

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

AMERICAN AXLE & MANUFACTURING
INC.,

Plaintiff,

v.

NEAPCO HOLDINGS LLC and NEAPCO
DRIVELINES LLC,

Defendants.

C.A. No. 15-1168-GBW


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MEMORANDUM ORDER

Plaintiff American Axle & Manufacturing, Inc. (“American Axle”) filed suit against Defendants Neapco Holdings LLC and Neapco Drivelines LLC (collectively, “Neapco”) alleging infringement of United States Patent Nos. 7,774,911 (“the ’911 patent”), 8,176,613 (“the ’613 patent”), and 8,528,180 (“the ’180 patent”). D.I. 1. After multiple visits to the United States Court of Appeals for the Federal Circuit, a petition for certiorari—along with several accompanying amicus briefs—to the United States Supreme Court, a denial of that petition, and the eventual remand back to this Court, only the ’911 patent remains at issue.¹ The ’911 patent generally relates to a method of manufacturing a driveshaft for automobiles that vibrates less and reduces noise.

Pending before the Court are the parties’ cross-motions for summary judgment on the validity of claim 1 of the ’911 patent and its dependent claims for failing to claim patent eligible subject matter pursuant to 35 U.S.C. § 101. *See* D.I. 255; 260. Also pending before the Court are American Axle’s motion for summary judgment on, *inter alia*, no invalidity pursuant to 35 U.S.C. § 102, *see* D.I. 260, and Neapco’s motion for summary judgment on, *inter alia*, non-infringement

¹ The Court writes for the benefit of the parties and assumes their familiarity with this action. For an overview of the proceedings to date, *see* D.I. 256 at 3-7 and D.I. 262 at 1-3.

of the '911 patent, *see* D.I. 255. The Court heard oral argument on the parties' motions on January 5, 2023. D.I. 301. For the reasons explained below, the Court grants-in-part and denies-in-part Axle's Motion for Summary Judgment of No Invalidity Under 35 U.S.C. § 101 and No Invalidity Under 35 U.S.C. § 102 and denies Neapco's Motion for Summary Judgment of Invalidity and Non-Infringement.²

I. LEGAL STANDARD

"The court shall grant summary judgment if the movant shows that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law." FED. R. CIV. P. 56(a). Material facts are those "that could affect the outcome" of the proceeding. *Lamont v. New Jersey*, 637 F.3d 177, 181 (3d Cir. 2011) (quoting *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248 (1986)). "[A] dispute about a material fact is 'genuine' if the evidence is sufficient to permit a reasonable jury to return a verdict for the nonmoving party." *Id.* (citations omitted). "The burden on the moving party may be discharged by pointing out to the district court that there is an absence of evidence supporting the non-moving party's case." *Peloton Interactive, Inc. v. iFIT Inc.*, C.A. No. 20-1535-RGA, 2022 WL 1523112, at *1 (D. Del. May 13, 2022) (citing *Celotex Corp. v. Catrett*, 477 U.S. 317, 323 (1986)).

The burden then shifts to the non-movant to demonstrate the existence of a genuine issue for trial. *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 586-87 (1986); *Williams v. Borough of West Chester*, 891 F.2d 458, 460-61 (3d Cir. 1989). A non-moving party asserting that a fact is genuinely disputed must support such an assertion by: "(A) citing to particular parts of materials in the record, including depositions, documents, electronically stored information, affidavits or declarations, stipulations . . . , admissions, interrogatory answers, or other

² The Court will issue a separate opinion addressing American Axle's *Daubert* motions. *See* D.I. 261.

materials; or (B) showing that the materials cited [by the opposing party] do not establish the absence . . . of a genuine dispute” FED. R. CIV. P. 56(c)(1).

When determining whether a genuine issue of material fact exists, the court must view the evidence in the light most favorable to the non-moving party and draw all reasonable inferences in that party’s favor. *Wishkin v. Potter*, 476 F.3d 180, 184 (3d Cir. 2007). If the non-moving party fails to make a sufficient showing on an essential element of its case with respect to which it has the burden of proof, the moving party is entitled to judgment as a matter of law. *See Celotex Corp.*, 477 U.S. at 322. The Federal Circuit “reviews a district court’s grant of summary judgment under the law of the regional circuit, here the Third Circuit.” *Acceleration Bay LLC v. 2K Sports, Inc.*, 15 F.4th 1069, 1075 (Fed. Cir. 2021) (citation omitted).

II. DISCUSSION

A. Cross-Motions for Summary Judgment as to Patent Eligible Subject Matter

The parties have filed cross-motions for summary judgment related to the issue of patent eligible subject matter under 35 U.S.C. § 101. *See, e.g.*, D.I. 255; D.I. 260. Neapco contends that it is entitled to summary judgment of invalidity because claim 1 of the ’911 patent and its dependent claims are patent-ineligible under the abstract idea exception to § 101. *See generally* D.I. 256. American Axle disagrees, arguing that it is entitled to summary judgment of validity because claim 1 of the ’911 patent and its dependent claims are “directed to a tangible, new and useful, multi-step industrial process for manufacturing improved driveshafts—not an ‘abstract idea’” under § 101. *See* D.I. 262 at 17. The Court will address both motions together.³

³ Because the parties have filed cross-motions for summary judgment related to the issue of patent eligible subject matter pursuant to 35 U.S.C. § 101, the Court is mindful of the standards that apply and independently considers each motion.

i. Law of the Case Doctrine

At the outset, the parties dispute whether the Federal Circuit’s findings as to claim 22 are imputed to claim 1 based on the law of the case doctrine. Neapco contends that, because American Axle “has not and cannot identify any meaningful requirement found in claim 1 that was not found in claim 22[,] . . . the Federal Circuit’s findings as to claim 22 (that the claim is merely directed to a desired result and lacks the means of achieving the result) are final and binding on [American Axle] as to claim 1.” D.I. 256 at 23. American Axle disagrees, arguing that the law of the case doctrine is inapplicable because “the Federal Circuit expressly stated that it was not making any findings about the Asserted Claims or Neapco’s new theory and vacated and remanded to this Court to rule in the first instance.” D.I. 279 at 25-26 (citing *Am. Axle & Mfg., Inc. v. Neapco Holdings LLC*, 967 F.3d 1285, 1300-01 (Fed. Cir. 2020)). The Court agrees with American Axle.

