THIS OPINION IS A
PRECEDENT OF THE TTAB

Mailed: May 20, 2021

UNITED STATES PATENT AND TRADEMARK OFFICE

Trademark Trial and Appeal Board

*McGowen Precision Barrels, LLC*

*v.*

*Proof Research, Inc.*

Cancellation No. 92067618

Timothy J. Monahan of Monahan & Company LLC,
for McGowen Precision Barrels, LLC.

Antoinette M. Tease of Antoinette M. Tease P.L.L.C.,
for Proof Research, Inc.

Before Goodman, Larkin, and Lebow,
Administrative Trademark Judges.

Opinion by Lebow, Administrative Trademark Judge:

Respondent, Proof Research, Inc., owns a registration on the Principal Register for the following trade dress configuration for "Component parts for rifles; Field guns; Firearms; Gun barrels; Guns; Hunting rifles; Rifle barrels; Rifles; Rifles and parts thereof; Sporting rifles," in International Class 13 ("the Registration"):

[1]

The Registration includes the following description of the mark:

> The mark consists of trade dress applied to gun barrels formed with a mottled pattern of irregularly-sized, rippled patches, resembling a quilt having striated patches of varying shapes and reflectivity depending on the ambient light source and viewing angle. The dotted lines in the drawing show the shape of the gun to which the applicant's trade dress is applied, are intended to show the position of the mark on the gun, and are not part of the mark. Color is not claimed as a feature of the mark.

Petitioner, Monahan & Company LLC, filed a petition for cancellation of the Registration on five grounds, namely, that (1) the mark "comprises matter that, as a whole is functional, in violation of the Trademark Act § 2(e), 15 USC § 1052(e)"; (2) the Registration "encompasses more than one mark, in violation of the Trademark Act §§ 1 and 45, 15 USC §§ 1051 and 1127"; (3) the "trade dress encompassed in [the] Registration … is generic, in violation of the Trademark Act §§ 1, 2 and 45, 15 USC §§ 1051, 1052 and 1127"; (4) the Registration "is invalid on the ground that the trade dress encompassed by the registration is aesthetically functional"; and (5) the Registration "was obtained by fraud and is invalid … pursuant to Trademark Act § 14(3), 15 USC § 1064(3)."[2]

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[1] Registration No. 4390533, issued August 27, 2013, based on Respondent's allegation of use in commerce under Section 1(a) of the Trademark Act, 15 U.S.C. § 1051(a), alleging a date of first use in commerce and anywhere of January 31, 2003; combined Section 8 and 15 declaration of use and affidavit of incontestability accepted/acknowledged.

[2] 1 TTABVUE (Petition for Cancellation). Citations to the record or briefs in this opinion are to the publicly available documents on TTABVUE, the Board's electronic docketing system. The number preceding "TTABVUE" corresponds to the docket entry number; the number(s) following "TTABVUE" refer to the page number(s) of that particular docket entry. Page

The case is fully briefed. After carefully reviewing all of the evidence and arguments in this case, we grant the petition to cancel on the ground that the trade dress comprising the mark in the Registration is, as a whole, functional under Section 2(e)(5) of the Trademark Act, 15 U.S.C. § 1052(e)(5). We do not reach the other claims.

## I. Evidentiary Record

The evidentiary record in this case is voluminous, comprising more than 3,300 pages of testimony, exhibits, and other documentary evidence. It consists of the pleadings, the file of the Registration by operation of Trademark Rule 2.122(b)(1), 37 C.F.R. § 2.122(b)(1), and various types of evidence made of record by the parties during their respective testimony and rebuttal periods.

Most of the parties' evidentiary submissions, as well as their briefs, have been filed in both a redacted (public) version, and an unredacted (confidential) version under seal, because they contain material that the parties designated as "Confidential" or "Confidential - Attorneys' Eyes Only" ("AEO") under the Board's Standard Protective Order, which is automatically in place for all inter partes proceedings unless modified by the Board. Trademark Rule 2.116(g), 37 C.F.R. § 2.116(g). The obligation to maintain the confidentiality of the parties' submissions presents a significant challenge in discussing the evidence in a publicly accessible opinion.

references herein to the trademark registration record in this proceeding refer to the online database of the USPTO's Trademark Status & Document Retrieval ("TSDR") system. All citations to documents contained in the TSDR database are to the downloadable .pdf versions of the documents in the USPTO TSDR Case Viewer.

The difficulty is compounded by the extensive and, in many instances, indiscriminate, designation of portions and even entire deposition transcripts and other materials as Confidential or AEO without any apparent basis for the designation, as perhaps revealed by the fact that some testimony and materials designated as Confidential have been discussed, quoted, or cited by one or both of the parties in their publicly accessible briefs. Additionally, certain information deemed confidential in some testimony is not treated as confidential in other testimony.[3]

Under Trademark Rule 2.116(g), 37 C.F.R. § 2.116(g), "[t]he Board may treat as not confidential that material which cannot reasonably be considered confidential, notwithstanding a designation as such by a party." Confidentiality designations thus do not provide absolute immunity from the public disclosure of materials so designated. *See Noble House Home Furnishings, LLC v. Floorco Enters., LLC*, 118

[3] Because proceedings before the Board are public, all papers should be available to the public, except for information that is truly confidential. It is clear that not everything the parties designated as confidential fits that description. For example, while the parties agreed between themselves to divide depositions into confidential and public portions (open sessions), the confidential portions are replete with non-confidential questions and answers mixed into the testimony, as well as entire exhibits that include non-sensitive information. Other examples are seen in several footnotes herein, where we have cited confidentially designated portions of the record for non-confidential information. While sensitive information, such as trade secrets, sales figures, and other similar information typically designated as confidential in Board proceedings may be shielded from the public, non-sensitive information is not protected. The parties are allowed until 60 days after the issue date of this decision to file amended redacted copies of all previously designated "confidential" evidence submitted during their respective testimony periods that contains evidence that is not truly confidential, as well as amended confidential and redacted briefs corresponding to the amendments, failing which the testimony and briefs in their entirety will become part of the public record. *Swiss Watch Int'l Inc. v. Fed'n of the Swiss Watch Indus.*, 101 USPQ2d 1731, 1736 n. 12 (TTAB 2012). To facilitate this procedure given the magnitude of the record, the parties are ordered to meet and confer prior to filing the redactions.

USPQ2d 1413, 1416 n.21 (TTAB 2016) (the Board must be able to discuss the record evidence in its opinions unless there is an overriding need for confidentiality). Accordingly, while we will give appropriate consideration to the parties' designations of evidence as Confidential or AEO, we will not be bound by inappropriate designations and "in this opinion, we will treat only testimony and evidence that is truly confidential or commercially sensitive as such." *Id.*

**A. Petitioner's Trial Evidence**

**1. Notice of Reliance** on:

- U.S. Patent No. 5,804,756 and U.S. Patent Application No. 2016/0209143 A1.[4]
- Respondent's answers to Petitioner's interrogatories,[5] and responses to Petitioner's requests for production of documents.[6]
- Portions of the discovery deposition of David Curliss, Ph.D., General Manager of Performance Polymer Solutions d/b/a Proof Research Advanced Composites Division, a wholly-owned subsidiary of Respondent, and exhibits ("Curliss Disc. Dep.").[7]

[4] 36 TTABVUE 14-38.

[5] 35 TTABVUE 47 (Confidential).

[6] 36 TTABVUE 39-53 (Public). Written responses to requests for production of documents introduced through a notice of reliance are admissible solely for the purpose of showing that a party has stated that there are no responsive documents, as Respondent did in certain of its responses. *See City Nat'l Bank v. OPGI Mgmt. GP Inc./Gestion OPGI Inc.*, 106 USPQ2d 1668, 1674 n.10 (TTAB 2013); *ShutEmDown Sports Inc. v. Lacy*, 102 USPQ2d 1036, 1038 n.7 (TTAB 2012). We have not considered Respondent's additional statements contained in those responses, which are not properly of record.

[7] 36 TTABVUE 54-215 (Petitioner's Notice of Reliance (or "NOR")). Dr. Curliss is, one of the inventors of Respondent's '117 Patent. Ordinarily, a discovery deposition may be used at trial if the deponent, at the time of the deposition, was an officer, director or managing agent of a party, or a person designated by a party pursuant to Fed. R. Civ. P. 30(b)(6) or 31(a). Trademark Rule 2.120(k)(1), 37 C.F.R. § 2.120(k)(1). However, the discovery deposition of a non-party witness may be offered in evidence by stipulation of the parties, approved by the Board. Trademark Rule 2.120(k)(2), 37 C.F.R. § 2.120(k)(2). Because Dr. Curliss is not one of the persons designated in Trademark Rule 2.120(k)(1) and there was no stipulation by the parties to allow the discovery deposition into evidence, the Board initially granted

- Portion of the discovery deposition of Kristopher Jense, Respondent's President ("Jense Disc. Dep.").[8]

**2. Trial Testimony**

- Testimony declaration of Ronald Duplessis, Owner of Petitioner and Hunters Run Gun Club, LLC d/b/a CarbonSix, and exhibits ("Duplessis Test. Decl.").[9]

- Testimony deposition of Jason E. Lincoln, Ph.D. Vice President of Engineering and Product Development of Performance Polymer Solutions Inc. d/b/a Proof Research Advanced Composites Division, a wholly-owned subsidiary of Respondent, and exhibits ("Lincoln Test. Dep."), including Respondent's U.S. Patent No. 10,168,117 B2 (the "'117 Patent").[10]

**B. Respondent's Trial Evidence**

**1. Notice of Reliance** on

- Discovery deposition of Mr. Duplessis and exhibits ("Duplessis Disc. Dep.").[11]

- Discovery deposition of Gene Gordon, Director of Sales for CarbonSix, and exhibits ("Gordon Disc. Dep.").[12]

- Discovery deposition of William Guidry, Digital Marketing Manager for Ron Duplessis Companies and the Marketing Manager for CarbonSix,

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Respondent's motion to strike the portion of Petitioner's NOR relying on Dr. Curliss's deposition testimony. 53 TTABVUE 8-11. Subsequently, however, the parties stipulated "that any depositions taken in the proceedings may be offered in evidence by a party during its testimony period," 54 TTABVUE, and both parties have referred to Dr. Curliss's deposition testimony in their briefs. The Board hereby approves the stipulation and vacates the portion of its previous order striking Dr. Curliss's deposition testimony.

[8] 36 TTABVUE 216-230.

[9] 37 TTABVUE.

[10] 47 TTABVUE (Public); 48 TTABVUE (Confidential). Dr. Lincoln is, along with Dr. Curliss, a co-inventor on Respondent's '117 Patent. 47 TTABVUE 17.

[11] 56-59 TTABVUE.

[12] 60 TTABVUE. CarbonSix is not a party to this proceeding. However, the deposition is properly of record under the parties' stipulation approved by the Board. *See* note 7.

and exhibits ("Guidry Disc. Dep.")[13]

- Discovery deposition of Travis Horzelski, an employee of Duplessis Buick GMC and CarbonSix as its IT person ("Horzelski Disc. Dep.").[14]

- Discovery deposition of Nick Niblick, a gunsmith and Operations Manager for Duplessis Rifles, LLC, another company owned by Mr. Duplessis, and he also does work for CarbonSix ("Niblick Disc. Dep.").[15]

- Discovery deposition of Daniel Wynne, Petitioner's Operations Manager ("Wynne Disc. Dep.").[16]

**2. Trial Testimony**

- Testimony declaration of Respondent's expert witness, Wayne C. Van Zwoll, Ph.D, and exhibits ("Van Zwoll Test. Decl.").[17]

- Testimony declaration of Respondent's expert witness, Chad Van Brunt ("Brunt Test. Dep.").[18]

- Testimony declaration of David Curliss and exhibits ("Curliss Test. Decl.").[19]

- Supplemental testimony declaration of David Curliss and exhibits ("Curliss Suppl. Test. Decl.").[20]

- Testimony declaration of Kristopher Jense and exhibits ("Jense Test. Decl.").[21]

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[13] 61 TTABVUE 2-12. Although he is not a party witness, the deposition is properly of record under the parties' stipulation approved by the Board. *See* note 7.

[14] 63 TTABVUE. Although he not a party witness, the deposition is properly of record under the parties' stipulation approved by the Board. *See* note 7.

[15] 64 TTABVUE. Although he not a party witness, the deposition is properly of record under the parties' stipulation approved by the Board. *See* note 7.

[16] 65 TTABVUE. Although he is not a party witness, the deposition is properly of record under the parties' stipulation approved by the Board. *See* note 7.

[17] 66 -67 TTABVUE.

[18] 81 TTABVUE (Confidential).

[19] 68-72 TTABVUE (Public); 82 TTABVUE (Confidential).

[20] 84 TTABVUE.

[21] 73-77 TTABVUE.

- Testimony declaration of Dr. Lincoln and exhibits ("Lincoln Test. Decl.").[22]

- Testimony declaration of Dale Robinson, a dealer and distributor of Respondent's rifles and rifle barrels, and exhibits ("Robinson Test. Decl.").[23]

- Testimony declaration of Evan Ranz, a purchasing agent for Bill Hicks & Co., Ltd., a distributor of firearms and firearms components, and a customer of Respondent ("Ranz Test. Decl.").[24]

- Testimony declaration of Justin Giarusso, a principal of H & G Marketing, Inc., an independent sales representative for various manufacturers in the firearms industry including Respondent.[25]

- Testimony declaration of Paul Mazzarella, a senior buyer at Optics Planet Inc., an online retailer in the sporting goods and shooting sports industry.[26]

- Testimony declaration of Bill Rapier, the owner of American Tactical Shooting Instructions LLC, who owns and uses rifles with Respondent's barrels.[27]

- Testimony declaration of Erik Van Woerkom, a hunter who owns rifles with Respondent's barrels and is sponsored by Respondent.[28]

- Testimony depositions of Paul Mazzarella,[29] Evan Ranz,[30] and Dale Robinson,[31] and exhibits.

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[22] 78 TTABVUE.

[23] 79 TTABVUE.

[24] 80 TTABVUE 2-5.

[25] *Id.* at 6-10.

[26] *Id.* at 11-15.

[27] *Id.* at 16-19.

[28] *Id.* at 20-22.

[29] 121 TTABVUE (Deposition); 122 TTABVUE (Exhibits).

[30] 124 TTABVUE (Deposition); 125 TTABVUE (Exhibits).

[31] 126 TTABVUE (Deposition); 127 TTABVUE (Exhibits).

