UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Casper Sleep Inc.,
Petitioner,

v.

Werner Media Partners, LLC,
Patent Owner.

U.S. Patent 10,842,301
IPR 2024-00474

JOINT MOTION TO EXPUNGE

On April 11, 2025, the Board issued an Order authorizing the parties in this IPR to file a Joint Motion to Expunge (Paper 57) ("Order"). Pursuant to the Order, Casper Sleep Inc. ("Petitioner") and Werner Media Partners, LLC ("Patent Owner") respectfully file this Joint Motion to Expunge certain portions of Papers and Exhibits that were not relied upon in the Written Decision issued by the Board on April 11, 2025 (Paper 56) ("Written Decision").[1]

The requests to expunge are summarized in the following table:

Requesting Party	**Paper/Exhibit**	**Title**	**Portion to be Expunged**
Petitioner	1082	Casper Pillow Sales	Entire Exhibit
Petitioner	33	Patent Owner Sur-Reply	Section V.E, which reviews the contents of Exhibit 1082 (Proposed redacted Paper 33 enclosed as Attachment A.)

[1] The same Order also authorized the parties to prepare a joint motion to seal portions of the Final Decision (Paper 56). On April 23, 2025, the parties informed the Board by email that such a motion to seal was not necessary.

I. PETITIONER EXPUNGEMENT AND REDACTION REQUESTS

A. Exhibit 1082 (Casper Pillow Sales) Should be Expunged in its Entirety

Exhibit 1082 was produced by Petitioner on November 15, 2024. Petitioner marked Exhibit 1082 as "Protective Order Material" under the Protective Order entered in this IPR (Exhibit 2027) ("Protective Order"). Exhibit 1082 includes Petitioner's gross revenue and unit sales data of certain pillow models broken down by month from January 2022 to September 2024 and by sales channel. The Written Decision did not cite or substantively discuss the contents of Exhibit 1082.

The sales data in Exhibit 1082 are confidential trade secrets of Petitioner. Disclosure of this sales data to the public would allow Petitioner's competitors to review this otherwise highly confidential data, thereby harming Petitioner's business. Further, there is no practical way to redact portions of Exhibit 1082 without revealing Petitioner's confidential trade secrets. Expungement of Exhibit 1082 in its entirety is appropriate.

Accordingly, Petitioner respectfully requests the Board expunge Exhibit 1082, and that Exhibit 1082 continue to be designated as "Protective Order Material" under the Protective Order. Patent Owner does not oppose this request.

B. Section V.E of Paper 33 (Patent Owner Sur-Reply) Should be Redacted

Paper 33 (Patent Owner Sur-Reply) was filed by Patent Owner on December 6, 2024. Patent Owner marked Paper 33 as "Protective Order Material" under the Protective Order. Section V.E of Paper 33 substantively discusses the contents of Exhibit 1082. This section V.E should be redacted from Paper 33 for the same reasons that Exhibit 1082 should be expunged (*see* Section I.A, above). Petitioner is attaching to this Motion a suitably redacted replacement Paper 33 as Attachment A.

Accordingly, Petitioner respectfully requests the Board order that Paper 33 be replaced with the enclosed redacted Paper 33 in Attachment A, and that Section V.E of Paper 33 continue to be designated as "Protective Order Material" under the Protective Order. Patent Owner does not oppose this request.

II. CONCLUSION

For the reasons set forth above, the parties request that the expungement and redaction requests in this Joint Motion be granted.

Respectfully submitted,

Dated: April 23, 2025

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CERTIFICATE OF SERVICE

The undersigned certifies that, in accordance with 37 C.F.R. § 42.6(e) and 37 C.F.R. § 42.205, service was made on Patent Owner as detailed below.

Date of Service	April 23, 2025
Manner of Service	Email to patent@assoulineberlowe.com, contact@pearsonip.com, wais@cotmanlaw.com, ed@cotmanlaw.com
Document Served	- This Joint Motion to Expunge - Attachment A
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Dated: April 23, 2025

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Attachment A

[redacted]

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CASPER SLEEP INC.,
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v.

