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Paper 12
Date: June 13, 2023

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

YITA LLC AND JINRONG (SH) AUTOMOTIVE ACCESSORY INDUSTRIAL DEVELOPMENT CO. LTD.,
Petitioner,

v.

MACNEIL IP LLC,
Patent Owner.

IPR2023-00172
Patent 8,899,655 B1

Before JAMES A. WORTH, MICHAEL L. WOODS, and ARTHUR M. PESLAK, *Administrative Patent Judges.*

PESLAK, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

Yita LLC and Jinrong (SH) Automotive Accessory Industrial Development Co. Ltd., (collectively "Petitioner") filed a Petition pursuant to 35 U.S.C. §§ 311–319 requesting an *inter partes* review of claims 1–6 ("the challenged claims") of U.S. Patent No. 8,899,655 B1 ("the '655 patent," Ex. 1001). Paper 1 ("Pet."). Petitioner filed a Declaration of Mr. Dan Perreault in support of the Petition. Ex. 1003. Patent Owner filed a Preliminary Response. Paper 6 ("Prelim. Resp."). With our authorization, Petitioner filed a Preliminary Reply to address discretionary denial issues. Paper 8 ("Prel. Reply"). Patent Owner filed a Preliminary Sur-reply. Paper 10 ("Prel. Sur-reply").

We have authority, acting by delegation of the Director, to determine whether to institute an *inter partes* review under 35 U.S.C. § 314(a). *See also* 37 C.F.R § 42.4(a) (2021) ("The Board institutes the trial on behalf of the Director."). Under 35 U.S.C. § 314(a), an *inter partes* review may not be instituted unless the information presented in the Petition shows "there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition."

Considering the Petition, the Preliminary Response, the Preliminary Reply, the Preliminary Sur-reply as well as all supporting evidence in the record, we conclude that the information presented in the Petition establishes a reasonable likelihood that at least one claim of the '655 patent is unpatentable. Pursuant to 35 U.S.C. § 314, we hereby institute an *inter partes* review of the challenged claims.

Our factual findings, claim construction, if any, and legal conclusions at this stage of the proceeding are based on the evidentiary record developed

thus far. This decision to institute trial is not a final decision as to the unpatentability of the claims for which *inter partes* review is instituted. Our final decision will be based on the full record developed during trial.

A. Related Matters

The parties identify the '655 patent as the subject of *MacNeil Automotive Products Limited et al. v. Yita LLC et al.*, No. 2:20-cv-00278 (W.D. WA) ("Yita Litigation") and *MacNeil Automotive Products Limited et al. v. Jinrong (SH) Automotive Accessory Development Co., Ltd. et al.*, No. 2:20-cv-00856 (W.D. WA) ("Jinrong Litigation").[1] Pet. 65; Paper 3, 2; *see also* Prelim. Resp. 1–2.

The parties state that the '655 patent relates to U.S. Patent No. 9,138,917, which is challenged in IPR2023-00173; U.S. Patent No. 8,382,186, which was challenged in IPR2020-01138 (institution denied) and IPR2022-01139 (final written decision on Jan. 3, 2022; appeal pending (CAFC 22-1373)); and U.S. Patent No. 8,833,834, which was challenged in IPR2020-01140 (institution denied) and IPR2020-01142 (final written decision on Jan. 3, 2022; appeal pending (CAFC 22-1374), which was consolidated with CAFC 22-1373). Pet. 65–66; Paper 3, 2–3.

B. Real Parties in Interest

Petitioner identifies itself, ShengTian (SH) Industrial Development Co., Ltd., and Hong Kong Yinta International Trade Company Limited as real parties in interest. Pet. 65. Patent Owner identifies itself, MacNeil Automotive Products LLC (formerly known as MacNeil Automotive

[1] These cases have been consolidated as Case No. C20-278 (W.D. WA). *See* Ex. 1049.

Products, Limited), and WeatherTech Direct, LLC as real parties in interest. Paper 3, 2.

C. The '655 Patent

The '655 patent is titled "Manufacturing Vehicle Floor Trays." Ex. 1001, code (54). The '655 patent issued on December 2, 2014, from Application No. 14/452,637, which was filed on August 6, 2014. *Id.* at codes (45), (21), (22). Application No. 14/452,637 claims priority through a series of continuation applications to Application No. 10/976,441, filed October 29, 2004, now Patent No. 7,316,847. *Id.* at code (60).

The '655 patent relates to a process for manufacturing vehicle floor trays by constructing an electronic model of the vehicle foot well surface, which in turn is used to construct an electronic three-dimensional image of the vehicle floor tray that is used to make a mold to manufacture the vehicle floor tray. Ex. 1001, code (57). The '655 patent explains that conventionally, vehicle owners attempted to protect the vehicle interior using vehicle floor mats, which moved easily causing the intended protected area not to be protected, occluded the gas, brake or clutch pedals, or bunched up or undesirably folded over. *Id.* at 1:26–39. Further, the '655 patent explains that it is common for floor mats to have portions intended to lie against the front surfaces of the foot wells and that mats which conform to the bottom surface of the foot well stay in place better. *Id.* at 1:42–49.

The '655 patent explains that vehicle floor trays having sidewalls have been used to offer enhanced protection to the surfaces surrounding the vehicle floor, but because vehicle foot wells have three-dimensional concave shapes, the fit of conventional vehicle floor trays "to the surfaces that they are supposed to protect has been less than optimum." Ex. 1001, 1:55–63.

The ’655 patent explains that this is because fitting a floor tray to the three-dimensional surface of a vehicle foot well is difficult, and as a result, “the products currently in the marketplace have limited consumer acceptance because of their loose fit inside the foot well” and due to the tendency to “noticeably deform when the occupant’s foot contacts it.” *Id.* at 1:67–2:7.

According to the ’655 patent, there was a need for a better fitting floor tray that stays in place, and provides a more solid foot feel. Ex. 1001, 2:9–13. The ’655 patent describes a process for manufacturing a vehicle floor tray that includes digitally measuring the three-dimensional position of a plurality of points of a vehicle foot well for which the vehicle floor tray is to be provided. *Id.* at 5:1–5. The points are stored in a memory, then used to construct an electronic model of the vehicle foot well surface. *Id.* at 5:5–7. The electronic model of the vehicle foot well surface in turn is used to construct an electronic three-dimensional image of the vehicle floor tray. *Id.* at 5:7–10. From this image, a vehicle tray data file is created and used to make a vehicle tray mold. *Id.* at 5:10–12. The vehicle floor tray is manufactured by molding polymer material in the mold created using the vehicle tray data file. *Id.* at 5:12–13.

Figure 1 of the ’655 patent is reproduced below.

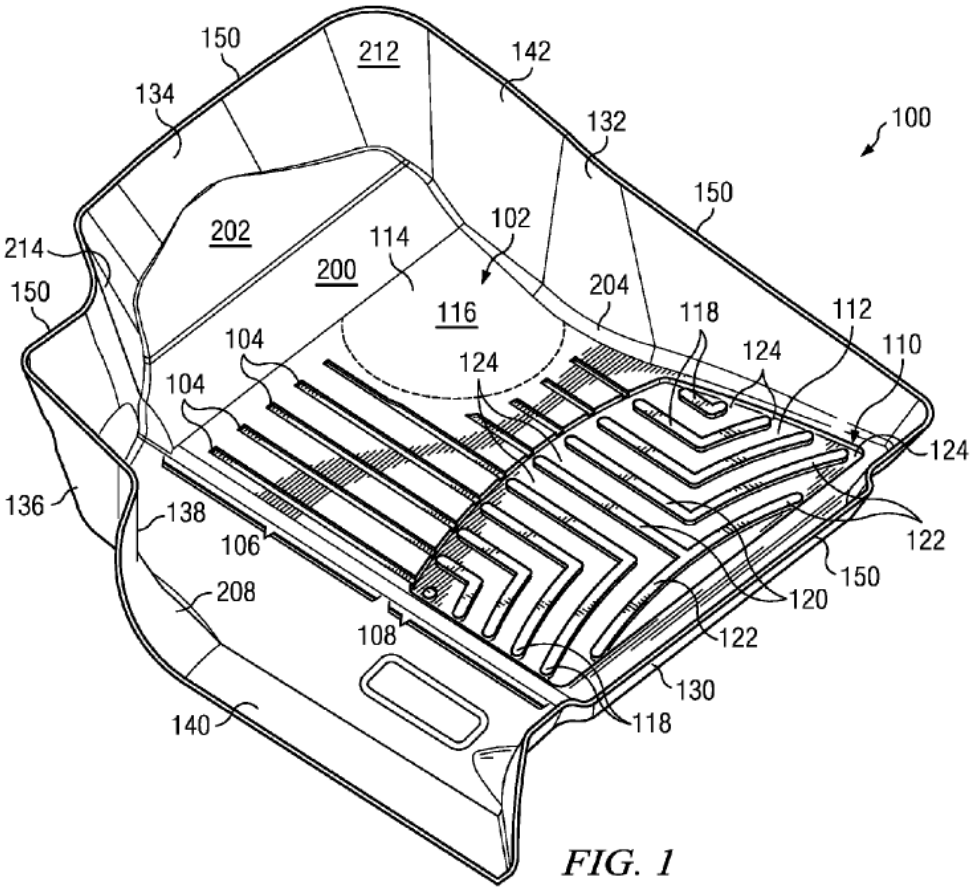

FIG. 1

Figure 1 "is an isometric view of one embodiment of a vehicle floor tray." Ex. 1001, 5:59–60. Floor tray 100 includes floor panel 102, which includes a plurality of longitudinal parallel straight channels 104 that are disposed in forward region 106 of floor panel 102, and that channel liquid runoff from the user's feet to reservoir 110. *Id.* at 6:46–50, 7:1–2. Disposed around floor panel 102 are a series of upstanding side panels, including back panel 130 that is disposed adjacent the bottom of a vehicle front seat, inner side panel 132 that closely fits a transmission tunnel, forward panel 134 that closely conforms to a vehicle firewall, outer side panel 136, and door sill panel 140. *Id.* at 7:47–59. Because tray 100 closely fits to the vehicle foot well in which it is placed, panels 130, 132, 134, 136, and 140 "are all formed

so as to as closely conform to the vehicle surfaces against which they are positioned." *Id.* at 8:8–12. The '655 patent explains that close conformance of the tray side panels to the surfaces of the vehicle foot well "produces a protective tray which will not be horizontally displaced under lateral forces created by the occupant's feet, or by the motion of the vehicle." *Id.* at 8:25–28.

