

a strap connected to said body, said strap securing said at least one flap to a user's forearm when the stabilizing attachment is secured to a user's forearm; and

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wherein said passage extends entirely through said body between said front end and said rear end of said body.

Id. at 6:12–27. Claim 3 differs from claim 1 in that it recites a support structure in the body of the claim, with the support structure being a buffer tube, and does not require the passage to extend entirely through the body or the support structure to be telescopically received. *Id.* at 6:31–46. Claim 5 recites similar subject matter as claim 3, but without reciting certain requirements for the body. *Id.* at 6:49–60.

Claims 2 and 4 require the at least one flap to be "constructed of an elastomeric material." Ex. 1001, 6:28–30, 6:47–48.

F. Prior Art and Asserted Grounds

Petitioner asserts that the Challenged Claims are unpatentable based on four grounds:

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| Claims Challenged | 35 U.S.C. § | References/ Basis |
|----------------------|-------------|------------------------------|
| 1-5 | 103(a) | Forjot ⁴ |
| 1-5 | 103(a) | Forjot, Morgan ⁵ |
| 1-5 | 103(a) | Forjot, Baricos ⁶ |
| 1-5 | 103(a) | Forjot, Deckard ⁷ |

Petitioner relies on the declaration testimony of Mr. John Nixon. Exs. 1002, 1022. Patent Owner relies on testimony from Dr. Joshua Harrison. Exs. 2001, 2009.

The following subsections provide a brief description of the asserted prior art references.

1. Forjot

Forjot, titled "Cuff and stabilizing plate to improve the use and firing of underwater weapons," published June

^{4.} Forjot, FR 899,565, published June 5, 1945 (Ex. 1008, "Forjot"). Exhibit 1008 is a certified English translation of Exhibit 1007. *See* Ex. 1008, 1.

^{5.} Morgan, US 6,016,620, issued January 25, 2000 (Ex. 1010, "Morgan").

^{6.} Baricos, et al., US 5,852,253, issued December 22, 1998 (Ex. 1009, "Baricos").

^{7.} Deckard, US 3,793,759, issued February 26, 1974 (Ex. 1011, "Deckard").

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5, 1945 from a grant on August 28, 1944. Ex. 1008, 1.⁸ We reproduce Forjot's Figures 1 and 2, below.



Figure 1 (a portion of which is reproduced above), depicts "the respective positions of the cuff [and] the stabilization plate on an underwater pistol or rifle." Ex. 1008, 1:45–47. Figure 2 depicts "a front view of the cuff." *Id.* at 1:48. Cuff 1, "preferably made of stainless steel and of a suitable thickness to obtain a certain elasticity . . . is intended to make [a] weapon integral with the arm" of a user. *Id.* at 2:3–6.

^{8.} We refer to the page number of the patent disclosure of Exhibit 1008 (which has two pages of disclosure and three pages of drawings) when referencing Forjot. Page 1 of the patent appears on page 2 of Exhibit 1008, with page 1 being the translator's declaration. When appropriate, we also include the line numbers in our citation, in the form page: lines.

Cuff 1 is attached to butt 5 of the gun through tube 2 and joint 6. Ex. 1008, 2:6–11. Screw 3 is used to tighten cuff 1 to tube 2 and to adjust opening 4. *Id.* at 2:6–9.

2. Morgan

Morgan, titled "Arm and Hand Gun Support Apparatus," issued January 25, 2000. Ex. 1010, codes (54), (45). Morgan is directed to "a support that is mounted onto the arm to steady the aim of a hand gun user." *Id.* at 1:9–10. We reproduce Morgan's Figures 1, 7, and 8, below.



Figure 1 depicts "a perspective illustration of the preferred embodiment of [Morgan's] arm and hand gun support apparatus." Ex. 1010, 3:52–53. Figures 7 and 8 depict "a frontal view of the wrist support" and "a frontal view of the forearm support," respectively. *Id.* at 4:1–2. Wrist support 136 and forearm support 138 are made of a

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rigid plastic. *Id.* at 5:51–53. Each support includes a pair of straps 142, with one end of the strap (end 146) attached to the support and the other end (end 144) having fastener 152. *Id.* at 5:53–58.

3. Baricos

Baricos, titled "Personal Firearm System," issued December 22, 1998. Ex. 1009, codes (54), (45). We reproduce Baricos's Figures 1 and 2, below.



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Figure 1 depicts "a diagrammatic perspective view of a firearm system in accordance with [Baricos's] invention carried beneath the forearm of a user," and Figure 2 depicts "a diagrammatic longitudinal axial section view of a firearm system." Ex. 1009, 1:54–58. Relevant to our analysis, Baricos's firearm system includes forearm or elbow cradle 230 having strap 232. *Id.* at 2:36–37, 2:47–49. "[S]trap 232 [is] designed to surround the user's forearm, in front of the elbow, as can be seen in F[igure] 1." *Id.* at 2:48–49.

4. Deckard

Deckard, titled "Concealed Pistol Mounting," issued February 26, 1974. Ex. 1011, codes (54), (45). We reproduce Deckard's Figures 1 and 4, below.



Figure 1 depicts "a front view of [Deckard's] device in the released mode." Ex. 1011, 1:45–46. Figure 4 depicts a "cross-section of the device taken at line 4—4 of F[igure] 1." Relevant to our analysis, mounting unit 10 includes

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straps 13, 14, which fasten mounting unit 10 to forearm 26, by encircling the user's arm. *Id.* at 1:61–62.

II. ANALYSIS

A. Level of Ordinary Skill in the Art

The level of skill in the art is "a prism or lens" through which we view the prior art and the claimed invention. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). Petitioner contends that a person having ordinary skill in the art at the time of the invention "would typically have a bachelor's degree in mechanical engineering and 2-3 years of experience in handgun use, procurement, repair, design, or manufacturing." Pet. 9–10 (referencing Ex. 1002 ¶ 34). Patent Owner contends that the level of ordinary skill in the art pertaining to the '021 patent

is that of a designer or experienced user of modern firearms accessories. The requisite knowledge and experience could be obtained through completion of a bachelor's degree in an engineering field, followed by some relevant experience designing or using accessories for modern firearms, for example. Alternatively, the same or an equivalent level of skill in the art could be obtained by nonprofessional firearms owners, users, or collectors who have substantial experience configuring and shooting modern firearms and related accessories, even without the benefit of any college education.

PO Resp. 2 (referencing Ex. 2009 ¶ 11).

We understand Patent Owner to contend that the level of ordinary skill may be obtained through an engineering degree and some experience in designing or using firearm accessories and that same level of skill could, alternatively, be achieved through additional experience without having a degree.

On the complete trial record, we find that the level of ordinary skill in the art of the '021 patent is a bachelor's degree in mechanical (or similar type of) engineering and 2 to 3 years of experience in handgun use, procurement, repair, design, or manufacturing, and that an equivalent level of skill may be obtained with additional experience without an engineering degree. This definition is consistent with the prior art of record and the skill reflected in the Specification of the '021 patent. See, e.g., Ex. 1001, 4:26-29 (indicating that a person having ordinary skill in the art would appreciate the function of a securement strap and how the strap may be arranged); 5:40-47 (indicating that a person having ordinary skill in the art would appreciate mounting brackets to mount a support structure); Ex. 1010, 6:9–16 (indicating that a person having ordinary skill in the art would understand how to optimize the size, materials, dimensions, and form of Morgan's hand gun support).

We note that our findings and conclusions in this Final Written Decision would be the same if we applied either Petitioner's or the Patent Owner's definition of the level of ordinary skill.

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B. Claim Construction

In *inter partes* reviews, we interpret a claim "using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b)." 37 C.F.R. § 42.100(b) (2019). Under this standard, we construe the claim "in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent." *Id*.

We determine that we must address two claim terms to resolve certain of the parties' disputes—"buffer tube" and "elastomeric material." *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017). We also address whether the preambles of independent claims 1, 3, and 5 are limiting.

1. "buffer tube"

Independent claims 3 and 5 recite "wherein said support structure is a buffer tube." Ex. 1001, 6:46, 6:60. Patent Owner contends that the term "buffer tube" is a term of art, and "is well known to refer specifically to a cylindrical lower receiver extension that houses the buffer assembly (sliding buffer and action spring components) of a firearm." PO Resp. 7 (referencing Ex. 2009 ¶ 42).

Patent Owner argues that Exhibit 2010, a U.S. Army technical manual, uses the term "buffer" consistent with Patent Owner's construction. PO Resp. 7 (referencing Ex. 2010, 25, 95–98, 196–197, 200; Ex. 2009 ¶ 43). Patent

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Owner adds that Petitioner's declarant, Mr. Nixon, uses the term "buffer tube" consistent with the proposed construction as well. *Id.* (referencing Ex. 1002 ¶ 4). Patent Owner also directs us to deposition testimony of Mr. Nixon that is consistent with Patent Owner's construction. *Id.* at 8 (referencing Ex. 2011, 12:15–13:6, 16:17, 17:11–21; Ex. 2010, 25, 95–98, 196–197, 200; Ex. 2009 ¶ 45).

Patent Owner explains that "the purpose of the buffer assembly in a firearm is to store (and partially damp) recoil energy from the backwards motion of the bolt carrier group when the gun is fired, and then to use the stored energy to return the bolt into battery while chambering the next round." PO Resp. 8 (referencing Ex. 2009 ¶ 47). Patent Owner adds that:

The mass of the buffer and the stiffness of the action spring controls the timing of the return motion of the bolt carrier group, and therefore also affects the proper operation of the firearm. No tube that is unrelated to the foregoing bolt return function can be properly understood to be a "buffer tube."

Id. at 8–9 (referencing Ex. 2009 ¶ 47).

Petitioner argues that the intrinsic record does not support Patent Owner's proposed construction; instead, Patent Owner's construction relies solely on extrinsic evidence. Reply 3. Petitioner argues that the only disclosure in the intrinsic record is that of "cylindrical extension 26." *Id.* Petitioner argues that, based on this

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intrinsic evidence, the proper construction of the term "buffer tube" is "a cylindrical lower receiver extension from the rear of the handgun that provides support for the stabilizing attachment." *Id.* at 4.

In addition, Patent Owner replies that Petitioner's proposed construction eliminates the word "buffer" from the term. Sur-reply 2, 18. Patent Owner argues that Petitioner's construction departs from how a person having ordinary skill in the art would understand the term "buffer tube." *Id*.

Patent Owner argues that Petitioner "incorrectly described element 26 in Figures 1, 2, and 7 as a 'cylindrical extension," which "is defined in the Specification as a 'buffer tube." Sur-reply 2–3 (referencing Ex. 1001, 3:59–65, 4:53, 5:22). Patent Owner argues that a "cylindrical extension" as used by Petitioner is more analogous to tubular member 62, which is a support structure other than a buffer tube. *Id*.

Patent Owner explains that the internal structure of a buffer tube is not described in the Specification of the '021 patent as the internal structure is implied by using the term "buffer tube." Sur-reply 3. Patent Owner adds that Petitioner's declarant testified that buffer tubes are distinct from other tubular members. *Id.* (referencing Ex. 2011, 16:15–17:23).

We conclude, on the complete record, that Patent Owner has the better position. We turn first to the intrinsic record. In construing the term, we start with the language of the claims. *See, e.g., Phillips v. AWH*

Corp., 415 F.3d 1303, 1314 (Fed. Cir. 2005) (en banc) ("[T]he context in which a term is used in the [claim at issue] can be highly instructive."). Claim 3 and 5 require that the "support structure" be "a *buffer* tube." Ex. 1001, 6:46, 6:60 (emphasis added). That is, the support structure is more than a tube; it is a specific type of tube—a *buffer* tube.

"[T]he specification 'is always highly relevant to the claim construction analysis." Phillips, 415 F.3d at 1315. As Petitioner notes, the Specification does not describe what is meant by the term "buffer tube." The Specification does characterize a buffer tube as a support structure that is present on a certain type of handgun. See, e.g., Ex. 1001, 5:21–27 ("[H]andgun 12 includes an integral buffer tube 26 that provides asuitable support upon which the stabilizing brace 10 may be attached But not every handgun is provided with a suitable tubular support or similar structure that rearwardly extends from the handgun to which the stabilizing brace 10 may be attached."). The Specification explains that for handguns without buffer tubes, a tubular member may be attached to the handgun using a bracket. Id. at 5:28-36. This characterization suggests a distinction between a buffer tube and other cylindrical lower receivers that extend from the rear of a handgun and provide support for a stabilizing attachment.

We are not directed to anything in the prosecution history that sheds additional light on the meaning of "buffer tube."

We now turn to the extrinsic evidence. Although extrinsic evidence, when available, may be useful when

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construing claim terms under our claim construction standard, extrinsic evidence should be considered in the context of the intrinsic evidence. *Phillips*, 415 F.3d at 1317. Still, "[t]he Board may properly rely on expert testimony 'to explain terms of art." *Bradium Techs. LLC v. Iancu*, 923 F.3d 1032, 1043 (Fed. Cir. 2019).

