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Paper No. ____

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

THE BURTON CORPORATION,
Petitioner,

v.

SMITH SPORT OPTICS, INC. AND KORROYD SARL,
Patent Owner.

Case No. IPR2022-00354

Patent No. 10,736,373

PETITIONER'S REQUEST FOR REHEARING¹

¹ Emphasis is added unless otherwise noted.

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I. INTRODUCTION

Petitioner respectfully requests rehearing of the Board's Institution Decision (Paper No. 9, "ID") 37 C.F.R. § 42.71(d). The Board denied institution because it found that Petitioner does not show sufficiently that it would have been obvious to omit "outer layers from Sajic's energy absorbing tubes and insert them in the recess of Muskovitz's liner 18." ID at 31. The Board identified *only* the "outer layers of sealing material" and found that the Petition did "not show sufficiently that a [POSA] would have deviated from Sajic's disclosure of constructing its inserts with outer layers of sealing material over the energy absorbing tubes' ends." ID at 31-33. The findings underlying this decision misapprehended the Petition's combination, PO's arguments/evidence and Sajic's disclosure. §§ II.A, II.B *infra*.

Regarding motivation, the Board found that because "Muskovitz teaches discretionary removal of insert member 26 [this] casts doubt on Petitioner's position that a person of ordinary skill in the art seeking to use Sajic's energy absorbing tubes to improve the helmet's impact absorption would substitute the energy absorbing tubes for insert member 26" and that the Petition "does not address whether the alleged benefit of avoiding the ventilation cutout of Muskovitz's insert member 26 would have provided an advantage outweighing Sajic's disclosed benefit of keeping foam out of the energy absorbing tubes." The Board's finding misapprehended the law of obviousness. § II.C *infra*.

II. ARGUMENT

The Petition established that Sajic discloses **two different** ways to use its “energy absorbing tubes” to improve the impact absorption performance of safety helmets: (1) as the *core* of a “sandwich panel” provided “continuously throughout the (arcuate) major plane of the helmet” (“Sandwich Panel Embodiment”); and (2) as *inserts* in the conventional foam liner of a safety helmet (“Insert Embodiment”). Pet at 15-16 (citing Copeland, ¶¶ 72-77).

The Petition relied *solely* on the Insert Embodiment and established that it would have been obvious to use Sajic’s inserts in Muskovitz’s foam liner in place of Muskovitz’s insert member to improve the impact absorption of Muskovitz’s helmet. Pet at 15-32. The proposed combination applied *every* aspect of the energy absorbing tubes that Sajic disclosed provided improved impact absorption, but omitted the “sealing material” that Sajic disclosed was used to “prevent[] the foam material from entering the open ends of the tubes” (Sajic at ¶ 122). Pet at 27-32.

The Petition established the obviousness of omitting the sealing material for the simple reason that it would be unnecessary in the proposed combination to prevent foam material from entering the open ends of Sajic’s insert because Sajic’s insert is not positioned in Muskovitz’s foam liner during formation, but after Muskovitz’s foam liner is already formed when “there is no need to prevent foam from entering the EAT-Insert-Member.” Pet at 30 (citing Copeland at ¶¶ 116).

A. The Board Misapprehended and/or Overlooked Arguments and Evidence in Finding that Omitting Sealing Material in the Proposed Combination Would Not Have Been Obvious

The Board found that because “Sajic discloses, without qualification, that providing the sealing material ‘prevents the foam material from entering the open ends of the tubes’” this means “*at any time*, including during the helmet’s use.” The Board pointed to Sajic’s disclosure that inserts “may be positioned during forming of the spacing member 110 or inserted afterwards,” as further evidence that Sajic discloses the use of sealing material to “prevent the foam from penetrating the energy absorbing tubes at any time.” ID at 32-33. The Board found Dr. Bonin’s testimony consistent with this understanding that “Sajic includes its sealing material for more than just keeping foam out of the energy absorbing tubes during formation of the helmet.” ID at 33 (citing Bonin at ¶ 93).

The Board interpreted Sajic’s absence of “qualification” as to when foam is prevented from entering open ends of the tubes to mean “any time,” rather than *when* sealing material would be needed to perform the stated function—i.e., during formation of an “expanded polystyrene foam” (Sajic, ¶ 114) when foam material *would* enter the open tubes, not after formation of the “hard foam” liner (Sajic, ¶ 4) when it would not. Pet at 16, 30 (citing Copeland at ¶¶ 73, 76, 116). The Board’s understanding that Sajic discloses the use of sealing material to prevent foam material from entering open ends of the tubes after formation overlooks that no

evidence supports this understanding and misapprehends Sajic's disclosure.