- Cross-examination testimony depositions of
  - Erik Van Woerkom ("Van Woerkom Cross Test.") and exhibits;[32]
  - Wayne Van Zwoll, Ph.D. ("Van Swoll Cross Test.") and exhibits;[33]
  - David Curliss ("Curliss Cross Test.") and exhibits;[34]
  - Chad Van Brunt ("Van Brunt Cross Test.") and exhibits, filed under seal;[35]
  - Jason Lincoln, Ph.D. ("Lincoln Cross Test.") and exhibits;[36]
  - Justin Giarusso ("Giarusso Cross Test.") and exhibits;[37] and
  - Kristopher Jense ("Jense Cross Test.") and exhibits.[38]

[32] 103 TTABVUE. Petitioner elected to take the oral cross-examination of this witness and the other witnesses of Respondent cited in notes 33-38 infra as permitted by Trademark Rule 2.123(c), 37 C.F.R. Section 2.123(c), which provides that "[w]hen a party elects to take oral cross-examination of an affiant or declarant, the notice of such election must be served on the adverse party and a copy filed with the Board within 20 days from the date of service of the affidavit or declaration and completed within 30 days from the date of service of the notice of election."

[33] 105 TTABVUE (Public); 106 TTABVUE (Exhibits); 107 (Confidential).

[34] 108 TTABVUE.

[35] 109 TTABVUE.

[36] 110 TTABVUE (Confidential); 111 TTABVUE (Public); 129 TTABVUE (Confidential).

[37] 112 TTABVUE.

[38] 114 TTABVUE (Confidential); 115 TTABVUE (Public); 116-119 TTABVUE (Exhibits).

### C. Petitioner's Rebuttal Evidence

#### 1. Rebuttal Notice of Reliance[39] on

- U.S. Patent No. 6,230,429 B1.[40]
- Excerpts from several publications, including technical publications and manuals.[41]
- Webpages printouts from Respondent's website, Respondent's social media pages, and third-party websites.[42]
- Portions of the file history of the Registration;[43]
- Portions of the discovery deposition of David Curliss and exhibits ("Curliss Disc. Dep.") filed under seal.[44]
- Portions of the discovery deposition of Kristopher Jense ("Jense Disc. Dep.").[45]

[39] In addition to the other evidence listed in this section, Petitioner's rebuttal Notice of Reliance purports to rely on certain documents produced by Respondent during discovery, including correspondence between Respondent's counsel and Respondent's witnesses, and portions of Respondent's privilege log. 87 TTABVUE 105-139 (Confidential); 88 TTABVUE 2-35 (Confidential); 89 TTABVUE 170-185 (Public); 90 TTABVUE 6-12 (Public). In the absence of authentication, those documents are not admissible by notice of reliance alone and we have not considered them. *See* Trademark Rule 2.120(k)(3)(ii), 37 C.F.R. § 2.120(k)(3)(ii); *Syndicat Des Proprietaires Viticulteurs De Chateauneuf-Du-Pape v. Pasquier DesVignes*, 107 USPQ2d 1930, 1932 n.7 (TTAB 2013) (documents produced in response to a request for production of documents may not be introduced under notice of reliance).

[40] 89 TTABVUE 12-23.

[41] *Id.* at 24-122.

[42] *Id.* at 123-163; 90 TTTABVUE 3-5.

[43] 89 TTABVUE 164-169. This was unnecessary because the file of the Registration is automatically of record. Trademark Rule 2.122(b)(1), 37 C.F.R. § 2.122(b)(1); *Hiraga v. Arena*, 90 USPQ2d 1102, 1105 (TTAB 2009) (respondent's registration file is automatically part of the record of the proceeding and need not be introduced under a notice of reliance).

[44] 88 TTABVUE 36-64 (Confidential).

[45] 88 TTABVUE 65-95 (Confidential); 90 TTABVUE 32-55 (Public).

**2. Rebuttal Testimony**

- Testimony declaration of Travis Horzelski ("Horzelski Test. Decl.").[46]

- Testimony declaration of Daniel Wynne and exhibits ("Wynne Test. Decl.") filed under seal.[47]

## II. Preliminary Issues

### A. Petitioner's Motion to Exclude Testimony

Petitioner, in an appendix to its main brief, objects to the testimony of several of Respondent's witnesses on various grounds and requests that we exclude that testimony.[48] Specifically, Petitioner objects to the testimony of

- Respondent's expert witnesses, Wayne Van Zwoll, Ph.D and Chad Van Brunt, on the claims of utilitarian functionality; that the registration encompasses multiple marks; genericness; and aesthetic functionality; and

- Respondent's fact witnesses, Paul Mazzarella, Justin Giarusso, Evan Ranz, Dale Robinson, Bill Rapier, and Erik Van Woerkom, on the claim of utilitarian functionality.[49]

Dr. Van Zwoll provided testimony and opinions related to the claims of utilitarian functionality, genericness, aesthetic functionality, and that the mark embodied in the registration encompasses more than one mark.[50] However, Respondent asserts that Petitioner's objections to his testimony regarding the first three issues are moot

[46] 98 TTABVUE.

[47] 99 TTABVUE.

[48] 130 TTABVUE 57-62 (Petitioner's Brief).

[49] *Id.*

[50] 66 TTABVUE 3 (Van Zwoll Decl.).

because Respondent "has not relied" on his testimony.[51] In light of Respondent's stated position, we consider the objections moot and give no consideration to his testimony specifically related to those issues.

As to the claim of "multiple marks," Respondent asserts that Petitioner's objections are also moot "because the only cited testimony is based on Dr. Van Zwoll's personal review of [Respondent's] advertisements."[52] While we agree with Petitioner that the testimony lacks a proper foundation,[53] Petitioner's objections are moot inasmuch as we do not reach the issue of whether the Registration encompasses multiple marks.

Similarly, because Respondent does not rely on the testimony of Paul Mazzarella, Justin Giarusso, Evan Ranz, Dale Robinson, Bill Rapier, or Erik Van Woerkom, with regard to Petitioner's claim of functionality,[54] and that is the only claim we reach on the merits, Petitioner's objection to the testimony of these witnesses is also moot.

For the same reasons, Petitioner's objection to the expert testimony of Chad Van Brunt beyond the issue of functionality is moot as well. Regarding functionality, Respondent objects to Mr. Van Brunt's testimony "on the ground that he is admittedly not an expert on carbon fiber composite technology."[55] However, Respondent states

[51] 132 TTABVUE 57 (Respondent's Brief, Appendix).

[52] *Id.*

[53] 130 TTABVUE 57 (Petitioner's Brief, Appendix).

[54] 132 TTABVUE 57 (Respondent's Brief, Appendix).

[55] 131 TTABVUE 62 (Petitioner's Brief) (Confidential). The entirety of Petitioner's objections to Mr. Van Brunt's testimony is redacted from the public version of its brief. However, it is unclear why any of the objections are considered confidential. *See* note 3.

that "Van Brunt is not being offered as an expert in composites. Rather, Van Brunt is an expert in evaluating the performance characteristics of carbon fiber rifle barrels."[56] Petitioner's objection to the testimony of Mr. Van Brunt on the issue of functionality is therefore overruled. To the extent Mr. Van Brunt's testimony concerning the performance characteristics of carbon fiber rifle barrels is relevant to our determination of functionality, we will give it the weight we think it deserves.[57]

**B. Respondent's Pending Motions to Strike**

Following the close of Petitioner's testimony period, Respondent filed a motion to strike the portion of paragraph 21 of the declaration of Petitioner's and CarbonSix's owner, Ronald Duplessis, on the basis that the testimony was based on "information and belief," and not based on Mr. Duplessis' personal knowledge.[58] The Board deferred the motion to strike until final decision and advised Respondent that if it wished to maintain the objection, it must renew that objection in its trial brief.[59] Because Respondent did not renew the objection in its final brief, it is waived. *See, e.g.*, *Wet Seal Inc. v. FD Mgmt. Inc.*, 82 USPQ2d 1629, 1632 (TTAB 2007) (objection

[56] 132 TTABVUE 58 (Respondent's Brief).

[57] Fed. R. Evid. 702, made applicable to Board proceedings by Trademark Rule 2.116(a), provides that "[a] witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if: (a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue; (b) the testimony is based on sufficient facts or data; (c) the testimony is the product of reliable principles and methods; and (d) the expert has reliably applied the principles and methods to the facts of the case."

[58] 44 TTABVUE.

[59] 53 TTABVUE 11-12. A substantive objection to declaration testimony "may be raised by a motion and maintained in the brief." *Barclays Capital Inc. v. Tiger Lily Ventures Ltd.*, 124 USPQ2d 1160, 1167 (TTAB 2017).

to testimony waived when not renewed in trial brief).

Additionally, following the close of Petitioner's rebuttal period, Respondent filed a motion to strike the rebuttal testimony declaration of Daniel Wynne "on the grounds that (a) it is untimely in that the referenced invoices were not included in Petitioner's Rebuttal Notice of Reliance and (b) [the] invoices [attached as exhibits to the declaration], and the issues addressed in the Wynne declaration, have no relevance to the present case."[60] According to Respondent, the sole purpose of the two-page declaration is to introduce certain invoices into evidence.[61]

Respondent's objections are not well-taken and are overruled. The objection based on timeliness is misplaced, since declaration testimony need not be provided under a notice of reliance. *See* Trademark Rule 2.123(a)(1), 37 C.F.R. § 2.123(a)(1) ("The testimony of witnesses in inter partes cases may be submitted in the form of an affidavit or a declaration pursuant to § 2.20 and in conformance with the Federal Rules of Evidence, filed during the proffering party's testimony period….").

As to the objection on relevance, we find that, at a minimum, the declaration includes Mr. Wynne's testimony regarding his position and responsibilities with Petitioner, the manufacturing process of Petitioner's barrels, and the parties to whom sales of Respondent's goods are made, which are relevant background in this case. "Suffice it to say, 'we simply accord the evidence whatever probative value it deserves, if any at all ... Ultimately, the Board is capable of weighing the relevance and strength

[60] 101 TTABVUE 3.

[61] *Id*. at 2-3.

or weakness of the objected-to testimony and evidence in this specific case, including any inherent limitations, and this precludes the need to strike the testimony and evidence.'" *Ricardo Media Inc. v. Inventive Software, LLC*, 2019 USPQ2d 311355, at *3 (TTAB 2019) (quoting *Hunt Control Sys. Inc. v. Koninkijke Philips Elecs. N.V.*, 98 USPQ2d 1558, 1564 (TTAB 2011)). The objection is therefore overruled and the motion to strike is denied.

## III. Entitlement to a Statutory Cause of Action[62]

Even though Respondent did not challenge Petitioner's entitlement to invoke the statutory cause of action for cancellation, such entitlement must be proven in every inter partes case. *See Australian Therapeutic Supplies Pty. Ltd. v. Naked TM, LLC*, 965 F.3d 1370, 2020 USPQ2d 10837, at *3 (Fed. Cir. 2020) (citing *Lexmark Int'l, Inc. v. Static Control Components, Inc.*, 572 U.S. 118, 109 USPQ2d 2061, 2067 n.4 (2014)). A party in the position of plaintiff may petition for cancellation of a registered mark where such cancellation is within the zone of interests protected by the statute, 15 U.S.C. § 1064, and the party has a reasonable belief in damage that is proximately caused by continued registration of the mark. *Corcamore, LLC v. SFM, LLC*, 978 F.3d 1298, 2020 USPQ2d 11277, at *6-7 (Fed. Cir. 2020).

Petitioner "manufactures steel rifle barrels for firearms," as well as "barrel blanks

[62] Board decisions have previously analyzed the requirements of Sections 13 and 14 of the Trademark Act, 15 U.S.C. §§ 1063-64, under the rubric of "standing." Despite the change in nomenclature, our prior decisions and those of the Federal Circuit interpreting Section 13 and 14 remain applicable. *See Spanishtown Enters., Inc. v. Transcend Resources, Inc.*, 2020 USPQ2d 11388, at *2 (TTAB 2020).

or liners, which its customers wrap with a composite."[63] Petitioner's customers include its sister company, Hunters Run Gun Club, LLC d/b/a CarbonSix, which "purchases blanks exclusively from [Petitioner] and applies a continuous-filament carbon fiber and epoxy resin composite,"[64] and unrelated companies Fierce Firearms, LLC and Primary Weapons Systems, Inc.[65]

Ronald Duplessis, the sole owner of both Petitioner and CarbonSix,[66] testified that prior to the institution of this proceeding, Respondent "filed a complaint in US District Court, District of Montana, naming [Petitioner] as the defendant," and alleging "that barrels being manufactured and sold by CarbonSix infringe [the Registration]."[67] The federal suit has been stayed pending the Board's disposition of this proceeding.[68] In addition, CarbonSix, Fierce Firearms, and Primary Weapons Systems have each "been threatened by [Respondent] with a trade dress infringement law suit. Primary Weapons Systems no longer purchases barrel blanks from [Petitioner]."[69]

Based on the foregoing, Petitioner has demonstrated that its interest in cancellation of the Registration falls within the zone of interests protected by the Lanham Act and that Petitioner has a reasonable belief that damage is proximately

[63] 37 TTABVUE 2 (Duplessis Test. Decl., ¶¶ 2-3).

[64] *Id.* at 3 (¶ 4).

[65] *Id.* at 4 (¶ 11).

[66] *Id.* at 2-3, (¶¶ 1, 4).

[67] *Id.* at 4 (¶ 9).

[68] 130 TTABVUE 8 (Petitioner's Brief); 132 TTABVUE 6 (Respondent's Brief).

[69] 37 TTABVUE 4-5 (Duplessis Test. Decl., ¶ 11).

caused by continued registration of the mark. *See Empresa Cubana Del Tabaco v. Gen. Cigar Co.*, 753 F.3d 1270, 111 USPQ2d 1058, 1062 (Fed. Cir. 2014) (Cuban cigar manufacturer entitled to seek cancellation of competitor's trademark registrations); *Domino's Pizza Inc. v. Little Caesar Enters. Inc.*, 7 USPQ2d 1359, 1363-64 (TTAB 1988) (entitlement to a statutory cause of action established by the opposer's position as a defendant in a civil action brought by the applicant alleging trademark infringement); *Tanners' Council of Am., Inc. v. Gary Indus., Inc.*, 440 F.2d 1404, 169 USPQ 608, 609 (CCPA 1971) ("It seems clear enough that registration of the mark as applied for could weaken the sales positions of appellants' members and hence reduce the income of appellant. We think this last factor is alone sufficient to bring appellant within the category of 'any person who believes he would be damaged' by the registration.").

Petitioner has thus established its entitlement to petition for cancellation of the Registration.

## IV. Background

### A. Respondent

Respondent (Proof Research, Inc.) is the successor-in-interest to Jense Precision, a company that started in 2006 as a sole proprietorship owned by Kristopher Jense, which he converted to an LLC in 2008.[70] "Jense Precision purchased rifle parts, assembled them, and then sold the finished rifles."[71]

[70] 73 TTABVUE 3 (Jense Test. Decl., ¶ 2).