Dr. Harrison, Patent Owner's declarant, testifies that "[t]he term 'buffer tube' is well known to refer specifically to a cylindrical lower receiver extension that houses the buffer assembly . . . of a firearm." Ex. 2009 ¶ 42. Dr. Harrison bases this testimony on his experience and the use of the term "buffer" in a U.S. Army technical manual. *Id.* at ¶ 43 (referencing Ex. 2010, 25, 95–98, 196–197, 200).⁹

In his direct testimony, Mr. Nixon declares, although not in the context of claim construction, that "[t]he '021 [p]atent is clearly aimed at the AR15 'pistol' market, the front page illustration, and Figure 1, showing a generic AR15 with characteristic buffer tube at the rear. Figure 7 illustrates an AK47 type firearm with an AR15 style buffer tube attached to the rear to enable mounting of the claimed invention." Ex. 1002 ¶ 4 (emphasis added); cf. Ex. 1022 (providing a supplemental declaration by Mr. Nixon inresponse to certain of Patent Owner's positions, but not addressing the construction of "buffer tube"). Mr. Nixon also testifies about buffer tubes in his deposition. For example, he states that the buffer tube of an AR15

^{9.} Patent Owner and Dr. Harrison refer to this manual as a "1987 manual." Exhibit 2010 indicates that it is "current as of December 1996, and supersedes the version dated August 1987. Ex. 2010, 1, 2–17 (providing dated changes to subsequent versions).

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"contains a spring and when you use the rifle the spring is compressed when the bolt moves backward and then the spring pushes the cartridge forward from the magazine and reloads the gun." Ex. 2011, 12:15–20; *see also id.* at 12:21–13:6 (testifying that the buffer tube includes a spring and weight), 14:2–12 (testifying that the 1918 Browning BAR rifle also included a buffer tube similar to that of the AR15). When asked if "[i]n a firearm would all tubular members be referred to as buffer tubes," Mr. Nixon answered, "No." *Id.* at 16:15–17.

On the complete record, we find that the term "buffer tube" is a term of art. We conclude that a person having ordinary skill in the art would understand this term to mean "a cylindrical lower receiver extension that houses the buffer assembly of a firearm." We credit Dr. Harrison's unrebutted testimony. First, we find that his testimony is consistent with the evidence of record. Exhibit 2010, a U.S. Army technical manual, describes a buffer assembly. Ex. 2010, 25, 95–98, 196–197, 200. Although directed to a 5.56 mm M16A2 Rifle, a 5.56 mm M4 Carbine, and a 5.56 mm M4A1 Carbine, rather than a handgun, the use of the term "buffer assembly" provides some corroborating evidence for Dr. Harrison's testimony.

Second, and more significantly, Mr. Nixon's testimony supports Dr. Harrison's testimony regarding the use of "buffer tube" as a term of art and what that term means. *See* Ex. 2011, 12:15–20, 12:21–13:6, 14:2–12; Ex. 1002 ¶ 4.

Also, we conclude that our construction is consistent with the intrinsic record, which indicates that a buffer

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tube is a unique structure that is distinct from a generic cylindrical extension from the rear of a handgun.

In summary, we conclude that the term "buffer tube" means "a cylindrical lower receiver extension that houses the buffer assembly of a firearm."

2. "elastomeric material"

Claim 2 depends directly from independent claim 1 and claim 4 depends directly from independent claim 3, each reciting "wherein said at least one flap is constructed of an elastomeric material." Ex. 1001, 6:27–29, 6:47–48. Patent Owner argues that a person having "ordinary skill in the engineering arts and sciences understands that the ordinary meaning of the term elastomer or 'elastomeric material' refers to a rubber-like polymer with a large range of elastic deformation and low rigidity." PO Resp. 9 (referencing Ex. 2009 ¶ 40; Ex. 2011, 30:10–14). Patent Owner argues that its proposed construction is supported by the Specification of the '021 patent, which states that the flaps may "be made of an elastomer or elastomeric material that can substantially conform to the shape of the shooter's forearm." Id. (referencing Ex. 1001, 4:12–14). Patent Owner adds that "the '021 [p]atent itself differentiates between a rigid material and an elastomeric material in describing a non-limiting example where 'the upper portion 20 could be formed of a rigid or non-elastomeric material and the lower portion 22 could be formed of a resilient material." Id. at 9–10 (quoting Ex. 1001, 4:34–38); see also id. at 10 (referencing Ex. 1001, 5:51-54).

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Petitioner replies that Patent Owner's construction is "unduly narrow and includes vague terms of degree." Reply 4. Petitioner argues that Patent Owner's construction "is more appropriately associated with the noun 'elastomer." *Id.* Petitioner argues that the claim term includes the suffix "ic," which changes the term to an adjective. *Id.* Petitioner argues that, as such, the claim merely requires that the recited material be polymer-like. *Id.* at 4–5 (referencing Ex. 1022 ¶ 7).

Petitioner directs us to a dictionary definition of elastomeric, which defines the term as "[a]ny material having the properties of being able to return to its original shape after being stressed." Reply 5 (referencing Ex. 1023). Petitioner argues that the intrinsic record for the '021 patent "indicates no intention to depart from" this dictionary definition. *Id*.

Patent Owner replies that Petitioner's proposed construction ignores the final clause of the definition from Exhibit 1023—"such as a roofing material that can expand and contract without rupture." Sur-reply 4 (emphasis omitted); *see* Ex. 1023. Patent Owner argues that Petitioner's definition is from an architectural dictionary, which is not probative of how a person having ordinary skill in the art of the '021 patent would understand the term. Sur-reply 4.

Patent Owner also argues that Petitioner's grammatical analysis is flawed, as the use of a word as an adjective "should not transform the use of the term entirely outside the accepted definition of its noun form 'elastomer." Sur-reply 5.

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Based on the complete record, we construe the term "elastomeric material" to require the material of the at least one flap to be made of an elastomer.¹⁰ Again, we start with the words of the claims. Claims 2 and 4 require the "at least one flap" to be "constructed of an elastomeric material" Ex. 1001, 6:27–29, 6:47–48.

We agree with Petitioner that the word "elastomeric" is used as an adjective in claims 2 and 4—modifying the word "material" in both claims. As such, the plain language of the claims requires the material of the at least one flap to be made of an elastomer.

The Specification supports our construction. The Specification states that flaps 28 and 30 are made of a "semi-rigid elastomeric material," such that the flaps "conform to the user's forearm 34." Ex. 1001, 4:12–14; see

^{10.} An elastomer is a polymer with properties similar to natural rubber. Larranaga, Michael D., Richard J. Lewis, and Robert A. Lewis, Hawley's Condensed Chemical Dictionary (16th ed.) (2016), John Wiley & Sons (Ex. 3001, 3); accord Daintith, John, Oxford Dictionary of Chemistry (6th ed.), Oxford Univ. Press (2008) (Ex. 3002, 3); Phillips, 415 F.3d at 1318 ("Because dictionaries, and especially technical dictionaries, endeavor to collect the accepted meanings of terms used in various fields of science and technology, those resources have been properly recognized as among the many tools that can assist the court in determining the meaning of particular terminology to those of skill in the art of the invention."); cf. Ex. 2009 ¶ 40 ("One of ordinary skill in the engineering arts and sciences understands that the ordinary meaning of the term elastomer or "elastomeric material" refers to a rubberlike polymer......"); Ex. 2011, 30:10-14 (Mr. Nixon defining elastomer as "a polymer material which could be deformed and recovered to its original shape").

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also id. at Fig. 2 (showing flaps 28, 30). The Specification describes body 14 of the preferred embodiment, including flaps 28 and 30, as made of a semi-rigid, elastomeric material, such as "rubber, foam rubber or the like material." *Id.* at 3:40–43; *cf. id.* at 4:30–41 (describing an alternative embodiment, with upper portion 20 of body 14 being made of a rigid, non-elastomeric material, and the flaps made of a resilient material, so that the flaps at least partially conform with the user's forearm).

The prosecution history also supports our construction. During prosecution of a grandparent application that matured into the '444 patent, the applicant amended pending claim 10 (which issued as claim 2 of the '444 patent), to distinguish it from the prior art, by replacing "a resilient material" with "an elastomeric material." IPR2020-00423, Ex. 1003, 166, 173-174.¹¹ As such, the applicant narrowed the scope of claim 2 from covering a resilient material to the narrower, elastomeric material. That is, the material is not merely like an elastomer (which would include a resilient material), but is made of an elastomer. See Trustees of Columbia University v. Symantec Corp., 811 F.3d 1359, 1369 (Fed. Cir. 2016) ("[W]here multiple patents 'derive from the same parent application and share many common terms, we must interpret the claims consistently across all asserted patents." (quoting NTP, Inc. v. Research in Motion, Ltd., 418 F.3d 1282, 1293 (Fed. Cir. 2005))).

^{11.} As discussed above in the "Related Matters" section, IPR2020-00423 concerns the '444 patent.

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We give very little weight to Petitioner's extrinsic evidence. As Patent Owner argues, Petitioner's dictionary definition is from the architectural arts. See Ex. 1023, 1 (providing two similar definitions, one from the "Illustrated Dictionary of Architecture" and one from the "McGraw-Hill Dictionary of Architecture and Construction"). Also, Petitioner's dictionary definitions would encompass any resilient material. As such, the definition contradicts the applicant's narrowing of a claim during prosecution of the '444 patent. See Phillips, 415 F.3d at 1322-23 ("[J]udges are free to consult dictionaries ... when construing claim terms, so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents."); see also id. at 1322 ("Moreover, different dictionaries may contain somewhat different sets of definitions for the same words. A claim should not rise or fall based upon the preferences of a particular dictionary editor, or the court's independent decision, uninformed by the specification, to rely on one dictionary rather than another.").

In summary, we construe the term "elastomeric material" to require the material of the at least one flap to be made of an elastomer.

3. Preambles of claims 1, 3, and 5

The preamble of claim 1 recites "[a] forearm-gripping stabilizing attachment for a handgun, the handgun having a support structure extending rearwardly from the rear end of the handgun, the forearm-gripping stabilizing attachment." Ex. 1001, 6:12–15. The preamble of claims 3

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and 5 each recites "[i]n combination a forearm-gripping stabilizing attachment and a handgun." Id. at 6:30–31, 6:49–50. "[A] preamble limits the invention if it recites essential structure or steps, or if it is 'necessary to give life, meaning, and vitality' to the claim." Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc., 289 F.3d 801, 808 (Fed. Cir. 2002) (quoting *Pitney Bowes*, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305 (Fed. Cir. 1999)). "[W]hen the limitations in the body of [a] claim 'rely upon and derive antecedent basis from the preamble, then the preamble may act as a necessary component of the claimed invention." Bicon, Inc. v. Straumann Co., 441 F.3d 945, 952 (Fed. Cir. 2006) (quoting Eaton Corp. v. Rockwell Int'l Corp., 323 F.3d 1332, 1339 (Fed. Cir. 2003)). "Whether to treat a preamble as a limitation is a determination 'resolved only on review of the entire [] ... patent to gain an understanding of what the inventors actually invented and intended to encompass by the claim." Catalina Mktg. Int'l, Inc., 289 F.3d at 808 (alteration in the original) (quoting Corning Glass Works v. Sumitomo Elec. U.S.A., *Inc.*, 868 F.2d 1251, 1257 (Fed. Cir. 1989)).

We conclude that the preambles of claims 1, 3, and 5 are limiting. Each preamble recites "essential structure" for the claim. *See Catalina Mktg. Int'l, Inc.*, 289 F.3d at 808. The preamble of claim 1 recites a handgun and a support structure extending rearwardly from the handgun. The body of claim 1 requires that, when the stabilizing attachment (recited in the preamble) is attached to a user's forearm, a strap secures the at least one flap to the user's forearm. The body of claim 1 also recites that the support structure is telescopically receivable by

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the passage in the upper portion of the forearm-gripping stabilizing attachment. The body of claims 3 and 5 require a support structure extending rearwardly outward *from the handgun*, which is recited in the preamble. Also, the preamble recites that the invention is a combination of the stabilizing attachment and handgun.

Supporting our conclusion is that the support structure and stabilizing attachment receive antecedent bases from the preamble of claim 1 and the handgun and stabilizing attachment receive antecedent bases from the preamble of claims 3 and 5. Also, in reviewing the Specification, we find that what the inventor invented was a forearmgripping stabilizing attachment that attaches to a support structure at the rear of a handgun. See, e.g., Ex. 1001, Fig. 1 (depicting the invention), 1:46–48 ("Embodiments of the present invention ... provid[e] a new and specially designed stabilizing attachment that secures to the rearward end of a handgun and which grips a user's "); PO Resp. 4 ("The '021 [p]atent discloses forearm and claims a stabilizing attachment for a handgun that has a support structure extending rearwardly from the rear end of the handgun.").

In summary, we conclude that the preambles of claims 1, 3, and 5 are "necessary to give life, meaning, and vitality' to the claim[s]," and, as such, are limiting. *See Catalina Mktg. Int'l, Inc.*, 289 F.3d at 808.

C. Applicable Law Governing Unpatentability

In *inter partes* reviews, a petitioner bears the burden of proving unpatentability of the challenged claims,

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and the burden of persuasion never shifts to the patent owner. *Dynamic Drinkware*, *LLC v. Nat'l Graphics*, *Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015). To prevail in this proceeding, Petitioner must support its challenge by a preponderance of the evidence. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d). Accordingly, all of our findings and conclusions are based on a preponderance of the evidence standard.

Petitioner's asserted grounds of unpatentability are based on obviousness under 35 U.S.C. § 103(a).

