Filed on behalf of Converter Manufacturing, LLC

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TEKNI-PLEX, INC.
Petitioner

v.

CONVERTER MANUFACTURING, LLC
Patent Owner

Case No. IPR2021-00916
U.S. Patent No. 9,908,281

PATENT OWNER'S REQUEST FOR REHEARING BY THE DIRECTOR

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PATENT OWNER'S EXHIBIT LIST

EXHIBIT	DESCRIPTION
2001	Transcript of PTAB Conference Call held on December 16, 2021.
2002	Patent Owner's Revised Discovery Requests To Petitioner in IPR2021-00916.
2003	Excerpts of D.I. 26-2 filed in *Clearly Clean Prods., LLC et al. v. Tekni-Plex Inc. et al.*, Case 2:20-cv-04723-CDJ (E.D. Pa. Dec. 21, 2020).
2004	Excerpts of D.I. 25-1 filed in *Clearly Clean Prods., LLC et al. v. Tekni-Plex Inc. et al.*, Case 2:20-cv-04723-CDJ (E.D. Pa. Dec. 21, 2020).
2005	Petitioner's U.S. Provisional Patent Application Serial Number 62/793,187 and filing receipt.
2006	Petitioner's Information Disclosure Statement filed in the prosecution of U.S. Patent Application Number 16/739,795.
2007	Expert Declaration of Mr. James Clements
2008	Curriculum Vitae of Mr. James Clements
2009	January 20-21, 2022 Deposition of Mr. Glenn May
2010	August 12, 2015 Request for Examination with Claim Amendments to Intellectual Property Office of New Zealand from Alto Packaging Limited in Australian Patent Application No. 2011326886.
2011	U.S. Patent Application Publication No. US2019/0358890 A1
2012	December 5, 2019 Response and Request for Reconsideration in U.S. Patent Application Serial Number 16/536,843
2013	U.S. Patent No. 3,746,497 to Neil ("Neil")
2014	Declaration of Glenn May in IPR2021-00918
2015	Declaration of Glenn May in IPR2021-00919
2016	Forming Temperature Guidelines
2017	WO2018/007183 to Aplix SA
2018	U.S. Patent No. 10,889,049 to Aplix SA
2019	Apr. 14, 2020 Non-Final Office Action In U.S. Patent Application Ser. No. 16/314,473
2020	JPH08-108494 to Oyama et al. with Certified English Translation
2021	JP 58-205705A to Iguchi with Certified English Translation
2022	U.S. Patent No. 10,189,624 to Wallace
2023	April 13, 2018 Amendment and Request for Reconsideration in U.S. Patent Application Serial No. 15/674,787

EXHIBIT	DESCRIPTION
2024	Slavin-Bond, Chandler, "How to Robotically Handle Trays for Parts Packaging," Packaging Digest, Apr. 23, 2021
2025	Chapter 600 of Manual of Patent Examining Procedure, Revs. 55-56 (July 1978)
2026	Excerpts of July 1, 1978 Title 37 of Code of Federal Regulations
2027	U.S. Patent No. 4,239,727 to Myers et al.
2028	Excerpts from Thomas, Ian MacIntyre, "The Blending and Permeability of Polymers for Packaging Applications," Thesis to Brunel Unitversity of West London, Dept. of Materials Technology, Dec. 1995
2029	U.S. Patent No. 3,739,052 to Ayers et al.
2030	Declaration of Jeff Maguire
2031	July 13, 2018 Email from Kevin Grimes to Jeff Maguire
2032	2019 Ameristar Award - Clearly Clean Products, LLC - Roll Over-Wrap Tray from Institute of Packaging Professionals
2033	November 27, 2019 Email from Kevin Grimes to Jeff Maguire
2034	March 18, 2020 Email from Kevin Grimes to Jeff Maguire
2035	Certified File History of AU2011326886 (served but not filed)
2036	Declaration of translation of JPH08-108494 to Oyama et al.
2037	Declaration of translation of JP 56-150606A to Saito et al.
2038	Declaration of Joni Mattera (served but not filed)
2039	Supplemental Declaration of Jeff Maguire (served but not filed)
2040	Supplemental Expert Declaration of Mr. James Clements in Response to Evidentiary Objections
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2055	Shipping label for trays sent from Clearly Clean Products, LLC to Mr. James Clements (served but not filed)
2056	JP S56-150606A to Saito et al. with Declaration of English Translation
2057	Form PTO-892 (Rev. 01-2001) accompanying Apr. 14, 2020 Non-Final Office Action In U.S. Patent Application Ser. No. 16/314,473
2058	May 18, 2022 Deposition of Mr. Marc Adler
2059	Translation of archived Dexter MT Dutch-language webpage, with Declaration of Jena van der Kolk
2060	March 5, 2018 Email chain between Pieter-Jans Willemse and Tim McKeever with attachments
2061	February 26, 2018 Email between Pieter-Jans Willemse and Tim McKeever with attachment
2062	February 26, 2018 Email between Pieter-Jans Willemse and Tim McKeever with attachment
2063	Declaration of Millard Wallace (served but not filed)
2064	Altered Screenshot from Ex. 1045 Paragraph 10 (served but not filed)
2065	Annotated version of drawings from Ex. 1045 Paragraph 14 (served but not filed)