Figure 8 of the '655 patent is reproduced below.

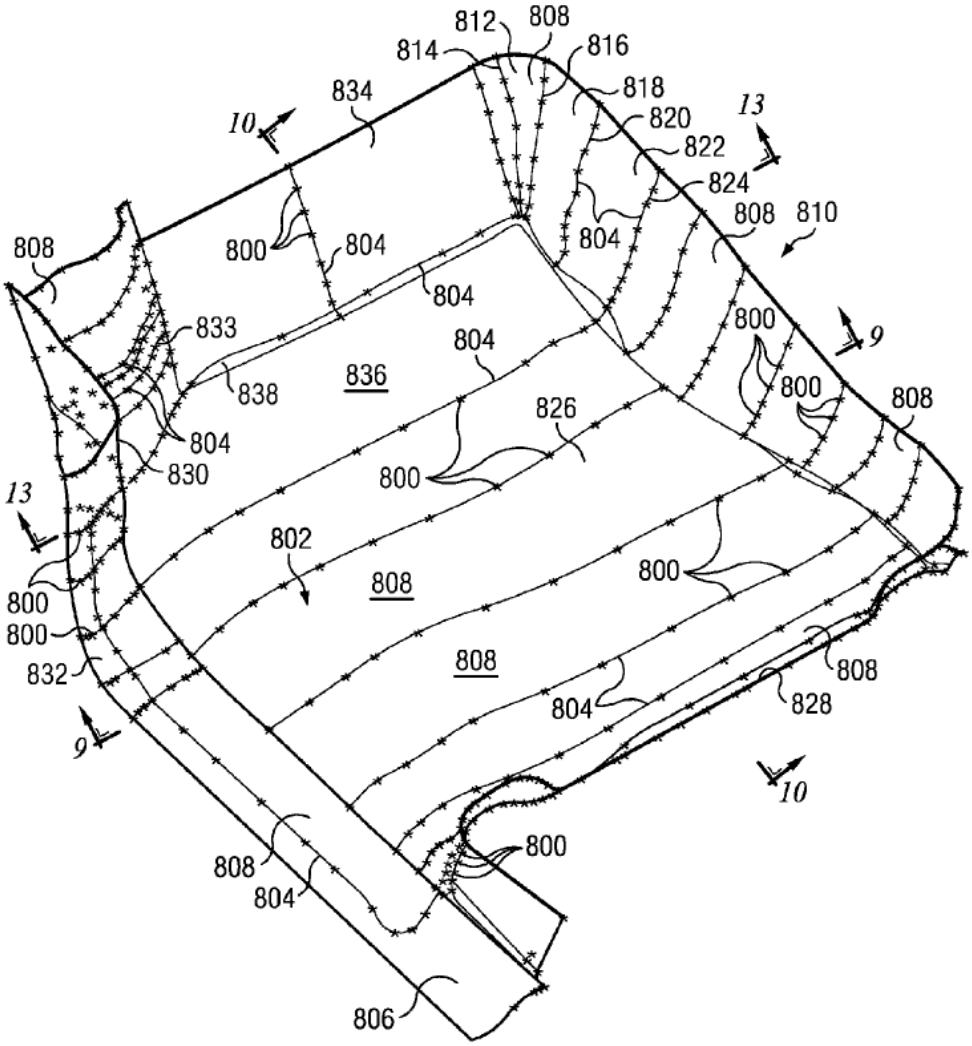

FIG. 8

Figure 8 is an isometric and schematic view of a digitally acquired vehicle foot well floor surface used to make floor tray 100. Ex. 1001, 6:7–9. In the process for making a vehicle floor tray, points on the vehicle foot well for which the floor tray is to be manufactured are digitally measured, captured, and stored in a file. *Id.* at 16:38–53. Figure 8 depicts representative ones of these points as small "x"s 800, on surface 802. *Id.* at 16:59–60. According to the '655 patent, different "lines" of these points are connected together by B-splines 804 that are used to estimate all of the points on the line other than the captured data points of that line. *Id.* at 16:66–17:3. Once splines 804 have been assembled, areas between each pair of parallel splines 804 are lofted to create different areal segments 808 until that surface of the foot well is entirely recreated. *Id.* at 17:14–18. The '655 patent explains that the resultant reconstructed vehicle foot well surface 802 is used "to construct a vehicle floor tray that fits the surface 802 to an enhanced degree of precision." *Id.* at 17:30–33. The resultant tray data file "is a complete representation of both the upper and lower surfaces of the floor tray," and "is used to make a commercial mold for producing the vehicle floor trays." *Id.* at 19:7–9, 19:20–21. According to the '655 patent, "[t]hree-dimensional vehicle floor trays for many different vehicle models can be quickly and accurately manufactured using this method." *Id.* at 19:24–26.

D. Illustrative Claim

Claim 1, the only independent claim challenged, is representative of the claimed subject matter, and is reproduced below with Petitioner's annotations for ease of reference:

> 1. [Preamble] A process for manufacturing a vehicle floor tray, comprising the steps of:

> [1a] digitally measuring the three-dimensional position of a plurality of points on a substantially carpeted surface of a vehicle foot well for which the vehicle floor tray is to be provided;
>
> [1b] storing said points in a memory;
>
> [1c] using the stored points to construct an electronic model of the vehicle foot well surface;
>
> [1d] using the electronic model of the vehicle foot well surface to construct an electronic three-dimensional image of the vehicle floor tray;
>
> [1e] creating a vehicle tray data file from the electronic three-dimensional image of the vehicle floor tray;
>
> [1f] using the vehicle tray data file to make a vehicle tray mold;
>
> and
>
> [1g] manufacturing the vehicle floor tray by molding polymer material in the mold.

Ex. 1001, 19:46–20:2.

E. Prior Art and Asserted Grounds

Petitioner asserts that claims 1–6 would have been unpatentable on the following grounds (Pet. 15):

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1, 2	103(a)	Stanesic,[2] Rothkop,[3] Cicotte[4]
3	103(a)	Stanesic, Rothkop, Cicotte, Lee[5]
4	103(a)	Stanesic, Rothkop, Cicotte, Fisker[6]

[2] U.S. Patent No. 6,817,649 B1 (issued Nov. 16, 2004) (Ex. 1005, "Stanesic").
[3] U.S. Patent No. 6,144,890 (issued Nov. 7, 2000) (Ex. 1006, "Rothkop").
[4] U.S. Patent No. 6,279,425 B1 (issued Aug. 28, 2001) (Ex. 1007, "Cicotte").
[5] U.S. Patent Publication No. 2001/0020222 A1 (published Sept. 6, 2001) (Ex. 1008, "Lee").
[6] International Publication No. WO 02/071794 A1 (published Sept. 12, 2002) (Ex. 1009, "Fisker").

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
5	103(a)	Stanesic, Rothkop, Cicotte, Gruenwald[7]
6	103(a)	Stanesic, Rothkop, Cicotte, Fu[8]

II. ANALYSIS

A. Overview

A petition must show how the construed claims are unpatentable under the statutory grounds it identifies. 37 C.F.R. § 42.104(b)(4). Petitioner bears the burden of demonstrating a reasonable likelihood that it would prevail with respect to at least one challenged claim for a petition to be granted. 35 U.S.C. § 314(a).

A claim is unpatentable under § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) when in evidence, objective indicia of non-obviousness (i.e., secondary considerations). *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

[7] G. Gruenwald, "Thermoforming, A Plastics Processing Guide," 2nd Edition, Technomic Publishing Company, Inc. 1998 (Ex. 1010, "Gruenwald").
[8] U.S. Patent Publication No. 2003/0074174 A1 (published Apr. 17, 2003) (Ex. 1011, "Fu").

B. Level of Ordinary Skill in the Art

Petitioner contends that a person of ordinary skill in the art "would have had a bachelor's degree in mechanical engineering, industrial design, or a closely related field, or equivalent formal training, education, or practical experience in a field relating to product design, CAD, or manufacturing." Pet. 13 (citing Ex. 1003 ¶¶ 27–28). Petitioner further contends that the person of ordinary skill in the art "would also have a minimum of three to five years of experience in plastics engineering, CAD, manufacturing, plastic product design, or a related industry," but that "a higher level of training or practical experience might make up for less education, and vice-versa." *Id.*

Patent Owner does not, at this stage of the proceeding, dispute Petitioner's definition of the person of ordinary skill in the art. Prelim. Resp. 12.

For the purposes of this Decision, we apply Petitioner's proposed level of skill in the art because it appears consistent with the problems addressed in the '655 patent and the prior art.

C. Claim Construction

We apply the same claim construction standard used by Article III federal courts and the International Trade Commission, both of which follow *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc), and its progeny. 37 C.F.R. § 42.100(b) (2021). This claim construction standard includes construing a claim in accordance with "the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent." *Id.*

Petitioner contends that no claim "terms need an explicit construction to resolve the controversy between the parties." Pet. 13.

Patent Owner contends that the term "vehicle floor tray" is explicitly defined and distinguishes over a floor mat. Prelim. Resp. 12–13. According to Patent Owner, based on the Specification of the '655 patent, "the claimed 'vehicle floor tray' should be construed to mean a vehicle floor covering that includes a floor panel and at least two upstanding side panels that are joined to the floor panel and to each other, consistent with the intrinsic record." *Id.* at 13. In support of its construction, Patent Owner contends that the '655 patent "distinguishes between a vehicle floor tray and ***a floor mat***." *Id.* at 12–13. Patent Owner contends that the '655 patent describes "a vehicle floor tray is a foot well covering, having sidewalls which are joined to a central panel and to each other." *Id.* at 13 (citing Ex. 1001, 1:55–63, 5:28–32, 7:47–55, 8:47–50). According to Patent Owner, a floor mat "is a floor covering that lies flat against the bottom surface of the vehicle foot well, sometimes including portions that lie against the firewalls or front surfaces of the foot wells." *Id.* (citing Ex. 1001, 1:29–54).

For the following reasons, we do not adopt Patent Owner's proposed construction.

Claim 1 recites a "vehicle floor tray" but does not recite any specific structural details of the tray. Ex. 1001, 19:46–2:2. Thus, nothing in the claim language suggests the aspects of a vehicle floor tray included in Patent Owner's proposed construction.