“The law of the case doctrine states that ‘when a court decides upon a rule of law, that decision should continue to govern the same issues in subsequent stages in the same case.’” *Speeney v. Rutgers, The State Univ.*, 369 F. App’x 357, 359 (3d Cir. 2010) (quoting *Christianson v. Colt Indus. Operating Corp.*, 486 U.S. 800, 816 (1988)). Here, however, the issue pending before the Court—whether claim 1 of the ’911 patent and its dependent claims are directed to an abstract idea—is plainly different than the issue decided by the Federal Circuit—whether claim 22 of the ’911 patent is directed to a natural law, i.e., Hooke’s law. Indeed, the Federal Circuit expressly stated that “Claim 1 is different than claim 22,” and “that the ‘characteristics’ that can be ‘tuned’ in claim 1 include variables other than mass and stiffness,” which were the variables the Federal Circuit relied on in finding that claim 22 was directed to a natural law, i.e., Hooke’s law. *Am. Axle*, 967 F.3d at 1300. More importantly, while remanding the case to the District Court, the Federal Circuit explicitly instructed “the district court to address the eligibility of claim 1 and its dependent claims in the first instance.” *Id.* at 1292. Thus, the law of the case doctrine is

clearly inapplicable to the present issue of whether claim 1 of the '911 patent and its dependent claims are directed to an abstract idea.

ii. Waiver

Separately, American Axle argues that, because “[t]he only patent ineligibility theory that Neapco ever disclosed and advanced was one related to the ‘natural law’ exception to Section 101,” any abstract idea theory of invalidity has been waived pursuant to Rule 37(c) of the Federal Rules of Civil Procedure. D.I. 262 at 16. To support its waiver argument, American Axle highlights that Neapco never disclosed or advanced an abstract idea theory throughout discovery or case dispositive motions and that, notably, even the Federal Circuit found that “the abstract idea basis was not adequately presented and litigated in the district court.” *Id.* (citing *Am. Axle*, 967 F.3d at 1301); *see also Am. Axle & Mfg. v. Neapco Holdings LLC*, 966 F.3d 1347, 1367 (Fed. Cir. 2020) (O’Malley, J., dissenting) (“This unrequested second chance for Neapco Holdings LLC is unwarranted and leaves American Axle trapped in § 101 purgatory. It is not our role as an appellate court to direct the litigation strategy of the parties or to pressure the district court into invalid[at]ing claims on grounds never argued to it before.”). Although Neapco never explicitly asserted an invalidity theory based on the abstract idea exception to § 101, Neapco did not waive this argument because the Federal Circuit explicitly “remand[ed] the case for the district court to address this alternative eligibility theory[, i.e., the abstract idea theory,] in the first instance.” *Am. Axle*, 967 F.3d at 1301; *see also Bankers Trust Co. v. Bethlehem Steel Corp.*, 761 F.2d 943, 949 (3d Cir. 1985) (when a case is remanded “for further proceedings after [a] decision by the appellate court, the trial court must proceed in accordance with the mandate and the law of the case as established on appeal”) (citing *Briggs v. Pennsylvania R.R. Co.*, 334 U.S. 304, 306 (1948)). More so, after this case was remanded, this Court ordered supplemental briefing limited to “the only new issue .

.. section 101 abstractness as directed by the Federal Circuit remand.” See D.I. 252. Accordingly, because the issue of whether claim 1 of the ’911 patent and its dependent claims are directed to an abstract idea is squarely within the scope of the Federal Circuit’s mandate, Neapco did not waive its abstract idea theory of invalidity.⁴

iii. Patent-Eligible Subject Matter

Patentability under 35 U.S.C. § 101 is a threshold legal issue. *Bilski*, 561 U.S. at 602. Section 101 of the Patent Act defines patent-eligible subject matter. It states, “[w]hoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.” 35 U.S.C. § 101. The Supreme Court has interpreted § 101 to carve out exceptions to the broad characterization of patentable subject matter. See *Ass’n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 589 (2013). That is, “[l]aws of nature, natural phenomena, and abstract ideas are not patentable.” *Alice Corp. Pty. v. CLS Bank Int’l*, 573 U.S. 208, 216 (2014) (internal quotation marks and citation omitted). “[I]n applying the § 101 exception, [the court] must distinguish between patents that claim the ‘building blocks’ of human ingenuity and those that integrate the building blocks into something more[] thereby ‘transforming’ them into a patent-eligible invention. The former ‘would risk disproportionately

⁴ American Axle also advances that it is entitled to summary judgment because “Neapco [] has no evidence to supports its new, ‘abstract idea’ theory as to Claim 1, which is Neapco’s burden to prove.” See D.I. 290 at 9; see also D.I. 262 at 15-17. However, patentability under § 101 “is a threshold legal issue.” *ClearDoc, Inc. v. RiversideFM, Inc.*, C.A. No. 21-1422-RGA, 2022 WL 3355960, at *2 (D. Del. Aug. 15, 2022) (citing *Bilski v. Kappos*, 561 U.S. 593, 602 (2010)). Although it is not *per se* “impermissible for a court to look outside the intrinsic evidence as part of the *Alice* step one inquiry,” the *Alice* step one inquiry begins and ends with the patent itself, see *CardioNet, LLC v. InfoBionic, Inc.*, 955 F.3d 1358, 1373 (Fed. Cir. 2020), meaning that patent eligibility can generally be resolved as a matter of law at *Alice* step one. See *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1368 (Fed. Cir. 2018) (“Patent eligibility has in many cases been resolved on motions to dismiss or summary judgment.”).

tying up the use of the underlying’ ideas, and are therefore ineligible for patent protection. The latter pose no comparable risk of pre-emption, and therefore remain eligible for the monopoly granted under our patent laws.” *Id.* at 217 (cleaned up).