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2066	Australian Patent No. AU2018220971 to Starnes (served but not filed)
2067	Annotated version of drawings from Ex. 1045 Paragraph 14
2068	Demonstrative of images from Ex. 1044 and Ex. 2066 (served but not filed)
2069	July 6, 2022 Deposition of Mr. James Naughton
2070	June 30 and July 1, 2022 Deposition of Glenn May
2071	2004 Sealed Air Corp Form 10-K (served but not filed)
2072	Alto Tray (not filed)
2073	Portion taken from Ex. 2072 (not filed)
2074	July 12, 2022 Deposition of Millard Wallace
2075	July 12, 2022 Continued Deposition of Glenn May
2076	Transcript of PTAB Conference Call held on July 11, 2022

Pursuant to 37 C.F.R. § 42.71(d) and the Order of the Board at the November 14, 2022 Conference (Paper 71), Patent Owner, Converter Manufacturing, LLC ("PO") submits this Request for Director rehearing of the Board's Final Written Decision ("FWD") determining all challenged claims of U.S. Patent No. 9,908,281 (the "'281 Patent") to be unpatentable (Paper 70). The request should be granted because the Board erred in applying the law and misapprehended or overlooked evidence cited in the Corrected PO Response ("POR") and Sur-reply ("POSR").

I. INTRODUCTION

Before the '281 Patent's priority date, August 31, 2015, achieving a smooth periphery (rolled rim) on a thermoformed rectangular article was considered "impossible" by those of ordinary skill in the art ("POSITA"). *See* POSR 5 (citing Ex. 1055 at 5 (rolled rim on non-circular thermoformed articles was "impossible until [2016]!")) The solution was highly desired because without a smooth periphery, the sharp peripheral edge of thermoformed rectangular articles cut overwrap ("OW") film and flesh of users. The '281 Patent disclosed, for the first time, how to smooth the periphery of thermoformed rectangular articles and claimed those articles.

In this IPR, the Board relied on Petitioner's flawed arguments and the conclusory opinions of its expert, Mr. May ("May"), to hold all challenged '281 Patent claims unpatentable. It did this despite PO's unrebutted documentary

evidence that the relied-upon references failed to teach or sufficiently guide skilled artisans to make the article recited in the challenged claims without unreasonable amounts of experimentation. The Board disregarded PO's proofs by applying a novel, insurmountable (and erroneous) enablement standard. The Board also failed to follow applicable anticipation and obviousness law, and found unpatentability on grounds never raised in the Petition. Accordingly, rehearing of the FWD is required.

II. STANDARD OF REVIEW

Since the Supreme Court's decision in *U.S. v. Arthrex, Inc.*, 141 S. Ct. 1970, 1987-88 (2021), parties to a PTAB proceeding may request Director review of a PTAB final decision and such review "will be de novo." Arthrex FAQ A1.3 (https://www.uspto.gov/patents/patent-trial-and-appeal-board/procedures/arthrex-qas). The Request is timely if filed in accordance with 37 C.F.R. §42.71(d).

Under the USPTO's interim *Arthrex* procedures, Director review of a Board decision may be warranted to determine "material errors of fact or law, matters that the Board misapprehended or overlooked, novel issues of law or policy, issues on which Board panel decisions are split," or "inconsistencies with Office procedures, guidance, or decisions." Arthrex Q&As No. D2 (updated July 20, 2021).

III. THE BOARD'S INCORRECT ENABLEMENT STANDARD

The Federal Circuit's predecessor, the Court of Claims and Patent Appeals ("CCPA"), reversed the Board's finding of prior art enablement because the patent

applicant provided competent evidence that the process disclosed in the reference could not be used to make the claimed compound. *See In re of Hoeksema*, 399 F.2d 269, 275 (C.C.P.A. 1968). To find the prior art claimed compound non-enabled, the CCPA did ***not*** require proof that there was no known or obvious method of producing the claimed compound (i.e., impossibility or inevitable failure). *Id.* at 275 n.9. The CCPA noted that "[i]t would be practically impossible for an applicant to show that all known processes are incapable of producing the claimed [structure]." *Id.* Yet, the Board committed reversible legal error by demanding PO prove impossibility and inevitable failure to demonstrate non-enablement of the alleged prior art Portelli, Long, and Meadors references. *See* FWD 23-24, 34-35, 52.

