UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

THE BURTON CORPORATION,
Petitioner,

v.

SMITH SPORT OPTICS, INC. AND KOROYD SARL
Patent Owners.

Case IPR2022-00354
Patent No. 10,736,373

PATENT OWNERS SMITH SPORT OPTICS AND KOROYD SARL'S PRELIMINARY RESPONSE

April 13, 2022

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LIST OF EXHIBITS

EXHIBIT	DOCUMENT
2001	Declaration of Expert Witness Stephanie Bonin
2002	G. Caserta, "The Use of Honeycomb in the Design of Innovative Helmets," 2012; attached as Exhibit H to Copeland District Court Declaration
2003	Declaration of Steven Copeland ISO Opposition to Preliminary Injunction Motion in *Smith Sport Optics, Inc. v. The Burton Corp.*, No. 1:21-cv-2112-CMA-SKC (D. Colo., 2021)
2004	US Patent No. 3,877,076
2005	District Court Scheduling Order in *Smith Sport Optics, Inc. v. The Burton Corp.*, No. 1:21-cv-2112-CMA-SKC (D. Colo., 2021)
2006	Transcript from Preliminary Injunction hearing in *Smith Sport Optics, Inc. v. The Burton Corp.*, No. 1:21-cv-2112-CMA-SKC (D. Colo., 2021)
2007	International Patent Publication No. WO 1994/00031 A1
2008	US Patent No. 3,447,163
2009	Burton's Invalidity Contentions in *Smith Sport Optics, Inc. v. The Burton Corp.*, No. 1:21-cv-2112-CMA-SKC (D. Colo., 2021)

I. INTRODUCTION

Patent Owners Smith Sport Optics ("Smith") and Koroyd SARL ("Koroyd," or, collectively, "Patent Owners," or patent "Applicant") submits this Preliminary Response pursuant to 37 C.F.R. § 42.107 in opposition to the petition for *inter partes* review IPR2022-00354 (the IPR "Petition") filed by The Burton Corporation ("Petitioner") regarding claims 1-5, 7, 12-13, and 15-17 ("the Challenged Claims") of U.S. Patent No. 10,736,373 (Ex. 1001, the "'373 patent"). This Preliminary Response is filed within three months of the January 14, 2022 delivery of the Notice of Filing Date Accorded. *See* Paper 5.

Burton has failed to demonstrate a reasonable likelihood that at least one claim of the '373 patent is invalid for obviousness, the sole proffered Ground for instituting review. Accordingly, the Petition should be denied.

II. BACKGROUND

Relevant aspects of the '373 Patent are discussed *infra* in the context of Petitioner's challenges, and in the Expert Declaration of Dr. Stephanie Bonin. *See* Ex. 2001. The file history of the '373 patent is similarly discussed *infra* in the context of Petitioner's challenges, as well as in Dr. Bonin's declaration. *See, e.g.*, Section IV.A.

III. CLAIM CONSTRUCTION

Denial of the Petitioner's challenge to the validity of the Challenged Claims of the '373 patent does not require analysis under anything other than the plain and ordinary meaning of the claim terms, and for this reason, Patent Owners propose ordinary and customary constructions of all terms of the Challenged Claims.[1]

IV. THE BOARD SHOULD DENY INSTITUTION OF THE PETITION

A. Discretionary Denial is appropriate Under *Advanced Bionics* and 35 U.S.C. §325(d)

35 U.S.C. §325(d) vests the Board with discretion to deny institution where "the same or substantially the same prior art or arguments previously were presented to the Office." The Board's discretion is guided by the two-step inquiry set forth in *Advanced Bionics LLC v. Med-El Electromedizenishe Gerate GMBH*, IPR2019-01469, Paper 6 at 8-9 (Feb. 13, 2020) ("*Advanced Bionics*"). Factors (a), (b), and (d) from the *Becton, Dickinson* decision[2] inform the inquiry at step (1), while factors

[1] Patent Owners reserve the right to present additional claim construction arguments in the concurrent litigation or this proceeding if necessary, and to opine on the scope of the plain and ordinary meaning of terms subject to claim construction.

[2] *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 (Dec. 15, 2017) (precedential as to § III.C.5, first paragraph) ("*Becton, Dickinson*").

(c), (e), and (f)[3] inform the inquiry at step (2). *Id.* at 10. These factors are "to 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. . .". *Id*.

Petitioner argues that Muskovitz and the Sajic Application both fail to satisfy *Advanced Bionics* step (1), and therefore, discretionary denial is inappropriate. Pet. at 79-83. Petitioner makes no arguments with regard to *Advanced Bionics* step (2) for either of these references. *Id.* at 83. Therefore, discretionary denial is appropriate if Petitioner is incorrect and the proffered references fail either inquiry

[3] *Becton, Dickinson* identifies the following non-exclusive factors: (a) the similarities and material differences between the asserted art and the prior art involved during examination; (b) the cumulative nature of the 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 the overlap between the arguments made during examination and the manner in which petitioner relies on 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. *See Becton, Dickson*, Paper 8 at 17–18 (§ III.C.5, first paragraph).

at step (1) of the analysis. *Advanced Bionics,* Paper 6 at 9. Because both Muskovitz and the Sajic Application independently fail *Advanced Bionics* step (1), discretionary denial is warranted.

1. Sajic Satisfies *Advanced Bionics* Step (1)

In its first information disclosure statement, the Applicant disclosed one patent and one patent application, both of which named Peter Sajic as the inventor, and each of which pertained to purported advances in the construction of body protecting devices utilizing energy absorbing honeycomb arrays. *See* Ex. 1002 at 738-39; *see generally* Ex. 1020 (the "Sajic Patent"); Ex. 1006 (the "Sajic Application"). The latter of these references is the same Sajic Application asserted as the minor reference in Ground 1 of the Petition. Both the Sajic Patent and the Sajic Application cite the same Sajic International Application (WO 2005/060778; Ex. 1007)[4] as disclosing certain purported advances in the same technology (*see* Ex. 1006 at [0005]; Ex. 1020 at face (disclosing PCT filing)), both share figures (*compare* Ex. 1020 Figures 1 and 5 *with* Ex. 1006 Figures 1a and 2) and specification disclosures (*compare* Ex. 1020 at 6:1-12 *with* Ex. 1006 at [0104]), and both references purport to disclose advances in the art of energy absorbing cell design in helmets.

[4] The three Sajic references are referred to herein as the "Sajic References."

One year after the Applicant disclosed the multiple Sajic References, the examiner cited the Sajic Patent as an obviousness reference in denying certain pending claims. *See* Ex. 1002 at 717-21. The examiner later relied on the Sajic Patent in rejections dated September 10, 2015, December 30, 2015, May 17, 2016, and October 3, 2016, each time citing the Sajic Patent's disclosure of energy absorbing cells as purportedly disclosing the limitations of then-pending claims. *Id.* at 666-68, 616-21; 563-69; 480-98.

The examiner also listed the Sajic Application as a reference cited and considered (*id*. at 725) and performed searches of prior art based on the Sajic Application. *Id*. at 732 (row S9 showing the serial number of the Sajic Application yielding two hits); *see also id.* at 735 (row S52); 577 (row S72); 578 (row S80); 572 (row L4); 450 (row S140); 131 (row S161); 132 (row S166). Today, the Sajic Application appears on the face of the '373 patent as a reference cited by the examiner. Ex. 1001 at 2.

The foregoing facts conclusively establish that the Sajic Application was presented to and extensively considered by the examiner, including the cumulative subject matter in the Sajic Patent on which the examiner based numerous claim rejections, thus satisfying step (1) of *Advanced Bionics*. *See Advanced Bionics*, Paper 6 at 7–8. ("Previously presented art includes . . . art provided to the Office by an applicant, such as on an [IDS]."); *Palo Alto Networks, Inc. v. Centripetal*

Networks, Inc., IPR2021-01270, Paper 10 at 13-14 (PTAB Jan. 24, 2022) (same); *Atrium Medical Corporation v. Bard Peripheral Vascular, Inc.*, IPR2021-01199, Paper 11 at 22-23, (PTAB Jan. 20, 2022) ("if the prior art asserted by Petitioner here was presented to the Office . . . during prosecution . . . *Advanced Bionics* requires us to consider *Becton, Dickinson's* factors (a) and (b) as satisfied.").

Where *Becton, Dickinson* factors (a) and (b) are met, the step (1) analysis is satisfied and the Board "need not reach whether the 'same or substantially the same arguments' previously were presented" under factor (d). *Advanced Bionics,* Paper 6 at 20. Nevertheless, *Becton, Dickinson* factor (d) strengthens the conclusion at step (1). During prosecution, the examiner utilized a variety of primary references (Fournier (Ex. 1012), Sundahl (Ex. 1019), and Ferrara (Ex. 1011)) to establish the claim elements reciting or related to a (1) helmet with a (2) shell, a (3) shock absorbing liner, and a (4) cavity in the liner into which (5) some other object was placed. *See* chart in IV.A.2.b *infra*. The Sajic Patent was always cited for the same purposes—as a secondary reference to allege it would have been obvious to use a honeycomb structure insert in the device from the primary reference in order to meet the pending claim limitations relating to an insert made of energy absorbing cells viewable through vents. *See id*. Petitioner uses the Sajic Application in the exact same manner to allege it would have been obvious to use the honeycomb material from Sajic with the device in the primary reference of Muskovitz. *See* Petition at

18. Thus, there is equivalence, or at least substantial overlap, between the use of the Sajic Application in the Petition and the Sajic Patent during prosecution.

Petitioner contends that the Petition cites art not discussed or asserted in a rejection. Pet. at 82. This misses the point, however, because "[p]reviously presented art includes . . . art provided to the Office by an applicant, such as on an [IDS]." *Advanced Bionics*, Paper 6 at 7–8; *see also Palo Alto Networks*, Paper 10 at 13-14; *Atrium Medical*, Paper 11 at 22-23. Petitioner cites *Solaredge Technologies Ltd. V. SMA Solar Technology AG*, IPR2020-00021, Paper 8 (April 10, 2020), but the Board in that review actually found that the first two references asserted by the petitioner were disclosed in the patent specification and in an IDS, and therefore *satisfied* the step (1) inquiry. *Id.* at 10. The Board in *Solaredge* nevertheless instituted review because Petitioner failed to show subject matter overlap between the third obviousness reference—which was not considered by the examiner—and the references actually considered by the examiner. *Id*. *Solaredge* has no relevance to the Sajic Application, as it was actually considered by the examiner, and therefore has complete overlap with the evidence considered by the examiner. *See Nespresso USA, Inc. v. K-Fee System GMBH*, IPR2021-01221, Paper 9 at 17-22 (Jan. 18, 2022) (rejecting argument that cited but unasserted art was not considered by the examiner).

Petitioner also argues that the Sajic Application is materially different from the Sajic Patent because the Sajic Application discloses use of the energy absorbing cells as an insert in a foam helmet liner, where the Sajic Patent was disclosed as the helmet liner itself. Pet. at 82. This argument, even if accepted as true, is beside the point, as the Sajic Application itself was considered by the examiner. Nevertheless, Petitioner's argument is inconsistent with the file history.

The examiner repeatedly found the Sajic Patent to disclose an *insert* of energy absorbing cells for use in a helmet. *See* Ex. 1002 at 718 ("Sajic teaches an insert . . . It would have been obvious . . . to modify Fournier . . . to include Sajic's teaching of an insert to fit into a cavity…"); 719 ("Sajic teaches an insert . . ."); 719 ("Sajic's teaching of an insert . . ."); 564 ("It would have been obvious . . . to modify Sundahl . . . to include Sajic's teaching of an insert with a honeycomb shape…"); 482 ("It would have been obvious . . . to modify Sundahl . . . to include Sajic's teaching of an insert with a second shock absorbing material having better shock absorption. . ."); 486 ("Sajic teaches a honeycomb insert . . .") (all emphases added). Moreover, the Applicant never traversed the Sajic Patent on the basis that it did not disclose an insert, or that the energy absorbing cells of the Sajic Patent were somehow incompatible with being used adjacent to a foam helmet liner.