WERNER MEDIA PARTNERS, LLC,
Patent Owner.

IPR2024-00474 Patent
10,842,301 B2

Paper 33 / Non-Confidental Redacted Version

PATENT OWNER SUR-REPLY TO PETITIONER REPLY

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TABLE OF AUTHORITIES

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Other Authorities

MPEP § 2145 23

MPEP § 716.02 23

Rules

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[redacted]

TABLE OF EXHIBITS

Exhibit No.	Description
2001	Declaration of Andrew Gross ("Gross Decl.")
2002	Curriculum Vitae of Andrew Gross
2003	PDF of Patent Owner's GhostPillow Product Website
2004	Viscoelastic (Memory) Foam, by the Polyurethane Foam Association
2005	Flexible Polyurethane Foam: A Primer, by the PFA
2006	"Reticulate", *Merriam-Webster.com Dictionary*, Merriam-Webster
2007	"Infuse", *Merriam-Webster.com Dictionary*, Merriam-Webster
2008	Leggett & Platt To Market Serta-Branded Sleep Comfort Systems Products (April 5, 2005), by Furniture World Magazine
2009	Foam Equipment, by Wayne Bowman (Video Presentation to Polyurethane Foam Association), https://www.youtube.com/watch?v=5XThFsqqUvU&t=4s
2010	"Solid", *Merriam-Webster.com Dictionary*, Merriam-Webster
2011	GhostPillow Memory Foam, https://www.ghostbed.com/products/ghostpillow-memory-foam ("GhostPillow")
2012	U.S. Reexamination Request Control No. 90/009,855 ("*Ex Parte* Whirlpool")
2013	Declaration of Jeff Quinn ("Quinn Decl.")
2014	Curriculum Vitae of Jeff Quinn
2015	Jeff Quinn Presentation of Secondary Considerations

[redacted]

2016	Market Survey Summary of Results Data
2017	Element Materials Technology, Test Results ("Element Test")
2018	GhostPillow Raw Excel File Survey Responses
2019	Jungle Scout Supplemental Data as of September 10, 2024
2020	Tested Samples from Element
2021	GhostPillow Sample Pillow
2022	GhostPillow Production Steps with Pictures (Confidential)
2023	GhostPillow Product Specifications (Confidential)
2024	GhostPillow Information Sheet (Confidential)
2025	ASTM D3574-17 (Confidential)
2026	ANSI/RESNA SS-1:2019 (Confidential)
2027	Protective Order
2028*	Deposition Notice of David Shiroff
2029*	Deposition Transcript of David Shiroff (November 27, 2024) (Confidential)
2030*	Andrew Gross Second Declaration (Confidential)
2031*	Affidavit of Joseph Prograr re: Andrew Gross
2032*	PCM-Over-Gel-Pack-White-Paper-R3-23-July-2024
2033*	Jeff Quinn Second Declaration (Confidential)
2034*	Viscoelastic (Memory) Foam Systems
2035*	"Resilient", *Merriam-Webster.com Dictionary*, Merriam-Webster
2036*	Declaration of Alan Hirschhorn

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2037*	Phase Change Material Failure
2038*	Whirlpool - How hot does a dryer get?
2039*	Britannica - Likert scale
2040*	Affidavit of Greg Fowler
2041*	Largest online retailers in the U.S
2042*	Declaration of Marc Werner (Confidential)
2043*	Casper Hybrid Pillow Before It Was Changed (with holes)
2044*	Amazon Listing Casper Sleep Hybrid Pillow After It Was Changed (no holes)
2045*	Pictures of Casper Hybrid Sleep Pillow After It Was Changed, from Amazon Listing (Exhibit 2044) (no holes)

* Filed with Sur-Reply

[redacted]

I. INTRODUCTION

Petitioner's combinations of prior art are not practical as they misconstrue the prior art disclosure and fail to consider the real-world consequences with such significant/speculative modifications. Patent Owner's objective evidence as to secondary considerations, which is confirmed based on the discredited declaration of Mr. Shiroff, supports a finding of non-obviousness. The '310 Patent should be held valid in its entirety.