[71] *Id.*

In or about 2008, the company began purchasing carbon fiber composite rifle barrels from Advanced Barrel Systems ("ABS").[72] According to Mr. Jense, the rifle barrels he purchased from Advanced Barrel Systems "had a very unique look to them. This 'look' is the same mottled finish that is the subject of [the Registration]. From [his] first exposure to these rifle barrels to the present, it has been [his] mission to maintain this same look so that consumers would associate it with [Respondent's] barrels."[73]

In 2011, Xtreme Precision Armaments, Inc. acquired Jense Precision and subsequently changed its name to Proof Research, Inc. (Respondent).[74] In 2012, Respondent "purchased the assets of ABS, including its trade dress." During that year, Mr. Jense decided to register the trade dress that is the subject of the Registration.[75] Mr. Jense testified that since obtaining the Registration in 2013, he has "insisted that [Respondent] maintain the trade dress 'look' on the outer surface of its carbon fiber wrapped barrels, regardless of the interior engineering of the barrel," which he urges "is important because customers associate the unique mottled pattern with the quality and superior performance of [Respondent's] rifle barrels."[76]

Respondent "makes barrels for some of the largest rifle manufacturers in the

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[72] Jense testified in his declaration that he started purchasing rifle barrels from Advanced Barrel Systems in 2006. *Id.* (¶ 3). However, on cross-examination, he testified that he only became aware of, and began purchasing rifle barrels from, that company in or around 2008. 115 TTABVUE 4 (Jense Cross Test., pg. 5:2-19).

[73] 73 TTABVUE 3-4 (Jense Test. Decl., ¶ 3).

[74] *Id.* at 4 (¶ 4).

[75] *Id.* (¶ 5).

[76] *Id.* at 7 (¶ 13).

United States, including Remington, Savage, Weatherby, Nosler, and Kimber. Rifles with [Respondent's] carbon fiber rifle barrels are used by competitive shooters, the military, and hunting and shooting enthusiasts around the world."[77] According to Mr. Jense, "[Respondent's] trade dress is our 'signature' and is more recognizable than the name 'Proof' or 'Proof Research' on the barrel. When consumers see the unique mottled pattern on the rifle barrel, they assume it to be [Respondent's] barrel."[78]

Several "images of rifle barrels displaying [Respondent's] registered trade dress" are shown below:[79]

[77] *Id.*

[78] *Id.* at 8 (¶ 16).

[79] *Id.* at 4, 13-15 (¶ 6 and Exhibit A); 66 TTABVUE 11-12, 31 (Van Zwoll Test. Decl., ¶ 18 and Exhibit B).

**B. Petitioner and its Sister Company, CarbonSix**

Petitioner (McGowen Precision Barrels, LLC) was formed in 2006 in Kalispell, Montana.[80] As noted, Petitioner manufactures steel rifle barrels.[81] In addition, the company manufactures and sells barrel blanks (or liners),[82] which are further processed by its customers by wrapping the blanks with a composite that is typically "a combination of carbon fibers and epoxy resin."[83]

Hunters Run Gun Club, LLC, which was formed in 2004 in Baton Rouge, Louisiana, began doing business as CarbonSix in 2016 (hereinafter referred to as CarbonSix), and is one of Petitioner's barrel blank customers.[84] CarbonSix purchases barrel blanks exclusively from Petitioner; it then wraps the barrel blanks with a continuous-filament carbon fiber and epoxy resin composite.[85] In early 2017, CarbonSix began selling its carbon fiber wound barrels for bolt action rifles to sportsmen, including precision rifle shooters and the general public.[86] Several images of CarbonSix's carbon composite rifle barrels, manufactured using Petitioner's barrel blanks, are shown below:[87]

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[80] 37 TTABVUE 2 (Duplessis Test. Decl., ¶ 1-2); 56 TTABVUE 4-5 (Duplessis Disc Dep.).

[81] 37 TTABVUE 2 (Duplessis Test. Decl., ¶ 2).

[82] The terms "barrel blanks" and "barrel liners" are used interchangeably throughout the evidence.

[83] 37 TTABVUE 2 (Duplessis Test. Decl., ¶ 3).

[84] 56 TTABVUE 4 (Duplessis Disc Dep., pgs. 8:10-16, 12:2-5).

[85] 37 TTABVUE 3 (Duplessis Test. Decl., ¶ 4).

[86] 56 TTABVUE 8-9 (Duplessis Disc. Dep.).

[87] 37 TTABVUE 3-4, 24, 28-29 (¶¶ 7, 9, and Exhibits 5, 7).

**C. Carbon Fiber Composites, Generally**

As explained in a treatise by F.C. Campbell titled "Structural Composite Materials" (2nd Ed. 2019), "[a] composite material can be defined as a combination of two or more materials that results in better properties than those of the individual components used alone" because "[i]n contrast to metallic alloys, each material retains its separate chemical, physical, and mechanical properties."[88] It further explains that there are two constituents of a composite: a matrix (or continuous) phase, and a reinforcement phase.[89] "The matrix (continuous phase) performs several critical functions, including maintaining the fibers in the proper orientation and

[88] 89 TTABVUE 29, 31 (Petitioner's Rebuttal NOR). Printed publications made of record by notice of reliance and without witness testimony generally cannot be considered for proving the truth of the matters discussed therein, but may have some relevance for what they show on their face. *See, e.g.*, *Ricardo Media*, 2019 USPQ2d 311355, at *2 (unaccompanied by testimony, articles from printed publications may not be considered for the truth of the matters asserted but are admissible for what they show on their face). Although Respondent asserts in its brief that Petitioner relies on this publication "without citing any witness testimony as to whether this article is relevant, whether the authors are credible, or whether the conclusions set forth in this article are distinguishable from the present case," 132 TTABVUE 23, Respondent does not dispute any of the statements therein, many of which are corroborated by Respondent's '117 Patent. Additionally, Dr. Curliss, a co-inventor of Respondent's '117 Patent, appears to have used several of the drawings (Figs. 1.4, 1.5, and 1.8) from Chapter 1 of this publication, "Introduction to Composite Materials," 89 TTABVUE 34-35, 37, in his declaration in support of the '117 Patent (corresponding to drawing figs. 1A, 1B, and 2 in the declaration), 36 TTABVUE 164-67. We find it appropriate to take judicial notice of this standard reference work as it relates to carbon fiber composites generally and to background information that is not in dispute. The Board may take judicial notice of facts that are either 'generally known' or 'accurately and readily [discernible] from sources whose accuracy cannot reasonably be questioned.'" Fed. R. Evid. 201(b). *See also Sprague Elec., Inc. v. Elec. Utils. Co.*, 209 USPQ 88 (TTAB 1980) ("[I]t is recognized that judicial notice may be taken of any standard reference…." *In re Hartop*, 311 F.2d 249, 135 USPQ 419, 420 n.6 (CCPA 1952) (taking judicial notice of two standard reference works); *In re Wiseman*, 596 F.2d 1019, 201 USPQ 658, 661 (CCPA 1979) (judicial notice that "[w]hen water is present in a brake disc assembly a substantial decrease in braking torque occurs" may be taken because it is "a widely known phenomenon"). We hasten to add that our decision is not dependent on any of the statements cited from this reference.

[89] 89 TTABVUE 29, 31 (Petitioner's Rebuttal NOR).

spacing and protecting them from abrasion and the environment."[90] The reinforcement phase "provides the strength and stiffness" and "[i]n most cases … is harder, stronger, and stiffer than the matrix."[91] It is further explained that "[t]he type and quantity of the reinforcement determine the final properties."[92]

According to the author, "the highest strength and modulus[93] are obtained with continuous-fiber composites." Unlike continuous-fiber composites, discontinuous-fiber composites "are normally somewhat random in alignment, which dramatically reduces their strength and modulus," but they "are generally much less costly." Accordingly, "continuous-fiber composites are used where higher strength and stiffness are required (but at a higher cost), and discontinuous-fiber composites are used where cost is the main driver and strength and stiffness are less important."[94] Both parties in this case use continuous-fiber carbon composites.[95]

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[90] *Id.*

[91] *Id.*

[92] *Id.* at 32.

[93] "Modulus" is "a constant or coefficient that expresses usually numerically the degree to which a body or substance possesses a particular property (such as elasticity)." MERRIAM-WEBSTER DICTIONARY, https://www.merriam-webster.com/dictionary/modulus (accessed, April 12, 2021). Petitioner explains without challenge that the "elastic modulus is the measure of the stiffness of a material, in particular, it is the relationship between the load applied to a material and the amount of deformation. 130 TTABVUE 15 (Petitioner's Brief). The Board may take judicial notice of dictionary definitions from online sources when the definitions themselves are derived from dictionaries that exist in printed form or have regular fixed editions. *See In re White Jasmine LLC*, 106 USPQ2d 1385, 1392 n.23 (TTAB 2013); *In re Red Bull GmbH*, 78 USPQ2d 1375, 1378 (TTAB 2006); *see also Gerson Co. v. United States*, 898 F.3d 1232, 1236 n.4 (Fed. Cir. 2018).

[94] 89 TTABVUE 29, 32.

[95] 66 TTABVUE 13 (Van Zwoll Test. Decl., ¶ 22); 37 TTABVUE 3 (Duplessis Test. Decl., ¶ 4). However, as discussed infra, Respondent's composites are composed of seven layers wrapped at different constant wrap angles varying from ±25° to ±85° relative to the center axis of the barrel with the outer layer wrapped at ±45°, 78 TTABVUE 12 (Lincoln Test. Decl., ¶ 27),

In addition, the materials used to form composites "can be classified as either isotropic or anisotropic":

> Isotropic materials have the same material properties in all directions, and normal loads create only normal strains. By comparison, anisotropic materials have different material properties in all directions at a point in the body. There are no material planes of symmetry and normal loads create both normal strains and shear strains. A material is isotropic if the properties are independent of direction within the material.[96]

The anisotropic nature of carbon fiber composites appears to be one of the primary benefits of using them. As explained by Dr. Jason Lincoln, a co-inventor, along with Dr. Curliss, of Respondent's '117 Patent,[97] "[t]he most important design feature of the composite materials results from their anisotropy."[98] Because "fiber constituents themselves are often anisotropic, such as carbon fibers;" such "materials can be tailored to provide strength or stiffness in directions in which they are needed."[99]

**D. Carbon Composite Rifle Barrels**

The general benefits provided by carbon fiber composites carry over to their use in the manufacture of rifle barrels. Indeed, "[c]omposite materials offer unparalleled design space ideal for firearms barrels," and provide "**tailorable** fiber stiffness, strength, and thermal conductivity" as well as "**tailorable** resin mechanical and

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whereas Petitioner's composites are composed of one layer that is wrapped at a constant angle of ±45° relative to the center axis of the barrel (monolithically wrapped), 37 TTABVUE 2-3 (Duplessis Test. Decl., ¶¶ 4-5, 7). "The term 'monolithic' has been used in this litigation to mean a single layer of carbon fiber wrapped at a constant angle." 132 TTABVUE 20 n.21 (Respondent's Brief).

[96] 89 TTABVUE 34 (Petitioner's Rebuttal NOR).

[97] 47 TTABVUE 17-32 (Lincoln Test. Dep., Exhibit 2).

[98] 48 TTABVUE 3, 6-8, 203 (Lincoln Test. Dep., and Exhibit 1) (Confidential).

[99] *Id*. at 203.

thermal performance."[100] "Most importantly," they provide space for "integrated and optimized design of [a] steel/composite barrel system."[101]

In addition to providing the capability of tailoring the performance characteristics of a rifle barrel to one's desired specifications, the use of carbon composite barrels in firearms provides the substantial benefit of reducing their weight. As explained in the '117 Patent,

> Users have long desired lighter weight gun systems that remain durable and reliably accurate. It is known to substitute relatively strong but lightweight materials—such as unreinforced and reinforced polymers, continuous glass fiber or carbon fiber composites—for various portions of the gun commonly fabricated from steel, aluminum, or other metals. Attention has focused on gun barrels, which constitute a large percentage of a gun's weight. It is known, for example, to fabricate a gun barrel having an inner liner, typically a steel alloy, surrounded by a continuous carbon fiber reinforced polymer matrix composite outer shell. With the appropriate choice of materials and properly engineered, this combination lightens the gun while retaining good barrel strength and stiffness.[102]

Petitioner's and CarbonSix's owner, Ronald Duplessis, explains (and Respondent's General Manager of Respondent's Advanced Composites Division and co-inventor of the '117 Patent, Dr. Curliss, confirms) that

> When the outer portion of a steel barrel is removed and replaced with a carbon fiber/epoxy resin composite, one obtains a weight reduction in the ratio of approximately 4.8:1 (steel : composite). In other words, every 4.8 lbs. of steel removed to create the barrel blank is replaced with only 1 lb. of composite. This is because steel has a density of approximately 7.7 g/cm$^3$ and the composite has a density of approximately 1.6 g/cm$^3$. … The weight reduction may be increased by removing more of the steel and replacing it with an equal volume of the composite. Regardless of

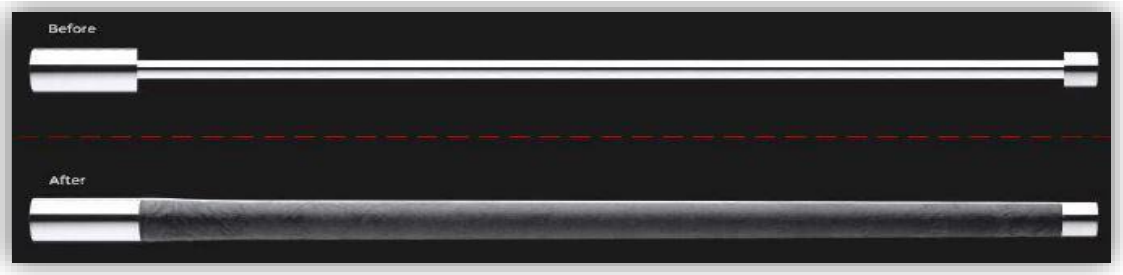
[100] *Id*. at 204 (emphasis in original).

[101] *Id.*

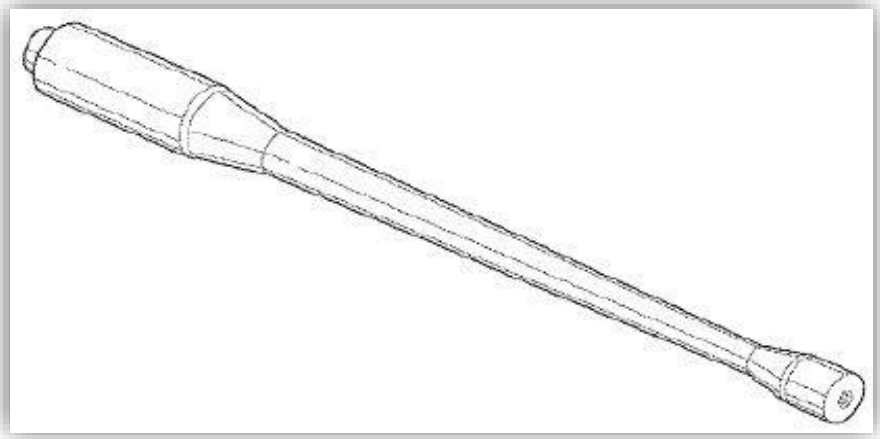
[102] 47 TTABVUE 26 (Lincoln Test. Dep., Exhibit 2, col. 1, lines 15-28).