Instead, Applicant, in the same manner as this Preliminary Response, argued that the examiner tried to utilize the energy absorbing core structure of the Sajic

Patent alone (i.e., in open space, without an abutting compliment of outer layers, foam, or rigid outer shell), contrary to the teachings of the Sajic Patent and other references, which consistently teach the importance of using the honeycomb as the core in a cohesive sandwich panel. *See, e.g.*, *id*. at 466-67. The examiner withdrew its assertion of Sajic's honeycomb core following this argument (*see id*. at 430) and never again asserted either Sajic reference, despite asserting at least four more rejections (*i.e.*, in rejections on May 17, 2017; Dec. 8, 2017; Mar. 28, 2019; and Jan. 7, 2020).

a) The Sajic Application Does not Cure the Problems of the Sajic Patent Identified in Prosecution

Petitioner does not and cannot argue that the Sajic Application somehow remedies the shortcomings of the Sajic Patent as identified by the Applicant and accepted by the examiner during prosecution. This is because the Sajic Application does not teach or suggest that honeycomb cores can be used without outer layers to span ventilation ports in a helmet. For example, the Sajic Application does not disclose an improvement in the chemical composition of honeycomb cores of the Sajic Patent that might enhance their performance such that they might be used alone. Ex. 2001 ¶¶84-85. Instead, the Sajic Application merely asserts that it would be an improvement in the art to provide a helmet with varying energy absorbing responsiveness at different locations and that this might be achieved through

"different materials[5] or different geometrical arrangements at different locations" in the helmet. Ex. 1006 at [0003]. The Sajic Application then discloses embodiments to achieve this purported advancement. The first embodiment is "a first material or core 20 which is sandwiched between a second material or outer layer 30 and a third material or inner layer 40. The outer layer 30 provides an impact surface." Ex. 1006 at [0097]. This is the same disclosure as the sandwich panel of the Sajic Patent (Ex. 2001 ¶¶124-26), though the Sajic Application teaches that one might alter the orientation of the honeycomb tubes to an oblique orientation to achieve a desired level impact energy absorption. *See* Ex. 1006 at [0106].

Petitioner focuses on an embodiment of the Sajic Application in which the core material 20 is encapsulated or otherwise placed within the foam spacing member 110 of a helmet, shown below.

[5] Sajic's reference to "different materials" is not a disclosure of some new chemical composition for the honeycomb core, but rather the mixed use of EPS foam in abutment with honeycomb cores. Ex. 2001 ¶¶84-85.

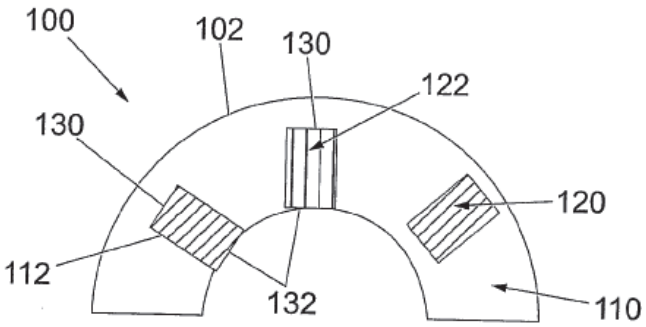


Fig. 9

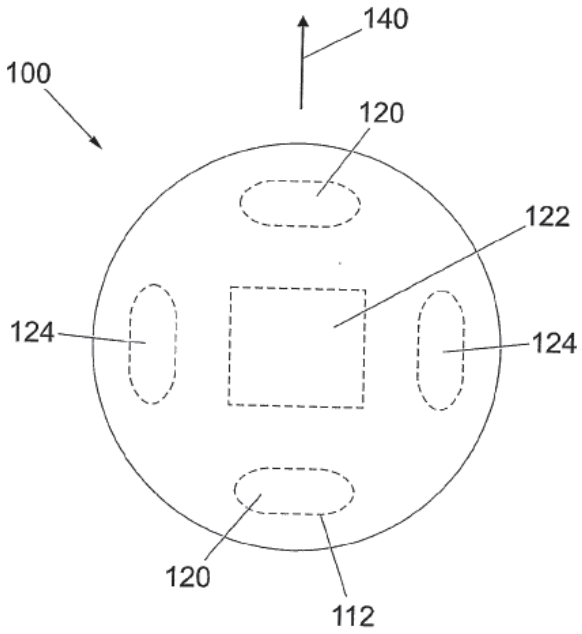


Fig. 10

These figures show the use of inserts 120, 122, and 124 made of an energy absorbing tubes "as described in the first embodiment of the invention" (Ex. 1006 at [0115])—i.e., the same energy absorbing tubes from the sandwich paneling disclosed in the Sajic Patent asserted by the examiner, albeit with some of the tubes oriented obliquely to the impact load. Ex. 1006 [0114-0117]; Ex. 2001 ¶¶83-88, 124-27). In other words, for every disclosed use of inserts 120, 122, and 124 in the Sajic Application, the tube arrays are positioned between resilient outer layers just as in the sandwich panel embodiments. Ex. 2001 ¶¶88-91. For example, the inserts are taught to be "encapsulated" within the expanded polystyrene foam of spacing member 110 "during forming of the spacing member 110." Ex. 1006 at [0115-0116]. A POSITA would understand this embodiment to describe a honeycomb insert

which is surrounded on all sides by energy absorbing foam, and further understand that the foam is placed within a rigid shell abutting the foam. *See id*. at Fig. 9; Ex. 2001 ¶¶88-93.

In other embodiments, the insert is placed into "pockets in the spacing member 110" or in "receptacles or cavities" in the major plane of the spacing member 110. Ex. 1006 at [0114]. In these embodiments, an insert is placed in the cavity or receptacle such that the all but one surface of the insert is abutted by the foam liner, which is, itself abutted by the helmet's rigid shell. *Id.*; Ex. 2001 ¶¶88-93. This may be seen in Figure 9 *supra*, where the center and left inserts are placed in pockets defined by the foam spacing member 110 which surrounds the insert on all but one side (e.g., the concave inner face of the foam spacing member 110). Thus, there is no embodiment in either the Sajic Patent or the Sajic Application in which the honeycomb core is used unbounded by other external layers. Ex. 2001 ¶91. A POSITA seeking to use the honeycomb inserts from the Sajic Application would also expect to add to the inner discontinuous surface of the tube array a soft and resilient material of some type, to achieve the comfort and durability benefits provided thereby. *See* Ex. 2001 ¶127.

These disclosures demonstrate that the Sajic Application fails to address the shortcomings of the Sajic Patent identified by the Applicant during examination and on which the Sajic Patent was withdrawn as a secondary reference. There simply is

no teaching, suggestion, or motivation to use Sajic's honeycomb cores without external layers (e.g., a resilient layer, foam, and/or a rigid shell) to help attenuate localized impact forces and avoid deleterious buckling of the core. *See infra* Section IV.B.4.(a); Ex. 2001 ¶¶126-28. The Board should find Petitioner's use of the Sajic Application in the Petition to be cumulative, because it suffers the same inadequacies which led to the examiner's withdrawal of the Sajic Patent.

The Sajic Application was disclosed to the examiner, expressly considered by the examiner, used as a basis to search the prior art by the examiner, and is substantially the same as the related Sajic Patent initially used by the examiner to reject then-pending claims during prosecution and, ultimately, withdrawn in view of arguments that Petitioner does not rebut in its Petition. Accordingly, the Sajic Application satisfies *Advanced Bionics* step (1). And because Petitioner offers no evidence or argument regarding *Advanced Bionics* step (2), the Sajic Application satisfies the *Advanced Bionics* analysis.

2. Muskovitz Satisfies the Advanced Bionics Analysis, Warranting Non-Institution

While Muskovitz was not considered during examination, Petitioner's argument that Muskovitz is materially distinct from <u>one</u> of the three primary references cited by the examiner (Sundahl), Pet. at 79-82, is both wrong on the merits

and insufficient, because it ignores other primary references in the file history which demonstrate the cumulativeness of Muskovitz.

a) Muskovitz is not Materially Distinct From Sundahl

Petitioner argues that Muskovitz is not cumulative of Sundahl based on Applicant's arguments in 2016 and 2017, as much as four years before the claims were finally allowed by the examiner. Pet. at 80-81. Petitioner posits that (1) Applicant argued Sundahl lacked certain claim elements, and (2) Muskovitz has these "missing" limitations and therefore addresses the shortcomings of Sundahl during prosecution. Pet. at 80-82. Specifically, Petitioner argues that Muskovitz remedies each of several alleged deficiencies the Applicant identified in Sundahl by disclosing a single component liner with a cavity spanning multiple vents into which a shock absorbing insert is positioned, such that Muskovitz is materially distinct from Sundahl. *Id*.

Petitioner's arguments fail on multiple bases. First, cumulativeness is an inquiry performed from the perspective of a "reasonable examiner," not Applicant's arguments to the examiner about the reach of chosen claim language. *See Regeneron Pharms., Inc. v. Merus N.V.*, 864 F.3d 1343, 1350 (Fed. Cir. 2017) ("A reference is cumulative when it 'teaches no more than what a reasonable examiner would consider to be taught by the prior art already before the PTO.'"). For this reason, Petitioner's arguments based on how Applicant characterized Sundahl fail. While

Applicant did argue in March of 2016—four years before allowance of the claims—that Sundahl's liner 12 and padding 49 could not combine to constitute the "shock absorbing liner" claimed in the then-pending claims (Ex. 1002 at 591-92), the examiner *rejected* that contention:

> Regarding Sundahl and Claim 1,[6] the applicant's claim limitations require a helmet (10 of Sundahl) comprising ... wherein the shock absorbing liner (12 and 49 of Sundhal) is formed of a first shock absorbing material (material of 12 and 49 of Sundahl). It is noted that use of the "comprising" language is open-ended and does not exclude additional, unrecited elements. In addition, the "first shock absorbing material" can be interpreted as a single material in the form of a composite.
>
> In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the first shock absorbing material being a single composition of a specific material) are not recited in the rejected claim(s)

[6] At this point in the prosecution, application claim 1 called for "a shock absorbing liner attached to the shell, wherein the shock absorbing liner is formed of a first shock absorbing material…". Ex. 1002 at 583. Application claim 31, which ultimately issued as claim 1, called for "a shock absorbing liner adjacent to and attached to the shell and comprising a cavity at least partially aligned with the vent…". *Id*. at 586

Ex. 1002 at 567. The examiner also rejected Applicant's related argument: since Sundahl's padding 49 was separate from liner 12, it was neither "adjacent to" nor "attached to" the shell, as required by the claims. *See id*. at 589. In so doing, the examiner explained that the claim language at the time did not allow for that narrow an understanding of the claims:

> In response the application argument that padding 49 is not positioned in a cavity in a material that is adjacent to the shell (see Page 8), the examiner respectfully disagrees. The term "adjacent" has been interpreted according to the definition by Merriam-Webster, i.e. adjacent: close or near."

Id. at 567-68.

Thus, the examiner notified the Applicant and the public that the pending claim language relating to a "shock absorbing liner" that was "adjacent to and attached to the shell" (as was recited in then-pending claims 1 and 13 (Ex. 1002 at 586)) was broad enough to encompass products with liners comprised of a combination of materials (*i.e.*, Sundahl's liner 12 and padding 49), even if both of those materials were not directly bonded to the shell.