In the context of prosecution before the United States Patent and Trademark Office ("USPTO"), the Federal Circuit requires the USPTO to presume enablement of the applicant's specification *unless* there is a "***reasonable*** explanation" for the USPTO's non-enablement position. *In re Hoffmann*, 558 Fed. Appx. 985, 987 (Fed. Cir. 2014).[1] The burden then shifts to the applicant to provide "suitable proofs indicating that the specification is enabling." *Id.* (citing *In re Wright*, 999 F.2d 1557,

[1] That *Hoffman* involved *ex parte* prosecution does not change its application to the enablement inquiry to be answered in an *inter partes* proceeding. *See Enzo Biochem, Inc. v. Calgene, Inc.*, 188 F.3d 1362, 1371–72 (Fed. Cir. 1999).

1561–62 (Fed. Cir. 1993)). A similar burden shifting framework applies when the patentee challenges enablement of prior art, namely, there is a presumption of enablement that the patentee must overcome with "more than … an unsupported belief." *See In re Morsa*, 713 F.3d 104, 110 (Fed. Cir. 2013).

The following "reasonable explanations" and "more than …unsupported beliefs" qualified not only to overcome the presumption of enablement but also to find the disclosure at issue to be non-enabling: (i) errors in the disclosure, *Hoffman*, 558 Fed. Appx. at 987; (ii) public statements doubting the efficacy of intended results, *id.* at 986; *Wright*, 999 F.2d at 1562; and (iii) post-priority date statements of unpredictability. *Wright*, at 1562. It has been held that a teaching in a specification that warns against a particular technology was sufficient *clear and convincing* evidence of non-enablement of that technology. *See AK Steel Corp. v. Sollac & Ugine*, 344 F.3d 1234, 1244 (Fed. Cir. 2003). In IPR challenges, the Federal Circuit has instructed the Board to find non-enablement when unfixable errors are identified in a reference, *see Apple Inc. v. Corephotonics, Ltd.*, 861 Fed. Appx. 443, 450 (Fed. Cir. 2021), or when the evidence shows a critical component was unavailable as of the priority date. *See Raytheon Techs. Corp. v. Gen. Elec. Co.*, 993 F.3d 1374, 1381-82 (Fed. Cir. 2021).

The Board erred by failing to closely examine Petitioner's rebuttal proofs and by not requiring Petitioner demonstrate enablement, such as "experiments, prior art,

or working examples." *Ex Parte Yun*, App. No. 2021-001467, 2022 WL 263595, at *6 (P.T.A.B. Jan. 27, 2022); *see also Raytheon*, 993 F.3d at 1381 (faulting IPR Petitioner for not providing test results or working examples). Petitioner's evidence fails to satisfy their burden of showing that any of Portelli, Long, or Meadors enables skilled artisans to make the "smooth periphery" required by the challenged claims.

IV. PO'S EVIDENCE OF NON-ENABLEMENT OVERCAME EACH CITED REFERENCE'S PRESUMPTION OF ENABLEMENT

The Board misapprehended the legal import of PO's non-enablement proofs.[2] As in *Hoffman* and *Wright*, PO showed that others in the industry, such as DexterMT and Nelson, considered rolling the rim of non-circular articles to either be unachievable or "impossible." POSR 1, 5, 17, 26 (citing Ex. 1055, 5; Ex. 1009, ¶[0003]). As in *Hoffman* and *Apple*, PO showed that the disclosures of Portelli and Long contain errors and defects requiring fixing.[3] *See* POR 13-29, 37-42, 46-54;

[2] It is unclear what the Board decided in the FWD since it says it never "reach[ed] the issue of whether Long is enabled," FWD 86, but found PO failed to overcome the presumption of Long's enablement. FWD 85 n.14.

