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Paper 49
Date: 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.

IPR2020-00423
Patent 8,869,444 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)

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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”).

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

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.

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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. 1:19-cv-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

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

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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.

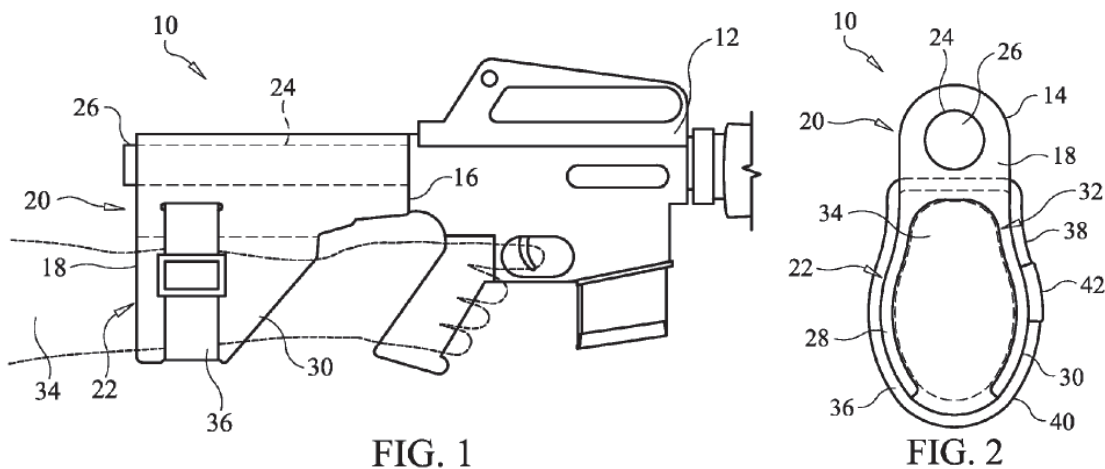


Figure 1 depicts “a side elevation view of the forearm-gripping stabilizing attachment for a handgun . . . , illustrating the stabilizing attachment in use and attached to a handgun.” Ex. 1001, 2:46–50. Figure 2 depicts “a partial rear elevation view of the forearm gripping stabilizing attachment for 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

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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.

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 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;

³ The ’444 patent also associates reference numeral “16” with the buffer tube. *See* Ex. 1001, 3:62–65. 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 3:35–36, 3:51–53, Fig. 1.

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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.

F. Prior Art and Asserted Grounds

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

Claims Challenged	35 U.S.C. §	References/Basis
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.

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

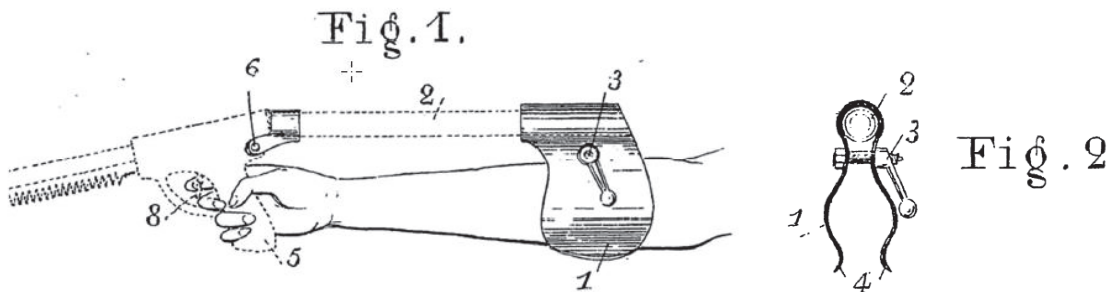


Figure 1 (a portion of which is reproduced above), depicts “the respective positions of the cuff [and] the stabilization plate on an underwater pistol or rifle.” Ex. 1008, 1:45–47. Figure 2 depicts “a front view of the cuff.” *Id.* at 1:48. Cuff 1, “preferably made of stainless steel and of a suitable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

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.

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.

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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.