> the wrap angle relative to the axis of the barrel, the carbon fiber/epoxy resin composite provides a useful function, that is, replacing the heavier steel with a rigid, carbon fiber-reinforced epoxy composite.[103]

A "simplified representation" of "a barrel blank [or liner], before and after a carbon fiber composite is applied" is shown below:[104]




Another example of a barrel blank is shown in the following excerpt from Fig. 1A of Respondent's published U.S. patent application number 2017/0205172 A1:[105]



As to the carbon fibers used in the outer shell of the barrel blank, they

> may be any types that provide the desired stiffness, strength and thermal conductivity. … The carbon fiber may be applied in a wet filament winding operation, wherein dry carbon fiber strands or tows are combined with a resin in a "wet" dip pan process, then wound around the inner liner and processed. Alternatively, the shell may be fabricated

[103] 37 TTABVUE 5-6 (Duplessis Test. Decl., ¶ 14); 36 TTABVUE 61-62 (Curliss Disc. Dep.).

[104] 37 TTABVUE 2 (Duplessis Test. Decl., ¶ 3, and Exhibit 1).

[105] *Id*. at 3 (¶ 3, and Exhibit 2).

> from carbon fiber tow, unidirectional tape, or fabric that was previously impregnated with resin in a separate process ("towpreg" or "prepreg"), or a textile preform wherein the resin is infused into the braided preform, then applied to the inner liner in a process that cures the prepreg into a hard thermally stable matrix and simultaneously bonds the outer shell to the barrel inner liner. … The composite barrel may then be cured (where relevant), finished, and attached to a receiver and stock. Such carbon fiber reinforced composites can provide a suitable balance of thermal properties, mechanical properties, and processing characteristics for many common firearms applications.[106]

Notwithstanding the ability to tailor the optimization of a carbon composite barrel to one's needs, various considerations need to be addressed in their processing. As the explained in the '117 Patent,

> [C]omposite gun barrels, however, can pose problems not encountered with traditional steel barrels. First, the composite must be constructed in a manner and quantity around and along the liner to ensure that the barrel does not burst upon firing, to achieve satisfactory strength and stiffness in the principal directions (e.g., axially and torsionally), to provide adequate environmental durability, and to dampen the shock wave that propagates when the projectile is fired. …
>
> Most of the foregoing issues can be addressed by additional windings, e.g., more circumferential "hoop wraps" to improve burst strength and more axially oriented helical windings to improve axial tensile and flexural strength and stiffness. … However, adding more layers of windings can lead to manufacturing and curing complications, higher material expense, more weight, and a bulkier barrel profile than desired. Fiber selection can also address these problems to some extent. Generally lower density, stronger and stiffer fibers are preferred provided they do not exhibit other undesirable characteristics, such as poor resin adhesion.
>
> Second, thermal management is a significant concern, inasmuch as the more common continuous fiber composite ("CFC") outer shells are relatively poor conductors of the heat generated by hot gasses within the liner. Additional layers of CFC windings exacerbate the heat removal problem. During operation, the barrel will heat up. …

[106] 47 TTABVUE 26 ('117 Patent, Lincoln Test. Dep., Exhibit 2, col. 1, lines 29-60).

> A third problem relates to stresses within the barrel arising from thermal expansion differences between the composite and the inner liner of the composite barrel. As the inner steel liner heats during operation, it expands both radially and longitudinally. Composite structures in the prior art have a substantially lower average effective coefficient of thermal expansion (CTE)[107] in the longitudinal direction than steel and so when heated, the CFC outer shell expands substantially less than the steel liner. This may increase or decrease thermal stresses in the barrel depending on the state of thermal residual stress from processing. The point is that as the temperature changes in the barrel, due to operation or the environment, the state of residual stress in the barrel also changes.[108]

As one can imagine based on the foregoing, not all carbon composite barrels are equal. The physical properties and resulting efficiency of a carbon composite barrel depend on a number of factors, including the angle at which the wrap of the carbon filament composite is applied to the barrel. For example, as explained in the '117 Patent,

> To increase the burst strength of the barrel, it is known to be advantageous to wind tows circumferentially about [the] inner liner in helical hoops, e.g. ±85° (plus or minus about 5° relative to the longitudinal axis of the barrel). For axial strength and stiffness, to minimize [the] barrel from flexing due to shockwaves arising from discharge of a bullet for example, it is preferable to have more longitudinal helical wraps, e.g. ±25° (again plus or minus about 5° measured relative to the longitudinal axis of barrel). To promote maximum axial stiffness with the fewest tows, it is preferable to locate the longitudinal helical wraps at or near the outer region of outer shell. The surface of outer shell can be made more durable to wear and tear, however, if the outer region of outer shell is wrapped at a less acute angle, e.g. 45°.
> …

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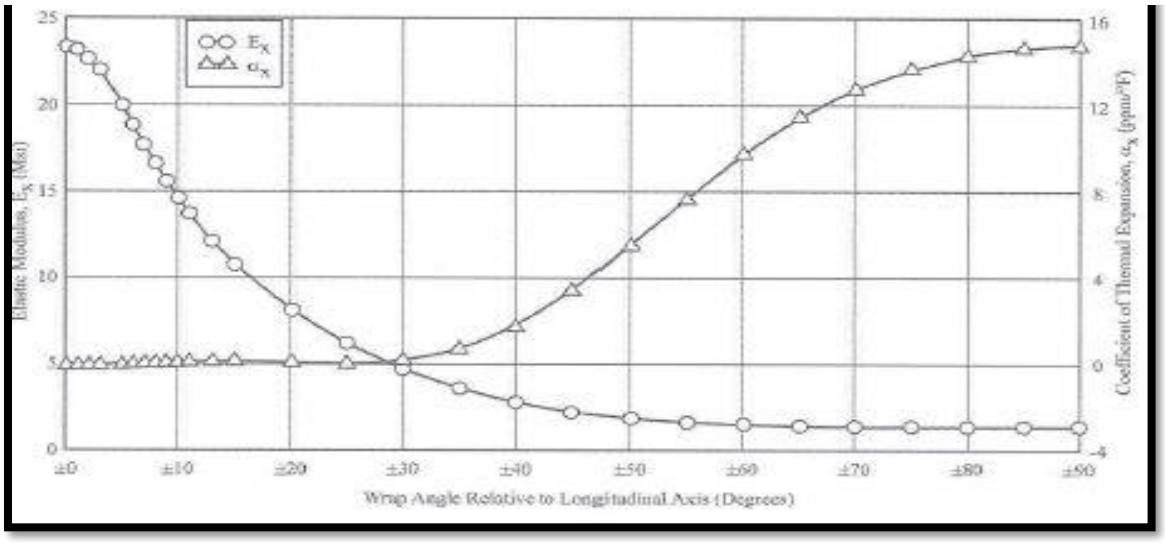
[107] We take judicial notice that the "coefficient of thermal expansion," or "coefficient of expansion" is "the amount of expansion (or contraction) per unit length of a material resulting from one degree in change of temperature"

(https://www.thefreedictionary.com/Coefficient+of+thermal+expansion) (Collins Dictionary accessed April 12, 2021). *See, e.g.*, *In re Wiseman*, 201 USPQ at 661.

[108] 47 TTABVUE 26 (Lincoln Test. Dep., Exhibit 2, col. 1, lines 66-67; col. 2, lines 1-58).

> The average effective longitudinal CTE . . . of the CFC outer shell will vary depending not only on wrap angle, but on a variety of other factors including matrix composition (e.g., whether resin versus ceramic or metal, type of resin, etc.), presence of matrix additives such as thermally conductive heat dissipation additives, fiber type, tow tension during wrapping, regional wrap angle sequence, and regional wrap angle thicknesses. All of these factors must be considered when attempting to match the average effective longitudinal CTE of the CFC outer shell to the CTE of the steel liner. [109]

Fig. 5 of Respondent's '117 Patent provides the following chart showing the relationship between stiffness and CTE as a function of wrap angle:[110]



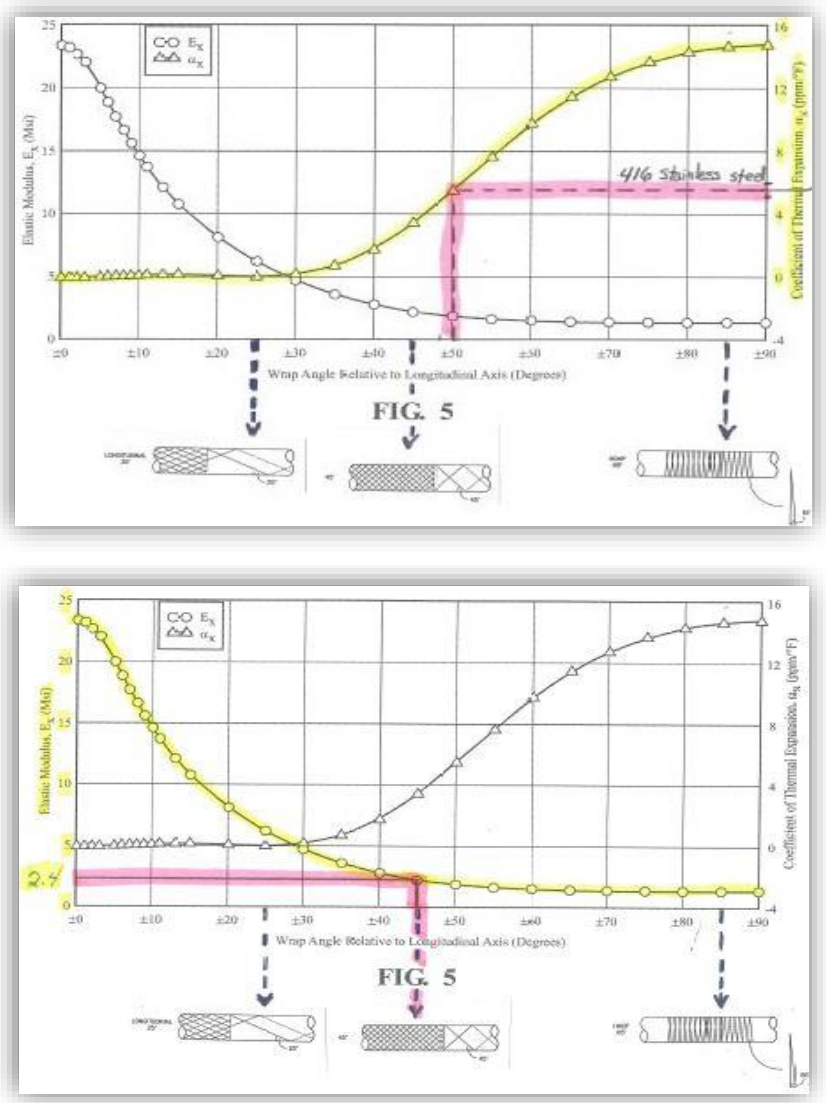

According to Mr. Duplessis, this table—"which is actually two graphs combined into one, namely (i) CTE … as a function of wrap angle; and (ii) stiffness as a function of wrap angle"—further evidences the relationship between the wrap angle of the carbon filament composite and various physical properties of the barrel."[111] To

[109] *Id*. at 29 (col. 7, lines 48-62; col. 8, lines 56-65, fig. numbers omitted).

[110] *Id*. at 23.

[111] 37 TTABVUE 6 (Duplessis Test. Decl., ¶ 16).

illustrate, he provided two marked-up versions of the same chart, the first showing the coefficient of thermal expansion (CTE) as a function of wrap angle, the second showing stiffness as a function of wrap angle, both with additions of the CTE of 416 stainless steel and illustrations of example filament wrap angles of 25°, 45° and 85° (as discussed in the Patent) and where they would fall on the chart:[112]




[112] *Id*. at 6-7, 34-37 (¶¶ 16-17, Exhibits 9-10).

**E. Respondent's Carbon Composite Barrels**

Respondent's predecessor, ABS, "was the first rifle barrel company to offer a helically wound and ground carbon fiber rifle barrel."[113] Respondent's barrels "feature a slim rifled core of 416R stainless steel in a shell comprising layers,"[114] 90% of them being seven layers,[115] "of continuous carbon fiber wrap."[116] The carbon filament layers are applied using "a wet bath filament winding process"[117] "wherein dry carbon fiber strands or tows are combined with a resin in a 'wet' dip pan process, then wound around the inner lining and processed."[118] "The outer region [of the shell], which constitutes approximately 13 percent of the shell thickness, is wound at a 45-degree angle, plus or minus 5 degrees."[119]

Respondent, during prosecution of the trademark application that matured into the Registration, further explained this process and how the resulting barrels come to display Respondent's claimed trade dress:

> The mottled pattern of irregularly-sized, rippled patches that appears on [Respondent's] gun barrels results from a manufacturing process that irregularly exposes various levels of carbon fiber winding at or near the surface of the barrel. … After curing, the rifle barrel surface is rough and slightly oversized, but is otherwise fully functional. [Respondent] chooses to finish its barrels by removing the outer carbon fiber surface. [Respondent] does this by rotating the barrel in a lathe, and using grinding wheels to grind down the barrel surface to the desired

[113] 68 TTABVUE 6 (Curliss Test. Decl., ¶ 12).

[114] 66 TTABVUE 13 (Van Zwoll Test. Decl., ¶ 22).

[115] 68 TTABVUE 27 (Curliss Test. Decl., ¶ 61).

[116] 66 TTABVUE 13 (Van Zwoll Test. Decl., ¶ 22).

[117] 36 TTABVUE 13 (Petitioner's NOR, Exhibit C-1, Curliss Disc Dep.).

[118] 47 TTABVUE 26 ('117 Patent, Lincoln Test. Dep., Exhibit 2).

[119] 66 TTABVUE 13 (Van Zwoll Test. Decl., ¶ 22).

> diameter. [Respondent] grinds down the surface in stages, progressing from coarse to fine diamond-coating grinding wheels. This process exposes different portions of the helical winding patterns of the carbon fiber tows. The barrels are then wiped with a solvent but not coated with any finish.[120]

**F. CarbonSix's Carbon Composite Barrels**

"CarbonSix applies the composite to the exterior of the barrel blank[s]" it purchases from Petitioner "as a 'prepreg' consisting of continuous-filament, carbon fiber tow, which has been pre-impregnated with uncured epoxy resin."[121] CarbonSix applies the prepreg, an "off-the-shelf, commercially available product," at "a volume ratio of carbon fiber to resin of approximately 60:40, respectively, for optimum strength," as purportedly recommended by the prepreg supplier.[122] According to Mr. Duplessis, "[a]n advantage of using a prepreg is that the target ratio of carbon fiber to resin is already present in the tow. The prepreg is applied by the well-known process of filament winding."[123]

CarbonSix then cures the wrapped barrel in an oven, "which causes the resin to

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[120] Registration file, March 25, 2013 Response to Office Action, TSDR 10. Statements made in an application during prosecution of a trademark registration are considered hearsay when offered by the registrant and may not be relied on as evidence on its behalf. *See* TRADEMARK TRIAL AND APPEAL BOARD MANUAL OF PROCEDURE (TBMP) § 704.04 (2020). TBMP Section 704.04 n.2 states, however, that under Rule 801(d)(2) of the Federal Rules of Evidence, such statements are not considered hearsay when they are offered as admissions of a party opponent. *See* MISCELLANEOUS CHANGES TO TRADEMARK TRIAL AND APPEAL BOARD RULES, 81 Fed. Reg. 69950, 69963 (Oct. 7, 2016) (statements falling under Fed. R. Evid. 801(d) do not constitute hearsay). There is some dispute regarding the meaning of the term "finish" as used in Respondent's '117 Patent, which we discuss infra, and to that extent, the statements may be construed as an admission. Respondents' above statements are also corroborated by other testimony in this proceeding and are not disputed.