Patent Owner does not direct us to an explicit lexicographic definition of the term "vehicle floor tray" in the Specification of the '655 patent. Rather, Patent Owner relies on descriptions of aspects of the embodiment

disclosed in Figure 1 of the '655 patent. For example, the '655 patent generally describes that "[f]loor trays have sidewalls." Ex. 1001, 1:58. The '655 patent states that in an "aspect" of the invention, "a vehicle floor tray has a central panel for the placement on the floor of a vehicle foot well, and at least first and second upstanding panels." *Id.* at 5:28–30. In column 7, the '655 patent describes that "[d]isposed around the central or floor panel 102 are a series of upstanding side panels, which *will vary in number and configuration from one vehicle model to the next.*" *Id.* at 7:47–49 (emphasis added). These portions of the Specification suggest that the term "vehicle floor tray" should not be limited to any particular number of side panels or any particular configuration such as the side panels are joined to the floor panel and each other.

In the Summary of the Invention, the '655 patent discloses "a vehicle floor cover, mat or tray which is removably installable by a consumer." Ex. 1001, 2:50–52. This statement in the Specification undercuts Patent Owner's contention that the '655 patent distinguishes between a floor mat and a floor tray and appears to suggest that the term vehicle floor tray may be used interchangeably with the term vehicle floor mat. *See* Prelim. Resp. 12–13.

Patent Owner also argues that a vehicle floor tray must be "closely fitted to the vehicle foot well in which it is designed to be placed" and the floor tray wall must "nest" the floor tray "against the foot well." Prelim. Resp. 35 (citing Ex. 1001, 8:29–30, 8:43–46) (emphases omitted). Neither of these limitations is explicitly recited or suggested by the language of claim 1. We decline to import these limitations from the Specification into claim 1. *See Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1346–47

(Fed. Cir. 2015) (The court "has repeatedly 'cautioned against limiting the claimed invention to preferred embodiments or specific examples in the specification.'").

Based on the present record, we need not explicitly construe "vehicle floor tray" or any other claim term for the purposes of this decision. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) ("The Board is required to construe 'only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.'" (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

The parties are not precluded from arguing proposed constructions of any claim terms in subsequent briefing during trial. Claim construction, in general, is an issue to be addressed at trial. Our final claim construction, if any, will be determined at the close of all the evidence.

D. Ground 1: Alleged Obviousness of Claims 1 and 2 over Stanesic, Rothkop, and Cicotte

Petitioner contends claims 1 and 2 are obvious over Stanesic, Rothkop, and Cicotte. Pet. 18–38. Petitioner supports its contentions with the Declaration of Mr. Perreault. Ex. 1003. Patent Owner disputes Petitioner's contentions. Prelim. Resp. 34–48.

We begin with a brief summary of the references and then address the parties' respective contentions.

1. Stanesic (Ex. 1005)

Stanesic is titled "One Piece Molded Floor Mat for Front Floor Areas of Vehicle." Ex. 1005, code (54). Stanesic describes "[a] molded floor mat [] dimensioned to fit into the front floor compartment area of pickup trucks and other vehicles with similarly configured floors." *Id.* at 1:44–46.

Figure 2 of Stanesic is reproduced below.

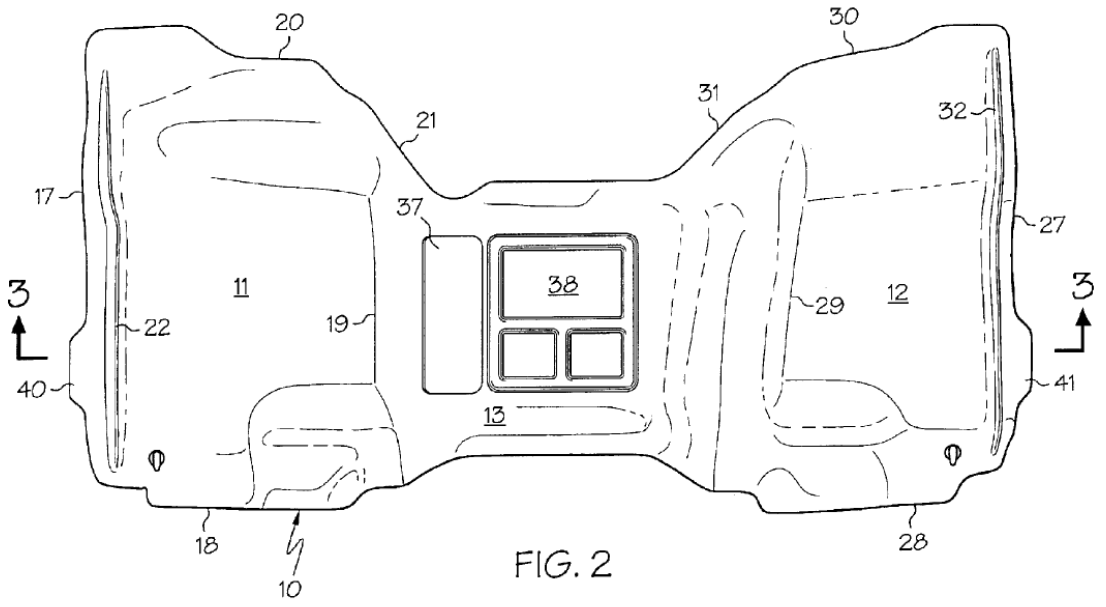

FIG. 2

Figure 2 is a top plan view of the floor mat. Ex. 1005, 1:67. Floor mat 10 is one piece, "is made from a pliable plastic material and is molded to a contour which snugly fits into and covers the driver's foot area, the front passenger's foot area and a center hump in between the two foot areas." *Id.* at 2:31–35. In particular, mat 10 has three contiguous sections, namely, driver foot area section 11, front passenger foot area section 12, and hump area section 13 connecting the driver and passenger foot area sections. *Id.* at 2:35–38. Stanesic explains that "raised wall 22 molded into the mat near and substantially parallel the first lateral edge 17 rises above the flat base 15 to create a tray-like central area in the section 11," and that a similar raised wall 32 is formed in section 12. *Id.* at 2:59–62, 3:8–10.

2. Rothkop

Rothkop is titled "Computerized Method and System for Designing an Upholstered Part." Ex. 1006, code (54). Rothkop "relates to computerized methods and systems for designing an upholstered part such as an automotive vehicle seat." *Id.* at 1:6–8. Rothkop's "system includes a data

input device for inputting seat surface data, and a memory for storing a functional interactive computer data model of the vehicle seat based on the seat surface data." *Id.* at 4:12–15.

Figure 1 is reproduced below.

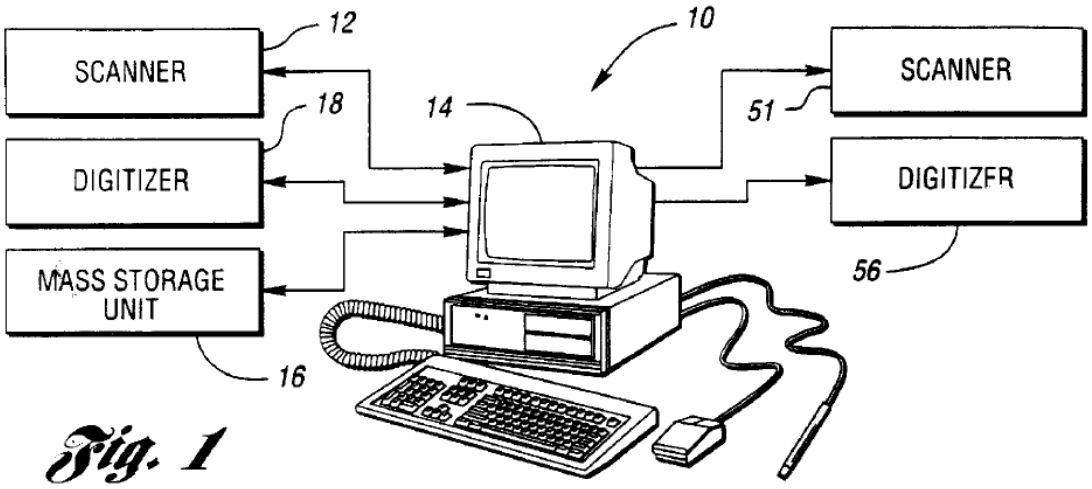

Fig. 1

Figure 1 is a schematic block diagram of a computerized system for designing an upholstered part. Ex. 1006, 4:33–35. System 10 includes a data input device, such as scanner 12 for scanning a physical part such as an existing seat, frame, or vehicle. *Id.* at 4:59–63. Scanner 12 scans the physical part into host computer 14, which includes surfacing software for capturing the point data from scanner 12 and outputting a NURBS (Non-Uniform Rational B-spline) surface. *Id.* at 5:1–9. Rothkop explains that using "scanner 12 together with the surfacing software allow[s] one to quickly reverse engineer an existing seat." *Id.* at 5:18–19. By combining the scanned data with other data, Rothkop's system "creates a virtual, functional, interactive computer data model." *Id.* at 5:26–27.

Figure 4 of Rothkop is reproduced below.