[3] PO cited May's opinion that the 90° corner illustrated in Figure 8 of Portelli would be sharp. POR 15-15 & n.7 (citing Ex. 1002, ¶305, 308-311). The Board understood that a sharp corner in Figure 8 would cut OW film on page 41 of its IPR2021-00918 FWD. Thus, Portelli teaches failure in Figure 8 according to May, which is

POSR 9, 11, 15-16, 20-23. As in *AK Steel Corp.* and *Hoffman*, PO showed that others, like Alto and Long, warned that failures would result if skilled artisans attempted to form a smooth periphery on a thermoformed rectangular article using Portelli's teachings. *See* POR 13-15. As in *Raytheon*, PO showed that Long's "second tooling assembly" and Portelli's "clacker box" were unknown and unavailable in the art as of the '281 Patent priority date.[4] *See* POR 28-29, 42-45; POSR 9-10, 19-20. Moreover, PO showed post-priority date evidence that, more than ***two decades*** after Portelli's 1996 publication date, engineers at DexterMT could not make an embodiment having a periphery like the one shown in Figure 13 of Portelli without undue experimentation (as that term was understood by Petitioner's

consistent with Portelli's teaching that its heating operation creates beading in the plastic. *See* POR 21. Additionally, Petitioner never disputed PO's showing how the elbow May said would exist in Long would cut Long's OW film wrap path. *See* POR 46-50, 56-58, 76-78; POSR 23-24.

[4] Contrary to FWD 27-29, PO explained that Petitioner failed to show pre-priority date availability of Portelli's "clacker box" or that a POSITA could make such a thing without undue experimentation. *See* POR 42-46; POSR 9-10.

expert).[5] *See* POSR 4-8 (citing Ex. 2060 at 1-2, 34; Ex. 2061-2062; Ex. 2063, ¶¶3-5; Ex. 2074, 35:5-36:3); *see Wright*, 999 F.2d at 1562 (statements of unpredictability made 5 years after priority date supported non-enablement); *Genentech, Inc. v. Novo Nordisk A/S*, 108 F.3d 1361, 1367 (Fed. Cir. 1997) (failure of POSITA to achieve claimed result demonstrated what "was not then within the skill of the art.") This real-world non-enablement evidence came from email statements and drawings from Pieter-Jans Willemse, the evidentiary value of which has never been challenged by Petitioner nor even analyzed by the Board, who approved Petitioner's reliance on Mr. Willemse for hearsay. FWD 82-83. Willemse's present sense impression (Ex. 2060, 1-2) contradicts May's enablement opinions to the contrary. *See* POSR 6-8, 12-13, 16.

[5] Petitioner advocated that the rolled in-rim ("RRIM") process discussed in PO's Ex. 2060 used Portelli's methods. *See* Reply 4, 7, 12-13, 20. If so, that would prove skilled artisans using RRIM technology considered a smooth periphery in non-circular articles to be "impossible" before the priority date (Ex. 1055 at 5) and a Portelli embodiment (Figure 13) in a rectangular tray as of 2018 was unachievable. *See* Ex. 2060, 1-2, 33-34; POSR 5-7; *Enzo Biochem*, 188 F.3d at 1373 (failure by following "methodology described in the specifications" showed non-enablement).

The Board overlooked the evidentiary deficiencies in the physical articles on which Petitioner relied to rebut PO's non-enablement arguments: (i) there was no proof that those articles were made according to the methods disclosed in Long or Portelli; (ii) the articles were not made *before* the priority date; and (iii) there was no proof that those articles satisfied every limitation of the challenged claims. *See* POSR 1, 4-5, 8, 17, 21-22; *cf. Wright*, 999 F.2d at 1562–63 ("developments occur[ing] after the effective filing date … are of no significance regarding what one skilled in the art believed as of that date."); *see also Enzo Biochem*, 188 F.3d at 1376 ("Enzo did not prove that the alleged post-filing successes were accomplished by following the teachings of the specifications"). The Board also overlooked that the equipment and processes alleged by Petitioner to demonstrate the practice of Long's method do not appear in Long and were maintained as a trade secret (i.e., the information necessary to make and use Long's teachings could ***not*** be disclosed to a skilled artisan). *See* POR 42-45; POSR 18-20.

Petitioner relied on textbooks and May's conclusory expert testimony to assert that the POSITA had available all the information needed to fill in gaps in Portelli and Long or to "fix" their defects.[6] Reply 20, 25-26, 44. That is not evidence of

[6] Among the fixing evidence cited by the Board in FWD 27, Petitioner only ever relied only on Ex. 1044, ¶72 in its Reply.

enablement. *See Genentech*, 108 F.3d at 1366 (enablement requirement "cannot be rectified by asserting that all the disclosure related to the process is within the skill of the art.") Petitioner's remediation evidence was never specifically applied to Portelli nor did it explain why a POSITA would try to "fix" Portelli in contradiction of its express disclosures (*i.e.*, Portelli's pucker-producing tapers 42, beading of plastic by melting (Ex. 1003, 17:5-6), and adherence of tray periphery to the molding die). POSR 13-16. To overlook Long's obvious omission of the necessary structures to perform the operations of its "second tooling assembly," the Board accepted that a POSITA could invent some unspecified kind of "custom" equipment. *See* FWD 35; *see* POSR 18-19. That Long left the task of inventing the "second tooling assembly" to others militates towards ***lack*** of enablement, not the opposite, as the Board found. POR 43-45.