The Challenged Claims of the '373 patent preserve this same claim language (i.e., "a shock absorbing liner adjacent to and attached to the shell") and the public is on notice that combinations of materials may satisfy this claim language, and, accordingly, a single material is not necessary to satisfy the "shock absorbing liner"

limitation or the "cavity" in a liner limitations of claims 1 and 12. Accordingly, Petitioner's arguments that Muskovitz somehow provides these "missing" limitations are inapposite, even if accepted.

During prosecution, Applicant also argued in February 2017 (*i.e.*, three years before claim allowance) that the perspiration absorbing pad in Sundahl was not disclosed to be shock absorbing but, again, the examiner rejected this contention, arguing that the chosen claim language "energy absorbing insert" did not distinguish a "pad" which the examiner posited was known to absorb energy:

> In response to applicant's argument, see Page 9, that there is "no indication in Sundahl that the perspiration pad is intended to serve an energy absorbing function," the Examiner respectfully notes that the pad of Sundahl is capable of serving this purpose since it is a pad located inside a helmet, and respectfully notes that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art.

Ex. 1002 at 431; *see also, e.g.*, *id*. at 481. Under the *Regeneron* inquiry, it is apparent the examiner believed Sundahl disclosed an energy absorbing insert, and Petitioner does not contend that this belief is unreasonable. Therefore, from the perspective of

the examiner, the disclosure of an energy absorbing insert in Muskovitz is cumulative of Sundahl's disclosure.[7]

In another example, in response to Applicant's February 3, 2017 argument that Sundahl's pad is not placed in front of a plurality of vents, the examiner was steadfast, over many years, that multiple pieces of art disclosed a gap/recess in a liner with an insert in front of a plurality of vents. Indeed, the examiner found two alleged inserts Sundahl and another in Ferrara, maintaining claim rejections in view of Sundahl as recently as 2020 (*i.e.*, more than four years after first asserting Sundahl in a July 9, 2015 rejection):

- May 17, 2017 rejection: "Ferrara teaches . . . a cavity . . . at least partially aligned . . . with . . . the plurality of vents…". Ex. 1002 at 415.
- May 17, 2017 rejection: "Sundahl teaches . . . a cavity . . . at least partially aligned (see Fig. 6) with the plurality of vents…". Ex. 1002 at 420.
- December 8, 2017 non-final rejection: "Sundahl teaches . . . a cavity . . . at least partially aligned . . . with the plurality of vents. . . . It is noted that the new interpretation of Sundahl includes a plurality of vents . . ." Ex. 1002 at 347, 356.

[7] Patent Owners disagree with both the examiner and Petitioner on this front. Neither the pad in Sundahl nor the insert in Muskovitz is intended to serve an energy absorbing function.

- Jan 07, 2020: "Sundahl discloses . . . a cavity . . . and portions between . . . that spans across at least a portion of each of the first and second openings . . . a shock absorbing insert . . . positioned in and substantially filling the cavity. . . .". Ex. 1002 at 35-36.

Accordingly, there is no basis for Petitioner to argue that Muskovitz adds anything material to what the examiner believed was already present in Ferrara and Sundahl. Petitioner presents no argument that the examiner's belief was unreasonable, so *Regeneron* dictates that Muskovitz' cavity disclosure is cumulative, even if one accepts Petitioner's assertion that the Muskovitz cavity aligns with vents, because the examiner already considered that to be the case with Sundahl (in two locations) and Ferrara.[8]

Finally, while Applicant also argued that the perspiration absorbing pad in Sundahl would cease to perform its intended functions if replaced with the honeycomb insert from the Sajic Patent, these arguments were repeatedly rejected by the examiner. Ex. 1002 at 621, 497-98. Moreover, the examiner later found what it believed to be a second alleged shock absorbing insert in Sundahl and maintained rejections of pending claims for a shock absorbing insert on that basis. *See, e.g.*, Ex. 1002 at 35-36 (identifying Sundahl elements 43 and 40 as the shock absorbing insert

[8] Petitioner does not contend that Muskovitz discloses anything materially new in respect to Ferrara's disclosure.

in a cavity and spanning vents, not the perspiration absorbing pad 47 of earlier rejections). This second alleged shock absorbing insert from Sundahl was not taught to be perspiration-absorbing or wringable like the pad, so Petitioner's belief that Muskovitz solves the motivation-to-combine problems of Sundahl based on it not disclosing a perspiration-absorbing pad is misplaced.

In short, even if accepted as true, each of Petitioner's purported "material" differences between Sundahl and Muskovitz are inapposite to the cumulativeness inquiry in view of the limitations of claims 1 and 12 and the full scope of the file history.

b) Muskovitz is <u>not</u> Materially Distinct From any Primary Reference Asserted by the Examiner

When a new reference is asserted in a petition, the Board is to "review whether Petitioner relies on [the new reference] in substantially the same manner as the Examiner cited [the examination reference] during prosecution such that [the new reference] discloses substantially the same information as [the examination reference] in relevant part." *Advanced Bionics,* Paper 6 at 15.[9] As shown in the chart

[9] This analysis focuses on the "manner" in which the <u>examiner</u> cited the art, and this section of the Preliminary Response should not be construed as expressing Patent

below,[10, 11] Petitioner uses Muskovitz in the same manner as the examiner used the other primary references during prosecution, which ultimately failed to demonstrate the claims were obvious for the same reasons Petitioner's arguments fail. Moreover, Petitioner provides no argument that Muskovitz is materially distinct from the disclosures of Ferrara or Fournier, or that it presents in its Petition arguments for Muskovitz that are materially distinct from the examiner's consideration of these two references.

Owners' view or an admission of the presence or absence of any claim limitation from the references discussed herein.

[10] All page citations for the Sundahl, Fererra, and Fournier references in this chart are to Exhibit 1002, the patent file history, and represent the examiner's assertion that a claim limitation was disclosed by the reference named at the top of the column. Where the examiner relies on a secondary reference to disclose a claim limitation, an explanatory bracket is provided.

[11] Because the prosecution lasted seven years, and the claim language was amended several times, Patent Owners list representative, conceptual claim limitations which capture limitations which may appear slightly differently across pending and issued claims.

Limitation	Muskovitz[12]	Sundahl	Ferrara	Fournier
Helmet	37; 70	657; 659; 606; 609; 617; 553; 556; 565; 480; 486; 491; 416; 420; 342; 347; 221; 173	413; 415	715
Shell	38-39; 70	657; 606; 609; 617; 553; 556; 565; 480; 486; 491; 416; 420; 342; 347; 221; 173	413; 415	714; 716
Vent or plurality of vents	38-39; 70	657; 661; 606; 611; 617; 553; 565; 480; 486; 491; 416; 420; 342; 347; 221; 173	413; 415	
Shock-Absorbing Liner adjacent/attached to shell	40-42; 70	657; 659-61; 606; 610-611; 617; 553; 556; 565; 480; 486; 491; 416; 420; 342; 347; 221; 173	413-14 [Ferrara and/or Lemelsen]; 415-416 [Ferrara and/or Lemelson]	714; 715; 716
Cavity in shock absorbing liner	42-45; 70	657; 659; 606; 609; 617; 553-54; 565; 480; 486; 491; 416; 420; 342; 347; 221; 173-174	413	714; 715

[12] All cites in this column are to the Petition; Patent Owners provide a bracketed note to show where Petitioner relies on the Sajic Application for disclosure of a limitation.

Cavity aligned with vent(s)	45-48; 60-62; 70	657; 661-62; 606; 611; 617; 553-554; 565; 480-81; 486; 491; 493; 416; 420; 342; 347; 221; 174	413-414; 415	
Shock absorbing insert in cavity	49; 70	657-658; 659-60; 606; 609; 480; 556; 565; 486; 491; 416-17; 420; 342; 347; 221; 174	414; 415	714; 715
Shock absorbing insert substantially fills cavity	49 [Musk. and Sajic App.]; 70 [Musk and Sajic App.]	491; 221; 174		
Insert spanning vents	50-54 [Musk. and Sajic App.]	342; 347; 221; 174		
Visible through vents	50-54 [Musk. and Sajic App.]; 70 [Musk. and Sajic App.]	420; 347; 351 [Sund. and Ferguson]; 174	415	
Liner between shell and insert	54-55	347		
Insert comprises energy absorbing tubes or cells	55-56 [Sajic App.]; 64-65 [Sajic App.]; 71-72 [Sajic App.]	667 [Sajic Patent]; 616 [Sajic Patent]; 172 [Sajic Patent]; 483 [Sajic Patent]; 417; [Ferguson]; 420 [Ferguson]; 343 [Ferguson]; 347 [Ferguson];	414	717-718 [Sajic Patent]; 327 [Sajic Patent]

		221 [Ferguson]; 174		
Cells have openings	55-56 [Sajic App.]; 71-72 [Sajic App.]	417 [Ferguson]; 420-21 [Ferguson]; 343 [Ferguson]; 347 [Ferguson]; 221 [Ferguson]; 174	414	721 [Hefling]
Openings are in vents and allow air flow	56-59 [Musk. and Sajic App.]; 72-73 [Musk. And Sajic App.]	491-92; 417 [Sund. and Ferguson]; 420-21 [Sund. and Ferguson]; 343[Sund. and Ferguson]; 221 [Sund. and Ferguson]; 174	414	721 [Hefling]

As this chart demonstrates, Petitioner uses Muskovitz in substantially the same manner as the examiner used the three primary references during the seven-year prosecution of the '373 patent—to establish the existence of helmets, shells, liners attached to shells, vents aligned with cavities in the liners, and inserts in those cavities. Then, to argue it would have been obvious to modify the primary references by using an open cellular energy-absorbing insert spanning and visible through vents, both Petitioner and the examiner resort to secondary references, including the Sajic References, both of which disclose the same sandwich panel honeycomb core

materials.[13] Ultimately, Applicant overcame the examiner's positions, which mirror Petitioner's use of the Sajic Application here. *See infra* IV.B.4.(a)-(b).

Accordingly, *Advanced Bionics* step (1) is met for Muskovitz because Petitioner presents "the same or substantially the same prior art" (*i.e.*, a primary reference purportedly disclosing helmets with shells, liners, a cavity in a liner aligned with a vent, an insert in the cavity) and arguments (*i.e.*, a POSITA would put the honeycomb cores of the Sajic References into the cavities of the primary references to improve shock absorption performance) as previously proposed and abandoned by the examiner. *See Advanced Bionics*, Paper 6 at 18-19; *see also Nespresso USA, Inc. v. K-Fee System GMBH*, IPR2021-01221, Paper 9 at 17-22 (PTAB Jan. 18, 2022); *Palo Alto Networks, Inc. v. Centripetal Networks, Inc.*, IPR2021-01155, Paper 12 at 15-16 (PTAB Jan. 20, 2022) (analyzing contents and use of examination reference to conclude that unexamined reference was cumulative of art and arguments in prosecution; finding *Advanced Bionics* step (1) for patent owner).

[13] Petitioner does not argue, for example, that the Sajic Application discloses advances in the chemical or physical structure of the honeycomb core discussed in the Sajic Patent, nor could it. *See* Ex. 2001 ¶85.

In view of all of the foregoing, the Board should exercise its discretion and deny institution under Section 325(d). In addition, as should be expected given the foregoing history, the Board must deny institution because Petitioner's obviousness arguments under Ground 1 fail on the merits and clearly implemented forbidden hindsight.

B. The Board Must Deny Institution Based on Ground 1 Because Muskovitz and Sajic fail to Teach or Make Obvious Multiple Limitations of Each Challenged Claim

Petitioner's sole invalidity Ground relies on the combination of Muskovitz and the Sajic Application to argue obviousness against the challenged claims of the '373 patent. *See* Pet. at 13. This argument fails for a host of reasons,[14] each of which is independently sufficient to establish that Petitioner has failed to demonstrate a substantial likelihood of prevailing in its invalidity challenge.