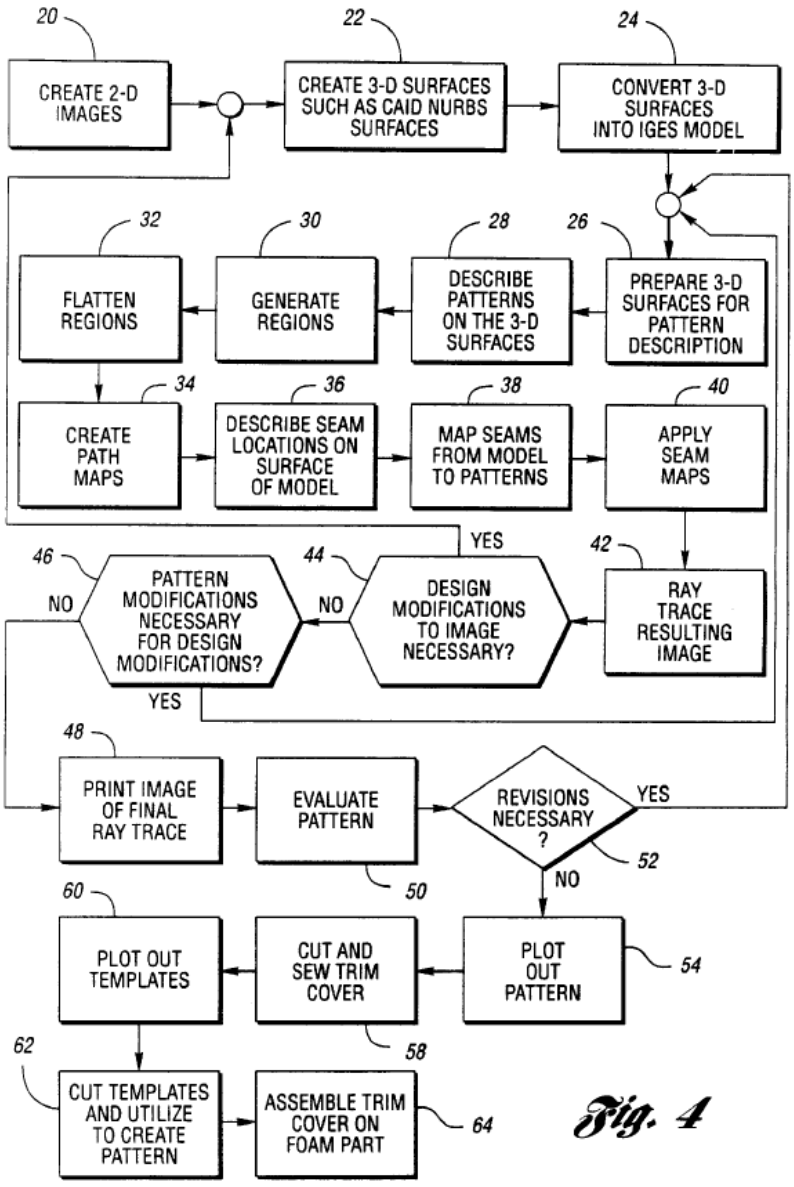

Fig. 4

Figure 4 is a block diagram flow chart illustrating a computerized method for designing an upholstered part. Ex. 1006, 4:41–42.

The method includes creating at block 20, 2-D images such as fabrics using scanner 12, creating 3-D surfaces such as NURBS surfaces, and then converting the 3-D surfaces into an IGES model by an IGES translator to enable the digital exchange of information among computer-aided design

(CAD) systems. Ex. 1006, 5:61–63, 6:15–21. Thereafter, "high resolution images are generated and displayed on the screen of the WorkStation 14," and patterns representing a seat are generated, and "the patterns are plotted out on Mylar on a plotter 56 (i.e. FIG. 1) to be used as templates for a trim cover." *Id.* at 6:24–25, 7:58–61. Then, "the templates are cut and used to create the seat foam from bulk foam material." *Id.* at 8:14–15. Finally, "a prototype is made by assembling the trim cover on the resulting seat foam, thereby forming a finished prototype." *Id.* at 8:19–21.

3. Cicotte

Cicotte is titled "Method of Producing Tools and Dies." Ex. 1007, code (54). Cicotte "relates to a method of making die shells from a model of predetermined dimensions, where the die shells are ultimately used for stamping, casting, molding, or forging a high volume of identical parts." *Id.* at 1:8–12. Cicotte defines the term "model" as "a three-dimensional representation of an object to be replicated into a series of articles." *Id.* at 3:56–58. Cicotte explains that the model 20 is essentially a "master" for the disclosed method, and "may include an actual physical model such as a clay sculpture, or even a previously manufactured [automobile] body panel," or "may be composed of a digital data set, such as a three-dimensional CAD rendering or a list of digital data points." *Id.* at 4:19–25.

4. Claim 1

Preamble: "A process for manufacturing a vehicle floor tray, comprising the steps of;"

Petitioner contends that a person of ordinary skill in the art "would have understood Stanesic's floor mat to be a floor tray" because it "is molded to a 'deeply contoured form' that 'snugly fits into' the driver's foot area and includes a 'tray-like central area.'" Pet. 18 (citing Ex. 1003

¶¶ 106–11; Ex. 1005, Abstract, 2:32–35, 2:46–67, 3:42–43, Figs. 1–3). Petitioner alternately contends that "[e]ven if Stanesic's floor mat is not a floor tray, Stanesic's teachings would have suggested the use of the same contour-matching and manufacturing process for a floor tray in a different vehicle, such as one with a deeper footwell." *Id.* at 18–19 (citing Ex. 1003 ¶ 111). Petitioner further contends that Stanesic "discloses a manufacturing process by teaching that its floor tray can be made with a 'thermoplastic material' that 'can be molded to a desired deeply contoured form and such form be retained." *Id.* at 20 (citing Ex. 1003 ¶ 111; Ex. 1005, 3:41–44).

Patent Owner first contends that none of the references cited by Petitioner discloses a "vehicle floor tray." Prelim. Resp. 35–38. Patent Owner bases this contention on its proposed construction of vehicle floor tray, which as discussed above (*supra* § II.C), we do not adopt. *Id.* at 35, 36 ("Stanesic does not disclose at least two walls that are joined that mate with adjoining walls of a foot well."). Consequently, this contention does not undercut Petitioner's showing based on the present record.

Patent Owner next contends that Petitioner's arguments that a person of ordinary skill in the art "would have understood Stanesic's floor mat to be a floor tray" or that Stanesic suggests "the use of the same contour-matching manufacturing process for a floor tray" are supported only by Mr. Perreault's conclusory testimony. Prelim. Resp. 36–37 (citing Ex. 1003 ¶ 111). Patent Owner also contends that "Mr. Perreault did not apply a proper definition of 'floor tray' to the extent he applied one at all." *Id.* at 37.

These contentions do not undercut Petitioner's showing based on the present record.

In his testimony concerning background prior art, Mr. Perreault relies on two prior art patents that disclose "floor mats" described similarly to Patent Owner's description of a "vehicle floor tray." *See* Ex. 1003 ¶¶ 29–30 (citing Ex. 1013 ("Bailey"); Ex. 1015 ("Tyler")). Bailey describes a "floor mat" that is "molded or otherwise preformed into a tray-like shape which conforms to the contour of a portion of the carpeted automobile floor. The mat is dimensioned and configured to nest within and abut against the sides of a carpeted floor well of the vehicle." Ex. 1013, 2:37–42, Fig. 6. Tyler describes "contoured vehicle floor mats" that "mate[] with the vehicle floorboard to hold the mat into place." Ex. 1015, code (57), 1:52–54. Based on our review of Mr. Perreault's testimony and these exhibits, we find, based on the present record, that Mr. Perreault's testimony is not conclusory and not based on an improper definition of floor tray.

Based on the present record and after considering Patent Owner's contentions, Petitioner sufficiently establishes that Stanesic discloses the subject matter of the preamble. In particular, Stanesic discloses "a tray-like central area" and "the raised wall 22 has two walls which rise about one inch to about two inches each from the base 15" (Ex. 1005, 2:61–62), which sufficiently supports Petitioner's contention that Stanesic discloses, or at least suggests, a vehicle floor tray.

> *[1.a] "digitally measuring the three-dimensional position of a plurality of points on a substantially carpeted surface of a vehicle foot well for which the vehicle floor tray is to be provided,"*

Petitioner asserts that the "combination of Stanesic and Rothkop discloses element 1[a]." Pet. 20 (citing Ex. 1003 ¶¶ 105, 113–125).

According to Petitioner, "Stanesic discloses that its 'floor mat fits onto the carpeted floor compartment areas of the pickup truck with no substantial folds or wrinkles,'" and that "the three areas of the floor tray (driver foot area, passenger foot area, and hump area) are 'molded to closely follow the contours of the respective underlying floor areas.'" *Id.* (citing Ex. 1005, 2:31–43, 2:62–67; 3:62–64). Petitioner asserts that Stanesic "does not specify how its molds are designed and created" to fit the floor area, but that techniques known in the art would "be used to make parts intended to mate with an existing part or surface." *Id.* at 20–21 (citing Ex. 1003 ¶¶ 114–120).

Petitioner contends that "Rothkop discloses 'computerized methods and systems for designing an upholstered part such as an automotive vehicle seat'" using "digitization of a three-dimensional object" including "'scanning a physical part such as an existing seat, frame or vehicle' and using the scanned data to design a seat, including to accurately develop foam and trim that will interface with the seat and the seat frame." Pet. 21 (citing 1003 ¶¶ 99–100; Ex. 1006, 1:6–8, 1:36–40; 4:61–63, 5:6–11, 5:55–60, 8:1–23). Petitioner further contends that Rothkop discloses "a 'portable coordinate measuring machine[]' which may be a contact scanner and measures the position of a plurality of points on a surface referred to as 'data point acquisition' in Rothkop." *Id.* (citing Ex. 1006, 1:38–49, 4:59–5:7).

Petitioner next contends that although Rothkop "focuses on 'reverse engineer[ing] an existing seat,' Rothkop more generally discloses 'scanning … an existing seat, frame or vehicle' and explicitly states that its methods 'can also be utilized for other upholstered parts of an automotive interior,'" which include "Stanesic's carpeted footwell." Pet. 21–22 (citing Ex. 1006, 4:62–64, 5:18–19, 8:31–37; Ex. 1003 ¶¶ 122–123) (emphasis omitted).

Petitioner further contends that, based on Rothkop's teachings, the ordinary skilled artisan "would have recognized that Rothkop's scanning could be used for scanning Stanesic's carpeted footwells as part of designing Stanesic's floor trays to meet the stated conformance in Stanesic." *Id.* at 22 (citing Ex. 1003 ¶¶ 122–124). Petitioner next contends that applying Rothkop's teachings to Stanesic "disclose[s] 'digitally measuring the three-dimensional position of a plurality of points on a substantially carpeted surface of a vehicle foot well for which the vehicle floor tray is to be provided." *Id.* (citing Ex. 1003 ¶ 125).

Patent Owner responds that "none of Petitioners' exhibits teaches digitally measuring a vehicle foot well for any purpose, let alone for the purpose of making a mold for a floor tray." Prelim. Resp. 38. Patent Owner argues that Mr. Perreault admitted: 1) "he was not aware of any automaker that scanned a foot well to make a floor tray or floor mat prior to Patent Owner," 2) "[n]o cited prior art reference referred to in his declaration in the other IPR proceedings discloses or suggests scanning a foot well to make a floor tray or floor mat," and 3) "[n]o cited prior art reference (in the other IPR proceedings) establishes that anyone scanned a foot well for any purpose before Patent Owner." *Id.* at 39 (citing Ex. 2007, 81:3–22, 111:6–12:22, 109:11–15, 112:23–113:3). This argument does not undercut Petitioner's showing based on the present record because this challenge is based on obviousness not anticipation.