The record evidence of non-enablement confirms the Board committed clear error when it credited May's conclusory expert testimony that is plainly inconsistent with that record. *See* FWD 24-31, 35-36;[7] *Homeland Housewares, LLC v. Whirlpool Corp.*, 865 F.3d 1372, 1378 (Fed. Cir. 2017) ("[W]e must disregard the testimony of an expert that is plainly inconsistent with the record.")

[7] Contrary to FWD 31, Clements never acknowledged that experimentation is routine in thermoforming. *See* Ex. 2007, ¶21.

V. THERE IS NO EVIDENCE OF PRE-PRIORITY DATE ARTICLES THAT SATISFY THE CHALLENGED CLAIMS

The Board cites Portelli (Ex. 1003) after stating that Ex. 1058 shows the possibility of a thermoformed article with rolled over terminal edges. FWD 87 n.15. The Board proposed no explanation of how Ex. 1058, images purportedly relating to rim-rolling of a ***cup*** (i.e., a circular article), evidences that Portelli teaches rolling rims of rectangular articles. *Cf.* Ex. 1044, ¶52. The Board asserts that "trays embodying Long have been made since before the priority date," FWD 36, but that is wrong. Exhibit 1044, ¶¶126-127, 143, and 150 refer to undated post-priority date articles using non-disclosed tooling (*see* POSR 17-20) while Ex. 1057 is a foreign patent whose existence has no relevance to any issue in this case. *Cf.* Reply 35. The Board's "finding" apparently relies upon hearsay in Exhibit 1045, ¶¶4-5, *see* FWD 35, but in the same FWD, the Board held that it "do[es] not rely on these statements for the truth of the matter asserted, i.e., that Alto manufactured the identified trays in 2012." *See* FWD 84. Thus, no evidence exists to support the Board's erroneous assertion that an article meeting the challenged claim limitations was made by any process, including the process of Long or Portelli, before (or even after) the '281 Patent priority date. *See* POSR 4, 5 n.3, 17.

VI. THE BOARD MISUNDERSTOOD THE NATURE OF THE CLAIMED INVENTION AND UNPREDICTABILITY IN THE ART

To justify its erroneous assertion that every reference was enabled, the Board

erroneously misapprehended the field of the invention, which is not "thermoforming" generically, but rather manipulation of the peripheral edges of already-thermoformed rectangular articles. POR 3-7. That misapprehension led the Board to erroneously conclude the art relevant to this case is "extremely mature" and predictable based on prior existence of rim-rolling techniques for circular articles. *See* FWD 26, 54, 55-56;[8] *see also* Ex. 1044, ¶44 ("The [DexterMT] images show the tooling and process involved in rolling the rim of a ***cup***."); ¶¶52-53, Ex. 1058 ("Four images above from 2004 presentation by OMV, showing rolling of thermoform ***cup*** flange."); Ex. 1049 at 569-71 (screw-fed cup rim-rolling process).

The Board failed to appreciate PO's explanation that before the priority date, a smooth periphery could only be achieved for circular thermoformed articles because of the spinning technique and circular heating devices needed to controllably heat and roll their circular rims. *See* POR 3-5; *also see* Ex. 1009, ¶[0003]. Contrary to May's opinion (Ex. 1044, ¶53), circular article rim-rolling techniques do <u>not</u> work on ***rectangular*** thermoformed articles due to their corners and unequal sides. POR 3-5; POSR 5 n.3; *see also* Ex. 2007, ¶24. The Board overlooked the fact that rolling the peripheral rim of a circular article, i.e., a cup, is

[8] Contrary to FWD 17 n.6, 38-39 n.8, 54, PO has always disputed Petitioner's unpatentability arguments based on Portelli. *See* POR 11-36; POSR 12.

irrelevant to the nature of the invention of the challenged claims.