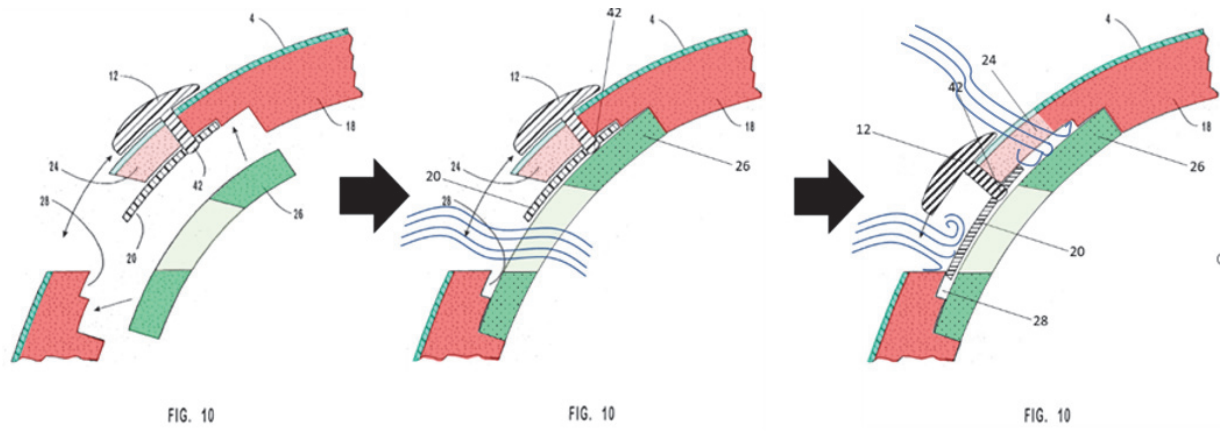
[14] At this preliminary response stage, Patent Owners elect to illustrate specific deficiencies in the Petition, but not by way of limitation or waiver. Patent Owners' silence on certain limitations should not be construed as an admission of the presence of the claim limitation in the Ground 1 combination, nor as an admission that the references are properly combined.

1. Petitioner's Proposed Combination is not Obvious Because it Defeats the Central Purpose of Muskovitz

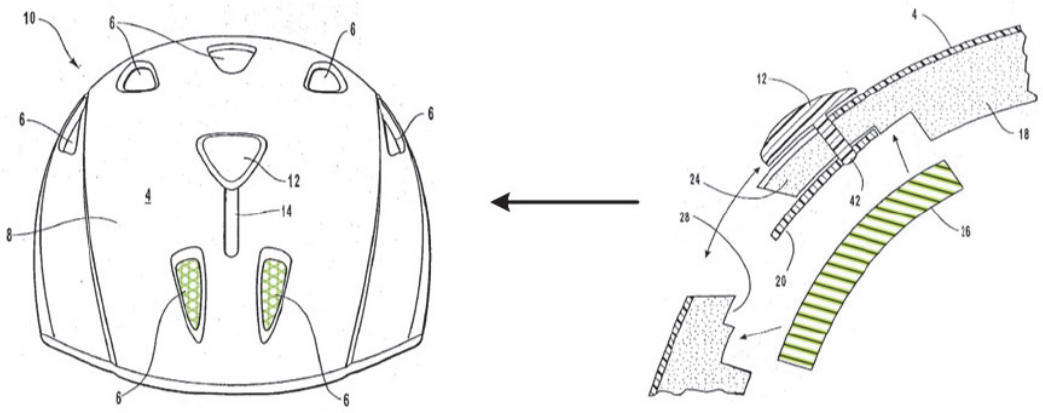
One of the innovations Muskovitz discloses is "an improved ventilation system" (Ex. 1005 at [0013]) utilizing a vent space having an enclosed vent shield "to control ambient air flow into and out of the helmet." *Id.* at [0021]. The vent shield, element 20 in the annotated image *infra*, is situated beneath the helmet's shell and connected through slotted portion 14 via elongated member 42 to a fluid airflow actuator 12 that sits above the shell. *Id.* at [0075, 0078]. A helmet wearer can operate the vent shield by pushing down or up on the fluid airflow actuator, causing the vent shield to move into an "open" or "closed" position. Ex. 2001 ¶¶70-72. This enables the user to selectively block airflow from entering the helmet or, conversely, to allow such airflow. Ex. 1005 at [0080] ("vent shield 20 is able to slide . . . within vent box 22. As it does, vent shield 20 either covers, uncovers, or partially covers ventilation ports 6 ***to control the flow of ambient air into the interior of protective helmet 10***."); [0100] ("in an open position, vent shield 20 is displaced such that ambient air may pass through aperture 108 in upper plate member 24, and aperture 112 in lower plate member 26, and subsequently through vent port 6 and into the interior of helmet 10. ***In a closed position, vent shield 20 is displaced such that ambient air is not allowed to flow through into the interior of protective helmet 10.***"); [0112] ("vent shield 20 may be displaced or slide in a bi-directional manner

relative vent port 6. This relationship creates a dynamic vent system in which ***the wearer may regulate ventilation into helmet 10***.") (all emphases added).

Thus, the purpose of the vent shield 20 is to allow the user to close or open the helmet to allow airflow into and/or out of the helmet. This is depicted below (*see* Ex. 2001 ¶¶70-72). Importantly, because insert member 26 is disclosed to occupy space behind slotted member 14, any air that might enter through slotted portion 14 when the vent shield 20 is in the closed position (and neither the elongated member 42 nor fluid airflow actuator 12 block the open, upper portion of the slot) is blocked by the insert member 26, thereby preserving the user's ability to close the interior of the helmet to ambient air flow. *See id*.



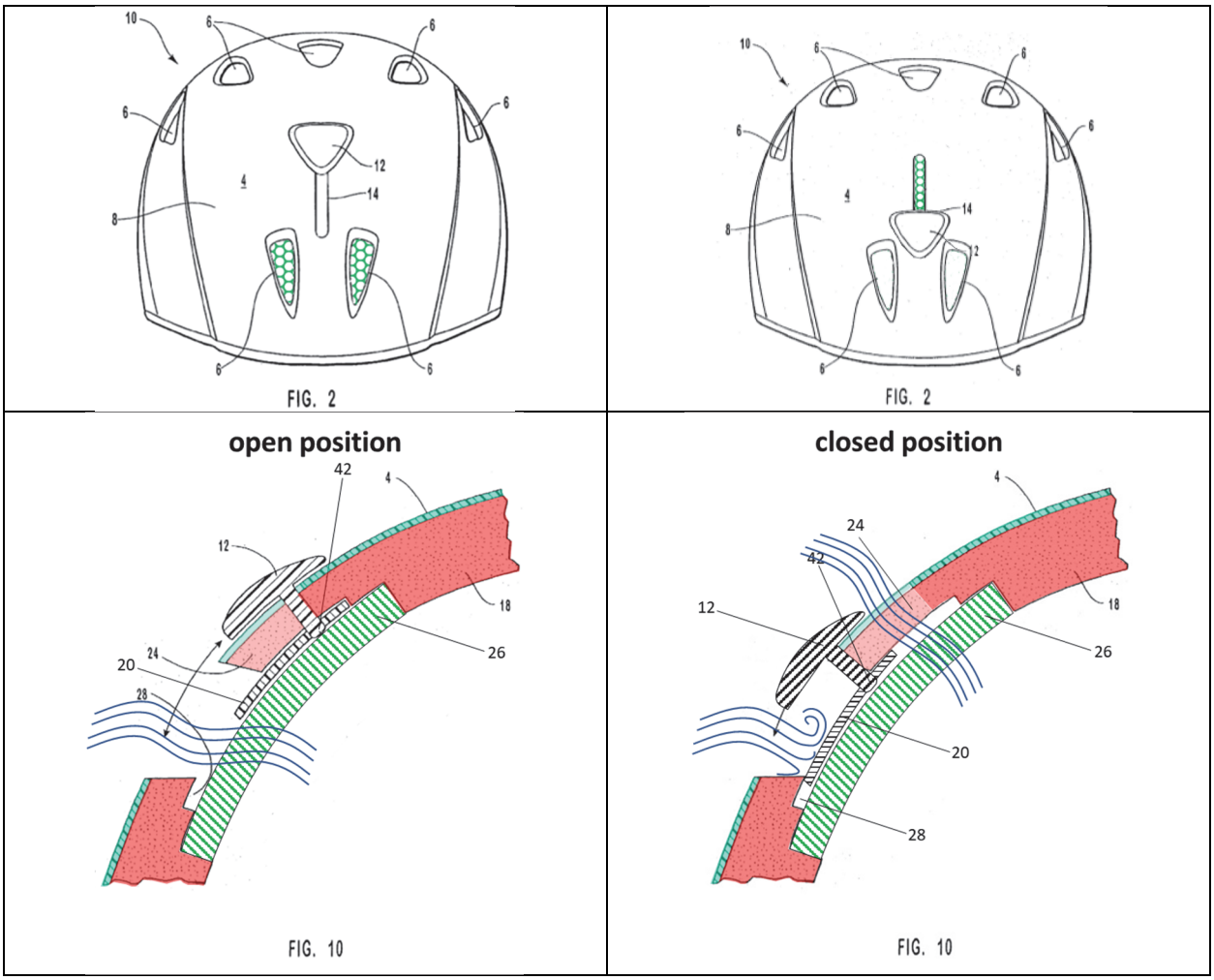
Against this backdrop, Petitioner alleges that a POSITA would find it obvious to take an <u>open</u> honeycomb core of the Sajic references without any abutting layers, size it to fit a recess in Muskovitz, then replace insert member 26 with Sajic's honeycomb core. *See* Pet. at 29-30. Petitioner depicts this as follows:



Muskovitz-Sajic-Helmet-1 (Modified FIGS. 2 and 10, Muskovitz)

Pet at 35.

It is apparent that Petitioner's proposed combination defeats the central purpose of Muskovitz—to provide a user with a vent shield capable of opening and closing the helmet to ambient air flow. Ex. 2001 ¶¶95-98. Petitioner contends that, contrary to the teaching of the Sajic Application, a POSITA would not seal the ends of the Sajic honeycomb core to allow airflow into the helmet and to avoid the cost of an additional manufacturing step. Pet. at 30; *see* Ex. 1006 at [0122]. But failure to seal the ends of the honeycomb core (which is contrary to Sajic's teachings) causes Petitioner's proposed combination to be incapable of preventing airflow into the helmet when the actuator is in the closed position, as illustrated below (*see* Ex. 2001 ¶¶95-98).



Thus, in Petitioner's proposed combination, as a user slides vent shield 20 into what is supposed to be the "closed" position such that "ambient air is not allowed to flow through into the interior of protective helmet 10" (*id*. at [0112]), the slotted portion 14 through which elongated member 42 travels is unoccupied by any component or material that would block airflow, as only the honeycomb core is situated between a wearer's head and the open area of slotted portion 14 allowing air to flow through the insert and into the helmet's interior. Pet. at 30; *see* Ex. 2001 ¶¶95-98. In other words, under Petitioner's proposed combination, a user is

prevented from sealing off ambient airflow, which Muskovitz teaches is a serious concern on cold ski days, with helmet wearers traveling at high speeds in frigid conditions. *See* Ex. 1005 at [0003] (helmets used in snow sports), [0010] ("The invention also discloses a device that can be rotated to the back to prevent cold air from flowing into the helmet in winter…").