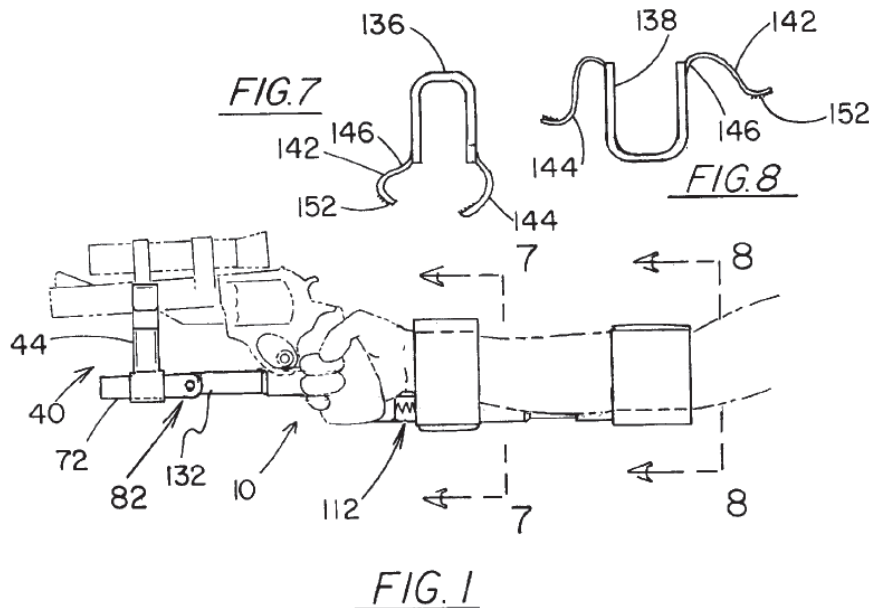


Figure 1 depicts “a perspective illustration of the preferred embodiment of [Morgan’s] arm and hand gun support apparatus.” Ex. 1010, 3:52–53. Figures 7 and 8 depict “a frontal view of the wrist support” and “a frontal view of the forearm support,” respectively. *Id.* at 4:1–2. Wrist support 136 and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

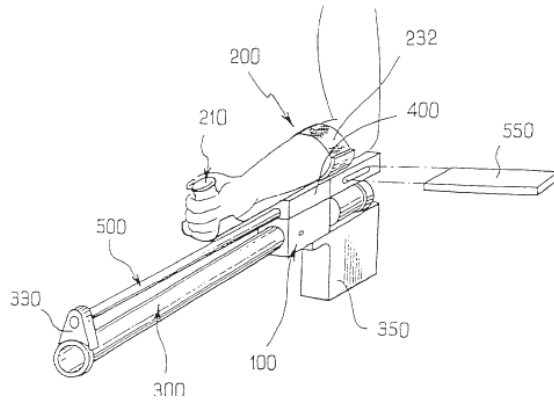


FIG. 2

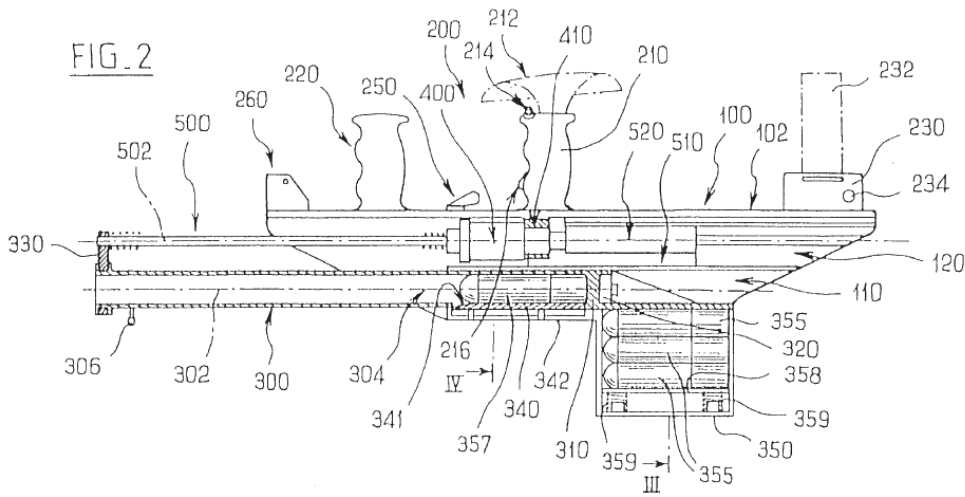


Figure 1 depicts “a diagrammatic perspective view of a firearm system in accordance with [Baricos’s] invention carried beneath the forearm of a user,” and Figure 2 depicts “a diagrammatic longitudinal axial section view of a firearm system.” Ex. 1009, 1:54–58. Relevant to our analysis, Baricos’s firearm 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.

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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.