The Board also improperly relied on attorney argument and uncited documents to hold that thermoforming was a mature and predictable art. *See* FWD 26-27 (citing Ex. 1035; Ex. 1044, ¶¶47, 49; Ex. 1047, 23:1-23; and Ex. 1053 identified for first time in demonstrative slides). Petitioner's attorney argument could not be credited over PO's well-supported showing that a POSITA had limited knowledge/capability to move the flange of a thermoformed article. *See* POR 6-7, 13-14, 44-45, 54-55; POSR 1, 3-8, 10-11, 17-19, 29-30. Yet, the Board erroneously ignored PO's expert testimony regarding the capabilities of a POSITA. FWD 12-14. Contrary to FWD 26-27, 51-55, PO provided evidence that showed that the shape of the peripheral edge of a thermoformed article was anything but "predictable" and moving it was anything but "mature." POR 3, 23-30, 54-55, 66, 70-73; POSR 3-4, 6-8, 10-11, 16 n.5.

PO cited Ex. 2024 and the "authoritative" Throne textbook, Ex. 1049 at 570, as evidence that determining flange dimensions "isn't an exact science," "is a calculation based on experience and trial and error," and there is "no science in determining the dimensions of a rim in a rim roll design… ." POSR 4, 28. To show unpredictability of a particular flange shape, in this case Portelli's Figure 13, PO cited the 2018 Willemse email, Ex. 2060 at 1-2, 33-34, as evidence that engineers required "extensive series of tests and optimisations" to "see if what [they] think will

happen, really happens" in attempting to make that particular flange shape in a thermoformed rectangular article. POSR 4, 7-8, 16 & n.5.

The Board clearly misapprehended PO's argument at POR 73 regarding Petitioner's failure to show the obviousness of claim limitations that resulted from "post-forming processes." The '281 Patent makes clear that the claimed articles result from a first forming process (the thermoforming of the rectangular article) and then a second, post-forming process (displacement of the flange of the thermoformed rectangular article). *See* Ex. 1001, 16:16-47; Figs. 1A-B (explaining already-thermoformed article and post-deformation flange deflection). Petitioner showed that there were trends and similarities for the first forming processes discussed above, i.e., thermoforming a rectangular article, *see* Pet. 126-129, but cited **nothing** (other than non-enabled Portelli, Long, and Meadors) to prove that second, post-thermoforming processes for the peripheral rims of rectangular thermoformed articles were known prior to the '281 Patent priority date. Reply 21-24.

VII. PORTELLI DOES NOT ANTICIPATE OR RENDER OBVIOUS ANY CHALLENGED CLAIM OF THE '281 PATENT

The Board credited Petitioner's assertion that the rim 58 of Figures 14-15 ***is*** the item 10 of Portelli Figure 13 even though Portelli discloses that the periphery of Figure 16 is what is shown as having rim 58. *See* FWD 39 n.8. That determination cannot be reconciled with the Board's analysis on pages 44-45 of the FWD in IPR2021-00919, which found the same assertion by Petitioner to be erroneous. In

any event, Petitioner's reliance on Figure 8 for any anticipation challenge is without merit because May opined that Figure 8 does not represent "actual thermoforming," Ex. 1002, ¶305, and Portelli's "manually-drawn" figures admittedly contain errors making them too ambiguous to be relied upon as a matter of law. *See* POR 15 n.7; *In re Turlay*, 304 F.2d 893, 899 (C.C.P.A. 1962).

The Board accepted Petitioner's obviousness theory with respect to challenged claims 2-13, 17, 20-22, and 24-29 based on interchangeability of Portelli's Figures 8 and 13. FWD 44-47, 50-52 (citing Ex. 1002, ¶¶76-77 and Ex. 1003, 14:10-28);[9] Pet. 30, 38, 146. However, none of the citations support Petitioner's obviousness theory with respect to claims 2-5 and 11-12. Instead, those citations are directed at either (i) anticipation of claims 3-4 and 12 (which the Board properly rejected, *see* FWD 91) or (ii) obviousness of claim 25. Also, May's deposition testimony contradicts his opinion in Ex. 1002, ¶77 on which the Board relies for its anticipation and obviousness findings related to claims 6-10, 13, 17, 20-22, and 24-29. FWD 50-52. In Ex. 1002, ¶77, May opined that a POSITA would insert the flange of Portelli's Figure 13 into die 25 of Figure 8 to arrive at the claimed flange shapes. But May contradicts himself when he testified that it wasn't Portelli's

[9] May could not identify one word in Ex. 1003, 14:10-28 to support his interchangeability opinion. *See* POR 34-35.

purpose to modify peripheries like Portelli's Figure 13 where the terminal edge of the periphery had already been deformed out of the OW path. *See* POR 80-81.