1. The Board Overlooked that Dr. Bonin Did Not Support its Understanding of Sajic and Misapprehended Its Disclosure

Dr. Bonin neither supported the Board's understanding of Sajic nor refuted Mr. Copeland's testimony. Dr. Bonin quotes Sajic's disclosure that a "sealing material . . . is provided at both of these discontinuous surfaces [i.e., the ends of the tubes/honeycombs] . . . This prevents the foam material from entering the open ends of the tubes." Bonin, ¶ 93 (insertions original). Dr. Bonin then asserts that "Mr. Copeland contends that this would only apply to embodiments in which the tubes/honeycomb are used as an encapsulated insert," but Dr. Bonin does ***not*** **refute** this contention. *Id.* (citing Copeland at ¶ 116).

Instead, Dr. Bonin merely alleged that "the Sajic Application ***does not distinguish*** between encapsulated and nonencapsulated embodiments when it teaches that the ends of the array should be sealed," but ***tellingly*** avoided opining that not distinguishing means Sajic would be understood to disclose providing sealing material to inserts positioned in spacing member 110 after formation, or preventing (or the need to prevent) foam material from entering the open ends of Sajic's inserts positioned after spacing member 110 is formed.

Moreover, contrary to Dr. Bonin's allegation, Sajic ***does*** distinguish between "encapsulated and nonencapsulated embodiments." Sajic discloses that "spacing member 110 defines a number of receptacles or **cavities 112**" and that an "insert

120, 122, 124 formed from a second material, ***is encapsulated within each cavity***” (Sajic at ¶ 115), which both experts agree means during formation of spacing member 110. Bonin at ¶ 88 (“the inserts are taught to be ‘encapsulated’ within the expanded polystyrene foam of spacing member 110 ‘during forming of the spacing member 110’”); Copeland at ¶ 116. Encapsulated cannot mean fully enclosed as demonstrated by the inserts shown in Fig. 9 that are **encapsulated within each cavity 112**. Sajic at ¶ 115, Figs. 9-10.

By contrast, when inserts are positioned in spacing member 100 after formation, Sajic teaches using the ***alternative*** to encapsulating—forming apertures, recesses or pockets in the spacing member 110. Sajic at ¶¶ 115-116. These alternative “formations” are not shown, but Sajic discloses that methods of providing them are “well known” (Sajic, ¶ 115). Sealing material is applied to the inserts shown in Fig. 9 that are “encapsulated” within “cavities 112.” Sajic, ¶ 115.

2. The Board Overlooked that No Expert Testimony Disputes the Petition’s Obviousness Rationale for Omitting Sealing Material

The Petition established that Sajic discloses that “sealing material” is “preferably” applied to “one or more” open ends of Sajic’s energy absorbing tubes and in the embodiment described in Fig. 9, discloses that the sealing material is provided to “prevent[] the foam material from entering the open ends of the tubes.” Pet at 30, 156 (citing Sajic, ¶¶ 68, 82 and Copeland at ¶¶ 116, 178). The Petition’s

obviousness rationale for omitting sealing material (that Sajic preferably applies) because “there is no need to prevent foam from entering the EAT-Insert-Member” when inserted in Muskovitz’s *formed* foam liner is *unrefuted. Id.*

Dr. Bonin repeatedly declined to offer testimony refuting Mr. Copeland’s testimony. As discussed in § II.A.1, Dr. Bonin asserts that “Mr. Copeland contends that [providing sealing material] would only apply to embodiments in which the tubes/honeycomb are used as an encapsulated insert.” Bonin at ¶ 93 (citing Copeland at ¶ 116). Dr. Bonin does **not** **refute** this contention.