The Supreme Court’s *Alice* decision established a two-step framework for determining patent-eligibility under § 101. In the first step, the court must determine whether the claims at issue are directed to a patent ineligible concept. *Id.* In other words, are the claims directed to a law of nature, natural phenomenon, or abstract idea? *Id.* If the answer to that question is “no,” then the patent is not invalid for teaching ineligible subject matter under § 101. If the answer to that question is “yes,” then the court proceeds to step two, where it considers “the elements of each claim both individually and as an ordered combination” to determine if there is an “inventive concept—i.e., an element or combination of elements that is sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.” *Id.* at 217-18 (alteration in original). “The question of whether a claim element or combination of elements is well-understood, routine and conventional to a skilled artisan in the relevant field,” which underlies the second step of *Alice*, is a question of fact. Any fact, such as this one, that is pertinent to the invalidity conclusion must be proven by clear and convincing evidence.” *Berkheimer*, 881 F.3d at 1368.

Neither the Supreme Court nor the Federal Circuit has ventured a single, comprehensive definition of an “abstract idea.” *Alice*, 573 U.S. at 221 (“[W]e need not labor to delimit the precise contours of the ‘abstract ideas’ category in this case.”); *see also Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1334 (Fed. Cir. 2016) (“The Supreme Court has not established a definitive rule to determine what constitutes an ‘abstract idea’ sufficient to satisfy the first step of the *Mayo/Alice* inquiry”). Instead, what has emerged from cases applying § 101 is a group of related

principles that can be applied in gauging whether or not a patent claim is directed to an abstract idea. Accordingly, the Federal Circuit has instructed courts to “evaluate ‘the focus of the claimed advance over the prior art’ to determine if the character of the claim as a whole, considered in light of the specification, is directed to excluded subject matter.” *Trading Techs. Int’l, Inc. v. IBG LLC*, 921 F.3d 1378, 1384 (Fed. Cir. 2019); *see also TecSec, Inc. v. Adobe Inc.*, 978 F.3d 1278, 1292 (Fed Cir. 2020). In doing so, the Court “must be careful to avoid oversimplifying the claims,” *see In re TLI Commc’ns LLC Patent Litig.*, 823 F.3d 607, 611 (Fed. Cir. 2016), or otherwise “describ[e] the claims at such a high level of abstraction and untethered from the language of the claims.” *Enfish*, 822 F.3d at 1337.

1. Representativeness

The parties dispute whether claim 1 of the ’911 patent is representative of all of the asserted claims for the purpose of evaluating patent eligibility. American Axle contends that “[n]o one claim is ‘representative’” and, thus, advances separate—albeit closely related—arguments for independent claim 1 and its dependent claims. D.I. 262 at 19 n.5; D.I. 279 at 34. On the other hand, Neapco effectively treats claim 1 as representative of all the asserted claims. Rather than identify the “abstract idea” to which dependent claims 2-6, 12, 13, and 19-21 are purportedly directed to, Neapco’s patent eligibility analysis at *Alice* step one solely focuses on independent claim 1. *See generally* D.I. 256. Neapco also criticizes American Axle for its “newfound reliance on the dependent claims,” arguing that the dependent claims merely recite “additional routine and conventional features to an otherwise abstract concept,” i.e., claim 1, which has no bearing on *Alice* step one. D.I. 293 at 9-10.

“Courts may treat a claim as representative in certain situations, such as if the patentee does not present any meaningful argument for the distinctive significance of any claim limitations not

found in the representative claim or if the parties agree to treat a claim as representative.” *Berkheimer*, 881 F.3d at 1365. While American Axle maintains that limitations included in dependent claims 2-6, 12, 13, and 19-21 bear on patent eligibility and never agreed to make claim 1 representative, the Court finds that the dependent claims only recite additional structures or features. Indeed, American Axle implicitly acknowledges that the dependent claims merely recite additional physical and structural characteristics of the liner such that there is no meaningful distinction between claim 1 and its dependent claims for purposes of *Alice* step one. See D.I. 262 at 23-24 (“[Claims 2-6] specify[] additional characteristics of the lined-propshaft system, including the required type (or mode) of propshaft vibration that the liner attenuates . . . and the required precision of matching between the liner frequency and propshaft frequency . . .”); *id.* at 24-26 (“Claim 12, 13, and 19 further recite physical, structural characteristics of the claimed liner . . .”); *id.* at 26 (“Claims 20 and 21 . . . further recite specifics of the positioning of the liners within the propshaft . . .”). Accordingly, for the purpose of evaluating patent eligibility, the Court finds that claim 1 of the ’911 patent is representative of the claims at issue, as claim 1 is the sole independent claim and the dependent claims only recite additional structures or features. See, e.g., *Planet Bingo, LLC v. VKGS LLC*, 576 F. App’x 1005, 1007 (Fed. Cir. 2014) (finding that analysis of the independent claims was sufficient as the dependent claims recited only slight variations of the independent claims); *FYF-JB, LLC v. Pet Factory, Inc.*, 410 F. Supp. 3d 912 (N.D. Ill. 2019).