The Board overlooked PO's proofs that there was no reasonable expectation of success for modifying Portelli before the priority date because of industry statements of impossibility and failures to achieve a smooth periphery on a thermoformed rectangular article. POR 13-15, 71-72, 79-80; POSR 1, 5, 17, 26-27. Here, a POSITA would not be motivated to modify or combine Portelli's teachings in view of the lack of reasonable expectation of success, as provided by skilled artisans such as Nelson, Alto, Long, and DexterMT noted the "impossibility" of and reported failures in practicing Portelli's prophetic results, i.e., achieving a smooth periphery in a rectangular thermoformed article, even nearly ***twenty*** years after Portelli's 1996 publication date. *See* POR 1, 4, 29; POSR 1, 5, 17, 26-27.*See OSI Pharms., LLC v. Apotex Inc.*, 939 F.3d 1375, 1385 (Fed. Cir. 2019) (ten years of failures of others proved that "only reasonable expectation at the time of the invention was failure, not success.")

VIII. LONG TEACHES AWAY FROM PORTELLI

The Board made the outlandish assertion that when Long suggested its process will allow POSITA to "avoid" the "puckering and distortions" that "often" resulted from Portelli's methods and the "slowness" of Portelli's double-stage

thermoforming process, it merely manifested a "preference." *See* FWD 59, 69.[10] Because Long and Alto stated that Portelli "often" fails (i.e., causes puckers and distortions), PO properly explained why a POSITA would be motivated ***not*** to combine Long and Portelli. POR 75-76. PO's proofs of teaching away did not need to meet the Board's impossibility standard for non-enablement. *See, e.g.*, *AK Steel Corp.*, 344 F.3d at 1244 (non-enablement); *see In re Fine*, 837 F.2d 1071, 1074 (Fed. Cir. 1988) (finding non-obviousness where "[reference] deliberately seeks to ***avoid*** [detecting nitrogen compounds]"). Teaching POSITA to "avoid" Portelli's methods

[10] The Board claimed PO never explained acceptable versus unacceptable puckers or distortions. FWD 69. The Board overlooked PO's explanation using a patented article *without* unwanted puckers at its periphery. *See* POR 89-90. The Board also overlooked the '281 Patent's teachings that acceptable "wrinkling" (puckers or distortions) are never found at the periphery of the article, unlike where they are found following the Portelli/RRIM method. *Compare* Ex. 1001, 6:65-7:25; Figs. 3A-C *with* Ex. 2060 at 34.

weeks before the priority date is extremely relevant evidence of the state of the art showing non-enablement **and** teaching away.[11] *Id.*

The Board's principle-of-operation analysis (FWD 59-60) focused on only the end products of Portelli and Long and ignored their contradictory methods of manufacture. That was legal error because even if the claim is to a product, as it is in this case, the method of making that product "is an integral part of the 'invention as a whole' which [the Board] must consider under section 103… ." *See Hoeksema*, 399 F.2d at 275; *see* POR 75-76, 79-80.

IX. MEADORS DOES NOT ANTICIPATE

The Board found Clements' opinion that Meadors is not enabled to be "conclusory" and "unsupported" even though his opinion was based on Meadors' express disclosures that its methods were performed using paper, 1005, 1:10-11, and that all of Meadors' drawings show its dies acting only on paper. POR 60-66, 83-84. Clements explained how the use of dies on a thermoplastic would "thin[] in the corners of the die as it is flexed" and thereby rip or fracture and be unusable. *See* POR 62-66 (citing Ex. 2007, ¶¶199-206; Ex. 2027). In response to Clements' well-

[11] Further contrary to FWD 69, that Long discouraged the POSITA from using a thermal deformation process, such as those within the scope of the challenged claims, demonstrates industry skepticism. *See* POR 89-90.

supported opinion, Petitioner relied on two sentences from Mr. May: one summary of Meadors and the other a conclusory opinion that a POSITA would know how to use Meadors to shape a thermoplastic sheet. Reply 47 (citing Ex. 1044, ¶267). May's "opinion on [enablement] must be supported by something more than a conclusory statement." *In re Buchner*, 929 F.2d 660, 661 (Fed. Cir. 1991).

The Board improperly relies on speculation to conclude that any thermoplastic can serve as an alternative to Meadors' paper stock method. *In re Glass*, 474 F.2d 1015, 1018-19 (C.C.P.A. 1973) (Board cannot rely on unwarranted speculation of a reference's disclosures). The Board also cannot disregard what Meadors' figures clearly show. *See, e.g.*, *In re Mraz*, 455 F.2d 1069, 1072 (C.C.P.A. 1972). Even if the Board's speculation were true, there is no evidence that the sole thermoplastic Meadors mentions (ABS) could be formed into the shapes recited in the challenged claims using Meadors' paper-forming methods. *See* POR 65-66. "Mere speculation" is not substantial evidence. *See Intellectual Ventures I LLC v. Motorola Mobility LLC* , 870 F.3d 1320, 1331 (Fed. Cir. 2017).