Section 103(a) forbids issuance of a patent when "the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains."

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: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) when available, objective evidence, such as commercial success, long felt but unsolved needs, and failure of others. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

"[O]bviousness must be determined in light of *all* the facts, and ... a given course of action often has

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simultaneous advantages and disadvantages, and this does not necessarily obviate motivation to combine" teachings from multiple references. *Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1165 (Fed. Cir. 2006) (emphasis added); *see also PAR Pharm., Inc. v. TWI Pharms., Inc.*, 773 F.3d 1186, 1196 (Fed. Cir. 2014) ("The presence or absence of a motivation to combine references in an obviousness determination is a pure question of fact.").

We must always consider, as part of an obviousness inquiry, objective evidence of non-obviousness, or secondary considerations evidence, when present. Transocean Offshore Deepwater Drilling, Inc. v. Maersk Drilling USA, Inc., 699 F.3d 1340, 1349 (Fed. Cir. 2012). Notwithstanding what the teachings of the prior art would have suggested to one with ordinary skill in the art at the time of the patent's invention, the totality of the evidence submitted, including objective evidence of nonobviousness, may lead to a conclusion that the challenged claims would not have been obvious to one with ordinary skill in the art. In re Piasecki, 745 F.2d 1468, 1471-72 (Fed. Cir. 1984). Secondary considerations may include long-felt but unsolved need, failure of others, unexpected results, commercial success, copying, licensing, and praise. See Graham, 383 U.S. at 17–18; Leapfrog Enters., Inc. v. Fisher-Price, Inc., 485 F.3d 1157, 1162 (Fed. Cir. 2007).

We address Petitioner's ground contending that the Challenged Claims are unpatentable as obvious over Forjot and Morgan (Ground 3) first, then address Petitioner's other three asserted grounds.

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D. Ground 3: Claims 1–5 as Allegedly Obvious Over Forjot and Morgan

Petitioner contends that Forjot, in combination with Morgan, renders obvious the subject matter of independent claims 1, 3, and 5 and dependent claims 2 and 4. Pet. 2, 15–23, 24.¹² In the subsections below, we discuss the scope and content of the prior art and any differences between the claimed subject matter and the prior art, on a limitation-by-limitation basis. We also discuss Patent Owner's objective evidence of non-obviousness.

- 1. Independent claims 1, 3, and 5
 - a) Claim 1
 - (1) Preamble

The preamble of claim 1 recites "[a] forearm-gripping stabilizing attachment for a handgun, the handgun having a support structure extending rearwardly from the rear end of the handgun." Ex. 1001, 6:12–15. Petitioner contends that Forjot's cuff corresponds to the recited forearm-gripping stabilizing attachment and that Forjot's cuff is for a handgun. Pet. 15–16 (referencing Ex. 1008, 2:3–7,

^{12.} Petitioner incorporates its contentions with respect to its first ground, that the combination of Forjot with the knowledge of a person having ordinary skill in the art renders obvious the Challenged Claims, into its ground relying on the combined teachings of Forjot and Morgan. Pet. 24. Accordingly, we address Petitioner's contentions with respect to Ground 1 as part of our analysis of Ground 3.

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2:51–52; Ex. 1002 ¶¶ 45, 46). Petitioner adds that Forjot's cuff is attached to a tube, corresponding to the recited support structure. *Id.* (referencing Ex. 1008, 2:9–11; Ex. 1002 ¶ 47); *see also* Ex. 1008, Fig. 1 (depicting tube 2 extending rearwardly from a gun).

We have reviewed Petitioner's contentions and find, on the complete record, that Petitioner has demonstrated, by a preponderance of the evidence, that Forjot discloses the subject matter of the preamble of claim 1. See Ex. 1008, 2:3–7 (disclosing cuff 1, which attaches to the rear end of tube 2 extending from butt 5 of the gun), 2:51–52 (indicating that Forjot's invention can be applied to landbased weapons), Fig. 1 (depicting cuff 1 gripping an arm and attached to tube 2). Patent Owner does not dispute Petitioner's contentions with respect to the subject matter of the preamble of claim 1.

(2) Body limitation

Claim 1 also recites "a body having a front end, a rear end, an upper portion, a lower portion, and a passage longitudinally extending within said upper portion and at least through said front end of said body, the support structure of the handgun being telescopically receivable by said passage." Ex. 1001, 6:16–20 (the "body" limitation of claim 1). Petitioner contends that Forjot discloses the subject matter of the "body" limitation of claim 1 and provides an annotated version of a portion of Forjot's Figure 1 in support of its contention. Pet. 17–18 (referencing Ex. 1002 ¶ 49). We reproduce this annotated figure, below.





This annotated figure provides a portion of Forjot's Figure 1 depicting cuff 1 and tube 2, with annotations pointing to the recited components of the "body" limitation. Petitioner adds that "Fig[ure] 1 of *Forjot* also shows 'the support structure of the handgun [tube 2] telescopically receivable by said passage." *Id.* at 18 (second alteration in original) (referencing Ex. 1008, 2:6–7; Ex. 1002 ¶ 50).

We have reviewed Petitioner's contentions and find, on the complete record, that Petitioner has demonstrated, by a preponderance of the evidence, that Forjot discloses the subject matter of the "body" limitation of claim 1. We find that Petitioner's annotated characterization of Forjot's cuff 1, reproduced above, appropriately identifies the recited components in the "body" limitation of claim 1. We also find that Figure 1 shows that tube 2 is telescopically received in the identified passage in the upper portion of cuff 1, as illustrated by the dashed lines in the figure. *See also* Ex. 1008, Fig. 2 (showing a front view of cuff 1).

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Patent Owner does not dispute Petitioner's contentions with respect to the subject matter of the "body" limitation of claim 1 in the Patent Owner Response.

(3) Lower portion limitation

Claim 1 also recites "said lower portion having at least one flap extending from said upper portion." Ex. 1001, 6:21–22 (the "lower portion" limitation of claim 1). Petitioner contends that Forjot's cuff 1 includes a lower portion defining two flaps that receive a user's forearm. Pet. 18 (referencing Ex. 1008, Fig. 2; Ex. 1002 ¶¶ 51–52); *compare* Ex. 1008, Fig. 2 (showing a view of cuff 1 from the front of the cuff), *with* Ex. 1001, Fig. 2 (showing a rear elevation view of an exemplary embodiment having a bifurcated lower portion that defines flaps).

Patent Owner contends that "[r]emoving one of the flaps from the cuff, would render Forjot unable to clamp around a user's arm, thereby rendering Forjot inoperable for its intended purpose (e.g., engaging with a user's arm to provide a connection with the weapon)." PO Resp. 31. Petitioner replies that Forjot discloses a cuff with at least one flap as required by the claim. Reply 15. In its Sur-reply, Patent Owner repeats that removing a flap would render Forjot inoperable for its intended purpose. Sur-reply 17.

We have reviewed Petitioner's contentions and find, on the complete record, that Petitioner has demonstrated, by a preponderance of the evidence, that Forjot discloses the subject matter of the "lower portion" limitation of claim

1. We find that Forjot's cuff 1 includes a bifurcated lower portion for receiving a user's forearm—that is, two flaps extending from the upper portion of cuff 1, such that the cuff has "at least one flap" as required by claim 1. *See* Ex. 1008, Fig. 2 (showing the bifurcated lower portion of cuff 1, with two flaps extending from the upper portion, where tube 2 is received).

We have considered Patent Owner's argument, but do not find it sufficient, on the complete record, to demonstrate a deficiency in Petitioner's position. Patent Owner's argument misconstrues claim 1 and Petitioner's position. Claim 1 requires the lower portion of the body to have at least one flap extending from the upper portion of the body. Ex. 1001, 6:21–22. As such, this requirement is met if the lower portion of the body has one flap or more than one flap. Petitioner contends that Forjot's cuff 1 has two flaps, that is, at least one flap, extending from the upper portion of the body. Pet. 18. We do not understand Petitioner to propose to modify cuff 1 by removing one of the flaps. Patent Owner fails to offer a claim construction or otherwise explain why we should construe the phrase "at least one flap" to require only one flap. A cuff that has a lower portion having one or more flaps satisfies the plain language of the claim.

(4) Wherein clause

Claim 1 also recites "wherein said passage extends entirely through said body between said front end and said rear end of said body." Ex. 1001, 6:26–27 (the "wherein" clause of claim 1). Petitioner contends that Forjot's Figure

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2 depicts a passage extending entirely through the body. Pet. 21 (referencing Ex. 1008, Fig. 2; Ex. 1002 ¶¶ 49, 57). In his Declaration, Mr. Nixon annotates Forjot's Figure 1 to identify the passage, which shows dashed lines (representing tube 2 within the identified passage) extending the length of the passage. Ex. 1002 ¶ 49; Ex. 1008, Fig. 1.

We have reviewed Petitioner's contentions and find, on the complete record, that Petitioner has demonstrated, by a preponderance of the evidence, that Forjot discloses the subject matter of the "wherein" clause of claim 1— that is, that Forjot discloses a passage that extends entirely through the upper portion of cuff 1. *See* Ex. 1008, Fig. 1 (depicting a dashed line representing tube 2 extending to the end of the upper portion of cuff 1), Fig. 2 (showing tube 2 in phantom, such that the passage in the upper portion of cuff 1 is shown to extend through the entire cuff); Ex. 1002 ¶ 49. Patent Owner does not dispute these contentions in the Patent Owner Response.

(5) Strap limitation

Finally, claim 1 recites "a strap connected to said body, said strap securing said at least one flaps to a user's forearm when the stabilizing attachment is secured to a user's forearm." Ex. 1001, 6:12–15 (the "strap" limitation). Petitioner acknowledges that Forjot does not disclose the recited strap. Pet. 18, 24. Petitioner contends that "[u]sing straps to secure a firearm support to a user's forearm, however, was known and obvious at the time the '021 patent was filed." *Id.* at 18–19 (referencing Ex. 1002 ¶ 53). Petitioner contends that:

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It would have been obvious to add a strap to *Forjot* in view of Morgan because *Morgan* teaches using a pair of straps 142 in conjunction with wrist support 136 and forearm support 138 to secure a handgun support member 12, and it would have been obvious to use a strap in the same way in *Forjot* to better secure the cuff 1 to the forearm, which is a goal of *Forjot*.

Id. at 24 (referencing Ex. 1002 ¶ 65).

Petitioner explains that "[f]orearm support 138 of *Morgan* and cuff 1 of *Forjot* are also similarly shaped, making the addition of a similar strap to the cuff of *Forjot* even more straightforward." Pet. 24 (referencing Ex. 1002 ¶ 65). Petitioner adds that "[i]t would also have been obvious to combine these teachings because both references have the same goal, to better aim a pistol." *Id.* (referencing Ex. 1008, 2:67–68; Ex. 1010, 1:7–8; Ex. 1002 ¶ 65).

Mr. Nixon declares that "[s]traps have been used in firearms throughout history." Ex. 1002 ¶ 40. Mr. Nixon explains that "[r]ifle shooters are trained to wrap their rifle sling (strap) around their support arm (left arm for a right handed shooter) to enhance the support that they give to the rifle, thereby minimizing perturbations, and maximizing accuracy." *Id.*; *see also id.* ¶ 43 (discussing Morgan); Ex. 1013 (U.S. Marine Corp. Rifle Marksmanship manual); Ex. 1010, 1:34–35 ("[T]he purpose of providing a support that is mounted onto the arm [is] to steady the aim of a handgun user.").

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Mr. Nixon also testifies that Morgan's two-piece strap would benefit Forjot's cuff "[b]ecause you can tighten the strap and that's all you need to do." Ex. 2011, 70:12–21; *see also* Ex. 1010, 5:60–62 ("The plurality of straps of each of the arm supports secures the arm of the hand gun user to the elongated support member. In use the wrist support goes over the wrist with the straps"), 6:1–4 ("The apparatus will help to prevent movement of the arm and wrist while holding and firing the hand gun. The arm and hand gun support apparatus is mounted onto the arm of the user.").

Further in support of its position, Petitioner argues that the '021 patent Specification "acknowledges" that straps to secure a firearm support to a user's forearm were known and obvious, with the Specification stating, "[o]ne of ordinary skill in the art will readily appreciate the function of strap 36 and recognize many suitable arrangements for the purpose of securing the body 14 about a user's forearm." Pet. 18–19 (quoting Ex. 1001, 4:26–29).

Petitioner reasons that

Forjot is concerned with the same goal as the '021 patent, *i.e.*, to stabilize and aim a handgun. Adding a strap to further secure the user's forearm within the flaps of Forjot would have been obvious to one having ordinary skill in the art to add a strap to *Forjot* because it was well known to use straps in general to mechanically secure one element to another, and the use of

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straps to secure guns and gun supports to a user were notoriously well known.

It would have been a simple task to add a strap to *Forjot*

The use of straps to secure firearms has been known for centuries and the stated goal of *Forjot* is to "rigidly hold the forearm." The motivation for the modification is suggested by *Forjot* and the added strap is being used for its known purpose This is simply using a well-known structure in a well-known way and therefore obvious.

Pet. 19–20 (citations omitted) (referencing Ex. 1002 ¶¶ 54–55; Ex. 1008, 2:57).