Petitioner's failure to employ Sajic's teaching of sealed honeycomb core ends results in a second failure to achieve the design goals of the Muskovitz patent. Use of the honeycomb core of the Sajic Application without the "sealing material" would, over time, allow for penetration of the ends of the honeycomb core into the foam liner of Muskovitz, causing the honeycomb core to encroach on the "vent space 28" depicted in Figure 10 of Muskovitz (*see also* Ex. 1005 at [0087]) and thus interfere with the movement of the vent shield. *See, e.g.*, Ex. 2002 at 50 ("[N]o bonding agents or other types of constraints were used to connect the honeycombs layers to the EPS foams, to facilitate the penetration of the honeycombs themselves in the foams."). Additionally, the penetration of the honeycomb core into the liner would hinder the user's ability to easily displace the insert at her discretion, which is taught to be a function of the insert member. *See* Ex. 1005 at [0087].

A POSITA would not find it obvious to make a combination or modification that defeats central purposes of Muskovitz, as Petitioner proposes in Ground 1. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984) (if a proposed

modification would render the prior art invention unsatisfactory for its intended purpose, there is no suggestion or motivation to make the proposed modification.); *see also Veterinary Orthopedic Implants, Inc. v. Depuy Synthes Products, Inc.*, IPR2019-01332, Paper 17 at 41-44 (PTAB Jan. 22, 2020) (declining institution where "it appears that the proposed change Petitioner is urging would be inconsistent with [a combination reference's] stated objectives" and "Petitioner does not persuasively explain why the ordinary artisan would, absent hindsight, have made the proposed changes to [the reference] in spite of the inconsistencies."); *Black & Decker, Inc. v. Positec USA, Inc.*, 646 Fed. Appx. 1019, 1027 (Fed. Cir. 2016) (reversing Board's obviousness decision because the "proposed modification" to the primary reference was "inconsistent with [the reference's] stated goal" and "[ran] counter to the intended purpose."); *Cook Grp., Inc. v. Boston Sci. Scimed, Inc.*, 809 Fed. Appx. 990, 1000-01 (Fed. Cir. 2020) ("The Board did not err as a matter of law when it explained that the loss of key functions in the primary reference here supports a finding of no motivation to combine.") (emphasis added). For this reason alone, Petitioner has failed to demonstrate a likelihood of prevailing.

2. Petitioner's Proffered Motivations to Combine the Ground 1 References are Without Foundation and Disregard Explicit Teachings of the Asserted References

Although the foregoing is sufficient to defeat Petitioner's Ground 1 contention, Petitioner's proffered motivations to combine under Ground 1 (each

addressed below) cannot withstand scrutiny, which is also fatal to its obviousness combination. *See KSR International Co. v. Teleflex Inc.*, 550 U.S. 398, 418-19 (2007) (it is "important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does … because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known.").

Petitioner: A POSITA would have recognized the benefit of using Sajic's honeycomb core to improve impact attenuation of Muskovitz' insert member 26. Pet at 18, 20, 24. This argument fails for the reasons discussed *infra* in Section IV.B.4.(a)-(b), and because Petitioner misunderstands the function of insert member 26 in Muskovitz. Consequently, Petitioner's inferences about how a POSITA might modify this component contradict Muskovitz and are unfounded. *See* Ex. 2001 ¶¶100-101.

Muskovitz does not teach the use of an insert for purposes of improving or even contributing to the shock absorbing performance of the helmet. Instead, Muskovitz teaches that insert member 26 is "removable . . . allowing the user to place or displace insert member 26 as desired," and is used to define a "vent space" that houses an adjustable vent shield component in the foam liner [Ex. 1005 at 0087]. Because the insert is removable at the discretion of the user, and taught to primarily

act as a backstop for a vent shield 20, a POSITA would not look to the insert as a way to enhance the impact absorbing performance of the helmet by introducing a new material, as argued by Petitioner. This is because any benefit from doing so would be obviated at the caprice of a user who may remove the insert at her discretion. To the extent a POSITA felt a desire to improve the impact absorption characteristics of the helmet, including around the vent areas, the POSITA would look instead to *permanent* components that are taught to act as an impact absorber, and which a user cannot remove at her discretion (e.g., the liner). Ex. 2001 ¶¶100-101.

Petitioner: Use of Sajic's honeycomb core in place of Muskovitz' insert member 26 is merely the use of a known material for its intended function with a predictable result. Pet at 19. As discussed throughout this Response, Petitioner does not use Sajic's honeycomb core according to its intended function. Honeycomb cores have been used for decades as the core of a sandwich panel bonded to outer layers providing more predictable buckling of the honeycomb walls and avoiding localized failure in the core. *See* Ex. 2001 ¶¶102-06. Every Sajic reference discloses this use of honeycomb sandwich panels. *See* Ex. 1007 at 13:10-13; Ex. 1020 at 5:17-21; Ex. 1006 at [0097]. In addition, according to the Sajic Application, when a honeycomb core is used as an insert in a foam liner, it is either entirely encapsulated by an EPS foam liner or abutted by an EPS foam liner on all but one side. *See* Ex.

2001 ¶¶102-06; Ex. 1006 at [0113-0117]. Thus, in every disclosed use of a honeycomb core, the core is entirely or substantially abutted by other resilient layers (e.g., the sandwich panels, the foam liner, and/or the helmet's rigid shell) which operate to distribute forces across the breadth of the honeycomb core, thereby avoiding failure of the core from localized impact that might lead to user injury. Ex. 2001 ¶¶102-06.

Petitioner's contention that an intended function of the honeycomb core in Sajic is to span an opening with no abutting layer, foam, or shell on either side of the core, for the purpose of absorbing impacts and facilitating ventilation is without factual basis in the Sajic Application or anywhere else in the art. *Id*. This is why the examiner withdrew the assertion of Sajic's honeycomb core as an obviousness reference when this was pointed out during prosecution, and Petitioner identifies no error in this argument or the examiner's abandonment of Sajic's honeycomb core as a secondary reference. *See* Ex. 1002 at 466-67, 430; Section IV.A.1 *supra*.

Petitioner's assertion that the result of using Sajic's honeycomb core is "predictable" is belied by Caserta, which found that honeycomb cores underperformed relative to EPS foam near vent ports (*see infra* Section IV.B.4.(b); Ex. 2002 at 113, 120-21), and the teachings of the Sajic Application itself: "The performance and failure mode of plastic and composite columns depends on a complex interaction of a number of different parameters including the material used,

the geometry (shape and thickness), fibre alignment in composites, the use of triggers, and the loading conditions. . . . careful selection of these parameters" is therefore required. Ex. 1006 at [0008] (emphasis added). Petitioner's proposed use of the Sajic honeycomb is wholly inconsistent with the loading conditions described in the Sajic Application (i.e., either sandwiched between resilient outer layers or encapsulated and/or abutting EPS foam and a rigid shell), and the decades-long use of honeycomb cores between resilient outer layers to form a sandwich panel. Ex. 2001 ¶106.

Petitioner: Incorporation of Sajic's honeycomb core may improve protection in areas of the helmet without the honeycomb core. Pet. at 22. This argument stems from a plain misapprehension of the Sajic Application and a fanciful view of physics. The Sajic Application teaches that where no honeycomb is used in a helmet, the foam liner 110 will still be used and thereby provide a "level of protection [] at least equal to that of conventional helmets which use only a foam core." Ex. 1006 at [0126]. A POSITA would not read this disclosure, as Petitioner does, to suggest that the use of a honeycomb core in one section of a helmet somehow improves the impact absorbing qualities of foam in another portion of the helmet, and there is no disclosure in the Sajic Application to that effect. Ex. 2001 ¶107. Thus, a POSITA would not use a honeycomb core to change the impact absorbing qualities of foam found in another location, as Petitioner posits.

Petitioner: Muskovitz discloses that the insert member is preferably the same material as the liner, but contemplates other materials. Pet. 22-23. Petitioner's failure to acknowledge the stated purpose of the Muskovitz insert 26 (*see* Ex. 2001 ¶108-09) causes it to erroneously adopt the wrong litmus for an acceptable alternative insert material. The Muskovitz insert is removable at the discretion of the user, and it is not taught to contribute to impact absorption in the helmet. Instead, the Muskovitz insert is used to define the vent space (Ex. 1006 at [0087]), not interfere with the movement of vent shield 20 (*id*.), be easily removed at the discretion of a user (*id*.), not present a comfort/injury risk to the user's head in ordinary use, and not add unnecessary material or assembly cost to the helmet. Ex. 2001 ¶109; *see also* Pet. at 30 (citing cost when making manufacturing decisions).

Petitioner provides no evidence that a POSITA would have found it obvious to use Sajic's honeycomb core to meet these design criteria. There is a reason Muskovitz teaches that the insert is "preferably the same or a similar impact absorbing material as [the] liner. Ex. 1005 at [0087]. A manufacturer with equipment to shape an EPS foam liner could just as easily shape an EPS foam insert member to fit in a recess of the liner. Ex. 2001 ¶¶109-10. However, manufacturing and shaping a honeycomb insert introduces additional complexity regarding different material inputs, manufacturing step(s), curing step(s), and shaping step(s), presenting expertise, machinery, and time concerns to a manufacturer, all of which

add cost to a helmet that must be justified over a cheaper alternative taught in Muskovitz to be acceptable (e.g., use the same foam as the liner). *Id*.

Additionally, Landi teaches that when a honeycomb insert "is to be worn directly" by a person, as proposed by Petitioner, "bonding a resilient material to the cell edges is essential" to avoid injury, further adding expense to the helmet. *See* Ex. 1010 at 2:30-3:3. A POSITA would not think the additional complexity and expense of using honeycomb materials are justified for a component that is not even taught to meaningfully contribute to the impact absorption performance of the helmet. Ex. 2001 ¶111.

Even if a POSITA were to look for a second, "non-preferred" material for the insert member in Muskovitz, she would do so within the context of the teachings in Muskovitz, which as discussed above, would not suggest the use of Sajic's honeycomb core in a completely unbounded and open-cell configuration. In fact, at paragraph [0120], Muskovitz suggests how one might "provide improved protection and greater or increased impact attenuation" relative to EPS foams, and honeycomb materials are not mentioned. Ex. 1005. This is likely because the Sajic Application itself teaches that cellular honeycomb materials suffer similar limitations to those taught by Muskovitz regarding EPS foam—permanent deformation and reduced ability to attenuate impacts after an initial blow or repeated impacts. Ex. 2001 ¶112;

see also Ex. 1006 at [0007-0009] (describing progressive "failure" and "crushing" of columns of various core materials).

In view of the teachings and suggestions in the references themselves, a POSITA would not believe that Sajic's honeycomb core is a suitable alternative material for the Muskovitz insert member, and the POSITA would not be motivated to make such a combination. Because Petitioner's proposed motivations to combine contradict the express teachings in the asserted prior art, Petitioner has failed to show a likelihood of prevailing.

3. Ground 1 Fails to Properly Demonstrate the "Substantially Filling the Cavity" Limitations of Claims 1 and 12

Claims 1 and 12 recite that a shock absorbing insert is "positioned in and substantially fill[s] the cavity" in the shock absorbing liner. Ex. 1001 cls. 1, 12 (the "Substantially Filling limitations"). This is shown in, for example, Figure 2 of the '373 patent.