Patent Owner next contends that "one can infer that a prior art method of molding was used as Stanesic seems to take molding as a given." Prelim. Resp. 40. Patent Owner responds that a person of ordinary skill in the art "would have been [led] away from scanning a foot well to make Stanesic's

mats because one can use prior art methods to mold a mat designed to fit a 'substantially flat' floor." *Id.* at 40–41.

"A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant." *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1327 (Fed. Cir. 2009) (quoting *Ricoh Co., Ltd. v. Quanta Comput. Inc*., 550 F.3d 1325, 1332 (Fed. Cir. 2008)). Based on the present record, this contention is unavailing because the fact that Stanesic's mat may have been molded by a prior art method would not necessarily mean that a person of ordinary skill in the art would have been discouraged from scanning a vehicle foot well. *See In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004) ("[M]ere disclosure of alternative designs does not teach away").

Patent Owner next contends that Petitioner "exaggerates both the disclosures and purposes of Rothkop," because the purpose of Rothkop's scanning is to reverse engineer a product such as an existing upholstered car seat and "is not being performed to make an entirely new product." Prelim. Resp. 41. Patent Owner contends that Rothkop's disclosure of "other upholstered parts" relates to "generating patterns useful for reproduction of covering material and padding of the part." *Id.* at 44 (citing Ex. 1006, 8:60–61). According to Patent Owner, the disclosure of Rothkop does not align with the claimed invention, because the '655 patent is directed to "creating an entirely ***new product*** designed to mate with certain scan information of the surface of an area (namely, a vehicle foot well) never considered by ***any*** of Petitioners' cited references in their Grounds." *Id.* at 45. This contention

does not undercut Petitioner's contentions because it is an attack on Rothkop individually while the challenge is based on applying the teachings of Rothkop to Stanesic and Stanesic discloses making a "new product," i.e., a vehicle mat.

We have reviewed the evidence cited by Petitioner for this limitation and, after considering Patent Owner's contentions, find that Petitioner sufficiently establishes that the combined teachings of Stanesic and Rothkop satisfy this limitation.

[1.b] storing said points in memory;

Petitioner contends that "Rothkop discloses that its system includes 'a memory for storing a functional, interactive computer data model of the [scanned] part based on the part surface data." Pet. 22–23 (citing Ex. 1006, 3:17–20). Petitioner further contends that a person of ordinary skill in the art "would have understood this teaching to indicate that the memory stores the underlying part surface data points as well as the computer data model." *Id.* at 23 (citing Ex. 1003 ¶¶ 126–127).

Patent Owner does not dispute Petitioner's contentions for this limitation. *See* Prelim. Resp. 34–48.

We have reviewed the evidence cited by Petitioner for this limitation and find that Petitioner sufficiently establishes that Rothkop discloses this limitation.

[1.c] using the stored points to construct an electronic model of the vehicle foot well surface;

Petitioner contends that "Rothkop's 'scanner 12 scans the physical part into a host computer or engineering workstation 14.'" Pet. 23 (citing Ex. 1006, 5:1–2. Petitioner further contends that Rothkop discloses using "surfacing software" to "captur[e] the point data from the scanner 12 and

outputting a NURBS . . . surface with a deviation or tolerance of no less than 0.5 mm from the scanned points so both the foam and the trim can be described accurately." *Id.* (citing Ex. 1006, 5:6–11). Petitioner further contends that Rothkop's "computer data model of the part [is] based on the part surface data." *Id.* at 24 (citing Ex. 1003 ¶ 129; Ex. 1006, 3:17–20). According to Petitioner, "[w]hen applied to Stanesic, Rothkop's teachings would have led a [person of ordinary skill in the art] to use the stored points from a scan of Stanesic's footwell to construct an electronic model (e.g., a NURBS surface) of the vehicle footwell surface." *Id.* (citing Ex. 1003 ¶ 129).

Patent Owner does not dispute Petitioner's contentions for this limitation. *See* Prelim. Resp. 34–48.

We have reviewed the evidence cited by Petitioner for this limitation and find that Petitioner sufficiently establishes that the combined teachings of Stanesic and Rothkop disclose this limitation.

[1.d] using the electronic model of the vehicle foot well surface to construct an electronic three-dimensional image of the vehicle floor tray;

Petitioner contends "Rothkop discloses using the electronic model of a seat and seat frame to construct an electronic three-dimensional image of the foam and trim." Pet. 24 (citing Ex. 1003 ¶¶ 130–131). Petitioner further contends Rothkop's "surface data is used to form an electronic model of a seat and seat frame, which is used to electronically model seat trim and seat foam that will interface with the seat and the seat frame." *Id.* (citing Ex. 1006, 5:61–8:17, Fig. 4). Petitioner further contends that "[b]ecause Rothkop also discloses scanning a seat frame and fitting the foam to the seat frame," a person of ordinary skill in the art "would have understood that the three-dimensional image of the foam is also constructed using the electronic

model of the seat frame." *Id.* at 26 (citing Ex. 1003 ¶ 135; Ex. 1006, 4:61–63, 5:1–11, 5:18–28, 5:53–60, 8:1–17). Petitioner further contends that applying Rothkop's teachings to Stanesic would have lead a person of ordinary skill in the art "to use the electronic model of the vehicle footwell surface (as the scanned part in place of the seat or seat frame) to construct an electronic three-dimensional image of the vehicle floor tray (as the part being designed in place of the foam and trim)." *Id.* (citing Ex. 1003 ¶¶ 136–137).

Patent Owner does not dispute Petitioner's contentions for this limitation. *See* Prelim. Resp. 34–48.

We have reviewed the evidence cited by Petitioner for this limitation and find that Petitioner sufficiently establishes that the combined teachings of Stanesic and Rothkop disclose this limitation.

[1.e] creating a vehicle tray data file from the electronic three-dimensional image of the vehicle floor tray;

Petitioner contends that "Rothkop discloses creating a data file from the electronic three-dimensional image of the trim because 'the patterns are exported to a digital nesting system' and then 'plotted out on Mylar on a plotter . . . to be used as templates for a trim cover.'" Pet. 26 (citing Ex. 1006, 7:57–61). Petitioner further contends that a person of ordinary skill in the art "would have understood the exporting of patterns to a digital nesting system as including creating a data file for the trim." *Id.* at 26–27 (citing Ex. 1003 ¶¶ 138–139). Petitioner further contends that "Rothkop discloses that the 'generated contour lines are then converted to wireframe using the "contour to wireframe" function in the converter's menu' and that the wireframes are 'output for plotting in the IGES or DXF format to the plotter." *Id.* at 27 (citing Ex. 1006, 8:9–13). According to Petitioner,

"[o]utputting the wireframes for plotting . . . includes creating a data file . . . from the electronic three-dimensional image." *Id.* (citing Ex. 1003 ¶¶ 140–141). Petitioner further contends that applying Rothkop to Stanesic would have lead a person of ordinary skill in the art "to create a vehicle tray data file from the electronic three-dimensional image of the vehicle floor tray so that a floor tray can be made based on the electronic model." *Id.* (citing Ex. 1003 ¶ 142).

Patent Owner does not dispute Petitioner's contentions for this limitation. *See* Prelim. Resp. 34–48.

We have reviewed the evidence cited by Petitioner for this limitation and find that Petitioner sufficiently establishes that the combined teachings of Stanesic and Rothkop disclose this limitation.

[1.f] using the vehicle tray data file to make a vehicle tray mold; and

Petitioner contends that "Cicotte, as applied to the combination of Stanesic and Rothkop, discloses" this limitation. Pet. 27 (citing Ex. 1003 ¶¶ 105, 143–145). Petitioner contends that "Rothkop focuses on patterns and templates as production tooling, rather than a mold" but "Stanesic discloses the use of molds to form its floor trays." *Id.* at 28 (citing Ex. 1006, 7:57–8:17). According to Petitioner, a person of ordinary skill in the art "would have been led to use Rothkop's digital information to make a mold as the production tooling for Stanesic's floor tray, which was well-known in the art, including in the automotive industry." *Id.* (citing Ex. 1003 ¶ 143).

Petitioner next contends that "Cicotte discloses 'a method of making die shells from a model of predetermined dimensions, where the die shells are ultimately used for stamping, casting, *molding*, or forging a high volume of identical parts,' particularly in the automotive industry." Pet. 28 (citing Ex. 1003 ¶¶ 101–103; Ex. 1007, 1:6–17, 3:1–3, 4:16–19). Petitioner further

contends that Cicotte surface maps a model by acquiring data from a "digital data set" and "the 'surface map data is then stored digitally from which a pattern or mold may be later fabricated.'" *Id.* (citing Ex. 1003 ¶ 144; Ex. 1007, 4:13–35, 4:44–47). According to Petitioner, this "would have led a [person of ordinary skill in the art] to use the vehicle tray data file . . . to make a vehicle tray mold for Stanesic's floor tray." *Id.* at 29 (citing Ex. 1003 ¶ 145).

Patent Owner contends that "what is generated by Rothkop as 'production tooling' are two-dimensional patterns/templates that are plotted on a plotter which are to be sewed together, not a mold of a three-dimensional entirely new product which is to mate with whatever surface is scanned." Prelim. Resp. 42–43. This contention does not undercut Petitioner's contentions because it is an attack on Rothkop individually while the challenge is based on the combined teachings of Stanesic, Rothkop, and Cicotte. Further, both Stanesic and Cicotte disclose molding a product. Ex. 1005, 1:8 ("invention relates to molded floor mats."); Ex. 1007, 1:7–10 ("a method of making die shells from a model of predetermined dimensions, where the die shells are ultimately used for . . . molding.").

We have reviewed the evidence cited by Petitioner for this limitation and after considering Patent Owner's contentions, we find that Petitioner sufficiently establishes that the combined teachings of Stanesic, Rothkop, and Cicotte discloses this limitation

[1.g] manufacturing the vehicle floor tray by molding polymer material in the mold.

Petitioner contends that "Stanesic explains that its floor tray is 'made from a pliable plastic material and is molded to a contour which snugly fits

into' the vehicle." Pet. 29 (citing Ex. 1005, 2:31–34). Petitioner contends that Stanesic discloses that its mats are made of "thermoplastic material" and gives examples of several polymer materials. *Id.* (citing Ex. 1005, 3:41–53). Petitioner contends that "[t]he mold would be made using the combined teachings of Rothkop and Cicotte." *Id.* (citing Ex. 1003 ¶ 146).