(a) Arguments addressing motivation to combine generally

Patent Owner responds that:

Forjot's solution provides for more precise aim of the speargun once the hunter has his/ her "forearm, **easily and quickly engaged** in the cuff by bending these ends, forming a clamp" because "he/she will have thus achieved **a perfect connection** of the weapon with his/ her arm." "Therefore, the invention essentially resides upon the absolute connection of the

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pistol or rifle weapon by the cuff 1 to the arm" allowing for better targeting of prey "by connecting the arm of the hunter with his/her weapon in an extremely rigid way."

PO Resp. 21 (citations omitted) (quoting Ex. 1008, 2:25–31, 2:35–45).

Patent Owner argues that a person having ordinary skill in the art "would not be motivated to modify the cuff taught by *Forjot* by adding a strap, because doing so would frustrate *Forjot's* expressly taught objective that the hunter's forearm be 'easily and quickly engaged in the cuff by bending [the] ends, forming a clamp." PO Resp. 22 (alteration in original) (referencing Ex. 2009 ¶ 23). Patent Owner adds that adding a strap would make engaging Forjot's cuff with the user's "forearm more difficult and time-consuming." *Id.* (referencing Ex. 2007 ¶ 23). Patent Owner argues that "[t]he mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the *desirability* of the modification." *Id.* at 22–23 (quoting *In re Gordon*, 733 F.2d 900, 902 (Fed. Cir. 1984)).

Patent Owner argues that "[b]ecause *Forjot* describes the invention as already providing the more secure attachment in an absolute and perfect way, there would be no motivation ... to add [Morgan's] strap to the device. PO Resp. 42 (referencing Ex. 2009 ¶ 35).

Petitioner replies that "Forjot provides motivation to use a strap (aiming and providing a rigid, integral
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connection with the forearm) and that motivation is directly tied to a well-known purpose of a strap in the art that is demonstrated by ... *Morgan*." Reply 7–8. Petitioner argues that Forjot's use of the phrase "perfect connection" would not discourage the proposed modification. *Id.* at 8–9 (referencing testimony of Mr. Nixon (Ex. 1022 ¶¶ 2–3) and Dr. Harrison (Ex. 1021, 38:21–39:2)). Petitioner adds that, as Mr. Nixon declares, Forjot's open cuff design would experience slipping. *Id.* at 9–10 (referencing Ex. 1022 ¶ 4). Petitioner argues that Dr. Harrison agrees that the cuff slipping is a potential problem of Forjot, and that a strap would prevent slipping. *Id.* at 10 (referencing Ex. 1021, 41:6–9, 42:9).

Petitioner argues that Patent Owner has not demonstrated that one of Forjot's primary purposes is to quickly engage cuff 1 or that using a strap would be difficult and time consuming. Reply 10–11. Petitioner argues that Forjot's primary objectives are to have improved aim without shouldering a weapon and to form a rigid, integral connection between the user's arm and weapon. Id. at 11. Petitioner argues that Patent Owner's declarant, Dr. Harrison, confirms that a strap would not frustrate these principle objectives. Id. (referencing Ex. 1021, 47:23–24). Petitioner argues that Patent Owner provides no support for its contention that employing a strap would be difficult and time consuming. Id. Petitioner adds that "Mr. Nixon notes that Velcro straps and releasable buckles have been used extensively in the firearm industry prior to the priority date of the '021 patent." Id. at 11-12 (referencing Ex. 1022 ¶ 5). Petitioner concludes that a person having ordinary skill in the art would have "trade[d] off the tiny

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increase in the time to engage the forearm to improve the connection with the forearm, provide a more secure interface, and prevent slippage." *Id.* at 12 (referencing Ex. 1022 ¶ 5).

Patent Owner replies that "Forjot's express use of the term 'perfect' [when referring to the connection between the cuff and user's forearm] indicates the connection is not an area of concern for a [person having ordinary skill in the art] looking to improve *Forjot*." Sur-reply 10. With respect to Petitioner's reasoning directed to slipping, Patent Owner argues that Dr. Harrison expressly testified in his deposition that adding a strap would not prevent slipping "in a way that would be compatible with Forjot's teaching of quick and easy connection." Sur-reply 11 (referencing Ex. 1021, 43:4–12). Patent Owner also argues that Forjot expressly discloses a desire for easy and quick engagement of the cuff with the user's arm, which discourages adding a strap. Id. at 12 (referencing Ex. 1021, 43:4–12). Patent Owner argues that any additional time to connect a strap would be undesirable and discourage the proposed modification. Id. at 12–13. Patent Owner adds that "there needs to be a quick and easy engagement that is faster than shouldering the weapon, but integral enough with the arm to provide the same stability when firing." *Id.* at 13 (referencing (Ex. 2009 ¶ 22).

> (b) Arguments addressing the operation of Forjot's screw 3

Next, Patent Owner argues that Petitioner's declarant, Mr. Nixon, misunderstands the teachings of Forjot and,

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as a result, undermines Petitioner's obviousness analysis. PO Resp. 24. Patent Owner argues that Mr. Nixon fails to appreciate that screw 3 functions to tighten cuff 1 to the user's arm. *Id.* (referencing Ex. 2011, 41:1–23, 43:2– 19, 51:2–12). Patent Owner argues that Forjot teaches that screw 3 adjusts opening 4, which is the opening through which a user places his or her forearm. *Id.* at 25 (referencing Ex. 1008, 2:5–9; Ex. 2009 ¶ 21). Patent Owner argues that Mr. Nixon's position that it would have been obvious to add a strap to Forjot's cuff is based on the faulty assumption that tightening screw 3does not tighten the cuff to the user's arm. *Id.* (referencing Ex. 2009 ¶ 24).

Patent Owner argues that Forjot's screw 3 is offset from tube 2 and, as such, a person having ordinary skill in the art would have understood that "after the screw 3 is tightened sufficiently to close the cuff 1 tightly around the tube 2 to attach the cuff 1 to the tube 2, further tightening of the screw 3 will adjust the opening 4 of the lower part of the cuff 1 to be narrower." PO Resp. 25-26 (referencing Ex. 2009 ¶¶ 24–25). Patent Owner argues that screw 3 together with the stiffness of cuff 1 allows the cuff to clamp a wide range of forearm sizes. Id. at 26 (referencing Ex. 2009 ¶ 26). Patent Owner argues that Forjot teaches that cuff 1 has elasticity and is secured to a user's forearm by bending the ends of the cuff to form a clamp. Id. (referencing Ex. 1008, 2:27–29; Ex. 2009) ¶ 26). Patent Owner concludes that "one of ordinary skill in the art would recognize that the amount of bending deflection required for the opening 4 of the cuff 1 to flex around a forearm of a particular size can be adjusted by tightening or loosening the screw 3." Id. (referencing Ex. 2009 ¶¶ 26–27).

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Patent Owner reasons that screw 3 allows cuff 1 to provide an "absolute connection of the ... weapon ... to the arm" and provide "extremely rigid" clamping without a strap. PO Resp. 27 (referencing Ex. 1008, 2:35–43; Ex. 2009 ¶ 28).

Petitioner replies that Patent Owner's assessment that screw 3 is used to tighten the cuff to the user's arm is contrary to Patent Owner's assertion that Forjot requires quick engagement, as tightening the screw and bending the cuff would be difficult and time consuming. Reply 13–14. Petitioner argues that Mr. Nixon's assessment is the "sensible" reading of Forjot—that the user employs screw 3 to tighten the cuff to tube 2, and then screw 3 is not adjusted further. *Id.* at 14 (referencing Ex. 1022 ¶ 8). Petitioner adds that the express disclosure in Forjot states that engaging the cuff to the user's arm is accomplished by bending the ends of the cuff and does not mention screw 3. *Id.* (referencing Ex. 1008, 3:27–29).

Patent Owner replies that Forjot's statement about bending the ends of the cuff begins with the phrase "[f]rom the forgoing," which is a reference to the operation of screw 3. Sur-reply 15. Petitioner argues that "it is apparent that both the screw and elastic bending of the cuff to accommodate the forearm provide the adjustability to form an adequate connection with various forearm sizes" which "obviates the need from a strap." *Id.* at 15–16.

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(c) Arguments addressing whether proposed modification renders Forjot inoperable for its intended purpose

Next, Patent Owner responds that adding a strap would render Forjot inoperable for its intended purpose— "allowing for a quick engagement between the user and speargun to achieve integration." PO Resp. 28 (referencing Ex. 2009 ¶ 22). Patent Owner argues that the proposed modification "would frustrate *Forjot's* express teaching about the desirability of 'easily and quickly engaged in the cuff by bending [the] ends, forming a clamp' in order to arrive at the rigid connection and integration of the user's arm and speargun." *Id.* at 29 (alteration in original) (referencing Ex. 1008, 2:27–29). Patent Owner argues that "[a]dding a strap to the cuff of Forjot would add sufficient delay in achieving the connection, thereby frustrating the purpose of the 'fast' connection." *Id.* (referencing Ex. 1008, 1:19–20).

Petitioner replies that adding a strap to Forjot would not render Forjot inoperable for its intended purpose as a strap does not change the basic principles of operation of Forjot. Reply 12–13. Petitioner argues that Forjot's primary goals "are better aiming, avoiding shouldering, andforming a rigid, integral connection with the shooter's arm," and that adding "a strap would further serve" these goals. *Id.* at 11 (referencing Paper 10 ("Dec. on Inst."), 17; Ex. 1022 ¶ 6). Petitioner argues that Dr. Harrison admits that adding a strap would not frustrate these objectives.

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Id. Petitioner also argues that Patent Owner does not support its position that using a strap would be difficult and time consuming. *Id.*

Patent Owner replies that "the ability of the forearm to be 'quickly and easily engaged in the cuff,' to make the weapon integral with the arm without shouldering is an intended purpose of *Forjot*. Sur-reply 14 (referencing Ex. 1008, 2:25–31).

(d) Arguments addressing whether using straps to secure a firearm was known

Next, Patent Owner responds that the language in the '021 patent on which Petitioner relies does not support the contention that using straps to secure a firearm support to a user's forearm was known. PO Resp. 31 (addressing Pet. 19; Ex. 1001, 4:26–29). The disclosure at issue states: "One of ordinary skill in the art will readily appreciate the function of strap and recognize many suitable arrangements for the purpose of securing the body 14 about a user's forearm." Ex. 1001, 4:26–27. Patent Owner argues that this passage merely provides that the disclosure in the '021 patent "is sufficient for one of ordinary skill in the art to appreciate the function and suitable alternative arrangements – claimed or unclaimed – of the disclosed strap 36 in the context of the other features disclosed by the '021 [p]atent." PO Resp. 31–32.

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(e) Arguments addressing "most likely result" of combined teachings

Finally, Patent Owner responds that Petitioner fails to explain adequately why a person having ordinary skill in the art would combine Morgan's teachings of a strap to Forjot's cuff rather than add Forjot's cuff to Morgan's brace, as such a modification would "be the most likely result" of the combined teachings of Forjot and Morgan. PO Resp. 42–44. Patent Owner also argues that Petitioner's proposed modification discards Morgan's teachings of a U-shaped barrel rest. *Id.* at 44. Patent Owner also argues "that supporting the U-shaped barrel rest of *Morgan* under the minor weight of a handgun barrel does not require much force, and that the cuff of *Forjot* already clamps to the shooter's forearm sufficiently for that purpose." *Id.*

Petitioner replies that Patent Owner's position as to the "most likely result" of combining Forjot and Morgan ignores the claimed invention. Reply 14. That is, the obviousness analysis under *Graham* looks at the differences between the prior art and the claimed invention. *Id.* Petitioner argues that Patent Owner fails to cite to any authority to support its "most likely result" theory, which is contrary to the law. *Id.* at 15.

Patent Owner replies its "most likely result" analysis illustrates that "the [P]etition failed in its burden to justify its specific combinations of cherry-picked subsets of elements selected from [Forjot and Morgan], at the

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exclusion of other unselected elements." Sur-reply 16; see *id.* at 16–17 (citing *Unigene Labs., Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1360 (Fed. Cir. 2011)). Patent Owner argues that "Petitioner fails to consider the motivation required to combine specific elements of references to arrive at" the invention of claim 1. *Id.* at 17.

(f) Analysis of the parties' arguments

We have evaluated Petitioner's and Patent Owner's arguments and weighed the supporting evidence. We find that Petitioner had demonstrated, by a preponderance of the evidence, that a person having ordinary skill in the art would have had reason to combine Morgan's teaching of straps for its forearm support with Forjot's cuff. Specifically, we find that a person having ordinary skill in the art would have added a strap to Forjot's cuff to better secure cuff 1 to a user's forearm. *See* Pet. 24; Ex. 1002 ¶ 65.

We find that Petitioner's reasoning is supported by rational underpinnings. *See KSR Int'l*, 550 U.S. at 418. First, we find that Morgan itself suggests the modification. As Petitioner contends, Morgan discloses a handgun support with a similarly shaped structure for receiving a user's forearm and that structure is secured to the forearm using straps. *See* Pet. 24; *see also* Ex. 1010, 5:51–6:4, Figs. 1, 7. Morgan expressly discloses that its arm support "help[s] to prevent movement of the arm ... while holding and firing the hand gun." Ex. 1010, 5:66–6:2.