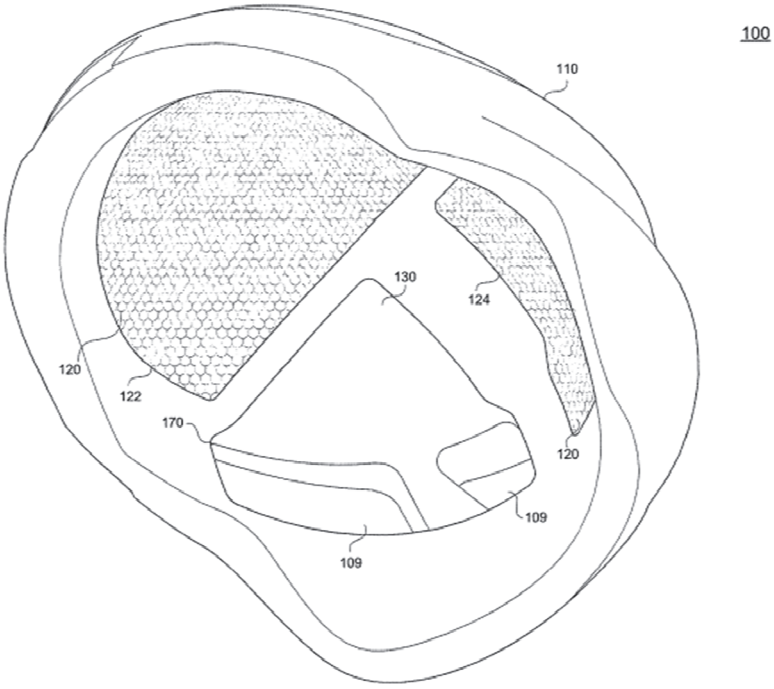


FIG. 2

Petitioner cites two paragraphs of Muskovitz and two paragraphs of the Copeland declaration to argue that its proposed combination meets the Substantially Filling limitations. *See* Pet. at 49. But Muskovitz expressly teaches the opposite, which the Petition ignores.

Muskovitz teaches that the insert member 26 "is not sized to fill the entire recessed portion of inner liner 18 in order to allow for and provide for the creation of vent space 28." Muskovitz at [0087]. A POSITA would understand that insert member 26 cannot occupy the recess used for the vent shield 20 and should have a substantial aperture in the insert with a vent. Ex. 2001 ¶115.

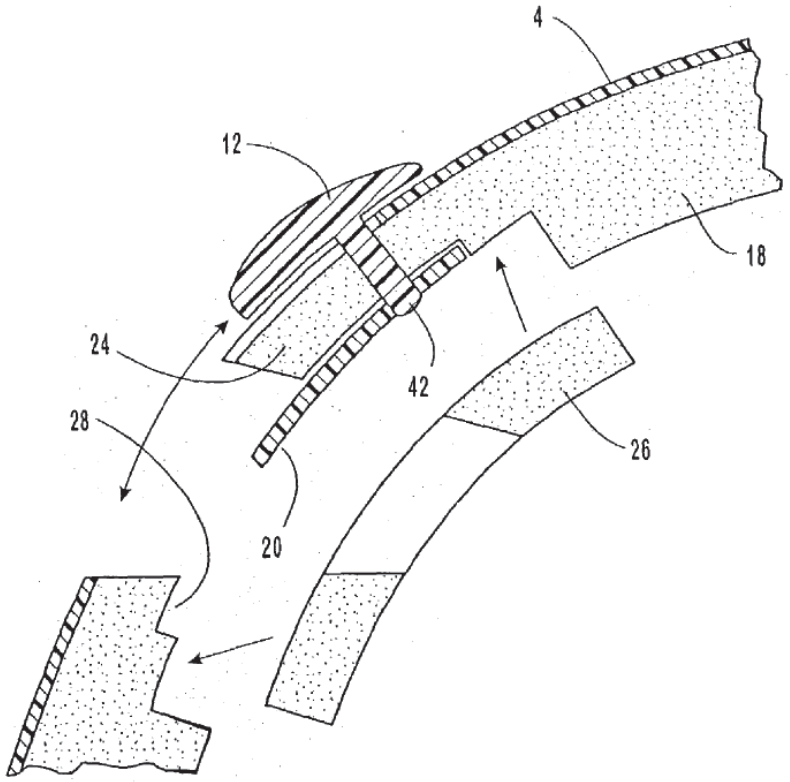


FIG. 10

If insert 26 substantially filled the alleged cavity in Muskovitz, it would operate like an inverted lid, sealing the ventilation port 6 irrespective of the position of the vent shield 20 and defeat a primary function of the design. *Id.* ¶116. In other words, Muskovitz teaches explicitly that insert 26 should not substantially fill the alleged cavity of the liner. *Id*. ¶¶116-17. Petitioner errs, then, when it concludes that Muskovitz teaches that insert member 26 "entirely fills the insert-space." Pet. at 49. Mr. Copeland's declaration shares Petitioner's misapprehension of Muskovitz (*compare* Pet. at 49 *with* Ex. 1003 ¶¶164-65). Accordingly, neither Petitioner nor Mr. Copeland offers a sensible reason why a POSITA would depart from these

essential characteristics of the Muskovitz insert member 26 in order to meet the Substantially Filling limitations in the claims.

4. Ground 1 Fails to Properly Demonstrate the "Spanning" and "Positioning" Limitations of Claims 1 and 12

Claim 1 recites that the shock absorbing insert "spans across at least a portion of each of the plurality of vents," and later recites that a first and second plurality of energy absorbing cells of the insert will be "positioned within a perimeter of" first and second openings in vents in the shell, respectively. Claim 12 similarly recites that the shock absorbing insert "spans across at least a portion of each of the first and second openings" in vents in the shell, and goes on to recite that the insert will have groups "of hollow structures defining a plurality of adjacent through-passages" which "overlap[]" with the first and second openings in the shell, respectively. *See* Ex. 1001 at cls. 1, 12. These are referred to herein as the "Spanning and Positioning" limitations.

Muskovitz alone does not meet the Spanning and Positioning limitations for a host of reasons. Primarily, insert member 26 of Muskovitz has no energy absorbing cells or arrays of hollow structures, and it has an aperture aligned with the vent openings instead of an array of energy absorbing cells. Ex. 2001 ¶¶119-20. Petitioner argues that a POSITA would find it obvious to substitute Muskovitz' insert member 26 with a honeycomb core from the Sajic Application to achieve the

Spanning and Positioning limitations of claims 1 and 12. Petitioner errs on independent bases.

a) The Examiner rejected the combination of Sajic's Honeycomb core with an ordinary helmet in the precise manner proposed by Petitioner

At least four times, the examiner rejected proposed claims in view of a combination of the Sundahl helmet patent and the Sajic Patent on the basis that it would have been obvious to use Sajic's honeycomb core to improve the impact absorption of the Sundahl helmet. Ex. 1002 at 667, 616, 564, 481-83. In each rejection, the examiner relied on Sundahl to disclose the shell, vent ports, openings in the vent ports, a cavity aligned with the vent ports, and an insert in the cavity. Ex. 1002 at 666-68 (September 10, 2015 rejection), 616-21 (December 30, 2015 rejection) 563-69 (May 17, 2016 rejection); 480-98 (October 3, 2016 rejection). Each time, the examiner cited the Sajic Patent as disclosing a shock absorbing honeycomb core that a POSITA would allegedly find obvious to use as and insert in the cavity to satisfy the Positioning limitations of the then-pending claims. *See* Ex. 1002 at 666-67, 618, 565, 481. After several unsuccessful arguments against such a combination, *see, e.g.*, *id*. at 497-98, 544, 621, 651, Applicant ultimately argued that using the honeycomb core of the Sajic Patent without the resilient outer and inner layers as taught by Sajic was incompatible with the teachings of the Sajic Patent, and therefore inappropriate:

> Sajic discloses a core material, which is specifically designed to avoid the risk of global buckling (i.e., compression) because such global buckling would be detrimental to the functioning of the core material. *See e.g.*, Col 5, ll. 59-65 In this regard, Sajic describes a specific method of forming a sandwich panel which sandwiches the core material (i.e., the array of hollow tubes) between two skins that are bonded to the upper and lower surface of the core material. *See* Col. 6, ll. 48-67. There is no evidence in Sajic, that it would be advisable or practical to use only the core material 20 without it being sandwiched between the skins 40 and 50 or that the core material 20 would provide a useful function if placed in a cavity with the upper and lower sides of the core not being supported by a skin. . . .
>
> Accordingly, Applicant submits that because the references teach away from the purported combination and because the Office Action fails to provide a motivation for combining the reference based on the facts of record, a prima facie case of obviousness has not been established and the 35 U.S.C. 103 rejection of claim 1 should be withdrawn.

Ex. 1002 at 466-67 (emphasis added). Applicant's argument was a faithful recounting of the teachings of the Sajic Patent, the corresponding Sajic International Application (Ex. 1007 at 3:21-4:19), and the Sajic Application asserted by Petitioner (Ex. 1006 at [0103-0105]). Ex. 2001 ¶121. The examiner subsequently withdrew the use of the Sajic Patent as a secondary reference. *See* Ex. 1002 at 466, 430.

The Sajic Patent is consistent with the state of the art, which understood honeycomb structures to be usefully applied when sandwiched between resilient outer layers that would serve to attenuate impact forces across multiple cells and

thereby avoid detrimental buckling of the core. Ex. 1010 at 2:30-3:3 (disclosing the "extremely important functions performed by "resilient layer[s] over both open ends of" the disclosed honeycomb core); Ex. 1011 at [0036] (disclosing that the "outer shell layer 20" of the sandwich panel is a "hard layer" placed atop a "compressible internal liner 32" such that an impact on the outer shell layer results in compression of the core layer of the sandwich); Ex. 2002 at 3 ("Honeycomb materials have been used extensively in a wide range of applications as [sic] core of sandwich panels…".); Ex. 2001 ¶¶122-24.

Because Petitioner's Ground 1 allegations are functionally identical to the obviousness combination asserted by the examiner and overcome during prosecution, and because the examiner properly withdrew this substantively similar combination, Ground 1 fails on the merits and because it is cumulative of art and arguments already made and overcome. *See* Section IV.A, *supra*.

b) Evidence Not Cited in Prosecution Demonstrates that a POSITA Would Not Expect Success in Using Sajic's Honeycomb Core as Proposed by Petitioner

Not only has Petitioner proposed a substantively identical and faulty combination of references as was withdrawn during prosecution, it has done so without alerting the Board to evidence known to Petitioner (and which was not of record during prosecution) which discourages the use of honeycomb cores in the manner Petitioner advocates.

In the concurrent district court preliminary injunction proceedings, Petitioner and Mr. Copeland submitted academic research on the use of honeycomb core material as an impact absorption medium in helmets. This research, entitled "The Use of Honeycomb in the Design of Innovative Helmets," was published the year before the Applicant filed its patent application, and it summarizes the author's attempt to analyze the benefits that might inure to a helmet wearer through "the coupling of hexagonal aluminium honeycomb with polymeric foams for the design of innovative and safer motorbike helmets." Ex. Ex. 2002 at 3 (attached as Exhibit H to the expert declaration of Steven Copeland in the District Court Litigation (Ex. 2003). To that end, the study's author, Mr. Gaetano Caserta, purchased commercial helmets and then modified the liners of those helmets to include recesses into which he inserted honeycomb cores. *See* Ex. 2002 at 106.