Furthermore, Dr. Bonin alleges “Mr. Copeland’s *conclusion* that ‘there is no need to prevent foam from entering the EAT-Insert-Member’ in the proposed combination [] *ignores* the performance benefits of sealing, and the fact that the Sajic Application does not distinguish between encapsulated and nonencapsulated embodiments when it teaches that the ends of the array should be sealed.” *Id.* Again, Dr. Bonin does **not** disagree with Mr. Copeland’s “conclusion,” but merely asserts that Mr. Copeland **ignores** certain information in reaching it. *Id.*

Dr. Bonin nowhere even alleges that sealing material **would** be needed to prevent foam material from entering Sajic’s insert when it is positioned after formation of Muskovitz’s foam liner. Also, Dr. Bonin also did **not** offer support for PO’s attorney argument that, without sealing material, Sajic’s insert would “over time” penetrate “the foam liner of Muskovitz” (POPR at 32). Dr. Bonin’s silence

reinforces Mr. Copeland's testimony and reveals a tacit agreement.

3. The Board Misapprehended the Evidence Alleging that Muskovitz's Foam Liner Could Enter Sajic's Insert

The only allegation that even attempts to dispute the Petition's obviousness rationale is PO's attorney argument that the "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." POPR, 32. This attorney argument should be given no weight.

First, PO conflates Sajic's energy absorbing tubes with "honeycombs." POPR, 32 (referring to "Sajic's honeycomb core"). They are not. Sajic discloses that "a honeycomb structure" is "an array of cells...having a hexagonal cross-sectional" wherein "each side wall is *shared* with neighboring cells." Sajic Patent at 2:18-24; Landi (1010) at 1:68-2:3 (also defining "honeycomb" as "an array of side by side cells...where *each cell has its walls in common* with the walls of adjoining cells."). Caserta uses this same structure. Caserta at 23-24.

Sajic expressly *contrasts* its "closed packed array" of circular tubes (Pet at 32 citing Sajic, ¶ 67) having separate but abutting walls *with* honeycombs having shared side-walls. Sajic Patent, 5:45-6:23. Caserta's "hexagonal aluminum honeycombs" (Caserta at i) are altogether unlike Sajic's energy absorbing tubes. Compare Sajic, Fig. 2 with Caserta, 23-24, Figures 3.1 and 3.3. Moreover, Caserta's impact tests in the 234-page PhD that PO cites are not even performed on

helmets. Caserta at 50. PO's attorney argument unsupported by Dr. Bonin should have been accorded no weight to the extent the Board relied on it.

No evidence refutes the Petition's obviousness rationale that it would have been unnecessary to apply sealing material in the proposed combination because Muskovitz's formed liner would not enter Sajic's inserts so "there is no need to prevent" it (Copeland at ¶ 116)—this obviousness rationale stands unrebutted.

4. The Board Misapprehended Dr. Bonin's Other Alleged "Performance Benefits of Sealing"

In finding that Dr. Bonin's testimony was consistent with the Board's understanding that "Sajic includes its sealing material for more than just keeping foam out of the energy absorbing tubes during formation of the helmet," the Board leaves open the possibility that the Board relied on the other "performance benefits of sealing" alleged in the testimony the Board cited. ID at 33 citing Bonin at ¶ 93.

First, the "plastic and composite columns" disclosed in "all of the Sajic references" (Bonin at ¶ 93) that Dr. Bonin disingenuously cites are **not Sajic's energy absorbing tubes**, but are instead known "axially loaded columns [that] have been used for some time" that are "unconnected and function independently." Sajic at ¶¶ 6-11. Dr. Bonin's quote also ***omits the very next sentence*** where Sajic explains why the "complex interaction" of the parameters of plastic/composite columns is discussed in the first place: "careful selection of these parameters can result in a safety device which outperforms the ***metal equivalent***." Sajic at ¶ 8.

Second, the Sajic Patent explicitly discloses that its energy absorbing tubes “avoid” the “instability” of these very prior structures. Sajic Patent at 2:9-14 (because “the columns are independent, a localized load can cause an undesirable global failure of columns”), 5:56-67 (using Sajic’s energy absorbing tubes “[i]nstability, which could lead to a global buckling failure mode, is avoided since the tubes are connected to, and supported by, adjacent tubes.”). **Third**, Dr. Bonin juxtaposes her disingenuous reference to prior art structures only to say that omitting “sealant” would have “*unknown* performance consequences.”

Then, as an example of an “unknown performance consequence,” Dr. Bonin points to honeycomb material for which Sajic *also* identified *multiple* stability issues avoided by its energy absorbing tubes. Sajic Patent, 2:18-24, 5:35-44. Dr. Bonin also ignores multiple other critical differences in both Landi’s honeycomb material and its protective body shield. Landi’s honeycomb core comprises “hexagonal cells” made of “nylon-coated paper” having “very thin” walls that are bonded to a foam elastomer layer in a flexible body shield that omits “hard shells.” Landi, 1:14-2:33. Dr. Bonin’s comparisons to Landi are implausible.