[121] 37 TTABVUE 3 (Duplessis Test. Decl., ¶ 5).

[122] *Id*.

[123] *Id*.

first soften. Then, a chemical reaction causes the resin to cross-link and harden into a rigid matrix surrounding the carbon fibers."[124] Because "the surface of the barrel is irregular and may be pitted where entrained air has migrated to the surface" after curing, "[t]he outer diameter of the composite portion of the barrel is greater than the desired profile of the barrel."[125] The composite must therefore "be ground down to the target 'profile' on a lathe, for example, using a belt sander, and then hand-sanded to a smooth finish before it can be sold. The 'profile' is the final, outer dimension of the barrel."[126]

CarbonSix currently offers two types of carbon fiber wound barrels that are monolithically wound: (1) one that is helically wrapped at an angle of ±45°[127] (helical wrap), which comprises 90% of its sales, and (2) one that is hoop wrapped at an angle of ±88° (hoop wrap), which comprises 10% of its sales.[128] "All of CarbonSix's barrels employ a straight taper from chamber to muzzle."[129]

Mr. Duplessis explains that "[d]uring the steps of shaping the composite to the desired profile, excess material is removed, thereby revealing the carbon fiber and epoxy resin composite underneath in approximately a 60:40 ratio by volume,

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[124] *Id*. (¶ 6).

[125] *Id*.

[126] *Id*. at 3-4 (¶ 7).

[127] Petitioner refers to this ±45° angle as a "uniform wrap," meaning that "[t]he wind angle of the fiber tow on the barrel liner may be kept constant (uniform), as the various layers of the composite are built up. By way of example, a uniform ±45° wrap angle includes tow oriented at +45° and -45° relative to the axis of the barrel, as the carriage guiding the tow moves laterally back and forth while the tow is paid out." 130 TTABVUE 13.

[128] 56 TTABVUE 12 (Duplessis Disc Dep., pgs. 37:16-38:4, 38:17-25, 39:5-18, 40:12-19).

[129] 37 TTABVUE 3-4 (Duplessis Test. Decl., ¶ 7).

respectively."[130] "The appearance of the finished barrel," he asserts, "is a direct result of the method of manufacture, which in this case means wrapping the steel barrel with a continuous-filament, carbon fiber prepreg tow at a ±45° wrap angle. The dark areas along the finished barrel are the carbon fibers, which have been exposed, and the lighter areas are the cured epoxy resin matrix, which has been exposed."[131]

**G. Appearance of the Barrels Compared**

"[Respondent's] carbon fiber barrels have seven different layers of carbon fiber composite materials" that are "wound at wrap angles that vary from ±25° to ±85°," including its "outermost layer with a ±45° wrap angle…."[132] CarbonSix's helically wound carbon fiber barrels, in contrast, have a single, monolithically wrapped outer layer that is wrapped at a constant angle of ±45°."[133] Notwithstanding the differences in the way the parties structurally-engineer their respective carbon fiber composite materials around the barrel blank, the outer appearance of their barrels look quite similar, as shown below:[134]

[130] *Id*. at 4.

[131] *Id*.

[132] 79 TTABVUE 12 (Lincoln Test. Decl., ¶ 27).

[133] 37 TTABVUE 5 (Duplessis Test. Decl., ¶ 13).

[134] 66 TTABVUE 11-12, 30-31 (Van Zwoll Test. Decl., ¶ 18 and Exhibit B).

[Respondent's Barrel]

[CarbonSix's Barrel]

## V. Utilitarian Functionality

Most of the evidence and argument in this case is directed to the issue of functionality. With the necessary technical background out of the way, we can now undertake our main task of determining whether Petitioner has met its initial burden of presenting evidence sufficient to make out a *prima facie* case that Registrant's trade dress design as depicted in the Registration comprises matter that, as a whole, is functional, within the meaning of Section 2(e)(5) of the Trademark Act. If so, then the burden shifts to Respondent to prove nonfunctionality. *See Poly-America, L.P. v. Illinois Tool Works Inc.*, 124 USPQ2d 1508, 1514 (TTAB 2017), *aff'd*, No. 3:18-cv-00443 (N.D. Tex. Sept. 26, 2019), *appeal dismissed*, No. 19-11180 (5th Cir. Feb. 4, 2020); *Valu Eng'g Inc. v. Rexnord Corp.*, 278 F.3d 1268, 61 USPQ2d 1422, 1429 (Fed. Cir. 2002) (citation omitted); *In re Howard Leight Indus. LLC*, 80 USPQ2d 1507, 1509 n.7 (TTAB 2006).

There is no dispute that carbon fiber composite barrels provide various functional benefits to rifles. What the parties dispute is whether the particular appearance of

Respondent's carbon fiber composite barrels is functional because it is a natural by-product of the manufacturing process that creates the barrels, as Petitioner claims, or whether it is simply the result of Respondent's cosmetic efforts to create a trade dress that consumers associate with Respondent.

**A. Applicable Law**

"The Lanham Act does not exist to reward manufacturers for their innovation in creating a particular device; that is the purpose of the patent law and its period of exclusivity." *TrafFix Devices, Inc. v. Mktg. Displays, Inc.*, 532 U.S. 23, 58 USPQ2d 1001, 1007 (2001). Nor does it protect trade dress in a functional design merely because a party has made an investment to encourage the public to associate a particular functional feature with a single manufacturer or seller. *Id.* Accordingly, Section 2(e)(5) of the Trademark Act prohibits registration of "a mark which … comprises any matter that, as a whole, is functional." Such matter is "incapable of serving as a trademark," *Grote Indus., Inc. v. Truck-Lite Co.*, 126 USPQ2d 1197, 1202 (TTAB 2018), *civil action filed*, No. 1:18-cv-00599 (W.D.N.Y. May 24, 2018), and cannot be registered, even with a showing that consumers recognize the proposed mark as a source identifier. *See TrafFix*, 58 USPQ2d at 1007.

A product design or product feature is considered functional in a utilitarian sense if: (1) it is "essential to the use or purpose of the article," or (2) it "affects the cost or quality of the article." *TrafFix*, 58 USPQ2d at 1006 (quoting *Inwood Labs., Inc. v. Ives Labs., Inc.*, 456 U.S. 844, 214 USPQ 1, 4 n.10 (1982)). In *TrafFix*, the Supreme Court confirmed the "*Inwood* formulation" as the "traditional rule" of functionality. 58 USPQ2d at 1006.

In making our determination of functionality under the *Inwood* test, the Board may consider the categories of evidence set forth in *In re Morton-Norwich Prods, Inc.*, 671 F.2d 1332, 213 USPQ 9, 15-16 (CCPA 1982). *See Valu Eng'g*, 61 USPQ2d at 1426; *In re Change Wind Corp.*, 123 USPQ2d 1453, 1456 (TTAB 2017) (in determining functionality under the Supreme Court's standards, "we are also guided by the analysis first applied in" *Morton-Norwich*).

*Morton-Norwich* identifies the following inquiries or categories of evidence that may be helpful in determining whether a particular design is functional: (1) the existence of a utility patent disclosing the utilitarian advantages of the design; (2) advertising materials in which the originator of the design touts the design's utilitarian advantages; (3) the availability to competitors of functionally equivalent designs; and (4) facts indicating that the design results in a comparatively simple or cheap method of manufacturing the product. *Morton-Norwich*, 213 USPQ at 15-16.

The *Morton-Norwich* categories "are not exclusive, however, for functionality 'depends upon the totality of the evidence.'" *In re Heatcon, Inc.*, 116 USPQ2d 1366, 1370 (TTAB 2015) (quoting *Valu Eng'g*, 61 USPQ2d at 1424). Therefore, in a given case, not all of four *Morton-Norwich* factors are necessarily relevant to a finding of functionality, nor do all four factors have to weigh in favor of functionality to support a finding of functionality. *Change Wind*, 123 USPQ2d at 1456; *Heatcon*, 116 USPQ2d at 1370. Moreover, other facts presented in the case may bear on our findings.

Notwithstanding, the Supreme Court has made clear that if functionality is established under *Inwood*, further inquiry into facts that might be revealed by a full

analysis of all types of *Morton-Norwich* evidence will not change the result—in particular, the availability of alternatives—and is unnecessary. *TrafFix*, 58 USPQ2d at 1006 ("Where the design is functional under the *Inwood* formulation there is no need to proceed further to consider if there is a competitive necessity for the feature."); *see also Becton, Dickinson*, 102 USPQ2d at 1378 (quoting *Valu Eng'g*, 61 USPQ2d at 1428) ("[I]f functionality is found based on other considerations, there is 'no need to consider the availability of alternative designs, because the feature cannot be given trade dress protection merely because there are alternative designs available.'").

As we review the facts in this case, we bear in mind that "product design almost invariably serves purposes other than source identification." *TrafFix*, 58 USPQ2d at 1005 (quoting *Wal-Mart Stores, Inc. v. Samara Bros., Inc.*, 529 U.S. 205, 54 USPQ2d 1065, 1069 (2000)).

**B. Existence of a Utility Patent Disclosing Utilitarian Advantages of the Design**

The first *Morton-Norwich* inquiry is whether a utility patent discloses the utilitarian advantages of the design at issue. "A prior [utility] patent … has vital significance in resolving the trade dress claim" and "is strong evidence that the features therein claimed are functional." *TrafFix,* 58 USPQ2d at 1005. Where a patent claims the features in question, "one who seeks to establish trade dress protection must carry the heavy burden of showing that the feature is not functional, for instance by showing that it is merely an ornamental, incidental, or arbitrary aspect of the device." *Id.*

Patent applications are also probative evidence under this inquiry. *Valu Eng'g*, 61 USPQ2d at 1429. Moreover, we are not limited to the claims in a patent in determining functionality; we may also consider the disclosures in the entire patent. *See In re Becton, Dickinson & Co.*, 675 F.3d 1368, 102 USPQ2d 1372, 1377 (Fed. Cir. 2012) (statements in a patent's specification may be "equally strong evidence of functionality") (citations and internal quotations omitted); *In re Howard Leight Indus. LLC*, 80 USPQ2d 1507, 1511 (TTAB 2006) (quoting J. Thomas McCarthy, MCCARTHY ON TRADEMARKS AND UNFAIR COMPETITION § 7:89.1 (4th ed. 2006) ("It is proper to look at the disclosure (as distinguished from the claims) in a utility patent as evidence of the functionality of a shape.")); *see also TrafFix*, 58 USPQ2d at 1006 ("These statements made in the patent applications and in the course of procuring the patents demonstrate the functionality of the design.").

Petitioner argues that "[t]he method used by Defendant to create its trade dress follows well-known methods for manufacturing carbon fiber-resin matrix composite barrels, pre-dating Defendant's entry into the market."[135] In support, Petitioner cites the "Structural Composite Materials" book discussed above, which refers to "filament winding" as "a mature process, having been in continuous use since the mid-1940s,"[136] and two third-party patents.[137]

Petitioner relies most heavily on Respondent's '117 Patent to show that the trade

[135] 130 TTABVUE 17 (Petitioner's Brief).

[136] 89 TTABVUE 47 (Petitioner's Rebuttal NOR).

[137] 130 TTABVUE 17-18 (Petitioner's Brief).

dress shown in the Registration depicts matter that, as a whole, is functional. In particular, Petitioner highlights the "best mode" for practicing the invention, which was indicated during prosecution of the underlying application for patent (Application No. US 2016/0320156, hereafter "the '117 Application") as required by Section 112 of the Patent Act, 35 U.S.C. § 112.[138] According to the '117 Application, the "best mode" for practicing the invention involves the use of a seven-layer laminate that includes an outermost layer wrapped (or wound) at an angle of ±45° and a radial thickness of 8% to 18%, based on the total radial thickness of the composite component of the barrel.[139]

Drawing Fig. 7 in the '117 Patent, shown below, depicts an embodiment of the invention with a cross-sectional cutaway view of the barrel construction comprising seven layers, including the barrel liner, with an outer layer wrapped at a 45° angle:[140]

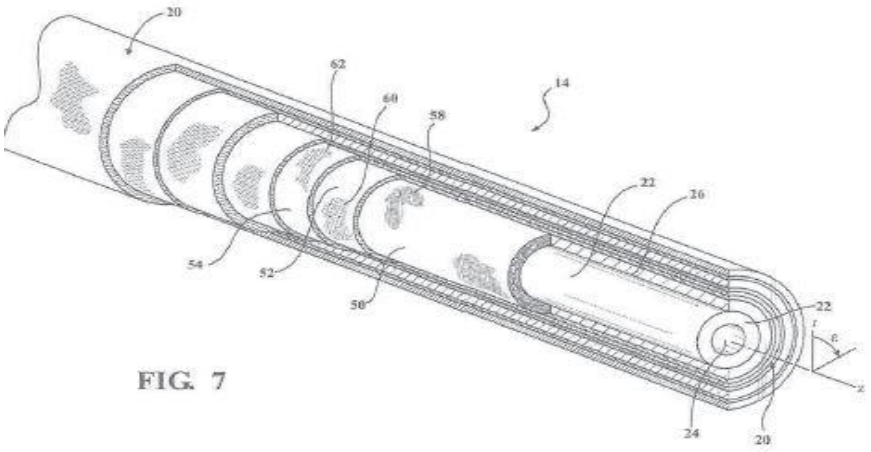


FIG. 7

As Petitioner notes, "the seven-layer laminate is not only the best mode of the

[138] 130 TTABVUE 20 (Petitioner's Brief).

[139] 36 TTABVUE 69, 136-137 (Curliss Disc. Dep., and Exhibit 6, ¶¶ [0044]-[0045]).

[140] *Id*. at 69-70, 131, 137 (¶¶ [0046]-[0047]).

invention, it is the only embodiment of the invention actually disclosed in the [] '117 [Patent]."[141] The following exchange between Petitioner's counsel and Dr. Curliss regarding the best mode of the invention is illuminating:[142]

---

Q: So getting into the finishing process again, let me direct your attention to paragraph 48 of your patent application. So back to the patent application.

A: Okay.

Q: So it reads, "Following complete cure using techniques known in the art, [the] barrel … is then ground down to a desired diameter on a lathe, for example, with diamond abrasives, then polished and finished as is known to those skilled in the art." My question to you is, if I were to practice the best mode of your invention, that is, with the outer layer being a 45-degree wrap angle, and then I was to follow the instructions in paragraph 48 of your patent application, would that result in a design that fell under [Respondent's] trade dress?

A: It would.