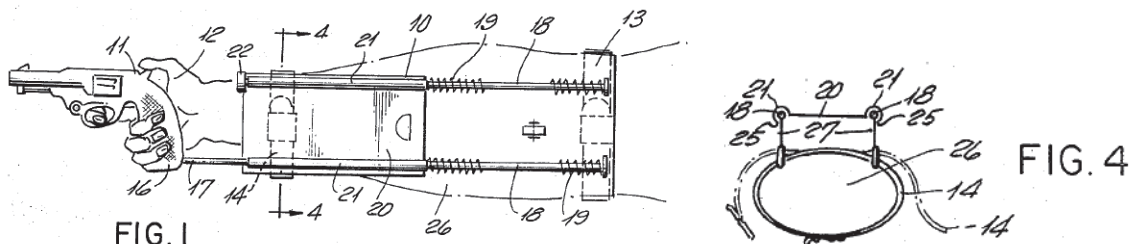


Figure 1 depicts “a front view of [Deckard’s] device in the released mode.” Ex. 1011, 1:45–46. Figure 4 depicts a “cross-section of the device taken at line 4—4 of F[igure] 1.” Relevant to our analysis, mounting unit 10 includes straps 13, 14, which fasten mounting unit 10 to forearm 26, by encircling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

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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 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 handgun support).

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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.

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

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(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:

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.*

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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.

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“[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).

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

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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 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

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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houses the buffer assembly of a firearm.” We credit Dr. Harrison’s un rebutted 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.”

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

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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

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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,

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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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 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.

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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 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,

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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

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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.”

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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 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,

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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 non-obviousness.

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 cuff is for a handgun.

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.

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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).

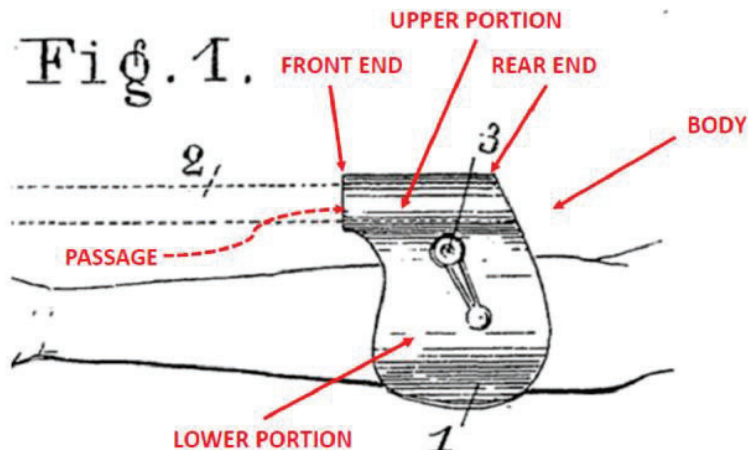
We have reviewed Petitioner’s contentions and find, on the complete record, that Petitioner has demonstrated, by a preponderance of the evidence, that Forjot discloses the subject matter of the preamble of claim 1. *See* Ex. 1008, 2:3–7 (disclosing cuff 1, which attaches to the rear end of tube 2 extending from butt 5 of the gun), 2:51–52 (indicating that Forjot’s invention can be applied to land-based 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.

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(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,

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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 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

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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 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 well-known way and therefore obvious.

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

¹² Owen, Jr., US 4,196,742, issued April 8, 1980 (Ex. 1005, “Owen”).

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(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 ¶ 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).

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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 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

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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

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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 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

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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

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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 36 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

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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.*

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

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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

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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 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

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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 art must “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,

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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

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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 cherry-picked 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.

(5) *Objective evidence of non-obviousness*

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.*,

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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 ’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.

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

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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 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–

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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 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.

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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

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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 shouldered their brace-equipped AR pistols.”), 49 (“With the ability of the SB-15 braced AR pistols to be shouldered, . . . 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

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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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; 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

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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

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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 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").

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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

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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, by a preponderance of the

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

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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 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

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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

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“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 ¶ 9.

Patent Owner does not address Petitioner’s obviousness position presented, for the first time, in the Reply in response to Patent Owner’s

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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

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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

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attached to butt 5 by any known means, either with or without a joint.

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 un rebutted 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

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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

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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

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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

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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 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*.

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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))).