Patent Owner does not dispute Petitioner's contentions for this limitation. *See* Prelim. Resp. 34–48.

We have reviewed the evidence cited by Petitioner for this limitation and after considering Patent Owner's contentions, we find that Petitioner sufficiently establishes that the combined teachings of Stanesic, Rothkop, and Cicotte discloses this limitation.

Motivation to Combine

Petitioner contends that "Stanesic does not specify how its molds are designed and created to achieve" a mat that "snugly fits into the vehicle over a carpeted footwell." Pet. 29–30 (citing Ex. 1003 ¶ 147; Ex. 1005, Abstract, 1:6–8, 2:31–67, 3:41-44, 3:62–64, Fig. 1–3). Petitioner further contends that a person of ordinary skill in the art "would have considered techniques known in the art for designing production tools (such as molds) that can be used to make parts intended to mate with an existing part or surface." *Id.* at 30–31 (citing Ex. 1004 ¶ 149).

Petitioner next contends that "Rothkop discloses a method for creating production tooling to accurately develop foam and trim that will interface with a vehicle seat and a seat frame." Pet. 30 (citing Ex. 1006, 4:61–5:14, 8:1–23). Petitioner further contends that Rothkop discloses "digitally measuring the three-dimensional position of a plurality of points on a textured surface of a vehicle seat (and digitally measuring the frame), storing

the points in memory, using the stored points to construct an electronic model of the vehicle seat (and frame)" and using the model "to construct electronic three-dimensional images of the foam and the trim, creating data files for the foam and the trim from the electronic three-dimensional image of the foam and trim, and using the data files to make production tooling for the foam and trim." *Id.* (citing Ex. 1003 ¶ 148; Ex. 1006, 1:38–49, 3:17–20, 4:59–5:28, 5:55–60, 7:57–8:23).

Petitioner next contends that "Cicotte discloses using a data file . . . of an automobile body panel to make a mold for the body panel." Pet. 30 (citing Ex. 1003 ¶ 148; Ex. 1007, 1:8–16, 3:1–3, 4:23–35).

Petitioner contends that it was well-known "to digitize an existing surface and use the digital information to either make an accurate part directly or make production tooling (e.g., a mold) so that a part may be developed accurately." Pet. 31 (citing Ex. 1003 ¶ 149; Ex. 1006, 5:1–14, 8:21–23; Ex. 1011 ¶¶ 47–50, 142–152, Figs. 2, 23; Ex. 1016, 13:3–19). According to Petitioner, "scanning parts . . . to design new parts to interface with the scanned part based on the scan data, and creating a mold based on the CAD models to manufacture the new part were all routine tasks for a [person of ordinary skill in the art] as part of a typical design process." *Id.* (citing Ex. 1003 ¶ 149).

Petitioner next contends that a person of ordinary skill in the art would have been motivated to use the digital approach because it results in "a more cost-effective manufacturing process . . . higher throughput capability, ability to customize, and higher levels of quality assurance." Pet. 31 (citing Ex. 1003 ¶¶ 150–153; Ex. 1006, 2:61–3:2, 5:18–19; Ex. 1011 ¶¶ 2, 6, 9; Ex. 1016, 17:27–30; Ex. 1021). Petitioner further contends that this would

have led a person of ordinary skill in the art "to Rothkop, which disclosed (1) 'a relatively rapid method of data point acquisition' and a way to 'quickly reverse engineer' an automobile physical part" and "(2) the ability to accurately develop parts . . . that would interface with an automobile component using CAD software . . . (3) the use of digital information to create production tooling." *Id.* at 32 (citing Ex. 1003 ¶ 153; Ex. 1006, 2:61–65, 4:61–67, 5:6–11, 5:18–19, 8:21–23).

Petitioner next contends that a person of ordinary skill in the art "would have been motivated to use production tooling in line with Stanesic's disclosure, i.e., molds, rather than Rothkop's production tooling" and "would have recognized that using molds, as disclosed in Stanesic, would facilitate the use of thermoplastics." Pet. 32 (citing Ex. 1003 ¶¶ 154–155; Ex. 1005, 3:41–53). Petitioner next contends "[t]his would have led a [person of ordinary skill in the art] to consider Cicotte, which discloses making molds based on a data file (e.g., a three-dimensional CAD rendering or list of digital data points) of an automobile body panel." *Id.* (citing Ex. 1003 ¶ 155; Ex. 1007, 1:8–16, 3:1–3, 4:23–35). According to Petitioner, the combination of Stanesic, Rothkop, and Cicotte "is simply combining prior art elements according to known methods to yield predictable results" and "would have resulted in all limitations recited in claim 1." *Id.* at 33 (citing Ex. 1003 ¶¶ 155–156).

Patent Owner contends that Petitioner's entire argument is based on improper hindsight because "Petitioners cite to no evidence in the record that anyone prior to Patent Owner had even suggested digitally measuring a ***vehicle foot well*** for any purpose, let alone for the purpose of ultimately making a brand new product to mate with said vehicle foot well." Prelim.

Resp. 40; *see also id.* at 38 ("At best, Petitioners merely cite to references discussing ***reverse engineering*** an ***existing*** part or product."); *id.* at 41 ("Rothkop's reverse engineering is not being performed to make an entirely new product for something to mate with the seat . . . There is no suggestion that Rothkop would be used to make any kind of mold for an ***entirely new, three-dimensional product***."); *id.* at 47 ("It makes no sense to combine [Stanesic] with Rothkop, which is primarily concerned with generating 2D images of surfaces that need to be joined by sewing . . . and has nothing to do with the present ***invention***, which relates to a process that creates an ***entirely new product***—namely a vehicle floor tray meant to mate with the vehicle foot well."). Patent Owner further contends that Stanesic "discloses a floor mat, not a floor tray." *Id.* at 40. Patent Owner further contends that Rothkop discloses "the kind of scanner that can be used for the invention, not what should be scanned." *Id.* at 43 (citing Ex. 1006, 4:61–63).

For the following reasons, Patent Owner's contentions are unavailing based on the present record.

First, as discussed above, Patent Owner's attempt to draw a distinction between floor trays and floor mats is unavailing based on the present record and undercut by its own exhibits describing Patent Owner's vehicle floor trays as "mats." *See* Ex. 2010; Ex. 2012; Ex. 2013; Ex. 2014. Second, as discussed above, the fact that Petitioner has not shown that someone previously scanned a vehicle footwell is unavailing because this challenge is based on obviousness, not anticipation. Third, the sentence in Rothkop that Patent Owner contends discloses a kind of scanner, not what is to be scanned, is "[t]he data input device may comprise a scanner 12 for scanning a physical part such as an existing seat, frame, or vehicle." Ex. 1006, 4:61–

63. Based on the present record, we do not agree that this sentence discloses a type of scanner. Fourth, Patent Owner's arguments concerning the claimed invention creating a new product versus reverse engineering an existing product in Rothkop raises potential fact questions that are best resolved at trial based on a fully developed record.

Petitioner provides numerous reasons why a person of ordinary skill in the art would have been motivated to combine Stanesic, Rothkop, and Cicotte in such a manner that teaches or suggests all limitations of claim 1. Pet. 29–34. Petitioner sufficiently supports this reasoning with the testimony of Mr. Perreault that he supports with reference to Stanesic, Rothkop, Cicotte, and other references showing the background art. Ex. 1003 ¶¶ 147–157. Further, Patent Owner does not dispute Petitioner's conclusion that the combination of Stanesic, Rothkop, and Cicotte "would be nothing more than applying known techniques . . . to a known method of producing a custom-fit vehicle floor tray . . . that is ready for improvement, yielding the predictable result of generating a custom-fit floor tray." *Compare* Pet. 33, *with* Prelim. Resp.

Based on the present record and after considering all of Patent Owner's contentions, we determine that Petitioner sufficiently establishes reasons supported by a rational underpinning why a person of ordinary skill in the art would have been motivated to combine Stanesic, Rothkop, and Cicotte.[9] Pet. 29–34.

[9] Because of this determination, we do not find persuasive Patent Owner's hindsight arguments. *See In re Cree, Inc.*, 818 F.3d 694, 702 n.3 (Fed. Cir. 2016) ("Cree argues that the Board's rejection was based on 'impermissible hindsight.' That argument, however, is essentially a repackaging of the argument that there was insufficient evidence of a motivation to combine the

Reasonable Expectation of Success

Petitioner provides argument and evidence in support of its contention that a person of ordinary skill in the art would have had a reasonable expectation of success in combining the teachings of Stanesic, Rothkop, and Cicotte. Pet. 34–36. Patent Owner does not address these contentions in the Preliminary Response.

We have reviewed Petitioner's contentions and evidence. Petitioner sufficiently establishes reasonable expectation of success.

Objective Indicia

Petitioner notes that the Board relied on Patent Owner's evidence of objective indicia in prior proceedings, IPR2020-01139 and IPR2020-01142, and determined that certain claims of the patents at issue in those proceedings were not unpatentable. Pet. 63. Petitioner contends "[t]he Board agreed with Patent Owner for only some of the claims at issue in those proceedings because the Board found the evidence of objective indicia was 'due to the close conforming aspect of the floor trays.'" *Id.* (citing Ex. 2008, 76–78). Petitioner further contends that "claims 13–15 of the [patent at issue in IPR2020-01142] did not recite a feature requiring close conformity." *Id.* (citing Ex. 2009, 51–53). Petitioner contends that because the challenged claims, other than claim 6, "do not require close conformity" any evidence of objective indicia "does not support patentability." *Id.* at 63–64 (citing Ex. 1003 ¶ 237).

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references. It is fully answered by the Board's observation that 'the weight of the evidence shows that the proffered combination is merely a predictable use of prior art elements according to their established functions.'"). Nevertheless, we may revisit these arguments at trial based on a full record.

Patent Owner, in turn, contends that the evidence of objective indicia "presented in IPR2020-01139 concerned both Patent Owner's revolutionary process for manufacturing closely conforming vehicle floor trays as well as the actual WeatherTech vehicle floor tray product produced using the process claimed in the '655 patent." Prelim. Resp. 19. Patent Owner notes that it submitted declaration testimony from its employee, Mr. Granger, in IPR2020-01139 that Patent Owner contends supports a finding of nexus to the challenged claims. *Id.* at 20–21, 50 (citing Ex. 2018 ¶¶ 49–72). Patent Owner further contends that the evidence establishes long-felt need, industry praise, commercial success, the invention is in a competitive industry with ample resources, a recognized commercial benefit to create better fitting floor trays, and long-term availability of tools. *Id.* at 51–62; Prel. Sur-reply 1–2.