…

Q. … You'd indicated earlier the best mode for practicing the invention included an outer layer with 45 degrees; is that correct?

A. Yes. According to the patent application.

Q. According to what you said?

A. Yes.

Q. You said it was the best mode; correct?

A. Well, yes, but I believe you were asking me about the description of the best mode in the application.

Q. Correct. Yes, I was.

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[141] 130 TTABVUE 21 (Petitioner's Brief).

[142] 36 TTABVUE 71-75 (Curliss Disc. Dep.).

A. Yes. So according to this application, the best mode is described in here having an outer layer plus-minus 45.

Q: And if I practiced the best mode after the invention -- after the patent expires and I finished it the way you described in paragraph 48, I would be infringing the trade dress; correct?
…

A: After the expiration of the patent, if you manufactured a barrel according to the best mode of this and then applied a surface finish, you would have a different-appearing barrel.

Q: I'm not applying a surface finish. I'm doing it just like is described in the patent.

A: It says "And finished."

Q: What do you mean by that?

A: It says, turning on a lathe, diamond abrasives, polishing and finished. So finishing to me means any finish that's applied, polyurethane, Cerakote, spray paint, rattle paint it with Krylon. I mean, finishing is finishing. Do you do any woodworking?

Q: I would love to talk about -- answer your questions, but --

A: So finishing, to me, is finishing through to the final article's appearance.

Q: But you had indicated earlier that if it was ground down and polished it would manifest the trade dress; correct?

A: With no further coatings applied to the external surface of a ground barrel, it will exhibit the trade dress.

---

Notably, Dr. Curliss attempts to conflate the "finish" of the barrel described in paragraph 48 of the '117 Application (discussing the seven-layer preferred embodiment of the invention) with the application of a commercial surface finish or coating. However, as discussed in preceding paragraph [0047] of the application, the

seven layers of the embodiment "vary significantly in radial thickness, expressed as a percentage of the radial distance from the surface of the steel inner liner to the exterior surface of the **finished** outer shell."[143] When pressed, Dr. Curliss admitted, as he must, that Petitioner's trade dress derives from the process of practicing the invention itself, which has no finish.[144]

Petitioner also highlights Respondent's statement to the examining attorney during prosecution of the underlying application for the Registration[145] that after grinding and polishing, "[t]he barrels are then wiped with a solvent but not coated with any finish."[146] Petitioner argues that Respondent "is claiming trade dress protection in a barrel that is manufactured as is 'known to those skilled in the art,' without any postproduction coating." "Consequently," Petitioner asserts, "anyone who practiced the best mode of the invention after expiration of the patent, in the same way that [Respondent] practices the invention, i.e. grinding and polishing the barrels without taking affirmative steps to conceal the appearance, would infringe [Respondent's] trade dress."[147]

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[143] 36 TTABVUE 137 (Curliss Disc. Dep., Exhibit 6, ¶ [0047]) (emphasis added).

[144] Respondent, in answer to Petitioner's interrogatory requesting the identification of each layer of Respondent's rifle barrels it claimed embodied the registered mark, stated that "the trade dress at issue in this case is defined by the outer **finished** surface of the barrel." 35 TTABVUE 42 (Petitioner's NOR, Exhibit B-1, emphasis added) (Confidential). However, as discussed, no "finish" is applied to the barrel, and the term "finish" is instead used to represent the appearance of the completed barrel after sanding and polishing.

[145] 130 TTABVUE 17 (Petitioner's Brief).

[146] Registration file, March 25, 2013 Response to Office Action, TSDR 10 (Emphasis added by Petitioner).

[147] 131 TTABVUE 21 (Petitioner's Brief) (Confidential).

In practical terms, the '117 Patent teaches that the wrap angles of the carbon filament winding can be varied in accordance with any number of performance characteristics. Burst strength is increased by "wind[ing] tows circumferentially about [the] inner liner in helical hoops, e.g. ±85° (plus or minus about 5° relative to the longitudinal axis of the barrel)," while for "axial strength and stiffness … it is preferable to have more longitudinal helical wraps, e.g. ±25° (again plus or minus about 5° measured relative to the longitudinal axis of barrel)."[148] But "[t]he surface of [the] outer shell can be made more durable to wear and tear, however, if the outer region of outer shell is wrapped at a less acute angle, e.g. 45°."[149] A wrap angle of 45° also enhances torsional stiffness of the barrel, as explained in the '117 Patent and corroborated by Dr. Curliss in his testimony:[150]

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Q: There are some references made in your patent application as to torsional strength, torsional stiffness. For example, paragraph 0005, middle of the paragraph, "Torsional stiffness is a significant design factor important to medium- and large-caliber barrels having rifling." Is there a particular wrap angle that has better -- provides better torsional stiffness than other wrap angles?

A: Plus-minus 45 is optimized for torsional stiffness.

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An article from Composites World (compositesworld.com), titled "Carbon composite driveshaft: Tailorable performance"[151] and relied on by Dr. Curliss in his

[148] 47 TTABVUE 29 (Lincoln Test. Dep., Exhibit 2, fig. numbers omitted).

[149] *Id.*

[150] 36 TTABVUE 87 (Curliss Disc. Dep.).

[151] 89 TTABVUE 128-32 (Petitioner's Rebuttal NOR).

testimony declaration,[152] corroborates the understanding that enhanced torsional stiffness is provided by wrapping fiber composites at or near a 45° angle:

> Ultimately, the design process produces fiber winding patterns, tube diameter and wall thickness for a customer's specific requirements and performance factors. Although winding patterns and ply sequence used for each customer or market application are strictly proprietary, generally, the following parameters apply: Axial (0-35°) fibers tend to increase critical speed; helical winding angles of 35-55° tend to increase torsional stiffness; high fiber angles of 55-90° (hoop) tend to increase buckling torque.[153]

It is a 45° angle that Respondent has chosen for the outer layer of its rifle barrels. While the manufacturing process is not a zero-sum game, it is clear that as one enhances the mechanical and thermal properties of a composite through the use of certain wind angles, one may decrease or sacrifice the maximum benefits of other mechanical and thermal properties that are provided using different wind angles. Hence, the wind angles of the composite are varied in accordance with the overall objective of the final composite.

The '117 Patent confirms this understanding in its explanation of the objective of the invention:

> Producing an optimized composite barrel must balance competing considerations. What is needed is a carbon fiber composite barrel that employs reasonably priced materials, that provides superior axial and torsional strength and stiffness while minimizing weight and radial bulk, that minimizes interlaminar stress, and that does not deform when heated due to mismatched axial CTEs [coefficients of thermal expansion] between the liner and outer shell [of the composite].[154]

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[152] 68 TTABVUE 17-18.

[153] 89 TTABVUE 130 (Petitioner's Rebuttal NOR).

[154] 47 TTABVUE 27 (Lincoln Test. Dep., Exhibit 2, col. 3, lines 49-50).

And the '117 Patent achieves that objective by matching the coefficients of thermal expansion of the composite with the inner liner:

> [T]he inventors have discovered that it is possible to match the average effective axial CTE of a CFC outer shell to the CTE an inner liner by using a plurality of wrapping regions, while also providing excellent axial, radial, and torsional strength and stiffness, yet keeping bulk and weight at a minimum.[155]

Providing more detail about how that matching occurs, Dr. Curliss explained in his declaration in support of the '117 Application that

> 6. … [T]he thermal expansion characteristics are the result of the unique combination of materials and the helical angle layers of varying orientation and thickness, which we discovered resulted in the superior performance of the projectile barrel described in the ['117] published application.
> ---
> 15. … In a multi-layer composite structure, such as a helically wound projectile barrel with a multiplicity of layers of different angles as described in the ['117] application (*see, e.g.,* paragraph [0047]), the mechanical and thermal properties, such as coefficient of thermal expansion (CTE), are a complex engineered result of the angles of the layers, the thickness of the layers, and the properties of the layers. In such a cross-ply composite structure, the measured anisotropic macroscopic properties may be homogenized; in this case, the measured macroscopic properties of a cross-ply composite material are known as its *average effective properties*.[156]

Paragraph [0047] in the '117 Application, referenced by Dr. Curliss in his declaration in support of the application, identifies the specific wrap angles and thickness of each layer of the invention's seven-layer preferred embodiment in a chart reproduced below:

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[155] *Id.* at 30 (col. 9, lines 6-11) (drawing figure numbers omitted).

[156] 36 TTABVUE 162-163, 169 (Curliss Disc. Dep., Exhibit 12).

| region | wrap angle | thickness (% of CFC radius) |
|---|---|---|
| inner | ±85 | 40 (±5%) |
| 1st intermediate | ±75 | 7 (±5%) |
| 2nd intermediate | ±65 | 6 (±5%) |
| 3d intermediate | ±45 | 7 (±5%) |
| 4th intermediate | ±25 | 21 (±5%) |
| 5th intermediate | ±35 | 6 (±5%) |
| outer | ±45 | 13 (±5%) |

[157]

The above chart corresponds to claim 22 in the '117 Patent, shown below, which comprises the inventors' "unique solution to the governing equations that yields a composite overwrap with an axial CTE matching that of 416R stainless steel:"[158]

22. The barrel of claim 21 comprising:
an inner region having a wind angel of ±85° and a radial thickness between 35% and 45% of the CFC radial thickness;
a first intermediate region having a wind angle of ±75° and a radial thickness between 2% and 12% of the CFC radial thickness;
a second intermediate region having a wind angle of ±65° and a radial thickness between 1% and 11% of the CFC radial thickness;
a third intermediate region having a wind angle of ±45° and a radial thickness between 2% and 12% of the CFC radial thickness;
a fourth intermediate region having a wind angle of ±25° and a radial thickness between 16% and 26% of the CFC radial thickness;
a fifth intermediate region having a wind angle of ±35° and a radial thickness between 1% and 11% of the CFC radial thickness; and
an outer region having a wind angle of ±45° and a radial thickness between 8% and 18% of the CFC radial thickness.

[159]

[157] *Id.* at 137 (Exhibit 6).

[158] 36 TTABVUE 170 (Curliss Disc. Dep., Declaration in support of the '117 Application, Exhibit 12, ¶ 17).

[159] 47 TTABVUE 31 (Lincoln Test. Dep., Exhibit 2, col. 11, lines 39-60).

As noted by Dr. Curliss in his declaration in support of the '117 Application, "[t]he effective properties of a composite are different than those of the constituents and are a complex result that depends highly on factors such as volume fraction and orientation of the constituents."[160] And in his deposition testimony, Dr. Curliss clarified what is meant by the term "effective properties" and how that is determined by taking into account all layers in a multi-layer laminate:[161]

---

Q. Could you explain what you mean by effective properties when there are different orientations?

A. Sure. It's a term used in laminated plate theory to describe the average or macroscopic performance of a plate that has multiple-angled layers…. So the average effective are the properties of the assembly of multiple layers of multiple directions.

Q. So when you figure out these effective properties, do you take all the layers into account?

A. Yeah, you would.

Q. So in the case of your patent application -- I'm just referring to paragraphs 45 and 47 again. So when you refer to the effective properties, you would take all of those seven layers into account; is that correct?

A. All seven layers are used in the analysis, yes.

Q. And when you used the analysis to determine the effective coefficient of thermal expansion, you took all these layers into affect [sic]?

A. Yes.

…

Q: Back to your preferred method, though, your best mode. That involves

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[160] 36 TTABVUE 164 (Curliss Disc. Dep., Declaration in support of the '117 Application, Exhibit 12, ¶ 10).

[161] 36 TTABVUE 83-84.

> carbon fiber wrapped at the angles indicated?
>
> A: Yes. The angles of the layers in this engineered approach and the thickness of the layers are specified in paragraph 47.
>
> Q: When you engineered your multilayer composite and you inputted information into your software program, did you input all of the layers that are mentioned in your best mode?
>
> A: Yes, they're all in there.

---

Based on the foregoing, it is clear that the angles identified in Claim 22 of the '117 Patent for each layer of the seven-layer laminate disclosed in the patent, including the helically wrapped ±45° angle of the outer layer of the composite, are taken into account in determining the average effective properties of a barrel engineered in accordance with the disclosures in the patent. Indeed, this "best mode" of practicing the invention results from "match[ing] the average effective CTE of an inner liner by using a plurality of wrapping regions, while also providing excellent axial, radial, and torsional strength and stiffness, yet keeping bulk at a minimum."[162]

Considering that the outer layer of the carbon composite barrel wrapped at a ±45° angle, with a radial thickness between 8% and 18% of the composite, is part of the calculation of the average effective properties of the composite; that the composite barrel is "more durable to wear and tear" when wrapped at an angle of ±45°;[163] and that angle is "optimized for torsional stiffness,"[164] it appears undeniable that this feature of the outer layer of the barrel in Claim 22 is both "essential to the use or

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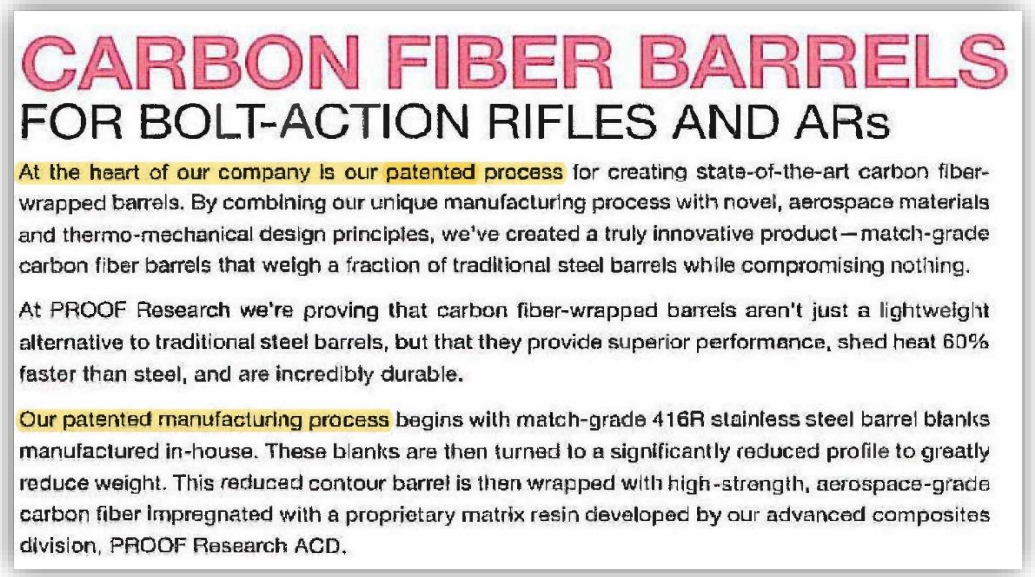
[162] 47 TTABVUE 27, 30 (Lincoln Test. Dep., Exhibit 2, col. 3, lines 49-50; col. 9, lines 6-11).

[163] *Id.* at 29 (Lincoln Test. Dep., Exhibit 2, fig. numbers omitted).

[164] 36 TTABVUE 87 (Curliss Disc. Dep.).

purpose" and "affects the … quality" of the barrel design disclosed in the '117 Patent. *TrafFix*, 58 USPQ2d at 1006 (quoting *Inwood Labs.*, 214 USPQ at 4 n.10).