Next, Petitioner argues that we should exclude Dr. Harrison’s Declaration because certain of his opinions “attack[] Petitioner’s expert’s

¹⁶ Available at <https://www.uspto.gov/sites/default/files/documents/tpgnov.pdf>.

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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

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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 Unpatentable	Claims Not shown Unpatentable
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;

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.

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.

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Paper 50
Date: 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)

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Patent 9,354,021 B2

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.”).

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

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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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.

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

² This proceeding is IPR2020-00423. We issue a Final Written Decision in IPR2020-00423 concurrent with our Final Written Decision in this proceeding.

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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.

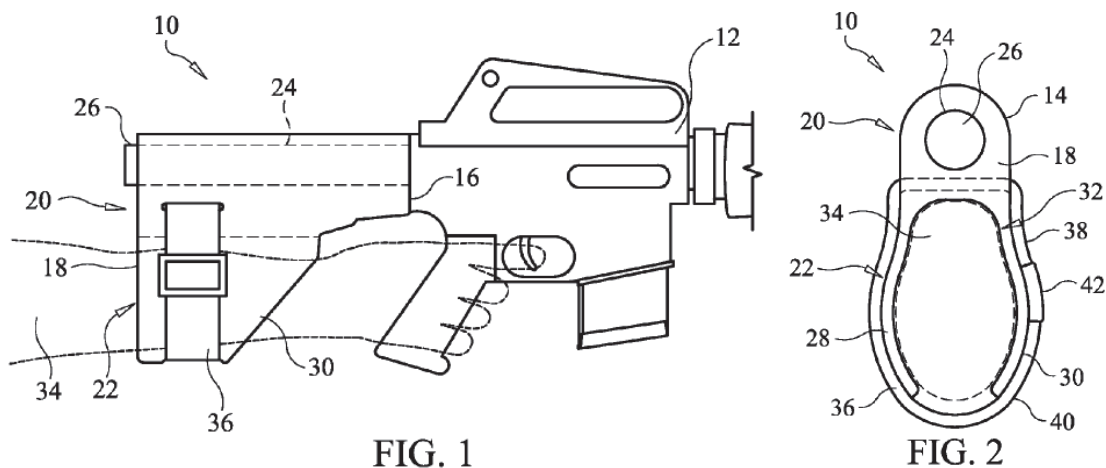


Figure 1 depicts “a side elevation view of the forearm-gripping stabilizing attachment for a handgun . . . , illustrating the stabilizing attachment in use and attached to a handgun.” Ex. 1001, 2:54–58. Figure 2 depicts “a partial rear elevation view of the forearm gripping stabilizing attachment for 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

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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 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;

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.

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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

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:

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

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

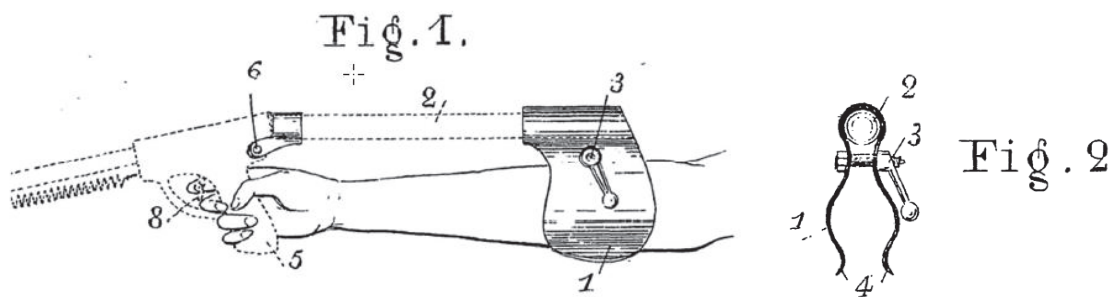


Figure 1 (a portion of which is reproduced above), depicts “the respective positions of the cuff [and] the stabilization plate on an underwater pistol or rifle.” Ex. 1008, 1:45–47. Figure 2 depicts “a front view of the cuff.” *Id.* at 1:48. Cuff 1, “preferably made of stainless steel and of a suitable 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.

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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.