B. The Board Misapprehended PO’s Arguments and Evidence in Finding that Omitting Sealing Material Impacted the Petition’s Established “Intended Function” or “Predictable Result”

The Board found that with “Petitioner and Mr. Copeland failing to recognize and accurately account for these aspects of Sajic, Petitioner’s allegations regarding

intended functions, predictability, and benefits do not show sufficiently that a [POSA] would have deviated from Sajic's disclosure of constructing its inserts with outer layers of sealing material." ID at 33.

The Petition "accounted" for the omission of sealing material as unnecessary in the proposed combination to perform the *only* function Sajic discloses it is used for. The Petition's rationale was (1) not refuted by Dr. Bonin; and (2) PO's attorney argument that Sajic's inserts would penetrate Muskovitz's foam liner over time should have been accorded no weight. §§ II.A.3, II.A.4. Respectfully, the Board does not explain how the omission of sealing material impacts "Petitioner's allegations regarding intended functions, predictability, and benefits."

The Petition established that the proposed combination used Sajic's inserts for their intended function of "impact attenuation" (Pet at 19) for the *same function* Sajic disclosed using them in the Insert Embodiment—to improve the impact absorption of conventional helmets that use foam liners. Pet at 19-21. The Petition further established that replacing Muskovitz's insert member with Sajic's "superior performance" inserts would "yield the predictable result of providing Muskovitz's insert member with the advantageous impact attenuation properties disclosed in Sajic" (Pet at 19) and that this would have provided Muskovitz's helmet "meaningful impact absorption improvement given the significant footprint" of Muskovitz's insert member. Pet at 20-21, 23.

Instead of explaining reasons the Board found eliminating “*outer layers* of sealing material” would have impacted the Petition’s showing of intended use and predictable result, the Board cites arguments in the POPR that do not discuss sealing material *at all*. ID at 33 (citing POPR at 35-37). To the extent the Board relied on some other “outer layer” that the Decision does not identify that allegedly pertain to the “intended function” or “predictable result” established in the Petition, the Board misapprehended those arguments and the law of obviousness.

1. The Board Misapprehended PO’s “Intended Function” Argument and Misapprehended the Law

PO’s argument that “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” (POPR at 36) (1) mischaracterizes the proposed combination; (2) wholly misstates the intended function established in the Petition (“impact attenuation”); and (3) is legally irrelevant.

The proposed combination positions Sajic’s inserts within and abutting Muskovitz’s shock absorbing liner 18 and underneath outer shell 4. Petition, 20-21 (showing the significant footprint of the insert member). PO’s arguments, even those that are in fact directed to the Insert Embodiment, mischaracterize the proposed combination. The Petition’s combination provides *each* layer that PO says is needed to “avoid[] localized failure of the core” over the *significant majority* of the insert. Pet at 20-21, 23; Reply (Paper No. 7) at 4-5.

The only *actual* difference between Sajic’s Insert Embodiment and the proposed combination—i.e., a small portion of Sajic’s inserts spanning vent openings—does not diminish but rather reinforces the Petition’s obviousness rationale by providing the superior protection of Sajic’s inserts everywhere that Muskovitz’s insert member 26 provided protection with *additional* protection across vent openings where insert member 26 provided no impact absorbing material *at all*. Petition, 20-21, 23; Reply at 4-5.

It is legally irrelevant whether Sajic contemplated using its inserts in a conventional foam liner where a small portion of the much larger insert spans vent openings. The proposed combination passes even the more rigorous *TSM* test because Sajic *teaches* using its energy absorbing tubes as inserts in a conventional foam liner to improve the impact performance of safety helmets and that is what the Petition established the proposed combination would have achieved. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 399-403 (2007). The only legally relevant question is whether a POSA would have understood that the proposed combination would have achieved this. PO has provided no creditable evidence that the proposed combination would not have achieved improving the impact absorption performance of Muskovitz’s protective helmet.

2. The Board Misapprehended PO’s Evidence Regarding Predictable Result

PO’s argues that “Petitioner’s assertion that the result of using Sajic’s

honeycomb core is ‘predictable’ is belied by Caserta...[and] ‘plastic and composite columns’ disclosed in Sajic. Neither of these arguments is supported by Dr. Bonin. First, PO argues that Caserta found that “honeycomb cores underperformed relative to EPS foam near vents ports.” POPR at 36.