The evidence also establishes that Respondent is practicing the patent in the manufacture of its carbon composite rifle barrels. Although Respondent appears to have tried to shield most of that evidence as a confidential trade secret, it has nevertheless, disclosed that fact at other points in presenting its case. For example, Respondent in its redacted brief explains that the '117 Patent "describes a seven-layer composite laminate in which the outer layer is wrapped at a 45-degree angle, which is the same method [Respondent] uses to make most of its carbon fiber rifle barrels today."[165] In addition, some of Respondent's promotional materials that were identified in exhibits attached to the public portion of Dr. Curliss's discovery deposition tout the use of Respondent's patented technology, for example:[166]



CARBON FIBER BARRELS

FOR BOLT-ACTION RIFLES AND ARs

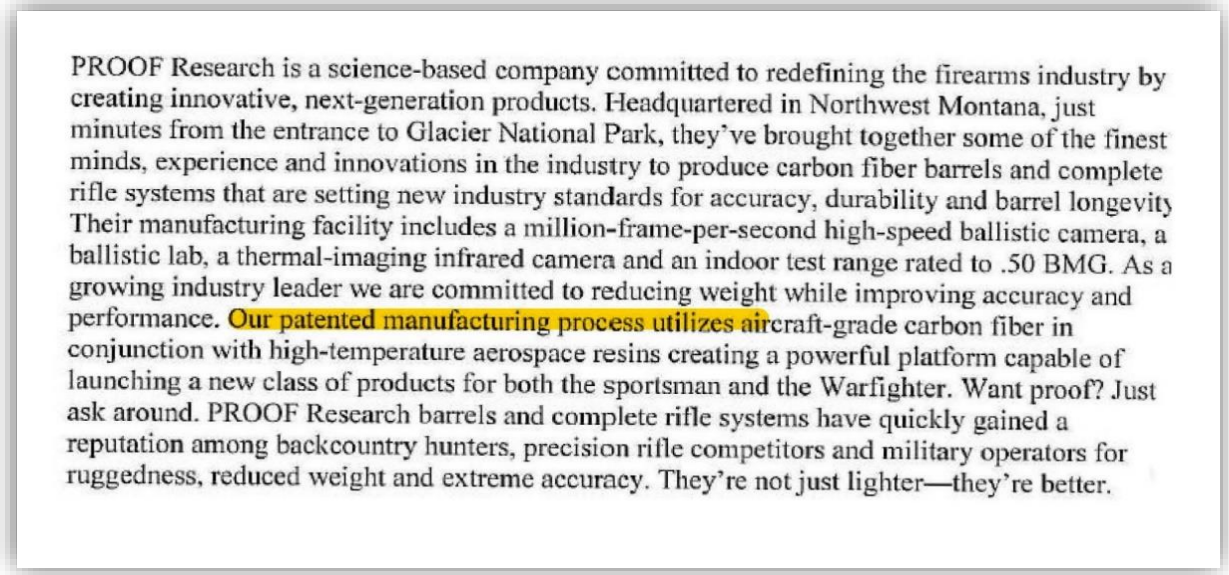
At the heart of our company is our patented process for creating state-of-the-art carbon fiber-wrapped barrels. By combining our unique manufacturing process with novel, aerospace materials and thermo-mechanical design principles, we've created a truly innovative product—match-grade carbon fiber barrels that weigh a fraction of traditional steel barrels while compromising nothing.

At PROOF Research we're proving that carbon fiber-wrapped barrels aren't just a lightweight alternative to traditional steel barrels, but that they provide superior performance, shed heat 60% faster than steel, and are incredibly durable.

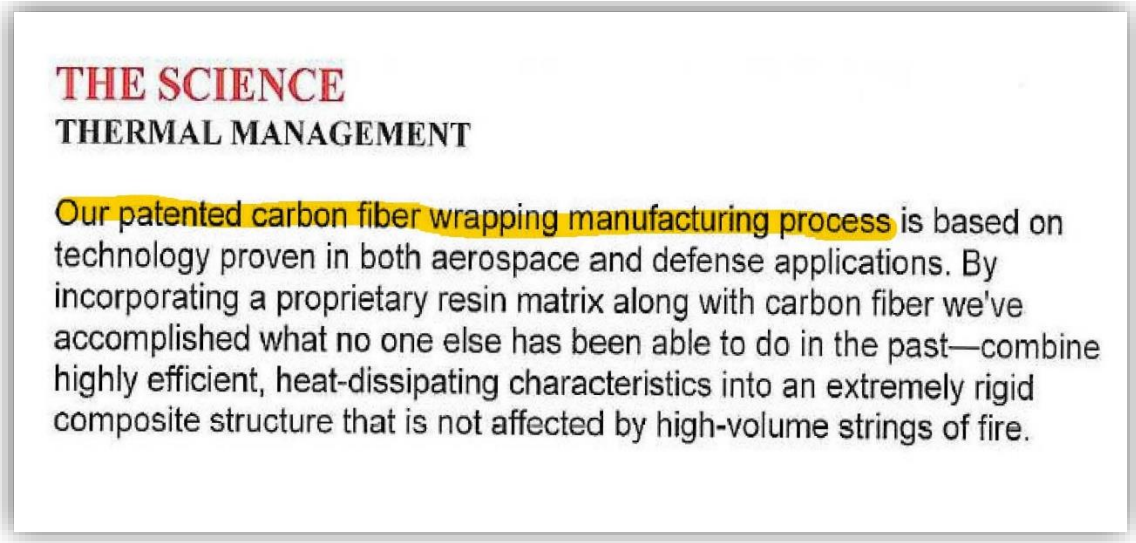
Our patented manufacturing process begins with match-grade 416R stainless steel barrel blanks manufactured in-house. These blanks are then turned to a significantly reduced profile to greatly reduce weight. This reduced contour barrel is then wrapped with high-strength, aerospace-grade carbon fiber impregnated with a proprietary matrix resin developed by our advanced composites division, PROOF Research ACD.

[165] 132 TTABVUE 16 (Respondent's Brief).

[166] 36 TTABVUE 188, 196, 199 (Curliss Disc. Dep., Exhibits 2 and 5) (emphasis added).



PROOF Research is a science-based company committed to redefining the firearms industry by creating innovative, next-generation products. Headquartered in Northwest Montana, just minutes from the entrance to Glacier National Park, they've brought together some of the finest minds, experience and innovations in the industry to produce carbon fiber barrels and complete rifle systems that are setting new industry standards for accuracy, durability and barrel longevity Their manufacturing facility includes a million-frame-per-second high-speed ballistic camera, a ballistic lab, a thermal-imaging infrared camera and an indoor test range rated to .50 BMG. As a growing industry leader we are committed to reducing weight while improving accuracy and performance. Our patented manufacturing process utilizes aircraft-grade carbon fiber in conjunction with high-temperature aerospace resins creating a powerful platform capable of launching a new class of products for both the sportsman and the Warfighter. Want proof? Just ask around. PROOF Research barrels and complete rifle systems have quickly gained a reputation among backcountry hunters, precision rifle competitors and military operators for ruggedness, reduced weight and extreme accuracy. They're not just lighter—they're better.



THE SCIENCE

THERMAL MANAGEMENT

Our patented carbon fiber wrapping manufacturing process is based on technology proven in both aerospace and defense applications. By incorporating a proprietary resin matrix along with carbon fiber we've accomplished what no one else has been able to do in the past—combine highly efficient, heat-dissipating characteristics into an extremely rigid composite structure that is not affected by high-volume strings of fire.

Lest there be any doubt that, of its four patents, Respondent was referring to the patented technology of the '117 Patent, Respondent confirmed in its confidential-designated discovery responses that "[t]he construction of the barrels currently produced, beginning in late 2013 to present … is nominally set forth in [the '117 Application], paragraph [0047]," which corresponds to Claim 22 in the '117 Patent.[167]

[167] 35 TTABVUE 49-52 (Petitioner's NOR, Exhibit B-2, Respondent's Supplemental Answers to Petitioner's First Set of Interrogatories Nos. 2 and 4).

We cannot treat that discovery response as confidential. To the extent Respondent's practice of the technology of the '117 Patent was previously a trade secret, it was extinguished by Respondent's disclosure in the '117 Patent. As the Federal Circuit has explained, "a [t]rade secret is secret. A patent is not. That which is disclosed in a patent cannot be a trade secret." *Atl. Research Mktg. Sys., Inc. v. Troy*, 659 F.3d 1345, 100 USPQ2d 1553, 1560 (Fed. Cir. 2011); *see also Rototron Corp. v. Lake Shore Burial Vault Co.*, 712 F.2d 1214, 220 USPQ 169, 170 (7th Cir. 1983) ("[T]he grant of a patent automatically constitutes full disclosure of the patented process" and "[t]he knowledge passes into the public domain, and thereafter the patentee's only protection is that afforded under the patent law.").

The patent evidence is entitled to even greater weight where, as here, Respondent, owner of the '117 Patent, asserts entitlement to a trademark registration for the same configuration claimed in its patent:

> [T]his evidence is particularly entitled to great weight if the patent was applied for by the same person who now asserts trademark significance in the same configuration. A kind of estoppel arises. That is, one cannot argue that a [design] is functionally advantageous in order to obtain a utility patent and later assert that the same [design] is non-functional in order to obtain trademark protection. Functional patent protection and trademark protection are mutually exclusive.

*Howard Leight Indus.*, 80 USPQ2d at 1510 (quoting J. Thomas McCarthy, MCCARTHY ON TRADEMARKS AND UNFAIR COMPETITION § 7:89.1 (4th ed. 2006)).

Respondent disputes Petitioner's contention that Respondent owns any utility patent disclosing the utilitarian advantages of Respondent's trade dress.[168] With

[168] 132 TTABVUE 14-16 (Respondent's Brief).

regard to Respondent's four patents, Dr. Curliss testified that

> Nothing in any of these patents addresses how the barrel is finished, nor is there any language in any of these patents that discloses any utilitarian advantages of PRI's trade dress—because there are none. To be clear, *there are no functional advantages* to PRI's trade dress. … PRI has maintained its trade dress over the years for branding purposes, not because of an actual or perceived functional advantage.[169]

Dr. Lincoln similarly testified that the designs presented in Respondent's patents "represent the effective properties of the bulk composite" and are therefore distinguishable from the "cosmetic surface layer."[170] Thus, according to Respondent, *TrafFix* "is inapplicable because," apart from not disclosing Respondent's trade dress, "[t]he only claim in the '117 patent that mentions a 45-degree wrap angle is claim 22" and that claim "says nothing about how a barrel is finished" but instead "addresses the interior engineering of the barrel."[171]

Respondent's attempt to disassociate the overall structural engineering of its continuous-filament carbon composite barrels with the surface "finish" of those barrels claimed as its trade dress is unconvincing. Although we are told that "[t]he surface finish has nothing to do with the structural barrel,"[172] the evidence in this case, including the '117 Patent and Respondent's own testimony, amply demonstrates that Respondent's claimed trade dress is the natural outcome of a carbon fiber composite having an outer layer wrapped at an angle of ±45°, and then ground to

[169] 68 TTABVUE 9 (Curliss Test. Decl., ¶ 22) (emphasis in original).

[170] 78 TTABVUE 5 (Lincoln Test. Decl., ¶ 6).

[171] *Id*. at 17.

[172] 108 TTABVUE 80 (Curliss Cross Test.).

whatever profile is desired. *Cf. Saint-Gobain Corp. v. 3M Co.*, 90 USPQ2d 1425 (TTAB 2007) (finding functional the purple color of applicant's sandpaper that was a natural by-product of the manufacturing process). This effect is illustrated through several photographs provided by Petitioner showing the appearance of a barrel with a ±45° helically wrapped carbon filament at different stages:[173]

| | |
|---|---|
| Photo of an **uncured** carbon composite barrel wrapped at ±45° angle relative to center axis of barrel |  |
| Photo of the same barrel **after curing** |  |

[173] 37 TTABVUE 3-4, 19-24 (Duplessis Test. Decl., ¶¶ 5-7, and Exhibits 3-5).

| | |
|---|---|
| Photo of the same barrel **after being ground and polished, with no coating applied** |  |

As Petitioner notes, "[t]he final manufacturing step is one of subtraction – the excess composite is removed by grinding and polishing, to expose the structural engineering of the composite. The outermost surface of the barrel bears the appearance of the outer region of the composite, because they are one and the same."[174] That being so, it would be wholly artificial to draw a distinction between the outer layer of Respondent's structural engineering and its appearance. In other words, the appearance of the barrel is dictated by its function. *See Becton, Dickinson*, 102 USPQ2d at 1379 (Linn, J., dissenting) ("[D]e jure functionality is directed to the appearance of the design (not the thing itself) and concerned whether the design is 'made in the form it must be made if it is to accomplish its purpose'—in other words, whether the appearance is dictated by function" (internal citations omitted); *Brunswick Corp. v. British Seagull Ltd.*, 35 F.3d 1527, 1531, 32 USPQ2d 1120, 1122 (Fed. Cir. 1994) ("de jure functionality rests on 'utility,' which is determined in light

[174] 134 TTABVUE 4-5 (Petitioner's Reply Brief).

of 'superiority of design,' and rests upon the foundation [of] ... 'effective competition.'").

Respondent also contends that Petitioner's reliance on the '117 Patent and the statements of its co-inventors, Dr. Curliss and Dr. Lincoln, are taken out of context:

> All of Petitioner's arguments concerning the '117 patent relate to the seven-layer laminate, and all of the excerpts Petitioner cites from the '117 patent relating to the advantages of the invention apply to the seven-layer laminate. Petitioner attempts to take these statements out of context to support an argument that there are functional advantages to a "helical pattern" finish….
>
> Petitioner has not provided any evidence from its own fact witnesses or from any expert witness … "that the 45-degree outer layer—separate and apart from the other six layers in the seven-layer laminate—possesses any functional advantages. … PRI's trade dress is completely independent of the performance of the rifle barrel."[175]

The evidence belies Respondent's contentions. Dr. Curliss declared during prosecution of the '117 Application that "the thermal expansion characteristics [of the barrels] are the result of the unique combination of materials and the helical angle layers of varying orientation and thickness, which [the inventors] discovered resulted in the superior performance of the projectile barrel described in the ['117] published application."[176] And he testified in this proceeding that all seven layers of the claimed laminate were included in the '117 Patent's optimization of the barrel's mechanical properties, including the ±45°-wrapped outer layer.[177] Accordingly, there is no need for Petitioner to establish "that the 45-degree outer layer—separate and apart from

[175] 132 TTABVUE 16-17 (Respondent's Brief) (citations omitted).

[176] 36 TTABVUE 162-63 (Curliss Disc. Dep., Exhibit 12).

[177] 36 TTABVUE 83-84 (Curliss Disc. Dep.).

the other six layers in the seven-layer laminate—possesses any functional advantages."