2. Step One⁵

At *Alice* step one, Neapco contends that claim 1 and its dependent claims are directed to the abstract idea of “tuning one or more liners” to achieve the desired result of “attenuat[ing] more than one mode of vibration.” D.I. 256 at 15-16; *see also* D.I. 276 at 7. Neapco explains that claim 1 lacks “the specificity required to transform [the] claim from one claiming only a result to one claiming a way of achieving it,” *see* D.I. 276 at 7 (citing *Am. Axle*, 967 F.3d at 1296), because “the ’911 patent does not explain how to tune a liner to attenuate more than one mode of vibration.” *See* D.I. 256 at 16. Neapco also argues that, like the “broad concept” of “tuning,” the concept of “positioning” is similarly an abstract idea because “a properly ‘positioned’ liner is defined not by the means or method used to position the liner, but by the result achieved (reducing vibration).” *Id.* at 20. American Axle responds that claim 1 and its dependent claims are not directed to an abstract idea but are, rather, “directed to a new and useful, multi-step industrial process for manufacturing an improved driveshaft.” D.I. 262 at 19. According to American Axle, the claims at issue recite a specific method for manufacturing a shaft assembly of a driveline system, the steps of which include: “providing a hollow driveshaft, ‘tuning’ ‘liners’ (low cost, hollow tubes made of fibrous material such as cardboard), positioning the liners into the hollow driveshaft to attenuate two types of driveshaft vibration, configur[ing] the liner to damp shell mode by 2% or more[,] and other steps.” *Id.* For the reasons stated below, the Court finds that claim 1 of the ’911 patent and

⁵ Neither party has identified a disputed issue of material fact at *Alice* step one that would preclude this Court from granting either party’s respective cross-motion for summary judgment. In fact, both parties agree that there are no disputed issues of material fact at least as to *Alice* step one. *See* D.I. 262 at 15 n.2 (“AAM submits that the Asserted Clams are not directed to an abstract idea at step one and do recite inventive concepts at step two, and that there are no genuine disputes on those two points.”); D.I. 293 at 8 (“There Are No Factual Disputes That Would Preclude Summary Judgment”). Accordingly, the Court finds that it can resolve *Alice* step one as a matter of law because the parties have not identified any fact issue that would preclude the Court from rendering summary judgment.

its dependent claims are not directed to an abstract idea and, therefore, are patent eligible subject matter.

The *Alice* step one inquiry considers “what the patent asserts to be the focus of the claimed advance over the prior art.” *Yanbin Yu v. Apple Inc.*, 1 F.4th 1040, 1043 (Fed. Cir. 2021) (citation omitted). Importantly, “at step one, it is not enough to merely identify a patent-ineligible concept underlying the claim; [the Court] must determine whether that patent-ineligible concept is what the claim is directed to.” *ChargePoint, Inc. v. SemaConnect, Inc.*, 920 F.3d 759, 766 (Fed. Cir. 2019) (internal citations omitted). Claim 1 of the ’911 patent recites:

1. A method for manufacturing a shaft assembly of a driveline system, the driveline system further including a first driveline component and a second driveline component, the shaft assembly being adapted to transmit torque between the first driveline component and the second driveline component, the method comprising:

providing a hollow shaft member;

tuning at least one liner to attenuate at least two types of vibration transmitted through the shaft member; and

positioning the at least one liner within the shaft member such that the at least one liner is configured to damp shell mode vibrations in the shaft member by an amount that is greater than or equal to about 2%, and the at least one liner is also configured to damp bending mode vibrations in the shaft member, the at least one liner being tuned to within about $\pm 20\%$ of a bending mode natural frequency of the shaft assembly as installed in the driveline system.

See ’911 patent at claim 1. The Court has previously construed “tuning at least one liner” to mean “controlling characteristics of at least one liner to configure the liner to match a relevant frequency or frequencies.” *See* D.I. 114 at 1.

On its face, claim 1 and its dependent claims are directed to a method of designing and manufacturing a tangible propshaft with reduced vibration that includes tuning and positioning a liner within a propshaft to attenuate bending and shell mode vibration. *See generally* ’911 patent. Far from an abstract idea, the claims are directed to a tangible system, or a method of using such

a system, with an observable real-world impact. *See FairWarning IP, LLC v. Iatric Systems, Inc.*, 839 F.3d 1089, 1094 (Fed. Cir. 2016) (“Indeed, even though a claim can be abstracted to the point that it reflects a patent-ineligible concept . . . that claim may nevertheless be patent eligible if the claim language is directed to a patent-eligible application of that concept.”); *see also Diamond v. Diehr*, 450 U.S. 175, 184, 187 (1981) (holding that claims reciting an industrial process for curing rubber were patent eligible because “[i]ndustrial processes such as this are the types which have historically been eligible to receive the protection of our patent laws”). Contrary to Neapco’s contention, the claims do not merely recite a “desired result of attenuating certain vibration modes and frequencies” based on the previously known abstract solutions of “tuning” and “positioning.” *See* D.I. 256 at 15, 20. Such an analysis improperly focuses on only two limitations—the “tuning” and “positioning” limitations—rather than the character of the claims as a whole. *See Diehr*, 450 U.S. at 188 (“[C]laims must be considered as a whole. It is inappropriate to dissect the claims into old and new elements and then to ignore the presence of the old elements in the analysis.”). Instead, the claims as a whole recite technological improvements to tangible systems or methods by performing concrete steps, including “tuning at least one liner” and “positioning the at least one liner within the shaft member.” *See* ’911 patent at claim 1; *see also McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1314 (Fed. Cir. 2016) (“We . . . look to whether the claims in these patents focus on a specific means or method that improves the relevant technology or are instead directed to a result or effect that itself is the abstract idea and merely invoke generic processes and machinery.”).