X. THE BOARD FOUND UNPATENTABILITY OF CLAIMS 2-5, 11-12, AND 14-15 ON A GROUND NOT RAISED IN THE PETITION

The Board held that claims 2-5, 11-12, and 14-15 were obvious over Portelli alone. FWD 47, 49. However, no such ground of unpatentability was presented. *Cf.* Pet. 124-152. The Board is not permitted to decide grounds of unpatentability that are not raised in the Petition. *See In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364,

1381 (Fed. Cir. 2016). Here, the Board necessarily found Portelli failed to anticipate any of these challenged claims. FWD 47, 49. Because Petitioner's argument that claims 2-5, 11-12, and 14-15 were obvious over Long and Portelli required Portelli to allegedly anticipated these same claims, the Board could not have found the former when it decided Petitioner failed to prove the latter. *Compare* FWD 91 *with* Pet. 129-135. Therefore, Petitioner failed to prove claims 2-5, 11-12, and 14-15 unpatentable based on Portelli alone or in combination with Long.

XI. THE BOARD'S '281 PATENT CLAIM CONSTRUCTION ERRORS

PO and Petitioner disputed the construction of the "smooth periphery" limitation. The Board erred by refusing to resolve the dispute. *Homeland*, 865 F.3d at 1375. Further, the Board also failed to properly find the clear and unequivocal disclaimer in the parent case to limit the "thermoformable sheet" limitation of the challenged claims to exclude injection molding. *See* FWD 15-17.

XII. MAY'S OBVIOUSNESS OPINIONS COULD NOT BE CREDITED

May had to consider PO's objective indicia evidence before giving his ultimate opinion of obviousness in support of Petitioner's arguments. *See InTouch Techs., Inc. v. VGO Commc'ns, Inc.*, 751 F.3d 1327, 1352 (Fed. Cir. 2014). The Board could not legally credit May's ultimate conclusion of obviousness when he deliberately chose to avoid considering such evidence. *See* POSR 25.

XIII. THE BOARD ABUSED ITS DISCRETION IN WEIGHING PO'S OBJECTIVE EVIDENCE

The Board faulted PO for not showing "exponential growth" in sales in a "relevant market." *See* FWD 64-65. But the law only requires "significant sales in a relevant market." *See J.T. Eaton & Co. v. Atlantic Paste & Glue Co.*, 106 F.3d 1563, 1571 (Fed. Cir. 1997). PO also identified the "relevant market" as being the one that its licensee pioneered. *See* POR 86. Petitioner's expert agreed that his own company's significant sales in a market it pioneered was a sign of commercial success in the thermoforming business. *Id.* (citing Ex. 2009, 78:6-79:6).

The Board does not explain its reasoning for why PO's evidence of industry praise was insufficient (e.g., whether PO should have had more than one award or more than three emails from others praising the claimed features). FWD 66-67 & n.11; *see In re Nuvasive*, 842 F.3d 1376, 1383 (Fed. Cir. 2016).

The Board claims there was "minimal, if any, evidence of long felt need." FWD 67-69. PO clearly showed the need existed for more than half a century. *See* POR 88; POSR 1, 5, 16, 26-27 (claimed solution thought "impossible" until 2016).

XIV. CONCLUSION

For the foregoing reasons, PO's motion for rehearing should be granted and the Board's unpatentability findings should be reversed and each identified error corrected in PO's favor.

Dated: November 21, 2022

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PAGE COUNT CERTIFICATION

Pursuant to 37 C.F.R. § 42.24(d) and the Order of the Board at the November 14, 2022 Conference (Paper 71), I certify that this Motion for Rehearing is 20 pages (excluding the title page, table of contents, table of authorities, table of exhibits, mandatory notices, this certificate, and the certificate of service), as determined by Microsoft Word.

Dated: November 21, 2022

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that on the 21st day of November, 2022, a true and accurate copy of the foregoing *PATENT OWNER'S REQUEST FOR REHEARING BY THE DIRECTOR* was filed through the Patent Review Processing System and served on the following counsel for Petitioner via email:

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The undersigned hereby further certifies that on the 21st day of November, 2022, a true and accurate copy of the foregoing *PATENT OWNER'S REQUEST FOR REHEARING BY THE DIRECTOR* was emailed to the Office by email to Director_PTABDecision_Review@uspto.gov.

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