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We credit Mr. Nixon's Declaration and deposition testimony, in part, because it is consistent with Morgan's teachings. See Ex. 1002 ¶ 65; Ex. 2011, 70:12–21. For example, Morgan discloses that each strap has a "pile-type fastener," that is, hook and loop type fastener, which can be simply secured. See Ex. 1001, 5:54–58; Reply 11–12; Ex. 1022 ¶ 5.

Second, we give weight to Dr. Harrison's deposition testimony that a strap would prevent a user's forearm from slipping out of Forjot's cuff. See Ex. 1021 43:4–12 ("Adding a strap would prevent it slipping out, but it wouldn't prevent it in a way that would be compatible with Forjot's teaching of quick and easy connection."). We appreciate that Dr. Harrison prefaced his statement with: "Forjot teaches to avoid [the forearm slipping out] by tightening the screw 3 enough to where [a strap is] unnecessary, so that you can maintain the quick and easy connection." *Id.* We find, however, that this prefacing statement overstates Forjot's teachings. Forjot does disclose that screw 3 adjusts opening 4, but does not go so far as to say that tightening screw 3 would prevent a forearm from slipping out of cuff 1.

Third, we find that the level of ordinary skill in the art is sufficiently high— a bachelor's degree in mechanical engineering and 2 to 3 years of experience in handgun use, procurement, repair, design, or manufacturing— to appreciate the role Morgan's straps play in securing its support to a user's arm. *See KSR Int'l*, 550 U.S. at 417 ("[I]f a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that

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it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.").

We are not persuaded that Petitioner's proposed modification would render Forjot inoperable for its intended purpose. As Petitioner asserts, Forjot's intended purpose is to "give [an] underwater pistol and rifle the rigidity sought after to ensure aim, but ... without using the shoulder" or "make [a] weapon integral with the arm." Reply 11; see Ex. 1008, 1:32–36 ("[I]f one could give the underwater pistol and rifle the rigidity sought after to ensure aim, but of course without using the shoulder, one would obtain a very great advantage in the use of these weapons."), 2:5-6 ("This cuff is *intended* to make the weapon integral with the arm.") (emphasis added). Although quick engagement may be a feature of Forjot's design—a feature that we weigh in our analysis—it is not the invention's intended purpose. A strap would provide the requisite rigidity to allow the weapon to be aimed without shouldering the weapon. We credit Mr. Nixon's testimony, as it is consistent with the evidence of record. See Ex. 1022 ¶ 6 ("The strap would improve on [Forjot's] objectives by preventing the forearm from slipping out of the cuff, and providing a tighter connection than the cuff alone could achieve, simply by cinching the strap tight."); Ex. 1021 43:4–12; Ex. 1010, 5:60–62, 6:1–4); see also Ex. 1021, 47:5–49:10 (including the testimony "Q. And the advantages [of 'improving aiming' and providing a 'rigid attachment to the arm'] would not be frustrated by adding a strap? A. Correct.").

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Also, we do not find that Forjot teaches away from the proposed modification. "A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant." In re Gurley, 27 F.3d 551, 553 (Fed. Cir. 1994); see, e.g., In re Fulton, 391 F.3d 1195, 1201 (Fed. Cir. 2004) (holding that, to teach away, the prior artmust "criticize, discredit, or otherwise discourage the solution claimed"). Patent Owner does not direct us to any persuasive disclosure in Forjot that would *discourage* a person having ordinary skill in the art from employing a strap to further secure Forjot's cuff, or otherwise criticize or discredit the proposed modification. Again, although quick engagement may be a feature of Forjot's design, we do not discern anything in Forjot's disclosure that rises to the level of teaching away from adding a strap to further secure the cuff.

In weighing the evidence, we do assign some weight to Forjot's disclosure that its design achieved an "absolute" or "perfect connection" between the *weapon* and the user's forearm. *See* PO Resp. 20; Ex. 1008, 2:25–32; *Polaris Indus., Inc. v. Arctic Cat, Inc.*, 882 F.3d 1056, 1069 (Fed. Cir. 2018) ("But even if a reference is not found to teach away, its statements regarding preferences are relevant to a finding regarding whether a skilled artisan would be motivated to combine that reference with another reference."). However, in weighing all of the evidence, we find that this disclosure in Forjot is insufficient to outweigh the evidence supporting Petitioner's reasoning. Forjot expressly characterizes the connection between

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the weapon and the user's arm as "perfect," suggesting that it is the overall configuration of how cuff 1 and plate 7 interact with both the user's arm and the weapon to "extend[the arm] . . . to the end of the barrel." *See* Ex. 1008, 2:3–32. Also, we afford Dr. Harrison's testimony little weight. Dr. Harrison declared that "adding a strap to Forjot clamp would make engagement to the forearm more difficult and time consuming," thus "frustrate[ing] Forjot's expressly taught objective that the hunter's forearm be *'easily and quickly engaged in the cuff*." Ex. 2009 ¶ 23. Dr. Harrison provides no support for this testimony. *See* 37 C.F.R. 42.65(a) ("Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight.").

Further, Patent Owner's assertions with respect to the advantage of quick engagement of the cuff with the user's arm presumes that the weapon is repeatedly engaged with the user's arm, rather than engaged with the arm initially, then maintained while hunting. Patent Owner does not direct us to disclosure in Forjot that persuasively supports this position. See Tr. 35:16-37:4. At oral hearing, Patent Owner's counsel directed us to the following in Forjot: "to quickly target the prey, to maintain this line of sight by connecting the arm of the hunter with his/her weapon in an extremely rigid way, thus giving more freedom to the hand to actuate the trigger and to attain the targeted prey with an almost absolute security." Tr. 36:23–37:4; Ex. 1008, 3:41–45. We interpret this passage, however, to not necessarily say that the "connecting" takes place after the prey is targeted. Instead, this passage can be read to mean that the targeting takes place while the

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arm is already connected to the weapon, such that the line of sight formed by the rigid connection between the arm and weapon allows for targeting and attaining the prey. We also note that Forjot expressly states that his invention may be employed for land-based hunting. Ex. 1008, 3:51–52. As such, the effects of slowed movement in the water would be diminished. *See, e.g.*, Ex. 1021, 46:5–9 ("Q. And Forjot says he's applicable to land-based weapons as well. How long would it take to attach a Velcro strap if Forjot was used on land? A. It would take less time than in water.").

Accordingly, we afford some, but not substantial weight, to any advantage for quick engagement for Forjot's cuff with the user's forearm against Petitioner's proposed combination.

Finally, we are not persuaded that Petitioner cherrypicked features from Morgan—features that would not have led to the most likely result of combining the references as a whole. We agree with Petitioner that, as part of our obviousness analysis, we must determine the scope and content of the prior art and any differences between the claimed subject matter and the prior art. See Graham, 383 U.S. at 17–18. Here, we have ascertained the scope and content of Forjot and Morgan and also found that Forjot differs from the subject matter of claim 1 in that Forjot does not disclose the subject matter of the strap limitation. Petitioner then proposes to modify Forjot with Morgan's teachings of a strap, and Petitioner has provided reasons to support the proposed modification.

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Patent Owner's reliance on Unigene Laboratories, Inc. is unavailing. Indeed, Unigene Laboratories, Inc. states that "obviousness requires the additional showing that a person of ordinary skill at the time of the invention would have selected and combined those prior art elements in the normal course of research and development to yield the claimed invention." 655 F.3d at 1360. This showing is exactly what Petitioner has done—providing reasons for why a person having ordinary skill in the art would have combined Morgan's strap with Forjot's cuff.

Accordingly, for the reasons above, we find, on the complete record, that Petitioner has demonstrated, by a preponderance of the evidence, that the combination of Forjot and Morgan discloses the subject matter of the "strap" limitation of claim 1. Also, we find that Petitioner has demonstrated, by a preponderance of the evidence, that a person having ordinary skill in the art would have been motivated to modify Forjot's cuff by adding a strap as taught by Morgan.

(6) Objective evidence of nonobviousness

Patent Owner presents objective evidence that purports to demonstrate commercial success, copying, and licensing. See PO Resp. 54–55; see id. at 49–57 (providing secondary considerations analysis). We must always consider, as part of an obviousness inquiry, this type of objective evidence, or secondary considerations evidence, when present. Transocean Offshore Deepwater Drilling, Inc., 699 F.3d at 1349.

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"For objective evidence to be accorded substantial weight, its proponent must establish a nexus between the evidence and the merits of the claimed invention." In re GPAC Inc., 57 F.3d 1573, 1580 (Fed. Cir. 1995). The Board uses a two-step analysis in evaluating nexus between the claimed invention and objective evidence. Lectrosonics, Inc. v. Zaxcom, Inc., IPR2018-01129, Paper 33 at 33 (PTAB Jan. 24, 2020) (precedential). We first consider whether the patent owner has demonstrated "that its products are coextensive (or nearly coextensive) with the challenged claims," resulting in a rebuttable presumption of nexus. Id. If not, that "does not end the inquiry into secondary considerations"; "the patent owner is still afforded an opportunity to prove nexus by showing that the evidence of secondary considerations is the 'direct result of the unique characteristics of the claimed invention." Id. (quoting Fox Factory, Inc., v. SRAM, LLC, 944 F.3d 1366, 1373-75 (Fed. Cir. 2019)). The patent owner may do so by demonstrating that the objective evidence is the result of some aspect of the claim (not already in the prior art) or the claimed combination as a whole. Id. (citing In re Kao, 639 F.3d 1057, 1068–69 (Fed. Cir. 2011); WBIP, LLC v. Kohler Co., 829 F.3d 1317, 1331 (Fed. Cir. 2016)).

(a) Nexus

"Whether a product is coextensive with the patented invention, and therefore whether a presumption of nexus is appropriate in a given case, is a question of fact." *Fox Factory*, 944 F.3d at 1373.

Patent Owner contends that "[a]ll of the elements of each of the independent claims in the '021 [p]atent read

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on the SB15 pistol stabilizer that is and has been sold by" Patent Owner. PO Resp. 50 (referencing Ex. 2012 (Bosco¹³ Declaration) ¶ 53); see also Ex. 2012, Exhibit R (providing claims charts for how the SB15 stabilizer corresponds to claims 1–5 of the '021 patent). Patent Owner continues that the SB15 pistol stabilizer was the basis for the Specification. PO Resp. 50–51.

Petitioner replies that Patent Owner has not met its burden that its objective evidence is entitled to a nexus. Reply 18–27. Petitioner argues that any success in the SB15 pistol stabilizer is attributed to the fact that users can (and do) shoulder the stabilizer, without the weapon being characterized as a short-barreled rifle. Id. at 19–25; see, e.g., Ex. 2012, 114 (indicating that pistol braces "have become popular replacements for standard AR-15 stock systems for reasons having nothing to do with their intended purpose"). Petitioner explains that, initially, the U.S. Bureau of Alcohol, Tobacco, Firearms and Explosives ("BATFE") concluded, in 2015, that an AR15 pistol fitted with a stabilizer was classified as a short-barreled rifle, triggering more onerous licensing requirements. Id. at 22-23 (referencing Ex. 1017; Ex. 1015, 19:1-10). Petitioner argues that Patent Owner "worked tirelessly for more than two years' to reverse the ruling." Id. at 23 (referencing Ex. 1019; Ex. 1015, 39:12–15, 44:6–15).

Petitioner also argues that Patent Owner fails to explain adequately how the same objective evidence applies to the claimed inventions of both the '021 patent

^{13.} Mr. Bosco is the Chief Executive Office of Patent Owner, NST Global, LLC dba SB Tactical. Ex. 2012 ¶ 2.

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and the '444 patent. Reply 25–27. Petitioner argues that the claims of the two patents are not identical, as the '021 patent claims a body with at least one flap, and the '444 patent claims a body with bifurcated flaps. *Id.* at 26. Petitioner argues that Patent Owner has not identified any novel feature over the '444 patent that led to the commercial success. *Id.* at 26–27.

Patent Owner replies that BATFE's approval supports a finding of nexus, as BATFE was trying to prevent shouldering of the weapon and the claimed features allow the weapon to be secured to the forearm. Sur-reply 22. Patent Owner also argues that there are other, cheaper, braces on the market that would allow shouldering, yet Patent Owner's products "still dominate the market." *Id.* at 22–23.

Patent Owner also replies that the '444 patent and '021 patent cover the same inventions. Sur-reply 23. Patent Owner argues that "a presumption of nexus is appropriate if the claims of both patents generally cover the same invention." *Id.* at 23–24 (citing *Fox Factory*; *WBIP*, *LLC*, 829 F.3d at 1324–25; *PPC Broadband*, *Inc. v. Corning Optical Comme'ns RF*, *LLC*, 815 F.3d 734, 737–739 (Fed. Cir. 2016); *Gator Tail*, *LLC v. Mud Buddy LLC*, 618 F. App'x 992, 995, 999–1000 (Fed. Cir. 2015)).