To be sure, the specification confirms that claim 1 and its dependent claims are directed to a meaningful improvement to the design and manufacturing of propshafts to reduce noise and

vibration.⁶ The specification states that one of the issues with conventional damping devices is the “need in the art for an improved method for damping various types of vibrations in a hollow shaft[, which] facilitates the damping of shell mode vibration as well as the damping of bending mode vibration and/or torsion mode vibration.” *See* ’911 patent at 2:39-44; *see also id.* at 1:7-16 (the claimed methods impact “consumers of modern automotive vehicles,” who “increasingly expect the interior of the vehicle to be quiet and free of noise from the power train and driveline.”). The ’911 patent seeks to solve this issue. *See Yu*, 1 F.4th at 1043 (“[W]hat the patent asserts to be the focus of the claimed advance over the prior art.”).

As previously stated, the “tuning at least one liner” limitation itself requires “controlling characteristics of at least one liner to configure the liner to match a relevant frequency or frequencies.” *See* D.I. 114 at 1. The specification discloses numerous characteristics that must be controlled to properly tune a liner, including the mass, length, thickness, material, the quantity and configuration of external members attached to the liner, and the positioning of the liner in the driveshaft. *See* ’911 patent at 7:56-8:2. In one specific embodiment, the specification provides the design parameters a person of ordinary skill in the art should use to tune a liner to reduce propshaft vibration. *See id.* at 8:2–23. Other embodiments illustrate how tuned liners may be physically structured in several distinct ways. *See id.* at 8:48–9:39, Figs. 10–14. (explaining that the liner may include a plurality of circumferentially-extending resilient members, a plurality of longitudinally-extending resilient members, a resilient member that covers substantially the entire outer surface of the structural port, a plurality of void spaces to control the stiffness, or a plurality

⁶ “[T]he Federal Circuit has told us that at step one, it is permissible to look to the specification to determine what the claims are directed to, and if the specification describes something as the innovation over the prior art, then it stands to reason that the claim is probably directed to that element or concept.” *Nielsen Co. (US), LLC v. TVision Insights, Inc.*, C.A. No. 21-1592-CJB, 2022 WL 3226318, at *4 (D. Del. Aug. 10, 2022) (citing *Enfish*, 822 F.3d at 1337).

of distinctly shaped fingers). The specification also teaches where and how to position a liner to reduce propshaft vibration, which is independent of the “tuning” limitation that dictates the liner’s structure.⁷ In one embodiment, the specification teaches that two liners should be positioned “generally symmetrically about an associated one of the second ($n=2$) bending nodes” by an interference fit. *See* ’911 patent at 8:20-23; *see also id.* at 8:4-19 (specifying the diameters of liners and propshaft for an interference fit), Fig. 4; *id.* at 9:40-43 (teaching “to chill the liners prior to their installation to a shaft member”). The ’911 patent’s specification further describes that a “secondary means for retaining the liner to the shaft member”—the structure of which “can be formed via an adhesive, a weld, a dimple, or a necked-down (*e.g.*, rotary swaged) section”—“can be employed to resist or inhibit axial movement of the liner within the shaft member” and secure its position “at a desired location.” *Id.* at 9:44-54.

The dependent claims also recite specific characteristics of the claimed “tuning” and “positioning” steps—i.e., “how” to achieve the desired damping of two modes of vibration—which further supports that these claims are not directed to an abstract idea. Specifically, claims 2-6 recite additional characteristics to reduce two types of vibration, such as forming the liner to have a frequency that matches to “within $\pm 15\%$ [10%, 5%] of the bending mode natural frequency” of the propshaft and specifying the mode, *e.g.*, the first, second, or third modes, of bending and shell mode propshaft vibration to attenuate. *See* ’911 patent at claims 2-6. Claims 12 and 13 recite

⁷ There is no support for Neapco’s contention that “‘positioning’ is simply ‘inserting’ the liner into the propshaft.” *See* D.I. 256 at 20. Indeed, the Federal Circuit held that the “positioning” limitation and the “inserting” limitation are “not equivalent.” *See Am. Axle*, 967 F.3d at 1300 n.13. Moreover, although neither party indicated that the “positioning” limitation required construction, “different words or phrases used in separate claims are presumed to indicate that the claims have different meanings and scope.” *Andersen Corp. v. Fiber Composites, LLC*, 474 F.3d 1361, 1369 (Fed. Cir. 2007) (quoting *Karlin Tech. Inc. v. Surgical Dynamics, Inc.*, 177 F.3d 968, 971-72 (Fed. Cir. 1999)).

structural characteristics of the claimed liner, *see, e.g., id.* at claim 12 (“[T]he at least one liner includes a structural portion and at least one resilient member that is coupled to the structural portion, the liner being inserted to the shaft member such that a wall of the shaft member contacts the at least one resilient member”); *id.* at claim 13 (“[T]he at least one resilient member extends helically about and along the structural portion”), while claim 19 discloses that “the structural portion is formed of a material selected from a group consisting of cardboard, plastic resin, carbon fiber, fiberglass, metal and combinations thereof,” *see id.* at claim 19. *See also id.* at Fig. 4, 8-9 (illustrating the structural features of the claimed liners). Similarly, claims 20 and 21 further specify the precise positioning of the claimed liners within the propshaft, i.e., “symmetrically about a bending anti-node” and a second bending anti-node. *See id.* at claims 20, 21.