Petitioner replies that "[t]he '655 patent was not at issue in the prior IPRs, and the claims are different." Prel. Reply 1 (citing Ex. 1001, claim 1; Ex. 2008, 5–6; Ex. 2009, 5–7). According to Petitioner, "no prior proceeding found a nexus between the present claims and the evidence in the prior IPRs." *Id.*

In order for us to accord substantial weight to secondary considerations, Patent Owner must establish "a 'nexus' to the claims, *i.e.*, there must be 'a legally and factually sufficient connection' between the evidence and the patented invention." *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373 (Fed. Cir. 2019). Patent Owner "is entitled to a rebuttable presumption of nexus between the asserted evidence of secondary considerations and a patent claim if the patentee shows that the asserted evidence is tied to a specific product and that the product '*is* the invention

disclosed and claimed.'" *Id.* Patent Owner must show that the product is coextensive with the claimed features. *Id.* "[T]he degree of correspondence between a product and a patent claim falls along a spectrum. At one end of the spectrum lies perfect or near perfect correspondence. At the other end lies no or very little correspondence." *Id.* at 1374. However, a "patent claim is not coextensive with a product that includes a 'critical' unclaimed feature that is claimed by a different patent and that materially impacts the product's functionality." *Id.* at 1375.

In the patent at issue in IPR2020-01139, claim 1 was directed to "[a] vehicle floor tray" and recited, *inter alia*, "a first panel . . . *closely conforming* to a first foot well wall." Ex. 2008, 5–6[10] (emphasis added). Based on Mr. Granger's testimony that "WeatherTech's vehicle trays are within 1/8 inch of the vehicle floor and the side walls should be within 1/16 inch of the vehicle foot well side walls," the Board found "Patent Owner establishes that WeatherTech's vehicle trays embody the claimed invention and are co-extensive with the claims." *Id.* at 72–73. In IPR2020-01142, the Board found that Patent Owner did not establish nexus for claims 13–15 because those claims did not require "close-conformance of the WeatherTech floor tray to a vehicle's interior." Ex. 2009, 50.

In this case, Patent Owner relies on our finding of close conformance in IPR2020-01139 as establishing nexus to the challenged claims. Prel. Sur-reply 2. After the parties' briefing in this case was submitted, the Federal Circuit entered its decision on Petitioner's appeal of our Final Written Decisions in IPR2020-01139 and IPR2020-01142. Ex. 1054. Of particular pertinence here, the court held with respect to IPR2020-01139 that "the

[10] We refer to the page numbers added to Exhibit 2008 by Patent Owner.

finding of secondary considerations lacks substantial-evidence support" and "the Board's judgment that those claims are not unpatentable for obviousness must be reversed." *Id.* at 15.

Claim 1 in this case does not require "close conformance" of the "vehicle floor tray" to vehicle foot well walls. Ex. 1001, 19:46–20:2. Consequently, the present record does not show that the evidence of objective indicia presented by Patent Owner in IPR2020-01139 or IPR2020-01142 is co-extensive with the presently challenged claims. *See Fox Factory, Inc. v. SRAM, LLC*, 813 F. App'x 539, 542 (Fed. Cir. 2020) ("[A] product is not coextensive with a claimed invention simply because it falls within the scope of the claim"). Further, the Federal Circuit's reversal of our findings concerning secondary considerations in IPR2020-01139 raises further fact questions as to the applicability of Patent Owner's evidence in the record before us concerning nexus, i.e., Exhibit 2018. The fact questions relating to nexus are best resolved at trial based on a fully developed evidentiary record. Consequently, based on the present record, we do not accord substantial weight to Patent Owner's evidence of objective indicia.

Weighing the Graham Factors

"Once all relevant facts are found, the ultimate legal determination [of obviousness] involves the weighing of the fact findings to conclude whether the claimed combination would have been obvious to an ordinary artisan." *Arctic Cat*, *Inc. v. Bombardier Recreational Prods. Inc.*, 876 F.3d 1350, 1361 (Fed. Cir. 2017). On balance, considering the record presently before us, which includes Petitioner's showing regarding claim 1 and Patent Owner's evidence of nonobviousness, we determine that Petitioner has established a reasonable likelihood that it would prevail in showing that the

combination of Stanesic, Rothkop, and Cicotte would have rendered the subject matter of claim 1 of the '655 patent obvious to one of ordinary skill in the art at the time of the invention.

5. Claim 2

Claim 2 depends from claim 1 and recites "wherein said step of digitally measuring the three-dimensional position of the points on the surface of the vehicle foot well comprises using a coordinate measurement machine (CMM)." Ex. 1001, 20:3–6. Petitioner cites to Rothkop's disclosure of a CMM provides reasons why a person of ordinary skill in the art would have been motivated to use such a machine in the context of the combined teachings of Stanesic, Rothkop, and Cicotte as discussed above for claim 1. Pet. 36–37.

Patent Owner does not address Petitioner's contentions for claim 2.

We have reviewed Petitioner's contentions and evidence for claim 2 and find them sufficient for institution.

E. Petitioner's Remaining Obviousness Challenges

Petitioner challenges dependent claims 3–6 as follow: claim 3 based on Stanesic, Rothkop, Cicotte, and Lee; claim 4 based on Stanesic, Rothkop, Cicotte, and Fisker; claim 5 based on Stanesic, Rothkop, Cicotte, and Gruenwald; and claim 6 based on Stanesic, Rothkop, Cicotte, and Fu. Pet. 38–63.

Patent Owner does not address Petitioner's contentions for claims 3–6.

We have reviewed Petitioner's contentions and additional evidence cited in support of the challenges to dependent claims 3–6, and find them sufficient for institution.

F. Discretionary Denial of Institution Under 35 U.S.C. § 325(d)

1. Analytical Framework

The statute provides that "the Director may take into account whether, and reject the petition . . . because, the same or substantially the same prior art or arguments previously were presented to the Office." 35 U.S.C. § 325(d).

We use a two-part framework to analyze a request to deny institution under § 325(d). First, we determine "whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office." *Advanced Bionics, LLC v. Med-El Electromedizinishe Geräte GmbH*, IPR2019-01469, Paper 6, 8 (Feb. 13, 2020) (precedential). Second, "if either condition of [the] first part of the framework is satisfied," we determine "whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of [the] challenged claims." *Id.* In applying this framework, we refer to the non-exclusive factors delineated in *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 (PTAB Dec. 15, 2017) (precedential). These factors are: a) the similarities and material differences between the asserted art and the prior art involved during examination; b) the cumulative nature of asserted art and the prior art evaluated during examination; c) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection; d) the extent of overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art or Patent Owner distinguishes the prior art; e) whether Petitioner has pointed out sufficiently how the Examiner erred in its evaluation of the asserted prior

art; and f) the extent to which additional evidence and facts presented in the Petition warrant reconsideration of the prior art or arguments. *Id.* at 17–18.

These factors "should be read broadly . . . to apply to any situation in which a petition relies on the same or substantially the same art or arguments previously presented to the Office during a proceeding pertaining to the challenged patent." *Advanced Bionics*, Paper 6, 10. If, after review of factors (a), (b), and (d), we determine the same or substantially the same art or arguments previously were presented to the Office, then factors (c), (e), and (f) relate to whether the petitioner demonstrates that the Office erred in a manner material to patentability of the challenged claims. *Id.*

2. The Parties' Contentions

Petitioner contends that the Examiner of the '655 patent application "issued a first-action allowance without providing any reasons for allowance." Pet. 11 (citing Ex. 1002, 8). Petitioner acknowledges that Stanesic was cited in an Information Disclosure Statement ("IDS") during prosecution of the '655 patent. *Id.* at 15. Petitioner further contends that "[a]lthough Stanesic was applied against other applications in the patent family, Applicant only overcame Stanesic-based prior art combinations when features not recited in the '655 patent claims were present." *Id.* at 16 (citing Ex. 1045, 2, 9–15; Ex. 1046, 12, 23–28, 66–69, 174–176). Petitioner further contends that "the Examiner's silence with respect to Stanesic and failure to provide any reasons for allowance reflects error and oversight in allowing the claims." *Id.* (citing Ex. 1002, 8).

Patent Owner contends that "[t]he applicant cited Stanesic in an IDS and the Examiner acknowledged that Stanesic was considered." Prelim. Resp. 25 (citing Ex. 1002, 30).

Patent Owner next contends that "[t]he Examiner considered multiple references that include analogous disclosures to that in Rothkop." Prelim. Resp. 26. Specifically, Patent Owner contends that "the Examiner considered an article titled 'Automated laser scanning system for reverse engineering and inspection' ('Son')" which "describes using 'laser scanners' for 'inspection and reverse engineering in industry.'" *Id.* (citing Ex. 1002, 36; Ex. 2001, 1). Patent Owner further contends the Examiner considered an article titled "CMM Produces Bikes with Custom-Look" ("CMM Produces") that discloses using "a portable CMM known as the FaroArm[]" to enable "rapid prototyping" development of "a physical model of the [existing] part, then use the arm to capture the shape changes in the digital realm so that the revised parts can be produce in metal." *Id.* at 27 (citing Ex. 1002, 17; Ex. 2002, 1). Patent Owner further contends that Rothkop is cumulative of "two press releases from Geomagic" that were considered by the Examiner. *Id.* at 28 (citing Ex. 1002, 36; Ex. 2003; Ex. 2004).

Patent Owner further contends that "[t]he relied-upon disclosures in Cicotte are cumulative of, and substantially overlap with at least U.S. 5,019,993 (Ex. 2005, 'Montalcini') and U.S. 6,804,568 (Ex. 2006, 'Miyazaki')." Prelim. Resp. 29. Patent Owner further contends that "[b]oth Montalcini and Miyazaki were considered during prosecution." *Id.* at 30 (citing Ex. 1001, code (56); Ex. 1002, 24, 30). According to Patent Owner, "Montalcini relates to a machine for measuring the surface of three-dimensional models for the manufacture of molds with numeric-control machine tools" and stores "information 'constitut[ing] the mathematical representation of the surface' of a model from which 'the information required to perform the numeric control of the machines which generate the

mold is extracted." *Id.* (citing Ex. 2005, 1:11–15, 4:34–41). Patent Owner further contends that Miyazaki discloses "a 3-D CAD . . . apparatus for generating NC [Numerical Control] data for processing a work from 3-D model data" and "the assignment of molds is determined in the form of the NC . . . program." *Id.* at 30–31 (citing Ex. 2006, 1:16–19, 15:12–20).