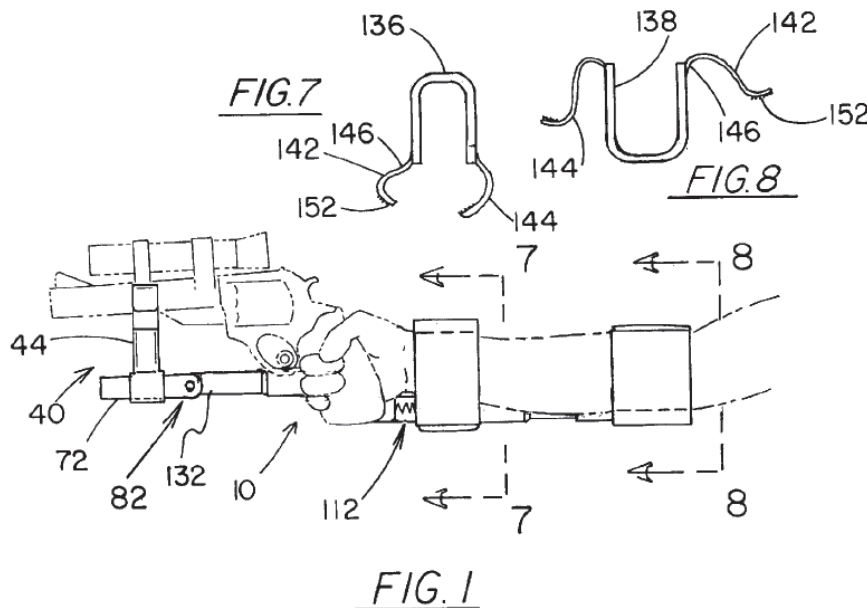


Figure 1 depicts “a perspective illustration of the preferred embodiment of [Morgan’s] arm and hand gun support apparatus.” Ex. 1010, 3:52–53. Figures 7 and 8 depict “a frontal view of the wrist support” and “a frontal view of the forearm support,” respectively. *Id.* at 4:1–2. Wrist support 136 and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

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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

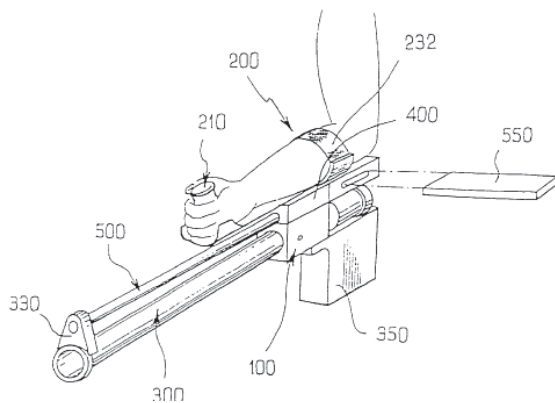


FIG. 2

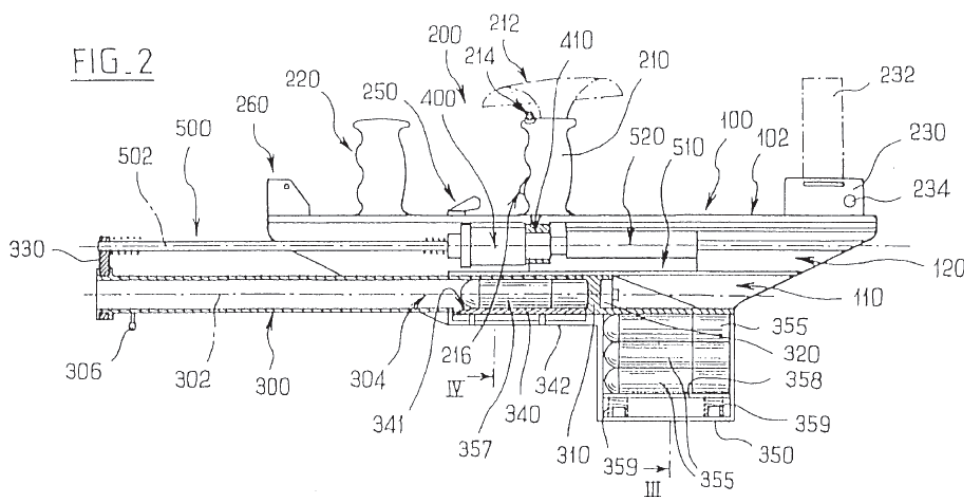


Figure 1 depicts “a diagrammatic perspective view of a firearm system in accordance with [Baricos’s] invention carried beneath the forearm of a user,” and Figure 2 depicts “a diagrammatic longitudinal axial section view of a firearm system.” Ex. 1009, 1:54–58. Relevant to our analysis, Baricos’s firearm 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

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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.