We find that Patent Owner has not met its burden of proving a nexus between the SB15 stabilizer and the claimed invention. Patent Owner has not demonstrated that it is entitled to a presumption of nexus. The independent claims of the '021 patent recite "a handgun,"

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"a support structure extending rearwardly from the rear of the handgun," and (for claims 3 and 5), a "buffer tube." See Ex. 1001, 6:12–26, 6:30–45, 6:48–59. Patent Owner has not established how many products sold included these elements. As such, the evidence of record does not include how many of the products sold are *coextensive* with claim 1. See Tr. 52:24–53:13 (Patent Owner's counsel stating that she does not know how many of the units sold included a support structure or handgun, that is, how many sales, if any, are for a product that is coextensive with the claims); cf. Polaris Indus., Inc., 882 F.3d at 1073 ("Moreover, the Board did not point to any limitation it found missing in the RZR vehicles."). Mr. Bosco's testimony is directed to the total number of "stabilizers" sold, without explaining persuasively that these sales include products coextensive with claim 1. See Ex. 2012 ¶¶ 21–31.

Also, the evidence of record is replete with products that differ from the SB15 stabilizer, the product on which Patent Owner relies for its commercial success. See, e.g., Ex. 2012, 33–38 (referencing the SB Tactical SBM4, SBA3, SB PDW, FS1913), 51 (stating that SB Tactical has "an extensive catalog of brace configurations"), 75–77 (referencing the SOB47 stabilizer), 90–91 (referencing the SB Tactical Mini stabilizer). Patent Owner fails to explain adequately if these different models of stabilizer are configured the same as the SB15 stabilizer and how many of the sales about which Mr. Bosco testifies are associated with the SB15 stabilizer as compared to these other models. See Ex. 2012 ¶ 21 (claiming that over 2,000,000 units were sold covered by at least one claim of the '021 patent, but not providing any support for this

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testimony or how stabilizers other than the SB15 satisfy a claim). Although we agree with Patent Owner that the '021 patent and '444 patent cover generally the same invention (*compare* Ex. 1001, 6:11–59 *with* Ex. 1006, 5:66–7:16), Patent Owner has failed to demonstrate, on the complete record, that these numerous products all fall within the scope of the claims of these patents.

Accordingly, we find that Patent Owner has not established how many, if any, of the products sold (as identified in Mr. Bosco's Declaration) are coextensive with the claimed subject matter, such that Patent Owner is entitled to a presumption of nexus.

As we indicate above, our analysis does not end with a finding that Patent Owner is not entitled to a presumption of nexus—Patent Owner may establish a nexus by demonstrating that the objective evidence is the result of some aspect of the claim (not already in the prior art) or the claimed combination as a whole. For the reasons below, we find that Patent Owner has not adequately made such a showing.

As set forth above, Patent Owner has not established how many SB15 stabilizers (that is, the specific stabilizer identified in Mr. Bosco's Declaration) were sold with a handgun and a support structure extending rearwardly from the rear of the handgun, which the claims of the '444 patent require. *See* Tr. 52:24–53:13 (Patent Owner's counsel stating that she does not know how many of the units sold included a support structure or handgun); Ex. 1001, 5:66–6:15, 6:29–46, 6:54–7:3. Nonetheless,

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considering the SB15 stabilizer used with a handgun and a support structure extending rearwardly from the rear of the handgun, Patent Owner has not sufficiently shown that the objective evidence of non-obviousness is the result of some aspect of the claim (not already in the prior art) or the claimed combination as a whole. As we found in our analysis of the *Graham* factors, the prior art (Forjot) differs from the claimed invention in that it fails to disclose a strap to secure its cuff to a user's forearm. Patent Owner has not demonstrated adequately that the strap limitation or the claimed combination as a whole (including the handgun and support structure) is the reason for the commercial success.

Significantly, we agree with Petitioner that the evidence of record supports a finding that any commercial success is likely attributable, at least in large part, to the ability to shoulder an AR15 pistol using Patent Owner's brace. Reply 19–25. That is, the objective evidence is more the result of some aspect of the claim that is already in the prior art, rather than a unique feature (the strap) or the recited combination as a whole. See Lectrosonics, Inc., IPR2018-01129, Paper 33 at 33. Industry articles in the record identify the ability to shoulder or cheek an automatic pistol fitted with the stabilizer as a main feature of the product. See, e.g., Ex. 2012, 29-30 (discussing shouldering), 48 ("The reactions [to the brace] were mixed However, a few enterprising purchasers decided not to use the SB-15 as intended, and they promptly should red their brace-equipped AR pistols."), 49 ("With the ability of the SB-15 braced AR pistols to be shouldered, ... the market responded."), 77 ("Long

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story short, you can shoulder your AR-15 pistol without any issues, so shoulder away!"), 114 ("Pistol braces are awesome, but the first thing you need to know about them is that very few people actually use pistol braces as pistol braces."), 119 ("You can also find most of the popular firearms YouTubers shouldering pistol braces regularly."), 127-128 (discussing the impact of stabilizing braces on AR15 pistol popularity and the use of the brace to shoulder the weapon), 157 (depicting user shouldering weapon with brace), 167 ("Basically, if an SB Tactical pistol stabilizing brace is attached by the end user to an AR pistol buffer tube, it can legally be shouldered and fired without being considered [a short-barreled rifle] under the [National Firearms Act]."); Ex. 2014, 4 (depicting use of brace to shoulder weapon); Ex. 2005, 4 (depicting brace used to cheek weapon).¹⁴ Forjot's prior art cuff would provide that same capability. That is, as we discuss above, the differences between the claimed invention of claim 1 and the prior art is the strap limitation. See, e.g., Ex. 1008, Fig. 1 (depicting a structure, without a strap, that could be shouldered, rather than attached to a forearm).

(b) Conclusion as to secondary considerations

Because we find that Patent Owner has not established a nexus between its objective evidence of non-obviousness and the claimed invention of claim 1, we find that this

^{14.} Although many of these articles address SB Tactical's stabilizing braces generally, that is, without reference to a specific model, these articles support a finding that the ability to shoulder the brace would span across different models.

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evidence is not entitled to substantial weight. See In re GPAC Inc., 57 F.3d at 1580.

(7) Conclusion as to claim 1

For the reasons provided above, we conclude, on the complete record, that Petitioner demonstrates, by a preponderance of the evidence, that claim 1 is unpatentable under 35 U.S.C. § 103(a) over Forjot and Morgan.

b) Independent claims 3 and 5

Independent claims 3 and 5 are similar to claim 1, except that each of these claims further recites "wherein said support structure is a buffer tube." Ex. 1001, 6:45, 6:59. As we indicate above in our claim construction analysis, we construe the term "buffer tube" to mean "a cylindrical lower receiver extension that houses the buffer assembly of a firearm."

In the Petition, Petitioner states "Forjot also uses 'tube 2' as the support structure and therefore discloses" a buffer tube. Pet. 20 (referencing Ex. 1002 ¶ 56). Mr. Nixon provides the exact same statement, without further explanation, in his Declaration. See Ex. 1002 ¶ 56. Mr. Nixon adds that "I note this limitation is the purported reason the claims were allowed. Use of a buffer tube is not novel or nonobvious, however, and is taught by Forjot." Id.

Mr. Nixon's testimony is the sole support for Petitioner's position. Neither the Petition nor Mr. Nixon provides a construction of the term "buffer tube" or

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explains how Forjot's tube 2 corresponds to a buffer tube *in the Petition. See* Pet. 24; Ex. 1002 ¶ 67; *cf.* 37 C.F.R. § 42.104(b)(3) (requiring, in a petition, a statement of "[h]ow the challenged claim is to be construed"); Ex. 2011, 16:15–17 (Mr. Nixon answering "[n]o," when asked if, "[i]n a firearm would all tubular members be referred to as buffer tubes").

Patent Owner responds that "[n]o tube that is unrelated to the ... bolt return function [of the handgun] can be properly understood to be a 'buffer tube." PO Resp. 34 (referencing Ex. 2009 ¶ 48; and relying on Patent Owner's proposed construction of the term "buffer tube"). Patent Owner argues that Forjot's tube 2 is not a buffer tube as that term is properly construed. *Id*.

Petitioner replies that, under the construction it proposes in the Reply, Forjot's tube 2 corresponds to the recited buffer tube. Reply 16. Petitioner adds that, even under Patent Owner's construction, "attaching Forjot's stabilizing member to an AR-15 pistol buffer tube would be obvious." Id. (referencing Ex. 1022 ¶ 9). Petitioner reasons that "AR-15 pistols with buffer tubes ... were known prior to the invention." Id. Petitioner adds that "Patent Owner's expert testified it was well-known to attach stocks to AR-15 buffer tubes." Id. (referencing Ex. 1021, 78:20–25 ("It is definitely true that buffer tubes -- that stocks were attached to buffer tubes in 2012, and that was well known, and in that regard the buffer tube supported the stock, yes.")). Petitioner concludes that "[i]t would have been obvious to use the stabilizer of *Forjot* with an AR-15 pistol since *Forjot* discloses attaching a

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stabilizing cuff to the same structure, i.e., a cylindrical lower receiver extension from the rear of a handgun, and suggests applying its invention to 'land-based weapons.'' *Id.* (referencing Ex. 1022 ¶ 9). Mr. Nixon testifies that Forjot's statement that its invention can be applied to land-based weapons provides a motivation for the modification. Ex. 1022 ¶ 9.

Patent Owner does not address Petitioner's obviousness position presented, for the first time, in the Reply in response to Patent Owner's construction. *See* Sur-reply 18 (addressing Petitioner's construction of "buffer tube").

We agree with Patent Owner that Forjot does not disclose a "buffer tube" as we have construed the term—"a cylindrical lower receiver extension that houses the buffer assembly of a firearm." Instead, Forjot merely discloses a tube as its support structure—tube 2. *See, e.g.*, Ex. 1008, Fig. 1 (showing tube 2 extending from rear of Forjot's gun).

We do not consider Petitioner's new obviousness theory presented, for the first time, in the Reply. A petitioner may not bolster its original case-in-chief with new theories and evidence in its reply brief. To do so would violate 37 C.F.R. § 42.23(b), which forbids the introduction of new arguments on reply. *See Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1369 (Fed. Cir. 2016) ("It is of the utmost importance that petitioners in the IPR proceedings adhere to the requirement that the initial petition identify 'with particularity' the 'evidence that supports the grounds for the challenge to each claim."").

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Here, Petitioner chose not to offer a construction of "buffer tube" in the Petition, and did not provide any explanation as to why tube 2 constituted the recited "buffer tube." Petitioner cannot properly shift its claim construction obligation on to Patent Owner, then present an entirely new obviousness theory based on that construction. *See Henny Penny Corp. v. Frymaster LLC*, 938 F.3d 1324, 1330–31 (Fed. Cir. 2019) ("[A]n IPR petitioner may not raise in reply "an entirely new rationale" for why a claim would have been obvious.").

We recognize that Mr. Nixon does declare that "[u]se of a buffer tube is not novel or *nonobvious*, however, and is taught by *Forjot*." Ex. 1002 ¶ 56 (emphasis added). First, this assertion is not in the Petition. Second, we do not read this testimony to mean it would have been obvious to use Forjot's cuff in conjunction with a weapon with a buffer tube, as Petitioner argued in the Reply. Instead, we read Mr. Nixon's testimony to be that Forjot discloses a buffer tube.

Accordingly, we conclude, on the complete record, that Petitioner fails to demonstrate, by a preponderance of the evidence, that independent claims 3 and 5 are unpatentable under 35 U.S.C. § 103(a) over Forjot and Morgan.

c) Dependent claims 2 and 4

Dependent claims 2 and 4 depend directly from independent claims 1 and 3, respectively, and require, in relevant part, that the at least one flap be made of an elastomeric material. Ex. 1001, 6:27–29 (claim 2),

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6:46–47 (claim 4). Petitioner argues that "it would have been obvious to use known elastomeric materials" given Forjot's teaching that its cuff "obtain[s] a certain elasticity" to receive a user's arm. Pet. 22–23 (referencing Ex. 1008, 2:4–5; Ex. 1002 ¶ 59).

Petitioner also argues that Morgan discloses that its forearm supports are made of plastic. Pet. 22 (referencing Ex. 1010, 5:53; Ex. 1002 ¶ 63). Petitioner argues that "[p]lastics having elasticity include 'elastomeric materials,' and the use of elastomeric materials for forearm accessories was well known in the art." Id. (referencing Ex. 1002 ¶ 63; Ex. 1012). Petitioner reasons that "[u]sing elastomeric materials instead of a metal having elastic properties is a 'mere substitution of one element for another known in the field' to 'vield a predicable result' and therefore obvious." Id. (quoting KSR Int'l, 550 U.S. at 416). Petitioner argues that "[a]rmed with the teaching in *Forjot* that the cuff has a 'certain elasticity,' one skilled in the art would have been taught by *Forjot* and *Morgan* to use elastomeric materials for the cuff of *Forjot*." *Id.* at 24 (referencing Ex. 1002 ¶ 66). Petitioner adds that "[s]uch a choice could have been motivated by the cost or availability of materials, ease of manufacture, user comfort, or the more resilient characteristics of elastomers versus stainless steel." Id. at 22–23 (referencing Ex. 1002 ¶ 62).

Patent Owner responds that Forjot neither discloses nor suggests that its "cuff be fabricated from an elastomeric material." PO Resp. 36. Patent Owner argues that Forjot discloses that its cuff is preferably made of metal. *Id.* Patent Owner argues that Forjot teaches away from an elastomeric material for its cuff. *Id.* at 36–37.