Based on the foregoing, Patent Owner contends that the first prong of the *Advanced Bionics* framework is satisfied. Prelim. Resp. 31. Patent Owner further contends that "[i]nstitution should be denied, because the Petition fails to demonstrate that the Office erred in a manner material to the patentability of the challenged claims." *Id.*

Petitioner, in turn, contends that Rothkop is not cumulative of the references cited in the IDS because those references "lack teachings of using the computer model of a scanned part to make a 3-D image of an interfacing part and then creating a data file of the interfacing part." Prel. Reply 3–4 (citing Exs. 2001–2004). Petitioner further contends that "Rothkop includes teachings of creating a 3-D image of an interfacing part (e.g., the foam, the trim) and then creating a data file of the interfacing part, as the Petition explains in detail" and "also includes a teaching that applies its method to 'other upholstered parts of an automotive interior or entire vehicle interior assemblies or subassemblies' beyond 'just seats.'" *Id.* at 4 (citing Pet. 5–6, 24–27; Ex. 1003 ¶¶ 58–59, 130–142; Ex. 1006, 8:31–37). Petitioner further contends that it "relies on this teaching as part of the reason to apply Rothkop's method to Stanesic's floor tray." *Id.* (citing Pet. 32; Ex. 1003 ¶ 153). According to Petitioner, "Rothkop is not cumulative to EX2001-EX2004" because "[n]one of EX2001-EX2004 have a similar teaching (nor does MacNeil point to any)."

Petitioner next contends that Patent Owner "did not even attempt to show that the other references in Grounds 2-5 (Lee, Fisker, Gruenwald, Fu), which cover four out of the six challenged claims, are cumulative." Prel. Reply 4.

With respect to prong 2 of the *Advanced Bionics* framework, Petitioner contends that "*Becton Dickinson* factor (c) weighs in favor of finding that Petitioner has shown material error by the Office" because "the asserted art (and EX2001-EX2006) 'was not the basis for a rejection and was not evaluated substantively at all during examination.'" Prel. Reply 4 (quoting *Liquidia Tech., Inc. v. United Therapeutics Corp.*, IPR2021-00406, Paper 18, 19 (PTAB Aug. 11, 2021)).

Petitioner next contends that *Becton Dickinson* factor (e) also weighs in favor of institution. Prel. Reply 5. Petitioner contends that "the Petition explains that the present claims were not rejected whereas similar claims in related applications were (over Stanesic combined with other art), showing that the present claims should have been rejected, not allowed without addressing a Stanesic-based combination." *Id.* (citing Pet. 11–12, 15–16). Petitioner further contends that "[t]he Petition's § 103 analysis also shows that the Office erred in allowing the claims." *Id.* (citing Pet. 12).

Petitioner next contends that *Becton Dickinson* factor (f) "supports institution due to Mr. Perreault's declaration and cited background art." Prel. Reply 5. Petitioner further contends that Patent Owner "attempts to discount his testimony but does not identify any aspect of prosecution that reflected the same or similar combination of references, obviousness rationale, or overview of the state of the art from someone with experience

in the field of product design, computer-aided design, or manufacturing." *Id.* (citing Prelim. Resp. 32).

In the Preliminary Sur-reply, Patent Owner contends that Rothkop is cumulative of CMM Produces which, according to Patent Owner, "describes using a coordinate measuring machine (CMM) to create a digital copy of a modified handlebar mount" that is "used to trace 'a physical model of the upper portion of the mount' (*i.e.*, the interfacing part) as well as the mating face component to which the mount will be coupled." Prel. Sur-reply 4 (citing Ex. 2002, 2). Patent Owner further contends that "[t]hese traces result in two digital files" which amounts to "creating a 3-D image of an interfacing part . . . and creating a data file of the interfacing part." *Id.* at 4–5.

Ground 1

3. Advanced Bionics Framework Prong One: Were The Same Or Substantially The Same Art Or The Same Or Substantially The Same Arguments Presented To The Office?

"Previously presented art includes art made of record by the Examiner, and art provided to the Office by an applicant, such as on an Information Disclosure Statement (IDS), in the prosecution history of the challenged patent." *Advanced Bionics*, Paper 6, 7–8. Because Stanesic was submitted in an IDS, Stanesic was previously presented to the Office.

None of the secondary references relied on by Petitioner, Rothkop, Cicotte, Lee, Fisher, Gruenwald, or Fu[11], were presented to the Office during prosecution the '655 patent. *See* Ex. 1002. Patent Owner does not contend

[11] Lee, Fisher, Gruenwald, and Fu are relied on in Grounds 2–6, which are addressed below.

that Lee, Fisher, Gruenwald, or Fu is cumulative of any of the references presented to the Office during prosecution of the '655 patent.

In connection with Ground 1, the combination of Stanesic, Rothkop, and Cicotte, the dispute for the first prong of the *Advanced Bionics* framework revolves around whether Rothkop is cumulative of Exhibits 2001, 2002, 2003, and 2004 cited in an IDS considered by the Examiner. Petitioner does not dispute that Cicotte is cumulative of Exhibit 2005 or 2006. *See* Prel. Reply. For the purposes of the § 325(d) analysis, we will assume, without deciding, that Rothkop is cumulative of at least one of the references Patent Owner relies on, i.e., Exhibits 2001, 2002, 2003, and 2004. We, thus, assume, without deciding, that the first prong of the *Advanced Bionics* framework is satisfied and move to the second prong.

4. Advanced Bionics Framework, Prong Two: Has Petitioner Demonstrated that the Office Erred in a Manner Material to the Patentability of the Challenged Claims?

The '655 patent issued from an application filed on August 6, 2014. Ex. 1001, code (22). The Examiner issued a Notice of Allowance on October 24, 2014. Ex. 1002, 6. The Notice of Allowance did not state any reasons for allowing the claims. *Id.* at 8–9. There were no Office Actions or claim amendments between the filing of the application and the Notice of Allowance. *See* Ex. 1002. Thus, the claims, as allowed, are identical to the claims filed on August 6, 2014. *Compare* Ex. 1001, 19:46–20:60, *with* Ex. 1002, 105–107.

Stanesic was cited on an IDS. Ex. 1002, 30. Stanesic was one of a large number of cited references. *See* Ex. 1001, code (56). Exhibits 2001–2006 were also cited on the IDS. Ex. 1002, 17, 34, 30, 36. Neither Stanesic nor any of Exhibits 2001–2006 was the basis of a rejection during the

prosecution of the ’655 patent. Nor did the Examiner comment on any of these references in the Notice of Allowance. Under *Becton Dickinson* factor (c) and in view of the above findings, these facts weigh in favor of a finding that an error material to patentability occurred during prosecution. *Liquidia Tech., Inc. v. United Therapeutics Corp.*, IPR2021-00406, Paper 18 at 19 (PTAB Aug. 11, 2021)(“Because the art asserted here was not the basis for a rejection and was not evaluated substantively at all during examination, *Becton, Dickinson* factor (c) weighs in favor of a finding the Petitioner has shown material error by the Office.”); *Code 2000 v. Bright Data Ltd.*, IPR2022-00353, Paper 8 at 10 (PTAB July 1, 2022)(“the fact that Crowds was not the basis of rejection in the prosecution of the ’344 patent . . . weighs strongly against exercising our discretion to deny institution under 35 U.S.C. § 325(d)).

With respect to *Becton Dickinson* factor (e), Stanesic was relied on to reject claims in other applications assigned to Patent Owner with process claims similar to the challenged claims but was not applied to the claims of the ’655 patent. Ex. 1045, 2, 9–15, 47; Ex. 1046, 12, 23–28, 66–69, 174–176. This fact weighs slightly in favor of a finding that that an error material to patentability occurred during prosecution because similar claims in the prior applications were rejected under Stanesic.

Under *Becton Dickinson* factor (f), in the absence of any rejection by the Office based on Stanesic, Petitioner’s mapping of Stanesic, Rothkop, and Cicotte to claim 1 and the supporting testimony of Mr. Perreault weigh in favor of a finding of an error material to patentability occurred during prosecution.

Patent Owner argues that "Petitioners failed to show that the examiner erred." Prel. Sur-reply 5. While Patent Owner argues that the cumulative nature of Rothkop in the Preliminary Sur-reply, it does not dispute Petitioner's contentions for the second prong of the *Advanced Bionics* framework. *See id.* at 4–5.

After weighing factors *Becton Dickinson* factors (c), (e), and (f), we find that the Office erred in a manner material to the patentability of claim 1 during prosecution.

Grounds 2–6

For Grounds 2–6, we find that none of the secondary references cited by Petitioner for these dependent claims, Lee, Fisker, Gruenwald, and Fu, was before the Office. *See* Ex. 1002. Patent Owner does not argue that Lee, Fisker, Gruenwald, or Fu is cumulative of any reference before the Office. Prelim. Resp. 24–32. We, thus, find that the same or substantially the same art was not before the Office during prosecution. Because there was no substantive rejection of claims 2–6, the same or substantially the same arguments were not before the Office during prosecution. Consequently, for Grounds 2–6, the first prong of the *Advanced Bionics* framework is not satisfied and we need not consider the second prong.

5. Conclusion on Advanced Bionics Framework

Upon consideration of the *Advanced Bionics* framework, we determine not to exercise our discretion to deny institution under § 325(d).

III. CONCLUSION

Based on the present record, we determine that Petitioner demonstrates a reasonable likelihood that it would prevail in establishing that at least one challenged claim of the '655 patent is unpatentable. We,

thus, institute an *inter partes* review of all challenged claims of the '655 patent. At this stage of the proceeding, we have not made a final determination under 35 U.S.C. § 318(a) with respect to the unpatentability of any challenged claim.[12]

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of the '655 patent is instituted with respect to the challenged claims on the grounds set forth in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(a) and 37 C.F.R. § 42.4(b), *inter partes* review of the '655 patent shall commence on the entry date of this Order, and notice is hereby given of the institution of a trial.

[12] Patent Owner is cautioned that any arguments not raised in the Patent Owner Response may be deemed waived. *See In re NuVasive, Inc.*, 842 F.3d 1376, 1379–82 (Fed. Cir. 2016) (holding that a patent owner waived an argument addressed in a preliminary response by not raising the same argument in the patent owner response).

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