Moreover, comparing the '911 patent claims to other claims already found not to be an abstract concept further supports that claim 1 and its dependent claims are directed to patent-eligible subject matter. *See Enfish*, 822 F.3d at 1334 (“[B]oth [the Federal Circuit] and the Supreme Court have found it sufficient to compare claims at issue to those claims already found to be directed to an abstract idea in previous cases.”). American Axle contends that the present claims are analogous to those found patent eligible in *Carrum Techs. v. BMW of N. Am.* and *Access Int’l, Inc. v. Genetec (USA) Inc.* because those claims, like here, “recit[e] physical, tangible systems or methods of using such systems.” D.I. 262 at 20-21 (citing *Carrum Techs. v. BMW of N. Am.*, C.A. No. 18-1645-RGA, 2019 WL 1779863 (D. Del. Apr. 23, 2019); *Access Int’l, Inc. v. Genetec (USA) Inc.*, 375 F. Supp. 3d 533, 537 (D. Del. 2019)). In *Carrum*, the claims related to “methods of adjusting driving speed [of a vehicle] based on measurements from lateral acceleration sensors” and methods “for adjusting the speed of a vehicle with an adaptive cruise control system in response to a detected object.” 2019 WL 1779863, at *1. The Court held that

defendant's characterization of the claims as an "abstract idea" was "plainly wrong" and, instead, reasoned that the claims were patent eligible at *Alice* step one because they "are directed to a tangible system, or a method of using such a system, with an observable real-world impact." *Id.* at *3. Similarly, in *Axcess Int'l, Inc. v. Genetec (USA) Inc.*, the Court found that the asserted claims "are directed to using RFID equipment and video to remotely watch over, and limit access to, property[, which] is a concrete application of an idea, the idea of keeping watch, and specifically **tethered to tangible equipment.**" 375 F. Supp. 3d at 537 (emphasis added). Thus, because the claimed methods were "tethered to tangible equipment" having "real-world impact," the Court held that the claims were "not directed at an unpatentable abstract idea." *Id.* The Court agrees that these cases are instructive because, like the claims in both *Carrum* and *Axcess*, claim 1 of the '911 patent and its dependent claims describe a real-world application of designing and manufacturing a liner for a propshaft system to achieve the desired damping of two modes of vibration, as opposed to an "untethered" abstraction.⁸ See *Sysmex Corp. v. Beckman Coulter, Inc.*, C.A. No. 19-1642-JFB-CJB, 2022 WL 1808325, at *6 (D. Del. June 2, 2022) (quoting *Alice*, 717 F.3d 1269, 1286 (Fed. Cir. 2013) (Lourie, J., concurring)).

⁸ Additionally, American Axle analogizes the decisions in *RICPI Commc'ns LLC v. JPS Interoperability Sols., Inc.*, *PM Holdings, LLC v. Heart of Texas Surgery Ctr., PLLC*, and *D&M Holdings Inc. v. Sonos, Inc.* to support its proposition that claims reciting tangible industrial processes, rather than merely results, are not directed at an unpatentable abstract idea. See, e.g., D.I. 262 at 21 n.6 (citing *RICPI Commc'ns LLC v. JPS Interoperability Sols., Inc.*, C.A. No. 18-1507-RGA, 2019 WL 1244077, at *4 (D. Del. Mar. 18, 2019); *PM Holdings, LLC v. Heart of Texas Surgery Ctr., PLLC*, C.A. No. 21-644, 2022 WL 1004644, at *3 (W.D. Tex. Apr. 4, 2022)); D.I. 279 at 28 (citing *D&M Holdings Inc. v. Sonos, Inc.*, C.A. No. 16-141-RGA, 2017 WL 1395603, at *7 (D. Del. Apr. 18, 2017)). For the same reasons the Court finds the decisions in *Carrum* and *Axcess* to be instructive, the Court finds that the decisions in *RICPI*, *PM Holdings*, and *D&M Holdings Inc.* further support that claim 1 of the '911 patent and its dependent claims are patent eligible.

Neapco asks the Court to ignore the tangible components included in the '911 patent because they define a “previously-known technological environment in which that desired result is to be achieved.” See D.I. 256 at 15; 17 (arguing that the claim “merely defines the conventional technological environment in which the abstract solution to the problem resides”); see also D.I. 276 at 7 (“[The claims] do no more than define the technological (and conventional) environment.”). Neapco asserts that, when one does ignore these components, a well-known propshaft including “a shaft assembly” that “transmit[s] torque between” a “first driveline component” and a “second driveline component” are the only components that remain. D.I. 256 at 17 (citing '911 patent at 1:38-39). But this argument blurs the line between step one and step two of *Alice* because whether a structure is “well-understood, routine, and conventional” is part of *Alice* step two, which is a fact specific inquiry. *Alice*, 573 U.S. at 225. Specifically, this language is used in *Alice* to explain that the addition of routine or conventional steps does not transform an otherwise unpatentable method into a patentable one. *Id.* This is different than arguing that the physical components are conventional, which strikes the Court as being an argument more directed to novelty instead of eligibility.⁹ See *Diehr*, 450 U.S. at 190 (“The question therefore of whether a particular invention is novel is ‘wholly apart from whether the invention falls into a category of statutory subject matter.’”).

Accordingly, the Court finds that claim 1 of the '911 patent and its dependent claims are directed to a method of designing and manufacturing a tangible propshaft with reduced vibration

⁹ Although this argument is more appropriately addressed at *Alice* step two—and, therefore, is not considered by this Court at *Alice* step one—the Court notes that Neapco’s argument implicates a genuine dispute of material fact, namely, whether Neapco’s own engineers relied on the '911 patent to learn how to tune and position liners to reduce two types of propshaft vibration. See D.I. 278 ¶¶ 20-26, 38, 42. Accordingly, if the Court were to reach *Alice* step two, Neapco’s own argument raises genuine disputes of material fact that would preclude the very relief it seeks.

that includes tuning and positioning a liner within a propshaft to attenuate bending and shell mode vibration. *Cf. Am. Axle*, 967 F.3d at 1305 (Moore, C.J., dissenting) (“The ’911 patent, directed to a method of manufacturing a drive shaft assembly for a car, is the type of traditional manufacturing patent of automotive parts which has been eligible for patent protection since the invention of the car itself.”) (citing *Diehr*, 450 U.S. at 184). Based on this finding, the Court concludes that representative claim 1 of the ’911 patent, *see supra* Section II.A.iii.1, and its dependent claims are patent eligible under 35 U.S.C. § 101. Thus, having found no disputed issues of material fact, *see supra* footnote 5, the Court will grant American Axle’s Motion for Summary Judgment on this issue (D.I. 260) and deny Neapco’s Motion for Summary Judgment on this issue (D.I. 255).