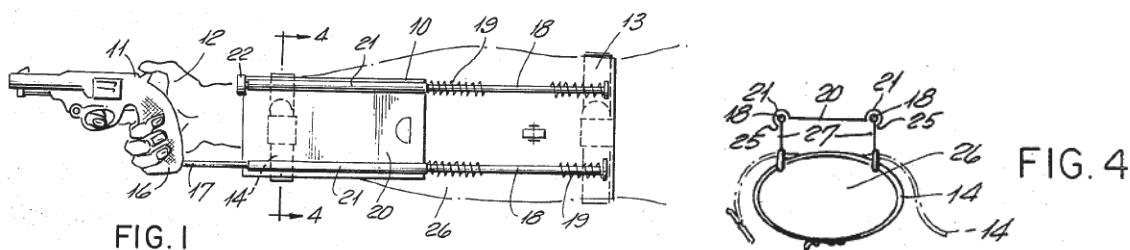


Figure 1 depicts "a front view of [Deckard's] device in the released mode." Ex. 1011, 1:45–46. Figure 4 depicts a "cross-section of the device taken at line 4—4 of F[igure] 1." Relevant to our analysis, mounting unit 10 includes straps 13, 14, which fasten mounting unit 10 to forearm 26, by encircling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

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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 handgun support).

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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.

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 Owner adds that Petitioner’s declarant, Mr. Nixon, uses the term “buffer tube” consistent with the proposed construction as well. *Id.*

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(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 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.*

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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 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

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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 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

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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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 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 un rebutted 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

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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.”

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.

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

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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 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-

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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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))).

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

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

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("[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 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

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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 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 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), 1:46–48 (“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 forearm”); PO Resp. 4 (“The ‘021 [p]atent discloses and claims a

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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, 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).

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“[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 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, 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).

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.

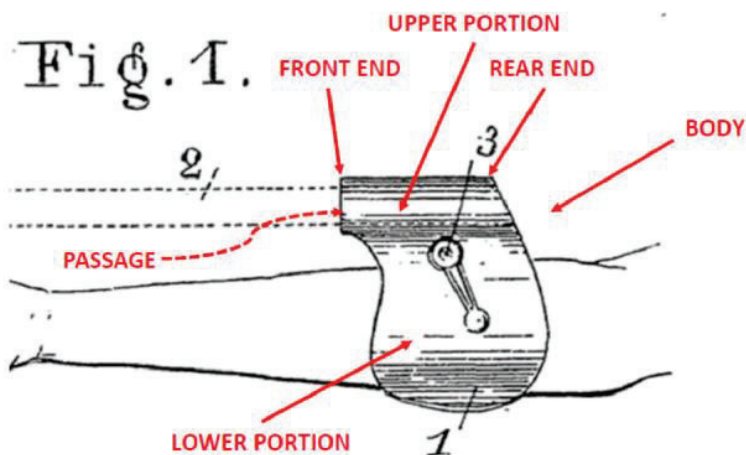
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We have reviewed Petitioner’s contentions and find, on the complete record, that Petitioner has demonstrated, by a preponderance of the evidence, that Forjot discloses the subject matter of the preamble of claim 1. *See* Ex. 1008, 2:3–7 (disclosing 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 land-based 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.



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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.* 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).

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).

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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

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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 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

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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:

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.”).

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

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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 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).

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(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. 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).

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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 9–10 (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 increase in the time to engage the forearm to improve the connection with the forearm, provide a

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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. 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

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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 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 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).

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

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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.

(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

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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,” 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. *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 36 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

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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.

(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 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.

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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.

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

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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 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

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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 art must “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”

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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

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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 cherry-picked 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 non-obviousness*

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.

"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.*,

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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 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.

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

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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 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

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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 Commc '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," "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.

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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 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.

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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 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

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few enterprising purchasers decided not to use the SB-15 as intended, and they promptly shouldered their brace-equipped AR pistols.”), 49 (“With the ability of the SB-15 braced AR pistols to be shouldered, . . . 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. 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).

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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(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.

(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 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)

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(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 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.

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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.'"). 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

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¶ 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), 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 ‘yield 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

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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.

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).

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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. 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

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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 ¶ 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.

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.

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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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 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

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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.*

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.*,

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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

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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 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

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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 ’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))).

¹⁷ Available at <https://www.uspto.gov/sites/default/files/documents/tpgnov.pdf>.

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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 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 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

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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.

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

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).

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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