II. A POSITA IS NOT REQUIRED TO HAVE A TECHNICAL DEGREE; INDUSTRY EXPERIENCE IS CRITICAL

Petitioner's focus on a POSITA's practical experience is perplexing. Petitioner is aware of Marc Werner's background regarding the bedding industry. (Exhibit 1026). While Mr. Werner holds a Bachelor of Science in Accounting, his experience in the bedding industry comes from 25 years of practical, hands-on experience. (Exhibit 1026).

Patent Owner is not precluding a technical degree, only that a POSITA in the bedding industry is not required to have a technical degree. Hands on, practical experience should not be cast aside merely due to the lack of a technical degree. Petitioner mischaracterizes Patent Owner's position that an ordinary skilled artisan may gain his practical experience in the bedding industry from working in manufacturing facilities. (Exhibits 2001, ¶ 17; 2013, ¶ 16).

[redacted]

Mr. Gross has practical experience in the bedding industry, supported by the declarations of Joseph Prograr and Greg Fowler. (Exhibits 2031, 2040). Petitioner's expert, Mr. Shiroff holds a Bachelor of Science degree in Accounting, similar to Mr. Werner. Mr. Shiroff admitted his experience developed from practical experience (although his credibility is questioned herein). (Exhibit 2029, 50:1-8). "To offer expert testimony from the perspective of a skilled artisan in a patent case . . . a witness must at least have ordinary skill in the art." *Kyocera Senco Indus. Tools v. ITC*, 22 F.4th 1369,1376-77 (Fed. Cir. 2022); FRE 702. A POSITA should not be required to have a technical degree when practical experience is just as useful.

III. '301 PATENT CLAIM CONSTRUCTION

Patent Owner highlighted the term "solid" has a different meaning when viewed in the context of reticulated foam that is effectively hollow given the lattice structure of the foam. (Exhibit 2006). Patent Owner's interpretation of "solid" is "being without an internal cavity" and "of uniformly close and coherent texture: not loose or spongy." (Paper 12, Section IV; Exhibit 2010).

An inventor is the lexicographer and used the terms "solid" and "resilient" in Claims 1 and 2. (Exhibits 2010, 2035). While the ANSI/RESNA definition is not disputed, the '301 Patent purposely used both "solid" and "resilient" as limitations in the claims. The ANSI/RESNA definition of solid encompasses the definition of resilient. (Exhibit 2035).

[redacted]

Patent Owner's use of two distinct words demonstrates different characteristics of the foam block. Solid refers to the physical structure of the foam block, i.e. "being without an internal cavity." (Exhibit 2010). Resilient refers to the ability of the foam to recover and withstand shock without permanent change. (Exhibit 2035).

The Board confirmed the '301 Patent specification describes "cracking" as a term of art in the field of foam bedding, which is consistent with the '301 Patent defining "cracking" as "a term for processing a foam block with a roller press." (Paper 7, p.16; Exhibit 1001, col 3, lines 39-41; col 11, lines 26-28). "A patentee is free to be his own lexicographer" when the specification clearly defines the term. *Markman v. Westview Instruments, Inc*., 52 F.3d 967, 980 (Fed. Cir. 1995).

IV. THE '301 PATENT IS NOT OBVIOUS BASED ON CITED PRIOR ART

A. Lievestro Uses Rollers in a Continuous Manufacturing Process

Contrary to Petitioner's view, Lievestro does not improve "thermal characteristics" of the foam block. Lievestro uses a continuous roller process to cut holes into foam for a more efficient process. Petitioner plays word games with the broadly phrased "thermal characteristics" as there is a distinct difference between the passive action of providing holes to allow passive air flow (i.e., prevent mugginess) compared to creating an active cooling effect to the user. (Exhibit 2030, ¶¶ 108, 111, 112). Mr. Gross provided a practical example of letting muggy air out

[redacted]

of a room by opening a window versus turning on air conditioning to actively cool the room. (Exhibit 2030, ¶ ¶ 225-228). This distinction teaches away from the '301 Patent.