3. Step Two

Because claim 1 of the ’911 patent and its dependent claims are not directed to a patent-ineligible concept under 35 U.S.C. § 101, the Court need not determine whether the additional elements transform the nature of the claim into a patent-eligible application under step two of the *Alice* inquiry. *Enfish*, 822 F.3d at 1339 (“Because the claims are not directed to an abstract idea under step one of the *Alice* analysis, we do not need to proceed to step two of that analysis.”); *see also CardioNet*, 955 F.3d at 1371.

B. American Axle’s Motion for Summary Judgment of No Anticipation

American Axle moves for summary judgment of no anticipation under 35 U.S.C. § 102, arguing that “there is not any credible dispute that the Asserted Claims are not anticipated by” either U.S. Patent No. 7,214,135 (“Laskey”) or the 2003 Econoline E-150 XLT van (“Econoline”). D.I. 262 at 4. Specifically, American Axle contends that “Neapco’s expert admits that Laskey does not anticipate” the ’911 patent, while both “[American Axle’s] and Neapco’s testing show that the Econoline liners provide less than 0.2% shell mode damping at the first through third shell

modes,” which is ten times less than the required additional 2% shell mode damping. *Id.* Neapco has affirmatively indicated that it “does not oppose [American Axle’s] motion for summary judgment of no anticipation by the Laskey reference.” D.I. 276 at 23. However, Neapco contends that, at a minimum, genuine disputes of material fact exist as to both parties’ testing conditions and methodologies related to the Econoline reference that preclude summary judgment in favor of American Axle. *Id.* at 21-23. For the reasons stated below, American Axle’s Motion for Summary Judgment of No Anticipation is granted as to the Laskey reference but denied as to the Econoline reference.

A patent is invalid as anticipated under 35 U.S.C. § 102 if “the four corners of a single, prior art document describe every element of the claimed invention, either expressly or inherently, such that a person of ordinary skill in the art could practice the invention without undue experimentation.” *Advanced Display Sys., Inc. v. Kent State Univ.*, 212 F.3d 1272, 1282 (Fed. Cir. 2000). “[T]he hallmark of anticipation is prior invention.” *Net MoneyIN Inc. v. Verisign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir. 2008). Thus, “the prior art reference . . . must not only disclose all elements of the claim within the four corners of the document, but must also disclose those elements ‘arranged as in the claim.’” *Id.*

The parties’ experts offer competing opinions on whether the Econoline reference lacks 2% shell mode damping as claimed by the ’911 patent, thereby raising a genuine issue of material fact for the jury to decide. *Compare* D.I. 280 ¶ 3 (“As part of his analysis of the original FEV testing data of the 2003 Econoline prior art reference, Mr. Becker also looked at the data for the 1/6th position sensors, or the sensor at 1/6th of the length of the propshaft.”), *with* D.I. 291 ¶ 3 (“Admitted that Mr. Becker purported to re-analyze the data from Neapco’s original testing, including data corresponding to an impact and sensor location at the 1/6th location. Denied to the

extent that Mr. Becker’s re-analysis was proper or that the results, and his opinions and conclusions based on those results, are reliable.”); *compare* D.I. 280 ¶ 8 (“The data collected by FEV and analyzed by Mr. Becker shows that the 2003 Econoline prior art reference had frequencies that ‘match’ the claimed bending mode and shell mode frequencies as recited in the asserted claims (as construed).”), *with* D.I. 291 ¶ 8 (“Denied.”); *see also* *TQ Delta, LLC v. 2wire, Inc.*, C.A. No. 13-1835-RGA, 2021 WL 3375900, at *9 (D. Del. Aug. 3, 2021). While American Axle takes serious issue with Neapco’s expert’s allegedly “flawed” re-analysis of the Econoline data, *see* D.I. 290 at 15 (“In addition to being contrary to his prior sworn testimony, Mr. Becker’s new value is simply not credible.”), American Axle effectively asks the Court to resolve the parties’ factual disputes regarding their respective experts’ testing conditions and methodology as a matter of law. However, the Court has no legal basis to choose between these expert opinions, particularly given that neither expert is subject to a *Daubert* challenge relating to the Econoline data or testing thereof. *See Microchip Tech. Inc. v. Aptiv Servs. US LLC.*, C.A. No. 17-1194-JDW, 2020 WL 4435510, at *5 (D. Del. July 31, 2020); *compare* D.I. 280 ¶ 6 (“AAM does not seek to exclude Mr. Becker’s opinions relating to the 2003 Econoline reference.”), *with* D.I. 291 ¶ 3 (“Admitted that AAM has not sought to exclude Mr. Becker’s opinions relating to the 2003 Econoline . . .”). Although Neapco’s expert’s re-analysis may prove unreliable, diving into the factual morass of evaluating each expert’s methodology and testing conditions, in addition to the experts’ credibility, is not a task appropriate for the Court at the summary judgment stage. *See BASF Corp. v. SNF Holding Co.*, 955 F.3d 958, 963 (Fed. Cir. 2020) (“[A]t the summary judgment stage the judge’s function is not himself to weigh the evidence” (internal quotation marks and citation omitted)).