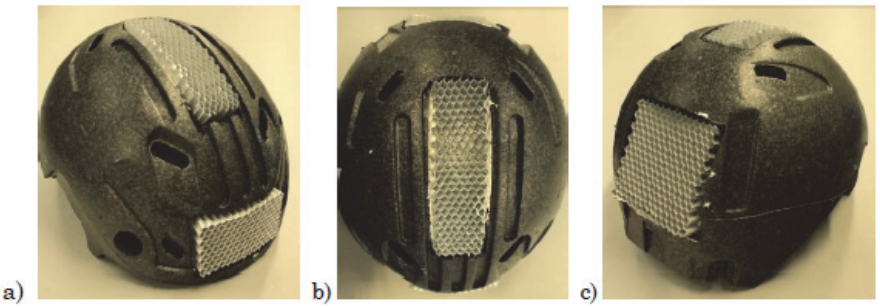


Figure 6.2 - Helmet prototype liner; a) perspective front view; b) top view; c) perspective rear view

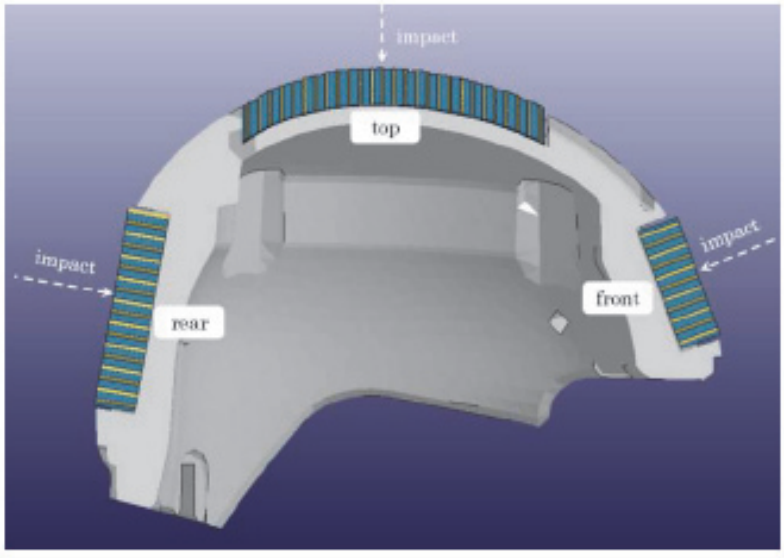


Figure 6.3 - Schematic section of the prototype liner

Mr. Caserta then reinserted the liner/honeycomb cores into the helmet's shell and conducted impact testing. *See, e.g., id.* at 113. The results of the experiment indicated that "introduction of the honeycombs in the rear region led to a worsening of the protective performances of the helmet" and "it was concluded that the contact between shell and honeycombs was not uniform at the time of the impact, as indicated by the presence of a u-shaped deformation region localized on the top of

the layer, probably caused by the contact between the rear ventilation area and the honeycombs." *Id.* at 121-22 (emphasis added). Thus, Caserta informed the industry that placing honeycomb material at the location of ventilation openings results in non-uniform load transfer to the honeycomb, causing deleterious performance of the foam liner as the honeycomb core transferred impacts to the foam. Ex. 2001 ¶¶129-30.

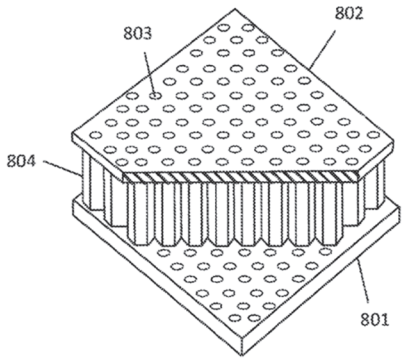
In view of Caserta's plainly relevant findings immediately before the advent of the claimed invention, and Petitioner's knowledge of Caserta, it is curious that Petitioner chose to withhold the Caserta reference from the Board's consideration in this proceeding after presenting it to the District Court on the same issue—i.e., the validity of the '373 patent. Caserta is powerful, objective evidence of the state of the art on a critical issue that supports and is consistent with the basis of the examiner's withdrawal of the Sajic Patent rejections during prosecution. In short, Caserta demonstrates that at the time of the filing of the application that became the '373 patent, a POSITA would not expect[15] to achieve improved impact performance

[15] Caserta would have been known to POSITAs. Ex. 2002 at 6 ("The research presented in this thesis has continuously been disseminated within the scientific as well as industrial community during the course of the project.").

by positioning open cell honeycomb cores at the location of vents in a foam-lined helmet. Ex. 2001 ¶¶131-32.

Caserta's data, and its concern for not placing honeycomb structures proximate to vent ports is also reflected by Bottlang (Ex. 1008), which was considered by the examiner during prosecution. Ex. 1002 at 726. Bottlang teaches that honeycomb cores should be used with a conventional compliment of outer and inner layers, but that one might use small perforations in those layers to promote breathability of the shock absorber, as pictured below:

Figure 8



Ex. 1008 at Fig. 8. Bottlang states that perforation is utilized to avoid a known hazard: "It will be appreciated that it may be advantageous to supply the helmet with a multitude of small ventilation holes **in order to prevent the gaps in protection that may result from the larger ventilation holes used in most conventional helmets.**" Ex. 1008 at [0036] (emphases added). Thus, Bottlang teaches that maintaining outer paneling bonded to the cell walls with small perforations is the desired way to achieve a breathable honeycomb shock absorbing

component, and expressly discourages the use of larger holes in the paneling that would compromise the energy absorption of the honeycomb core. Ex. 2001 ¶133. No POSITA, with knowledge of Caserta and Bottlang, would find it obvious to strip a honeycomb core of its outer layers, then place that core proximate to gaps in the helmet at ventilation ports. *Id*. Accordingly, the claimed invention of the '373 patent proceeded contrary to the conventional wisdom at the time, such that a POSITA would not find it obvious to combine modified honeycomb cores of the Sajic References with a helmet like Muskovitz in the manner alleged in Ground 1.

5. Ground 1 Fails to Properly Demonstrate Openings in the Inserts Allowing for Airflow

Claim 1 recites that the shock absorbing insert will have open first and second longitudinal ends positioned "such that air is able to flow from an exterior side of the helmet through each of the first and second vents and through a respective one of the first and second plurality of adjacent cells toward an interior of the helmet." Ex. 1001 at cl. 1. Claim 12 recites "an array of hollow structures defining a plurality of adjacent through-passages . . . wherein . . . adjacent through-passages . . . allow air to enter through . . . to an interior of the helmet…". *Id*. at cl. 12. These limitations are referred to herein as the "Airflow" limitations.

Petitioner asserts, like the examiner before it, that a POSITA would take only the honeycomb core disclosed in the Sajic references (without the sandwich layers),

size it to fit a cavity of a helmet (here, the Muskovitz helmet; in prosecution, the Sundahl helmet), and thereby attain the Airflow limitations. This combination is improper for many reasons.

First, as just discussed in the preceding Section, there is no indication that a POSITA would expect beneficial performance of the honeycomb core without using abutment layers across one or more ends. Neither Muskovitz nor the Sajic Application remedies this fatal flaw in Petitioner's and the examiner's substantively identical obviousness allegations, nor does the expert declaration of Copeland. Ex. 2001 ¶¶129-33.

Second, despite the use of honeycomb cores in combination with outer layers in helmets dating back as far as the 1970s (*see* Ex. 2004 (cited in Ex. 1007 as prior art)) Petitioner cites no prior art reference which corroborates its conclusory allegation that it would be obvious to strip the honeycomb core of its outer panels/layer materials then place that core material such that it spans open space, unabutted by any foam liner or shell, to take advantage of the purportedly obvious airflow benefits provided by the open spaces in the cores. Were this as obvious as Petitioner contends, surely some reference would teach it, but Petitioner provides no such teaching. Numerous references establish the contrary. Indeed, numerous references submitted by Petitioner explicitly teach away from this:

- The Sajic International Application, Sajic Patent, and Sajic Application all disclose the use of outside layers and adhesive on both sides of a honeycomb core. Ex. 1007 at 13:10-15; Ex. 1020 at 5:17-23; Ex. 1006 at [0097]. This would prevent airflow.

- The Sajic Application teaches that its honeycomb core must be used entirely "encapsulated" by foam or positioned in foam such that all sides but one abut foam which is abutted by a rigid shell. Ex. 1006 at [0115-0117], Fig. 9. This would prevent airflow.

- The Sajic Application teaches that the encapsulated/inserted embodiments require sealing of the ends of the honeycomb core to prevent foam from entering the core. *Id*. at [0122]. This would prevent airflow.

- Landi teaches the importance of sealing honeycomb ends to resilient outer layers for the structural integrity and performance of honeycomb cores. Ex. 1010 at 2:29-3:3 (explaining the "extremely important function" provided by the resilient outer layer and adhesive applied to the ends of a honeycomb core operate to "prevent edges of the cell walls from crumbling," "reinforce[] only the edges of the cell walls and tends to restore them to their original shape when they have been buckled by being subjected to an impact. This effect increases the useful life" of the product and "better distributes the force to be absorbed throughout the cells" to "resist[] crushing of the edges of the cell walls."). Petitioner abandons the sealing and resilient layer components common in the art, and the advantages provided by those steps/components, to achieve a limitation of the patent, and this reveals hindsight.

- The Bottlang reference, which was cited by the examiner during prosecution, discloses a honeycomb core in between outer layers, and expressly teaches against naked use of the honeycomb core in the manner advocated by Petitioner. Ex. 1008 at [0036], *see also* Fig. 8 ("It will be appreciated that it may be advantageous to supply the helmet with a multitude of small ventilation holes ***in order to prevent the gaps in protection that may result from the larger ventilation holes used in most conventional***

> ***helmets***."). Petitioner abandons the resilient outer layers and adhesive components common in the art to achieve limitations of the Challenged Claims, revealing its hindsight motivation.
>
> - Fournier was asserted by the examiner as a basis to reject pending claims in prosecution, and it teaches plug holes in a foam liner into which a second shock absorbing material is placed. Ex. 1012 at 4:17-31. Fournier is explicit that this second material should not be placed into holes which align with ventilation holes. Ex. 1012 at Figs. 3-10, 4:15-31. Because of the placement of these inserts, no air flows through them.

Thus, Petitioner's assertion that it would be obvious to put open-ended honeycomb cores in an opening to allow air to flow through those open ends is (1) absent in any reference offered by Petitioner and (2) a principle refuted in multiple references cited by Petitioner and the examiner, on independent bases.

6. The Manner in Which Petitioner Combines the Ground 1 References, and the Proffered Reasons for Doing So, Reveal Impermissible Hindsight Bias

Viewed in the aggregate, including the foregoing analysis, Petitioner's Ground 1 allegations reveal that it is not faithfully presenting what the prior art shows or what a POSITA without knowledge of the claimed invention would have considered obvious at the time of the invention. Rather, it is clear that the language of the Challenged Claims is the lodestar of the Ground 1 combination, especially where the teachings of the asserted references themselves and the understanding of POSITAs teach away from the inventions claimed in the '373 patent. In other words, Petitioner's hindsight bias is the most plausible basis for Petitioner's proposed

obviousness combination, given the extent to which it contradicts the prior art evidence. This is summarized below:

- Petitioner asserts a combination which fails to achieve a central purpose of Muskovitz. *See supra* at Section IV.B.1.

- To achieve a limitation of the Challenged Claims, Petitioner ignores Muskovitz' explicit teaching that the insert member 26 does not substantially fill the cavity. *Id*. at Section IV.B.3.

- Petitioner alleges it would be obvious to improve the shock absorption of an insert (rather than a permanent liner) which is not taught to contribute to shock absorption in the helmet and which is removable by a user. *Id*. at Section IV.B.2.

- Petitioner disregards that Muskovitz teaches away from the honeycomb core of Sajic as an acceptable material to improve impact attenuation in a helmet. *Id*.

- Petitioner ignores the increased marginal cost of incorporating honeycomb shock absorption materials into an EPS foam helmet, and it fails to justify those costs for a removable component of the helmet. *Id*.

- By selecting only Sajic's honeycomb core for its combination, Petitioner disregards decades of prior art which consistently disclose honeycomb cores as the middle layer of a "sandwich" that operates as a cohesive whole to attenuate impact forces across the honeycomb and thereby avoid known failure risks. *Id*. at Section IV.B.4.

- Petitioner fails to present to the Board the examiner's withdrawal of a combination based on Sajic's honeycomb core in view of the Sajic Patent's disclosures about the importance of outer layers to avoid deleterious shock absorption performance. *Id*.

- Petitioner fails to inform the Board of the examiner's withdrawal of a combination based on Sajic's honeycomb core following Applicant's identification of a lack of expectation of success in using only the honeycomb core. *Id*.

- Petitioner disregards the consistent teachings of the Sajic References which show that the honeycomb core is employed directly abutting an outer layer, foam liner and/or rigid shell. *Id*. at Section IV.A.1.