As discussed above in §§ II.A.3, II.A.4, Sajic discloses that its energy absorbing tubes addressed multiple instability issues of honeycomb material. Sajic Patent at 5:35-6:20. PO’s conclusory argument omits any discussion of Caserta’s altogether different honeycomb material, Caserta’s different configuration (e.g., honeycomb inserts *above* the foam material and *near* “the *rear ventilation area*”), or the reasons Caserta gives for why the honeycomb material “underperformed” in limited areas in one of many impact tests Caserta performed. Caserta at 121-122.

PO’s second comparison is *wholly* disingenuous and irrelevant. Like Dr. Bonin’s, PO omits the critical disclosure demonstrating that (1) the referenced prior art plastic/composite columns are *not* Sajic’s energy absorbing tubes; and (2) the reason why Sajic discusses the “complex interaction” of these prior art structures; and (3) structures that Sajic explicitly discloses were vulnerable to instability and that Sajic’s energy absorbing tubes avoided. § II.A.4. PO’s attorney arguments on predictable result should have been accorded no weight.

The Board’s citation to PO’s and Dr. Bonin’s argument without identifying them or explaining which argument the Board relied on and why makes it difficult

to ascertain the basis of the Board's decision. Petitioner believes those arguments are meritless for the reasons given above. To the extent the Board relied on these arguments, they are replete with mischaracterizations of the Petition, the prior art and the evidence, and misleading citations. This emphasizes the need for a trial so Petitioner can confront Dr. Bonin and challenge the evidence.

C. The Board Misapprehended the Law by Requiring the Petition to Demonstrate There Were No More Desirable Combinations

The Board found that because Muskovitz's insert member can be discretionarily removed, this "casts doubt on Petitioner's position that a person of ordinary skill in the art seeking to use Sajic's energy absorbing tubes to improve the helmet's impact absorption would substitute the energy absorbing tubes for insert member 26." ID at 33-34. The Board also faulted the Petition for not addressing "whether the alleged benefit of avoiding the ventilation cutout of Muskovitz's insert member 26 would have provided an advantage outweighing Sajic's disclosed benefit of keeping foam out of the energy absorbing tubes."

It is well-established law that a combination need not be either the preferred or most desirable combination to provide motivation, it need only be desirable.

Taylor Made Golf Company, Inc., v. Parsons XTREME Gold, LLC, IPR2018-00768, Paper 9 at 34 ("It is well-established, however, that 'our case law does not require that a particular combination must be the preferred, or the most desirable, combination described in the prior art in order to provide motivation for the current

invention”) *citing In re Fulton*, 391 F.3d 1195, 1200 (Fed. Cir. 2004). Whether or not a POSA might have looked at other ways to improve the impact absorption performance of Muskovitz’s helmet, as PO speculates, is legally irrelevant because whether there was a more desirable combination is not the test. *Id.*; POPR at 35.

The Petition established that Sajic’s teaching to use its energy absorbing tubes as inserts in a foam liner to improve the impact performance of a safety helmet “suggested the desirability” of likewise using Sajic’s inserts in Muskovitz’s foam liner to achieve the same benefit of improving the impact absorption performance of Muskovitz’s helmet. Pet at 16-23 (citing Copeland at ¶¶ 79-87). The Petition need only have shown that this would have been desirable.

The Petition also need not have considered “whether the alleged benefit of avoiding the ventilation cutout of Muskovitz’s insert member 26 would have provided an advantage outweighing Sajic’s disclosed benefit of keeping foam out of the energy absorbing tubes” for the same reason—the law does not require the Petition to have *a priori* weighed the relative benefits and drawbacks of a different combination and propose only the more desirable one (even if evidence were to later demonstrate such drawbacks existed, which here the evidence does not).

III. CONCLUSION

For the reasons above, Petitioner respectfully requests that the Board grant this request for rehearing and institute *inter partes* review on Ground 1.

Date: August 4, 2022

Respectfully submitted,
The Burton Corporation
/Marc S. Johannes/

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CERTIFICATE OF SERVICE UNDER 37 C.F.R. § 42.6 (E)(4)

I certify that on August 4, 2022, I will cause a copy of the foregoing document, including any exhibits filed therewith, to be served via electronic mail, as previously consented to by Patent Owner, upon the following:

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