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Patent Owner also argues that Morgan does not disclose a cuff made of an elastomeric material, as Morgan's cuff is made of a rigid plastic. PO Resp. 37. Patent Owner explains that the Specification of the '021 patent distinguishes between a rigid material and an elastomeric material. *Id.*

Petitioner replies that Forjot discloses a cuff made of an elastomeric material, as Petitioner construes that term. Reply 17. Petitioner argues that, even if Forjot's stainless steel cuff is not an elastomeric material, such materials were well known in the firearms art. *Id.* Petitioner adds that Dr. Harrison testified that "[i]t's really common' to use elastomeric materials in firearms." *Id.* Petitioner argues that "*Forjot* expressly provides a motivation to use 'elastic' materials." *Id.*

Patent Owner replies that "[e]lastic does not mean elastomeric." Sur-reply 18. Patent Owner argues that Petitioner mischaracterizes Dr. Harrison's testimony concerning elastomeric material, which he testified is commonly used for grips on handguns. *Id.* at 18–19 (referencing Ex. 1021, 76:13–17).

Again, we construe the term "elastomeric material" to require the material of the spaced flaps to be made of an elastomer. As such, we find Forjot does not disclose a cuff made from an elastomeric material. Forjot's cuff is preferably made of stainless steel. Ex. 1008, 2:3–5. We also find that Morgan does not disclose a cuff made of an elastomeric material. As Patent Owner argues, Morgan discloses that its supports 136, 138 "are each

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made of a *rigid* plastic." Ex. 1010, 5:51–53 (emphasis added); PO Resp. 33. The rigid characteristic takes Morgan's cuff material outside the scope of an elastomeric material, which has properties similar to natural rubber, including the ability to return to its original shape after being stretched. *See* PO Resp. 36 (explaining that "[t]he specification of the '021 [p]atent itself differentiates between a rigid material and an elastomeric material").

We also find that Petitioner has not demonstrated, by a preponderance of the evidence, that it would have been obvious to a person having ordinary skill in the art to modify Forjot's cuff to construct it of an elastomeric material. Petitioner's sole rationale for this modification is that, because Forjot discloses that its cuff has a "certain elasticity," a person having ordinary skill in the art would have modified Forjot's stainless steel cuff with an elastomeric material. Pet. 21–22 (referencing Ex. 1002 ¶ 59). In support of this reasoning, Mr. Nixon declares that Forjot's teaching that its cuff obtains a certain elasticity "alone is sufficient to suggest to one of ordinary skill in the art to use elastomeric materials." Ex. 1002 ¶ 62. We do not agree.

Forjot's disclosure as to obtaining a "certain elasticity" is directed to the thickness of the stainless steel cuff. Ex. 1008, 2:3–5. Forjot also teaches that a user would bend the flaps to engage the user's forearm, forming a clamp over the forearm. *Id.* at 2:25–29. Neither Petitioner nor Mr. Nixon adequately explained how this disclosure suggests using an elastomeric material, which has properties similar to natural rubber, instead of stainless steel.

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In support of our finding, we agree with Patent Owner and Dr. Harrison that "[e]lastic does not mean elastomeric." Sur-reply 18; Ex. 2009 ¶ 40 ("Still, the terms 'elastic' and 'elastomer' refer to very different concepts."). Indeed, as Forjot itself teaches, a metal can have elastic properties. Ex. 1008, 2:3–5; *see also* Ex. 2009 ¶ 40 ("[A] metal can behave elastically and resiliently in a small range of deformation.").

Although we recognize that an elastomeric material has properties similar to natural rubber, including elasticity, we find elasticity alone insufficient to serve as the sole basis for why a person having ordinary skill in the art would substitute an elastomeric material for Forjot's stainless steel cuff, as the evidence of record demonstrates that other materials have elastic properties.

Petitioner's reliance on Troncoso¹⁵ is unavailing. Petitioner states that "[p]lastics having elasticity include 'elastomeric materials,' and the use of elastomeric materials for forearm accessories was well known in the art." Pet. 22 (referencing Ex. 1002 ¶ 60; Ex. 1012). Mr. Nixon provides, with reference to Troncoso, similar testimony—"the use of elastomeric materials for forearm accessories was well known in the art." Ex. 1002 ¶ 60.

Troncoso's reference to elastomeric material, however, is directed to material added to fork 32b to provide a snug fit between the barrel fork and the barrel of a gun. Ex. 1012, 4:1–11; *see also id.* at Fig. 5 (depicting elastomeric material layer 76 on tines 72, 74, of fork 32b). As such,

^{15.} Troncoso, Jr. US 5,180,874, issued Jan. 19, 1993 (Ex. 1012).

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Troncoso's use of elastomeric material is not directed to a forearm accessory as Petitioner and Mr. Nixon imply. Neither Petitioner nor Mr. Nixon adequately explained how this disclosure in Troncoso demonstrates that using elastomeric materials for forearm accessories was well known in the art or otherwise suggests replacing Forjot's stainless steel with an elastomeric material.

For the reasons above, on the complete record, we find that Petitioner fails to demonstrate, by a preponderance of the evidence, that a person having ordinary skill in the art would have been motivated to modify Forjot's stainless steel cuff by making it out of an elastomeric material. Accordingly, Petitioner fails to demonstrate, by a preponderance of the evidence, that claims 2 and 4¹⁶ are unpatentable under 35 U.S.C. § 103(a) over Forjot and Morgan.

E. Grounds 1, 2, and 4: Claims 1–5 as Allegedly Obvious Over Forjot alone, or Forjot in combination with and Baricos or Deckard

Petitioner contends that Forjot, alone (Ground 1), or Forjot in combination with Baricos or Deckard (Grounds 2 and 4), renders obvious the subject matter of independent claims 1, 3, and 5 and dependent claims 2 and 4. Pet. 2, 15–23, 25–26.

^{16.} Because we conclude that Petitioner did not demonstrate, by a preponderance of the evidence, that independent claim 3 was obvious over Forjot and Morgan, claim 4 is also not proved obvious for that reason. *See, e.g., In re Fritch,* 972 F.2d 1260, 1266 (Fed. Cir. 1992) ("[D]ependent claims are nonobvious if the independent claims from which they depend are nonobvious.").

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Because we conclude that Petitioner demonstrates, by a preponderance of the evidence, that independent claim 1 is obvious over Forjot and Morgan, we need not address this claim for Grounds 1, 2, and 4.

With respect to claims 2–5, we address Petitioner's contentions with respect to Grounds 1 and 3 above, in connection with our analysis of these claims for Ground 3. Petitioner does not provide any additional contentions with respect to these claims for Grounds 2 and 4. See Pet. 23, 25–26. That is, Petitioner's contentions with respect to the "buffer tube" and "elastomeric material" subject matter are the same for all asserted grounds. See, e.g., Pet. 20 (addressing "buffer tube" subject matter); Pet. 21 n.7 ("The arguments regarding dependent claims 2 and 4 apply to each of Grounds 1- 4."). Accordingly, we conclude that Petitioner fails to demonstrate, by a preponderance of the evidence, that claims 2–5 are unpatentable under 35 U.S.C. § 103(a) over Forjot alone, or over the combinations of Forjot and Baricos or Forjot and Deckard.

III. PETITIONER'S MOTIONS TO EXCLUDE EVIDENCE

Petitioner files two motions to exclude evidence. Papers 37, 38. We address each motion in turn, below.

A. Petitioner's Motion to Exclude Certain Exhibits

Petitioner moves to exclude certain exhibits, each of which "has been relied on by Patent Owner to show that secondary considerations of non-obviousness support a

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finding that the claimed invention is patentable." Paper 38, 1 (listing Exhibits 2003–2005; Exhibit 2012, Exs. C-P; Exhibit 2013, Exs. A-D; Exhibit 2014, Ex. A; Exhibit 2015, Ex. A; and Exhibit 2016, Ex. A). Because we do not give substantial weight to Patent Owner's objective evidence of non-obviousness, we dismiss this motion as moot.

B. Petitioner's Motion to Exclude Dr. Harrison's Declaration

Petitioner seeks to exclude Dr. Harrison's direct testimony because "Dr. Harrison is not an expert in firearms and did not use reliable principles and methods when preparing his opinions." Paper 37, 1. Petitioner argues that Dr. Harrison "has no technical experience to draw from to offer expert testimony that could assist the Board." *Id.* For the reasons discussed below, we disagree, and we deny Petitioner's motion.

First, Petitioner argues that allowing Dr. Harrison to testify "opens the doors for other full-time patent attorneys to hold themselves out as experts." Paper 37, 2–3. Petitioner argues that "admitting such testimony 'serves only to cause mischief and confuse the factfinder." *Id.* at 3 (quoting *Sundance, Inc. v. DeMonte Fabricating Ltd.*, 550 F.3d 1356, 1362 (Fed. Cir. 2008); and also citing *Proveris Sci. Corp. v. Innovasystems, Inc.*, 536 F.3d 1256 (Fed. Cir. 2008)). Petitioner adds that "allowing additional attorney argument under the guise of expert opinion would permit a party to evade the Board's page limits for legal briefing." *Id.*

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Patent Owner responds that "Petitioner proposes a rule and misstates law by asserting an otherwise qualified expert becomes unqualified by later becoming a patent attorney." Paper 40, 5. Patent Owner argues that "Petitioner cites to case law where expert witnesses were excluded not because they testified on the law, but because they testified regarding invalidity and validity issues related to a field of invention to which he did not have the requisite skill in the art." *Id*. Patent Owner adds that "Dr. Harrison has extensive experience related to the use of firearms, and he is not simply a patent attorney testifying on a field to which he has no experience." *Id*. at 6.

Petitioner replies that "Dr. Harrison could only qualify as an independent 'expert' in this proceeding if he possessed *specialized* knowledge that is *relevant* to an issue the Board might require help understanding." Paper 43, 1 (citing *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 590 (1993); Fed. R. Evid. 702; 37 C.F.R. § 42.62(a)). Petitioner argues that Patent Owner "has not presented anything but general education and firearm shooting/ instruction experience to support that Dr. Harrison is an 'expert' on the subject of designing forearm braces for pistols." *Id.* Petitioner adds that "Dr. Harrison's general training and experience using firearms is not evidence that he has technical knowledge relevant to an issue in this case." *Id.* at 2.

We are not persuaded by Petitioner that Dr. Harrison's testimony should be excluded under Rule 702. Rule 702 serves "a 'gatekeeping role,' the objective of which is to ensure that expert testimony admitted into evidence is

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both reliable and relevant." Sundance, 550 F.3d at 1360; see Daubert, 509 U.S. at 593 ("The initial question of whether expert testimony is sufficiently reliable is to be determined by the court, as part of its gatekeeper function."). The policy considerations for excluding expert testimony, such as those implemented by the gatekeeping framework established by the Supreme Court in *Daubert*, however, are less compelling in bench proceedings such as *inter partes* reviews than in jury trials because, unlike a lay jury, the Board by statutory definition has competent scientific ability (35 U.S.C. § 6) and has significant experience in evaluating expert testimony. See Nestle Healthcare Nutrition, Inc. v. Steuben Foods, Inc., IPR2015-00249, Paper 76 at 23 (PTAB June 2, 2016). Accordingly, the danger of prejudice in this proceeding is considerably lower than in a conventional district court trial in front of a lay jury.

As an initial matter, to the extent that Petitioner argues that a patent attorney can never be a technical expert, the law does not support such a *per se* rule. Also, the risks of causing "mischief and confus[ing] the factfinder" are greatly reduced given the nature of the Board. *Cf. Sundance*, 550 F.3d at 1362. Also, based on our review of Dr. Harrison's Declaration, we do not find that it amounts to attorney argument, such that it constitutes additional briefing by Patent Owner. The mere fact that an expert is also an attorney does not convert that expert's testimony into attorney argument.

We also find Petitioner's reliance on *Sundance* and *Proveris Scientific* unpersuasive. As Patent Owner argues, the experts in each of these cases were found to

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have no experience in the relevant field. Sundance, Inc., 550 F.3d at 1361–1362; Proveris Scientific Corp., 536 F.3d at 1256. We agree with Patent Owner that Dr. Harrison has sufficient experience in the field of firearms to help the Board "to understand the evidence or to determine a fact in issue." See Fed. R. Evid. 702(a); Paper 40, 4; see also Ex. 2009 ¶ 7 ("I earned the Masters of Science and the Ph.D. degrees in mechanical engineering from the University of California, San Diego"), ¶ 5 ("I am presently certified by the California Dept. of Justice as a firearms safety instructor, and presently certified by the National Rifle Association as a pistol instructor, and am presently licensed to carry a concealed handgun in the State of California."); Ex. 2002 (providing curriculum vitae, including military training and experience).

Indeed, as we find, a person having ordinary skill in the art would have a bachelor's degree in mechanical (or similar type of) engineering and 2 to 3 years of experience in handgun use, procurement, repair, design, or manufacturing. Dr. Harrison has a *Ph.D.* in mechanical engineering. Ex. 2009 ¶7. Further, our definition (as initially provided by Petitioner) requires experience in *handgun use*, procurement, repair, design, *or* manufacturing. Dr. Harrison has served 23 years in the military, and has owned and used firearms for over 40 years. *Id.* ¶¶ 3–4. He is a certified firearms instructor. *Id.* ¶ 5. These facts support a finding that he is a person of at least ordinary skill, if not extraordinary skill, as we have defined the level of ordinary skill in the art, at least as to firearms *use*.