- Petitioner withholds the Caserta reference which teaches underperformance relative to EPS foam when honeycomb materials are used near vent ports (the exact opposite result Petitioner says would motivate making its combination). *Id*. at Section IV.B.4.(b).

These inconsistencies, taken together, are powerful evidence of the hindsight bias upon which the Ground 1 allegations are built, and constitute an independent basis to decline institution. *See, e.g.*, *Veterinary Orthopedic Implants, Inc. v. Depuy Synthes Products, Inc.*, IPR2019-01332, Paper 17 at 41-44 (PTAB Jan. 22, 2020) (declining institution where "it appears that the proposed change Petitioner is urging would be inconsistent with [a combination reference's] stated objectives" and "Petitioner does not persuasively explain why the ordinary artisan would, absent hindsight, have made the proposed changes to [the reference] in spite of the inconsistencies.").

C. THE BOARD SHOULD DENY INSTITUTION UNDER § 314(A)

The Board should also deny institution under the discretionary factors set forth in *Apple Inc. v. Fintiv, Inc*., IPR2020-00019, Paper 11 at 5–6 (Mar. 20, 2020)

("*Fintiv*"). The Supreme Court has explained that because 35 U.S.C. § 314 includes no mandate to institute review, "the agency's decision to deny a petition is a matter committed to the Patent Office's discretion." *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2140 (2016). "[I]n evaluating the factors, the Board takes a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review." *Fintiv*, Paper 11 at 6.

For the reasons discussed below, this proceeding would be highly duplicative of the related district court case involving the same parties and the same patent. *Smith Sport Optics, Inc. et al v. The Burton Corporation*, 1-21-cv-02112 (D. Colo. 2021) ("the District Court Action").

1. Factor 1: The District Court Only Recently Stayed the Concurrent Litigation

The first *Fintiv* factor is "whether a stay exists or is likely to be granted if a proceeding is instituted." *Fintiv*, Paper 11 at 6. In the District Court Action, Petitioner filed a Motion to Stay Proceedings on December 21, 2021. Patent Owners opposed the motion on January 18, 2022. The district court only recently granted this motion on March 22, 2022. Because of this substantial delay, the parties have exchanged and answered written discovery requests, exchanged and responded to infringement and invalidity contentions, and exchanged terms for constructions. Given the advanced posture of the case, this non-dispositive factor slightly favors

institution. *See, e.g.*, *Snap v SRK Tech*, IPR2020-00820, Paper 15 at 19 (Precedental) ("no single factor is determinative of whether we exercise our discretion to deny institution under § 314(a)").

2. Factor 2 is neutral or slightly in favor of denial because trial in the District of Colorado was to take place and may still occur before the Board's projected statutory deadline.

"If the court's trial date is earlier than the projected statutory deadline, the Board generally has weighed this fact in favor of exercising authority to deny institution." *Fintiv*, Paper 11 at 9. Due to the Court's instructions for an expedited case schedule, the parties' final pretrial conference was set for January 17, 2023, meaning that an anticipated seven-day jury trial would be held as much as five months earlier than the Board's statutory deadline for a final written decision, which would be in June 2023. *See* Ex. 2005 at 8. The scheduling order is explicit that these dates will not change absent good cause. *Id.* at 9.

Due to the Court's recent stay order, however, this date may be delayed by an unknown amount of time. Nevertheless, the district court has asked for quarterly updates regarding the IPR petition, and will likely lift the stay if the Petition is not instituted, allowing for a jury to resolve the invalidity issues petitioned for here in about the same or even quicker a period of time than the Board, if it elects not to institute. Accordingly, this factor is neutral or slightly in favor of denying institution.

3. Factor 3 shows that the investment in the District of Colorado case weighs in favor of denying institution.

Factor 3 considers "the amount and type of work already completed in the parallel litigation by the court and the parties at the time of the institution decision." *Fintiv*, Paper 11 at 9. "This investment factor is related to the trial date factor, in that more work completed by the parties and court in the parallel proceeding tends to support the arguments that the parallel proceeding is more advanced, a stay may be less likely, and instituting would lead to duplicative costs." *Id.* at 10.

Petitioner mistakenly neglects the six-month delta between its Petition and the institution decision deadline by only considering work done by the parties at the time of the filing of the Petition. *See* Pet. at 77. However, as the Board has explained, "[t]he time for evaluating investment in the proceeding is the time when institution would occur in this IPR." *See Google*, IPR2021-00204, Paper 13 at 8.

Here, the institution decision is expected in late June 2022, and the court issued its stay in late March. By the time the stay issued, the parties exchanged *Markman* terms and proposed constructions. The parties have produced documents, and followed up with each other on the adequacy of those productions. Patent Owners have already served and received responses to their first set of discovery requests.

In addition, the parties have also served, and received responses to, their infringement and invalidity contentions. The Court has also considered and denied the motion for preliminary injunction (after considering arguments directed to infringement and invalidity), and the Court still recognized the need for being expeditious in this case and ordered an expedited trial schedule. *See* Ex. 2006 at 64:8-22 ("So my order … should reflect that the magistrate judge should put this case on an expedited track[.]"). These significant early proceedings (not found in every litigation) favor denial. *See Fintiv*, Paper 11 at 9-10 ("if, at the time of the institution decision, the district court has issued substantive orders related to the patent at issue in the petition, this fact favors denial"). Petitioner's attempt to paint the proceedings in the litigation to date as insubstantial have no rational grounding.

Because the parties have invested substantial resources to date, this factor weighs in favor of denying institution.

4. Factor 4 supports discretionary denial because of substantial overlap of critical issues.

Petitioner's IPR Petition asserts obviousness in view of Muskovitz and the Sajic Application. Petitioner asserts these exact references, in the exact same manner, in the District Court Action against claims 1-3 and 7, each of which it challenges in the Petition. *See* Ex. 2009 at 5. Factor 4, therefore, weighs heavily in favor of denial. *Fintiv*, Paper 11 at 12 ("if the petition includes the same or

substantially the same claims, grounds, arguments, and evidence as presented in the parallel proceeding, this fact has favored denial").

Despite pressing the same art and arguments in these two venues, Petitioner emphasizes that it is also seeking invalidity in the District Court Action on other grounds not asserted here. Pet. at 78. This argument is not a faithful statement of law, and it vaults form over substance to attempt to escape Section 314 scrutiny.

Under factor 4, "the mere existence of non-overlapping claims does not support Petitioner's position that this factor favors institution"; what drives the analysis is "the similarity of the claims challenged in the petition to those at issue in the district court." *Samsung Electronics Co., Ltd. et al. v. Clear Imaging Research LLC*, IPR 2020-01402, Paper 12 at 21-23 (emphasis added; citing *Fintiv*, Paper 11 at 13). This is a *substantive* analysis, and the presence of additional challenged claims in a petition is not dispositive if the subject matter of those claims is similar to the overlapping claims. *See, e.g.*, *Next Caller, Inc. v. TRUSTID, Inc*., IPR2019-00961, Paper 10 at 14 (PTAB Oct. 16, 2019) (denying institution, even though the petitions involved all 52 claims and the district court proceeding involved only 7 claims, because all claims are directed to the same subject matter).

The claims at issue in the parallel District Court Action and in the Petition are all directed to the same subject matter and are alleged to be invalid in view of the same art and arguments. The additional claims challenged in the Petition (*i.e.*, claims

4-5, 12-13, and 15-17) do not constitute sufficiently distinct subject matter to support Petitioner's arguments, and Petitioner makes no arguments to that effect. Indeed, Petitioner largely relies on its evidence and argument for claim 1 to make its invalidity arguments for independent claim 12. *See* Pet. at 70-73 (claim 12); *compare id*. at 37-62 (claim 1). Dependent claims 4-5 and 15-16 further define the shape and orientation of the previously claimed cells, and dependent claims 13 and 17 further define the shape and dimensions of the previously claimed insert. *See* Ex. 1001 at cls. 4-5, 13, 15-17. Petitioner devotes roughly six pages (Pet. at 65, 70-74) to the additional claims in the Petition, compared to 31 pages (Pet. at 38-64, 66-69) devoted to the claims challenged in both the District Court Action and the Petition.

The Board has explained that "if a petition involves the same prior art challenges but challenges claims in addition to those that are challenged in the district court, it may still be inefficient to proceed because the district court may resolve validity of enough overlapping claims to resolve key issues in the petition." *Fintiv*, Paper 11 at 13. That is clearly the case here, and factor 4 favors denying institution. *See Samsung Electronics Co. v. Clear Imaging Research, LLC*, IPR2020-01399, Paper 13 at 20 (PTAB Feb. 3, 2021) (finding factor 4 favored denial where petitioner failed to "show that the non-overlapping claims differ significantly"); *Apple v. Maxell, Ltd*., IPR2020-00203, Paper 12 at 12-16 (finding factor 4 favored denial where "the two references in the [p]etition's single

obviousness ground are also asserted in the district court proceeding, so that institution of an *inter partes* review may result in duplicative efforts by the Board and the trial court."); *Intel Corp. v. VLSI Tech. LLC*, IPR2019- 01192, Paper 15, at 11 (PTAB Jan. 9, 2020) ("When considering the impact of parallel litigation in a decision to institute, the Board seeks, among other things, to minimize the duplication of work by two tribunals to resolve the same issue.").[16]

5. Factor 5 supports denial because Petitioner is also the district court defendant

Because Burton is the Petitioner and the accused infringer in the district court, factor 5 favors denying institution. *Supercell Oy v. Gree, Inc.*, IPR2020-01619, Paper 15 at 14 (PTAB Mar. 24, 2021); *Cisco Systems, Inc. v. Ramot at Tel Aviv University Ltd.*, IPR2020-00123 (PTAB May 15, 2020); *Google LLC v.*

[16] Patent Owners note that Petitioner has not offered the Board or the district court a "*Sotera* stipulation" that would, upon institution, bind Petitioner not to raise issues at the district court that it might or could have raised with the Board. This heightens the chance of concurrent, conflicting, and inefficient consideration of invalidity theories in different venues, further favoring denial of institution. *See Samsung*, Paper 12 at 23.

Personalized Media Communications, LLC, IPR2020-00719 (PTAB Nov. 5, 2020); *Amazon.com, Inc. et al v. Freshub, Ltd.*, IPR2020-01145 (PTAB Jan. 11, 2021).

6. Factor 6 supports discretionary denial because Petitioner raised substantially the same art and arguments over which the challenged claims issued.

Under this factor, the Board engages in "a balanced assessment of all the relevant circumstances in the case." *Fintiv*, Paper 11 at 14. This factor weighs in favor of discretionary denial because, as discussed *supra* in Sections IV.A-B, the application that issued as the '373 patent was subject to a highly contested seven-year examination, and the challenged claims issued over substantially similar art and arguments to those presented in the Petition. Accordingly, *inter partes* review would likely result in a duplicative process imposing undue burdens on Patent Owners.

V. CONCLUSION

In view of the foregoing, Patent Owners respectfully request the Board DENY institution of the Petition.

Dated: April 13, 2022 */Mark A. Miller/*

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CERTIFICATION OF WORD COUNT UNDER 37 C.F.R. § 42.24(d)

Under the provisions of 37 C.F.R. § 42.24(a), (b), and (d) the undersigned hereby certifies that the word count for the foregoing Patent Owners' Preliminary Response totals 13,752 words, excluding the parts exempted by 37 C.F.R. § 42.24(a),(b). Accordingly, this Petition is under the word count limit of 18,700 words. This word count was made by using the built-in word count function tool in the Microsoft Word software used to prepare the document.

Dated: April 13, 2022

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CERTIFICATE OF SERVICE

In accordance with 37 C.F.R. §§ 42.6(e) and 42.205, and stipulation of electronic service by Petitioner, the undersigned certifies that the foregoing was served via email on counsel for Petitioner at:

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