Accordingly, because the jury must resolve these factual disputes predicated on the experts' analyses and their credibility, American Axle's motion for summary judgment of no anticipation related to the Econoline reference is denied. *See Reeves v. Sanderson Plumbing Prods., Inc.*, 530 U.S. 133, 150 (2000) (“[I]n entertaining a motion for judgment as a matter of law, the court should review all of the evidence in the record. In doing so, however, the court must draw all reasonable inferences in favor of the nonmoving party, and it may not make credibility determinations or weigh the evidence.”) (citations omitted). Again, American Axle's motion for summary judgment of no anticipation is granted as to the Laskey reference. *See* D.I. 276 at 23.

C. Neapco's Motion for Summary Judgment of Non-Infringement

Neapco seeks summary judgment of non-infringement of the '911 patent, arguing that, “for every single accused product, Neapco never ‘controlled characteristics’ to match a relevant shell mode frequency,” while “Neapco never ‘controlled characteristics’ to match a relevant bending mode frequency [for most accused products,] either.” D.I. 256 at 29. Additionally, Neapco argues it is entitled to summary judgment of non-infringement because American Axle has no evidence that Neapco actually achieved the specific desired result recited in claim 1 “as installed in the driveline system.” *Id.* at 30 (quoting '911 patent at claim 1). American Axle disagrees, arguing that it both “provided affirmative evidence that Neapco controlled and selected the characteristics and properties of the accused liners during development of the Accused Products,” and demonstrated that Neapco's accused liners “do, in fact, ‘match a relevant frequency or frequencies’ of the accused propshafts and reduce both bending mode and shell mode vibration as recited” by the '911 patent. D.I. 279 at 20.

Here, American Axle has identified genuine disputes of material fact that preclude granting summary judgment of non-infringement in favor of Neapco. *See U.S. Water Servs., Inc. v. Novozymes A/S*, 843 F.3d 1345, 1351 (Fed. Cir. 2016) (holding that the district court erred by

making “credibility determinations and weigh[ing] conflicting evidence.”). For example, American Axle identified that, contrary to Neapco’s position that “*none* of the accused 31xx propshafts ever experienced any shell mode vibration problems,” *see* D.I. 256 at 31 (emphasis in original), [REDACTED]

[REDACTED] *See* D.I. 279 at 20-21 (citing D.I. 263, Ex. 28); *compare* D.I. 273 ¶ 8, *with* D.I. 278 ¶ 8. Similarly, although Neapco contends that it “did not configure its liners to match any frequency in order to dampen shell mode vibrations,” *see* D.I. 273 ¶ 10, at a minimum, the present record raises a genuine dispute of whether Neapco knew prior to manufacturing the accused propshafts that the liners matched relevant propshaft frequencies. *See* D.I. 278 ¶¶ 10, 13. The parties also dispute whether American Axle’s testing of Neapco’s accused propshafts, which were performed on a bench with the propshafts clamped to a bedplate in a pinned-pinned condition, is the same as the conditions for propshafts “as installed in the driveline system” of a vehicle as recited by claim 1 of the ’911 patent. *See* D.I. 279 at 21-24; *compare* D.I. 278 ¶¶ 27-31, *with* D.I. 294 ¶¶ 27-31.

As such, there exist genuine disputes of material fact regarding whether Neapco “controlled characteristics” to match a relevant shell or bending mode frequencies for the accused propshafts. Additionally, there exist genuine disputes of material fact related to the testing conditions of American Axle’s bench testing and whether these tests are comparable to the conditions for testing propshafts “as installed in the driveline system” of a vehicle as recited by claim 1 of the ’911 patent. Because the Court cannot supplant the role of the jury in weighing this evidence, summary judgment of non-infringement of the ’911 patent is denied. *See Reeves*, 530 U.S. at 150 (“[I]n entertaining a motion for judgment as a matter of law, the court should review all of the evidence

in the record. In doing so, however, the court must draw all reasonable inferences in favor of the nonmoving party, and it may not make credibility determinations or weigh the evidence.”) (citations omitted).

III. CONCLUSION


For the foregoing reasons, with respect to the issue of invalidity pursuant to § 101, the Court denies Neapco’s motion for summary judgment of invalidity and grants American Axle’s motion for summary judgment of no invalidity. *See* D.I. 255; D.I. 260. The Court also grants American Axle’s motion for summary judgment of no anticipation as to the Laskey reference, denies American Axle’s motion for summary judgment of no anticipation as to the Econoline reference, and denies Neapco’s motion for summary judgment of non-infringement of the ’911 patent. *Id.*

* * *

WHEREFORE, at Wilmington this 19th day of July, 2023, **IT IS HEREBY ORDERED** that:

1. Neapco’s Motion for Summary Judgment of Invalidity and Non-Infringement (D.I. 255) is **DENIED**;
2. American Axle’s Motion for Summary Judgment of No Invalidity Under 35 U.S.C. § 101 and No Invalidity Under 35 U.S.C. § 102 (D.I. 260) is **GRANTED-IN-PART** and **DENIED-IN-PART** as described herein; and
3. American Axle’s Motions to Preclude Portions of the Testimony of Neapco’s Technical Expert, Steven Becker and Portions of the Testimony of Neapco’s Damages Expert, Michael Chase (D.I. 261) remain under consideration by the Court.
4. Because the Memorandum Order is filed under seal, the parties shall meet and confer and submit a joint proposed redacted version no later than seven (7) days after the date

of this Memorandum Order. In the absence of a timely request compliant with applicable standards, the Court will unseal the entire Order.



GREGORY B. WILLIAMS
UNITED STATES DISTRICT JUDGE