Petitioner focuses on Dr. Harrison's lack of experience in design of handguns or forearm support systems. Paper

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36, 5. But such experience is not required to serve as an expert, or even to qualify as a person of ordinary skill in the art of the '021 patent. Cf. Flex-Rest, LLC v. Steelcase, Inc., 455 F.3d 1351, 1360–61 (Fed. Cir. 2006) (determining that a district court did not abuse its discretion for excluding an expert with no keyboard design experience in a case where the court *expressly found* that a skilled artisan was a keyboard *designer*). Instead, the consideration is whether Dr. Harrison is "qualified in the pertinent art" so as to help the Board understand the evidence and reach factual findings. See Sundance, Inc., 550 F.3d at 1363-64; Consolidated Trial Practice Guide 34 (Nov. 21, 2019) ("CTPG")¹⁷ (stating that an expert's testimony is not precluded as long as the testimony "is helpful to the Board," and "the expert's experience provides sufficient qualification in the pertinent art"); cf. Mytee Prods., Inc. v. Harris Research, Inc., 439 F. App'x 882, 886-87 (Fed. Cir. 2011) (non-precedential) (upholding admission of the testimony of an expert who "had experience relevant to the field of the invention," despite admission that he was not a person of ordinary skill in the art). We find that Dr. Harrison is sufficiently qualified in the firearms arts to assist this panel. See CTPG 34 ("There is, however, no requirement of a perfect match between the expert's experience and the relevant field." (citing SEB S.A. v. Montgomery Ward & Co., 594 F.3d 1360, 1373 (Fed. Cir. 2010)).

Next, Petitioner argues that we should exclude Dr. Harrison's Declaration because certain of his opinions

^{17.} Available at https://www.uspto.gov/sites/default/files/ documents/tpgnov.pdf.
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"attack[] Petitioner's expert's opinion on legal grounds." Paper 37, 7; *see also id.* at 7–8 (providing examples). Patent Owner responds that "[t]o the extent the Board finds particular assertions of Dr. Harrison to be impermissible legal conclusions, the Board is 'capable of discerning from the testimony, and the evidence presented, whether the witness' testimony should be entitled to any weight, either as a whole or with regard to specific issues."" Paper 40, 6 (quoting *Daiichi Sankyo Co., Ltd. v. Alethia Biotherapeutics, Inc.,* IPR2015-00291, Paper 75 at 24 (PTAB June 14, 2016)).

We agree with Patent Owner—the Board is capable of disregarding any testimony that goes to matters of the law, rather than technical considerations.

Petitioner's additional concerns are also unavailing. Petitioner argues that Dr. Harrison admitted in his deposition that certain declaration statements were wrong (Paper 37, 9–10); Dr. Harrison's obviousness analysis is contrary to the law (Paper 37, 10–11); Dr. Harrison lacks knowledge about how a person having ordinary skill in the art would understand the term "buffer tube" (Paper 37, 11); Dr. Harrison's testimony adds structural limitations to the claim (Paper 37, 11–12); and Dr. Harrison's opinions on secondary considerations lack proper foundation (Paper 37, 12–13). Patent Owner responds, in part, that these concerns go to the weight of testimony, not its admissibility. *See* Paper 40, 7, 11, 13.

We agree with Patent Owner that these concerns go to the weight of the testimony, not its admissibility. We

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have taken into account all of the facts and circumstances, including the underlying bases for Dr. Harrison's testimony and his cross-examination deposition, in weighing his testimony and in arriving at our findings and conclusions in this Final Written Decision. Indeed, "[v]igorous cross-examination [and] presentation of contrary evidence ... are the traditional and appropriate means of attacking shaky but admissible evidence," (*Daubert*, 509 U.S. at 595), not a motion to exclude the evidence.

IV. CONCLUSION

After considering all the evidence and arguments in the complete record, we conclude that Petitioner demonstrates, by a preponderance of the evidence, that independent claim 1 is unpatentable over Forjot and Morgan.¹⁸ We also conclude that Petitioner fails to demonstrate, by a preponderance of the evidence, that claims 2–5 are unpatentable, for any asserted ground.

^{18.} Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this Decision, we draw Patent Owner's attention to the April 2019 Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding. *See* 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. *See* 37 C.F.R. § 42.8(a)(3), (b)(2).

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In summary:

| Claims ¹⁹ | 35 U.S.C. § | References | Claims Shown Unpatentable | Claims Not shown Unpatentable |
|----------------------|-------------|--------------------|------------------------------|-------------------------------------|
| 1 - 5 | 103(a) | Forjot, Morgan | 1 | 2-5 |
| 1-5 | 103(a) | Forjot | | 2-5 |
| 1–5 | 103(a) | Forjot, Baricos | | 2-5 |

^{19.} We did not reach a conclusion as to claim 1 for the grounds based on Forjot alone, or Forjot in combination with Baricos or Deckard.

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| 1-5 | 103(a) | Forjot, Deckard | | 2-5 |
|--------------------|--------|--------------------|---|-----|
| Overall Outcome | | | 1 | 2-5 |

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, claim 1 *is shown to be unpatentable* under 35 U.S.C. § 103(a) over Forjot and Morgan;

ORDERED that, claims 2–5 *are not shown to be unpatentable* under 35 U.S.C. § 103(a) over Forjot alone, or over the combination of Forjot with Baricos, Morgan, or Deckard; and

FURTHER ORDERED that because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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APPENDIX E — RELEVANT CONSTITUTIONAL AND STATUTORY PROVISIONS

UNITED STATES CONSTITUTION

Fifth Amendment

No person shall be held to answer for a capital, or otherwise infamous crime, unless on a presentment or indictment of a Grand Jury, except in cases arising in the land or naval forces, or in the Militia, when in actual service in time of War or public danger; nor shall any person be subject for the same offence to be twice put in jeopardy of life or limb; nor shall be compelled in any criminal case to be a witness against himself, nor be deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use, without just compensation.

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United States Code

Title 5. Government Organization and Employees

Part I. The Agencies Generally

Chapter 5. Administrative Procedure

Subchapter II. Administrative Procedure

5 U.S.C. § 554. Adjudications.

- (b) Persons entitled to notice of an agency hearing shall be timely informed of—
 - (1) the time, place, and nature of the hearing;
 - (2) the legal authority and jurisdiction under which the hearing is to be held; and
 - (3) the matters of fact and law asserted. When private persons are the moving parties, other parties to the proceeding shall give prompt notice of issues controverted in fact or law; and in other instances agencies may by rule require responsive pleading. In fixing the time and place for hearings, due regard shall be had for the convenience and necessity of the parties or their representatives.
- (c) The agency shall give all interested parties opportunity for—

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- (1) the submission and consideration of facts, arguments, offers of settlement, or proposals of adjustment when time, the nature of the proceeding, and the public interest permit; and
- (2) to the extent that the parties are unable so to determine a controversy by consent, hearing and decision on notice and in accordance with sections 556 and 557 of this title.

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United States Code

Title 35. Patents

Part II. Patentability of Inventions and

Grant of Patents

Chapter 11. Application for Patent

35 U.S.C. § 112. Specification

- (a) In general.—The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor or joint inventor of carrying out the invention.
- (b) Conclusion.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.
- (c) Form.—A claim may be written in independent or, if the nature of the case admits, in dependent or multiple dependent form.
- (d) **Reference in Dependent Forms.**—Subject to subsection (e), a claim in dependent form shall contain

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a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

- (e) Reference in Multiple Dependent Form.—A claim in multiple dependent form shall contain a reference, in the alternative only, to more than one claim previously set forth and then specify a further limitation of the subject matter claimed. A multiple dependent claim shall not serve as a basis for any other multiple dependent claim. A multiple dependent claim shall be construed to incorporate by reference all the limitations of the particular claim in relation to which it is being considered.
- (f) Element in Claim for a Combination.—An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

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United States Code

Title 35. Patents

Part II. Patentability of Inventions and

Grant of Patents

Chapter 13. Review of Patent and

Trademark Office Decisions

35 U.S.C. § 141. Appeal to Court of Appeals for the Federal Circuit.

- (a) **Examinations**.—An applicant who is dissatisfied with the final decision in an appeal to the Patent Trial and Appeal Board under section 134(a) may appeal the Board's decision to the United States Court of Appeals for the Federal Circuit. By filing such an appeal, the applicant waives his or her right to proceed under section 145.
- (b) Reexaminations.—A patent owner who is dissatisfied with the final decision in an appeal of a reexamination to the Patent Trial and Appeal Board under section 134(b) may appeal the Board's decision only to the United States Court of Appeals for the Federal Circuit.
- (c) Post-Grant and Inter Partes Reviews.—A party to an inter partes review or a post-grant review who

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is dissatisfied with the final written decision of the Patent Trial and Appeal Board under section 318(a) or 328(a) (as the case may be) may appeal the Board's decision only to the United States Court of Appeals for the Federal Circuit.

(d) Derivation Proceedings.—A party to a derivation proceeding who is dissatisfied with the final decision of the Patent Trial and Appeal Board in the proceeding may appeal the decision to the United States Court of Appeals for the Federal Circuit, but such appeal shall be dismissed if any adverse party to such derivation proceeding, within 20 days after the appellant has filed notice of appeal in accordance with section 142, files notice with the Director that the party elects to have all further proceedings conducted as provided in section 146. If the appellant does not, within 30 days after the filing of such notice by the adverse party, file a civil action under section 146, the Board's decision shall govern the further proceedings in the case.

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United States Code

Title 35. Patents

Part II. Patentability of Inventions and

Grant of Patents

Chapter 13. Review of Patent and

Trademark Office Decisions

35 U.S.C. § 144. Decision on appeal.

The United States Court of Appeals for the Federal Circuit shall review the decision from which an appeal is taken on the record before the Patent and Trademark Office. Upon its determination the court shall issue to the Director its mandate and opinion, which shall be entered of record in the Patent and Trademark Office and shall govern the further proceedings in the case.

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United States Code

Title 35. Patents

Part III. Patents and Protection of Patent Rights

Chapter 26. Ownership and Assignment

35 U.S.C. § 261. Ownership; assignment.

Subject to the provisions of this title, patents shall have the attributes of personal property. The Patent and Trademark Office shall maintain a register of interests in patents and applications for patents and shall record any document related thereto upon request, and may require a fee therefor.

Applications for patent, patents, or any interest therein, shall be assignable in law by an instrument in writing. The applicant, patentee, or his assigns or legal representatives may in like manner grant and convey an exclusive right under his application for patent, or patents, to the whole or any specified part of the United States.

A certificate of acknowledgment under the hand and official seal of a person authorized to administer oaths within the United States, or, in a foreign country, of a diplomatic or consular officer of the United States or an officer authorized to administer oaths whose authority is proved by a certificate of a diplomatic or consular officer of the United States, or apostille of an official designated by a foreign country which, by treaty or convention, accords

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like effect to apostilles of designated officials in the United States, shall be prima facie evidence of the execution of an assignment, grant or conveyance of a patent or application for patent.

An interest that constitutes an assignment, grant or conveyance shall be void as against any subsequent purchaser or mortgagee for a valuable consideration, without notice, unless it is recorded in the Patent and Trademark Office within three months from its date or prior to the date of such subsequent purchase or mortgage.

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United States Code

Title 35. Patents

Part III. Patents and Protection of Patent Rights

Chapter 29. Remedies for Infringement

of Patent, and Other Actions

35 U.S.C. § 282. Presumption of validity; defenses.

- (a) In General.—A patent shall be presumed valid. Each claim of a patent (whether in independent, dependent, or multiple dependent form) shall be presumed valid independently of the validity of other claims; dependent or multiple dependent claims shall be presumed valid even though dependent upon an invalid claim. The burden of establishing invalidity of a patent or any claim thereof shall rest on the party asserting such invalidity.
- (b) **Defenses.**—The following shall be defenses in any action involving the validity or infringement of a patent and shall be pleaded:
 - (1) Noninfringement, absence of liability for infringement or unenforceability.
 - (2) Invalidity of the patent or any claim in suit on any ground specified in part II as a condition for patentability.

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- (3) Invalidity of the patent or any claim in suit for failure to comply with—
 - (A) any requirement of section 112, except that the failure to disclose the best mode shall not be a basis on which any claim of a patent may be canceled or held invalid or otherwise unenforceable; or
 - (B) any requirement of section 251.
- (4) Any other fact or act made a defense by this title.
- (c) Notice of Actions; Actions During Extension of Patent Term.—In an action involving the validity or infringement of a patent the party asserting invalidity or noninfringement shall give notice in the pleadings or otherwise in writing to the adverse party at least thirty days before the trial, of the country, number, date, and name of the patentee of any patent, the title, date, and page numbers of any publication to be relied upon as anticipation of the patent in suit or, except in actions in the United States Court of Federal Claims, as showing the state of the art, and the name and address of any person who may be relied upon as the prior inventor or as having prior knowledge of or as having previously used or offered for sale the invention of the patent in suit. In the absence of such notice proof of the said matters may not be made at the trial except on such terms as the court requires. Invalidity of the extension of a patent term or any portion thereof under section 154(b) or 156 because of the material failure—

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- (1) by the applicant for the extension, or
- (2) by the Director,

to comply with the requirements of such section shall be a defense in any action involving the infringement of a patent during the period of the extension of its term and shall be pleaded. A due diligence determination under section 156(d)(2)is not subject to review in such an action.