Respondent also argues that "[n]othing in the ['117] patent dictates the use of the trade dress or … specifies a particular finish. Instead, the patent leaves open the possibility of finishing the barrel in any number of ways."[178] According to Dr. Curliss, "[i]t is possible to practice the invention disclosed in the '117 patent with an essentially infinite number of composite material and design variations without infringing [Respondent's] trade dress."[179] Both Dr. Curliss and Dr. Lincoln identify a number of post-manufacturing coatings, i.e., "[h]igh temperature paints, Cerakote, pigmented coatings (thermoplastic, ceramic, etc.), thermoplastic sleeves, decals, carbon fabric, glass fabric, aramid fabric, and textile composites" that could be used to conceal the wrap angle of the composite.[180]

Respondent's argument is a red herring, since Respondent applies no finish.[181] Additionally, as Petitioner points out, "[i]t is well established … that a competitor is under no obligation to 'hide', 'cover', or 'conceal' the appearance of a functional feature."[182] Because Respondent's use of a ±45° wrap angle for the outer layer of its laminate is functional, it is unnecessary for competitors to explore designs to hide

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[178] *Id*. at 17-18.

[179] 68 TTABVUE 14 (Curliss Test. Decl., ¶ 35).

[180] 68 TTABVUE 6-7 (Curliss Test. Decl., ¶¶ 14-17); 78 TTABVUE 7 (Lincoln Test. Decl., ¶ 12).

[181] Respondent's "[grinding] process exposes different portions of the helical winding patterns of the carbon fiber tows. The barrels are then wiped with a solvent but not coated with any finish." Registration file, March 25, 2013 Response to Office Action, TSDR 10.

[182] 130 TTABVUE 32 (Petitioner's Brief).

that layer. The helically wrapped angle of the outermost layer, in conjunction with the angles used for the other layers of the laminate by Respondent, assures the user that the device will work. "If buyers are assured the product serves its purpose by seeing the operative mechanism that in itself serves an important market need. It would be at cross-purposes to those objectives, and something of a paradox, were we to require the manufacturer to conceal the very item the user seeks." *TrafFix*, 58 USPQ2d at 1006.

Furthermore, "[t]he fact that the patent[] may encompass a wide variety of [winding angles and radial thickness design variations] means only that the patent[] [is] broad in scope, not that [Respondent's] particular [registered] design is not functional. *In re Dietrich*, 91 USPQ2d 1622, 1633 (TTAB 2009). Because the durability of carbon composite rifle barrels is an obvious consideration in their manufacturing, and helically wrapping the outer layer of the composites at an angle of 45° affects their quality, the resulting appearance of that outer layer that comprises the mark shown in the Registration is functional. *TrafFix*, 58 USPQ2d at 1006; *Inwood Labs*., 214 USPQ at 1, 4 n.10.

For all of these reasons, Respondent's contention that *TrafFix* "is inapplicable because there is no claim in the '117 patent that discloses the [Respondent's] trade dress"[183] is unavailing. Moreover, even if Respondent's trade dress did not follow the exact configuration covered by the '117 Patent, "statements in a patent's specification illuminating the purpose served by a design may constitute equally strong evidence

[183] 132 TTABVUE 17 (Respondent's Brief).

of functionality." *Becton, Dickinson*, 102 USPQ2d at 1377. *See also TrafFix*, 58 USPQ2d at 1006 ("statements made in the patent applications and in the course of procuring the patents demonstrate the functionality of the design"); *Grote Indus.*, 126 USPQ2d at 1205 ("We consider the entirety of a patent - both claims and disclosures - and have found functional applied-for marks depicting the preferred embodiment described in a utility patent."); *Change Wind*, 123 USPQ2d at 1453. The disclosures in the '117 Patent make clear that the surface of the outer shell of a carbon fiber composite barrel can be made more durable to wear and tear if it is wrapped at an angle of 45°, which provides optimum torsional stiffness.

Respondent also argues that its trade dress is not functional because its "engineering processes are constrained by the requirement that [it] maintain the trade dress 'look' on the outer surface" of the barrels.[184] This argument is unavailing. Respondent's trade dress—the result of a carbon composite rifle barrel whose outermost layer is wrapped at a ±45° wrap angle and an integral component of Respondent's unique solution to enhance the mechanical and thermal properties of the barrel—is functional not because it is the only way to design a composite barrel, or even the best way, but because it represents one of many solutions to a problem. *See In re Bose Corp.*, 772 F.2d 866, 227 USPQ 1, 5 (Fed. Cir. 1985) ("That another type of [design] would work equally as well does not negate that this [design] was designed functionally to enhance or at least not detract from the rest of the system."); *Specialized Seating, Inc. v. Greenwich Indus., LP*, 616 F.3d 722, 96 USPQ2d 1580,

[184] 68 TTABVUE 9 (Curliss Test. Decl., ¶ 22).

1583-84 (7th Cir. 2010) (finding the plaintiff's folding chair trade dress "functional not because it is the only way to do things, but because it **represents one of many solutions to a problem**" and that although multiple functional alternatives could be derived "along the axes of weight, strength, kind of material, ease of setup … [a] novel or distinctive selection of attributes on these many dimensions can be protected for a time by a utility patent or a design patent, but it cannot be protected forever as one producer's trade dress" (emphasis added)). All such designs would be functional, in the sense that they represent different compromises with regard to burst strength, axial strength and stiffness, durability, and so on, and therefore affect the quality of the barrel.[185]

As the Seventh Circuit succinctly put it in a similar situation involving personal care kits (small bags containing small portable toiletries), where the plaintiff argued that its bag was in fact inferior to competing options (such as those comprised of metal tins that are cheaper and less easily damaged, or in other shapes making the accessibility of the bag's contents easier),

> The question is not, as [Respondent] would have it, whether the claimed trade dress has "less utility" than alternatives. Focusing on that question would be contrary to our precedent and sound interpretation of

[185] The evidence and testimony in this case, including Respondent's discovery responses noted above, consistently show that Respondent, as Dr. Curliss testified, "tries to have a consistent quality finish and to maintain the 45-degree wrap angle on the outer surface of its rifle barrels." 68 TTABVUE 10 (Curliss Test. Decl., ¶ 26). Notwithstanding Respondent's actual practice of following the best mode of the '117 Patent in its endeavor to maintain a ±45° wrap angle on the outer layer of its barrels for consistency, Respondent claims that "[t]he trade dress is the surface finish appearance of a wound-and-ground barrel with outermost surface at approximately ±25° and ±65°." *Id.*; 132 TTABVUE 32 (Respondent's Brief). Respondent does not argue that its trade dress is not functional because it can be reproduced over a wider range of wind angles. That issue is not before us since Respondent does in fact use a ±45° for its outer layer.

> the Lanham Act, offering unlimited monopolies for useful design features. It would also encourage peculiar arguments by trade-dress plaintiffs criticizing their own products, as [Respondent] did in this case. Under *TrafFix,* . . . the right question is whether the design feature affects product quality or cost or is "merely ornamental." *McAirlaids, Inc. v. Kimberly-Clark Corp*., 756 F.3d 307, 312 (4th Cir. 2014).

*Arlington Specialties, Inc. v. Urban Aid, Inc*., 847 F.3d 415, 420 (7th Cir. 2017). *See also In re Bose Corp.*, 227 USPQ at 6 (Fed. Cir. 1985) (Where evidence shows that a particular product feature is functional, the fact that it "may be produced in other forms or shapes does not and cannot detract from the functional character of the configuration here involved.") (*quoting In re Honeywell, Inc*., 532 F.2d 180, 189 USPQ 343, 344 (CCPA 1976)).

Respondent's trade dress is the result of a manufacturing process that follows Claim 22 in the '117 Patent. As Petitioner aptly summarizes, "(1) the mechanical and thermal properties [of the invention] are a result of the contribution of each layer of the multi-layer composite; (ii) the composite is a 'unique solution' to the optimization goals sought by the inventors; and (iii) claim 22, [sic] recites the features of that unique solution, which includes an outermost region wrapped at an angle of ±45° — the trade dress."[186] Hence, notwithstanding Respondent's argument that it "only uses an outermost layer with a ±45° wrap angle to maintain its registered trade dress,"[187] Respondent is practicing the best mode of its patented invention, which yields the trade dress at issue when ground down with no coating applied. Once again, the appearance of the barrel is dictated by its function.

[186] 134 TTABVUE 10 (Petitioner's Reply Brief).

[187] 132 TTABVUE 32 (Respondent's Brief).

### C. CarbonSix's Past References to the "Cosmetic" Appearance of its Rifle Barrels

We briefly address Respondent's additional argument that its trade dress is not functional because, "[b]y Petitioner's own admission, CarbonSix's 'helical pattern' is purely cosmetic, simply a style preference, and there are no performance differences among its helical, hoop and woven patterns."[188] Pointing to the statements of several of Petitioner's witnesses and Petitioner's promotional materials, Respondent argues that "[w]hen CarbonSix first started selling carbon fiber rifle barrels in 2017, it offered consumers a choice of three different carbon fiber patterns: a woven pattern, a hoop pattern, and a helical pattern" and "represented to consumers that these three patterns were 'purely cosmetic,' 'strictly cosmetic,' 'simply a style preference,' and that the specific pattern 'in no way effects [sic] the performance of [its] barrel."[189]

This argument does not get Respondent very far because we are not here to determine the functionality of **Petitioner's** trade dress, and since Petitioner has taken the opposite position in this proceeding, we are perhaps relieved from ever deciding it. In any event, Petitioner's previous opinions about the lack of utility comprised by the appearance of its rifle barrels carry little, if any, weight in our evaluation of whether Respondent's trade dress is, in fact, functional as a whole.

Mr. Duplessis confirmed in his testimony that when CarbonSix initially began offering both helically wrapped (±45°) and hoop wrapped (±85°) composite barrels, its

[188] *Id.* at 13.

[189] 132 TTABVUE 11 (Respondent's Brief, quoting from Duplessis Disc. Dep. and exhibits, 56 TTABVUE 22, 28, 56, 65-68; 57 TTABVUE 2-8, 20-23).

"evaluations indicated that the barrels were comparable — both barrels achieved a significant weight reduction relative to an all steel barrel and both barrels were found to provide the physical strength and stiffness for accurate shooting" notwithstanding the difference in appearance due to wrap angle.[190] However, he also testified that based on knowledge that he gathered during the course of this proceeding, "namely, the 'anisotropic' nature of continuous-filament carbon fiber composites," he now understands that "the contribution of the carbon fiber/epoxy resin composite to the various physical properties of the resulting barrel will vary depending upon the wrap angle relative to the barrel."[191] Indeed, the evidence has borne out that understanding.[192]

**D. Conclusion**

In making our determination in this case, we have kept in mind the Supreme Court's guidance that "[t]he functionality doctrine ... protects competitors against a disadvantage (unrelated to recognition or reputation) that trademark protection might otherwise impose, namely their inability reasonably to replicate important non-reputation-related product features." *Qualitex Co. v. Jacobson Prods. Co.*, 514 U.S. 159, 34 USPQ2d 1161, 1165 (1995). To afford registration to functional designs

[190] 37 TTABVUE 8-9 (Duplessis Test. Decl., ¶ 21).

[191] *Id*.

[192] As discussed earlier, Respondent admits that its patented winding method is the best method to attain composite barrel properties (e.g., weight, strength, etc.) it believes are optimal, and that method results in the claimed trade dress when the barrel is ground and polished. *See, e.g.*, 36 TTABVUE 71-75 (Curliss Disc. Dep.). That other manufacturers may choose to emphasize other attributes that work equally well does not negate that the outer layer of Applicant's barrel "was designed functionally to enhance or at least not detract from the rest of the system." *Specialized Seating, Inc.*, 96 USPQ2d at 1583-84.

would inhibit legitimate competition by, in effect, granting a monopoly over a non-reputational, or non-source-identifying, feature of a product. *Id*. at 1163-64. As emphasized by the Federal Circuit in *Morton-Norwich*, "the effect on competition 'is really the crux of the matter,' and a balance must be struck "between the 'right to copy' and the right to protect one's method of trade identification." *Morton-Norwich*, 213 USPQ at 15-16.

After careful consideration of all of the evidence and arguments in this case, we conclude that the compelling evidence provided by the '117 Patent and Respondent's manufacturing process demonstrates that Respondent's trade dress, the subject of the Registration, comprises matter that, as a whole, is functional, within the meaning of Trademark Act § 2(e)(5), when used in connection with "Component parts for rifles; Field guns; Firearms; Gun barrels; Guns; Hunting rifles; Rifle barrels; Rifles; Rifles and parts thereof; Sporting rifles," in International Class 13. "In fact, we view the disclosures in the ['117] Utility Patent as so strong as to be sufficient, by [themselves], to sustain the functionality refusal without consideration of the other *Morton-Norwich* categories of evidence." *In re OEP Enters., Inc.*, 2019 USPQ2d 309323, *10-11 (TTAB 2019). *See also Grote Indus.*, 126 USPQ2d at 1203. Simply put, the patent evidence, combined with the evidence regarding Respondent's manufacturing process, is dispositive on the issue of functionality.[193]

[193] Both Petitioner and Respondent presented evidence and argument related to each of the *Morton-Norwich* categories of evidence that are useful in determining whether trade dress is functional in the first place, including the existence of advertising materials touting the design's utilitarian advantages; the availability to competitors of functionally equivalent designs; and facts indicating that the design results in a comparatively simple or cheap method of manufacturing; and we have carefully reviewed and considered all of it. However,

Respondent's trade dress is functional because the outer layer of Respondent's carbon fiber composite rifle barrels, helically wrapped at an angle of ±45° and comprising 8% to 18% of the radial thickness of the composite is "essential to the use or purpose" and "affects the … quality" of the barrel design disclosed in the '117 Patent. *TrafFix*, 58 USPQ2d at 1006.[194]

**Decision**: The Petition for Cancellation is granted on the ground of functionality,[195] and Registration No. 4390533 will be cancelled in due course.[196]

because we find that the trade dress is functional, "further inquiry into facts that might be revealed by a full analysis of all types of *Morton-Norwich* evidence will not change the result … and is unnecessary." *TrafFix*, 58 USPQ2d at 1006.

[194] "[I]n general, if a proposed mark is functional for **any** goods encompassed by the identification, the proposed mark is considered functional and must be refused accordingly." *Mag Instrument, Inc. v. Brinkmann Corp*., 96 USPQ2d 1701, 1717 n.21 (TTAB 2010). All of the goods identified in the Registration either include or encompass rifle barrels and the trade dress is thus functional with respect to all the identified goods.

[195] In light of our decision on functionality, we do not reach the remaining grounds alleged in the petition. *See Multisorb Techs., Inc. v. Pactiv Corp*., 109 USPQ2d 1170, 1171 (TTAB 2013) ("[T]he Board's determination of registrability does not require, in every instance, decision on every pleaded claim").

[196] As noted in footnote 3, the parties are allowed until 60 days after the issue date of this decision to file amended redacted copies of all previously designated "confidential" evidence, as well as amended confidential and redacted briefs corresponding to said amendments, failing which the testimony in its entirety will become part of the public record.