A POSITA would understand the heat buildup and impact of Lievestro's continuous manufacturing process on the integrity of foam, with and without PCM. (Exhibit 2030, ¶¶ 24, 25). Dr. Brienza's request for "calculations of thermal effects" misses the point a POSITA would understand the temperature concern regarding foam in a continuous manufacturing operation. Dr. Brienza ignores the unintended consequences of the addition of active cooling solutions to combat the heat buildup. Foam recovery rate and firmness are impacted by temperature given the glass transition temperature of foam. (Exhibit 2030, ¶¶ 27, 28). Conveniently, Dr. Brienza fails to provide his own calculations.

Dr. Brienza suggests slowing down the speed of the continuous roller process to reduce the heat buildup. A lay person understands a factory is concerned about maximizing output, not arbitrarily slowing down the manufacturing line and reducing output. (Exhibit 2020, ¶¶ 29-31).

Mr. Gross testified Lievestro was designed for continuous rolled foam, not cut, fabricated bedding toppers. (Exhibit 1074, 108:7-11; 108:25-109:21). Mr. Gross reads Lievestro not in a theoretical position, but how Lievestro would be applied to the process of the '301 Patent. Mr. Shiroff validated Mr. Gross'

observation he had never seen a 13-foot-high piece of foam. (Exhibits 2030, ¶¶ 34, 35; 2001, ¶¶ 46, 49; 2029, 42:10-25). Practically, it would be difficult for Lievestro's rollers to compress and feed 13-foot-high foam through Lievestro's continuous rollers.

Mr. Gross voluntarily corrected a statement from his first declaration (Exhibit 2001) that Lievestro disclosed a potential purpose of compressing the foam to open cell structure and improve comfort. (Exhibit 1074, 9:1-7). Petitioner attempts to use Mr. Gross' voluntarily retraction, which Mr. Gross stated does not change his other conclusions, to bolster its mischaracterization of "thermal characteristics." Petitioner attempts to capitalize on Mr. Gross' correction to falsely associate comfort with airflow.

B. Ohta's Objective is to Punch Foam to Prevent Mugginess, Not Provide an Active Cooling Benefit to the User

Ohta punches the foam using a platen and ejects the punched form pieces. Dr. Brienza concedes Ohta does not perform the required Claim 1 step of "cracking the block" because Ohta uses a press, not a roller, to compress the foam block during the hole punching operation. (Exhibit 1075, ¶ 49).

Ohta attempted to solve fabrication problems associated with the dominant memory foam technology of the period, closed cell foam with high density, slow recovery and low rebound. (Exhibit 2030, ¶¶ 93-95). This class of materials had low airflow characteristics given the very dense cell structure of the materials. (Id.). Dr.

[redacted]

Brienza's attempt to characterize the foam in Ohta as open cell is pure speculation. (Id.).

Petitioner's false association of preventing mugginess and active cooling is highlighted in Ohta. Mr. Gross provided a practical example to highlight the distinction. Imagine a person sitting in a room without any air conditioning and the room becomes muggy. (Exhibit 2030, ¶¶ 224-228). The person opens a window to release the mugginess and permit fresh air into the room. (Id.). The outside air is roughly the same temperature as the internal room. (Id.). This is the dynamic of cutting out foam pieces on Ohta to combat the "oppressive, muggy feeling during use." (Exhibit 1009, ¶¶ 0002). Turning on the air conditioning provides an active cooling benefit in the room. (Id.).

C. Crawford Uses a Gel with PCM Infused into the Foam, Which Teaches Away From a Surface Application

Crawford discloses infusion of a gel mixture into foam. (Exhibit 2030, ¶ 76). Infusion requires "penetration" into the foam, which would require some open cell characteristics to the foam substrate. (Id. ¶ 83). The gel infused in Crawford is not applied to the surface of the foam block as required by the '301 Patent. The gel is sprayed using nozzles (23) onto the foam and immediately infused using roller (8).

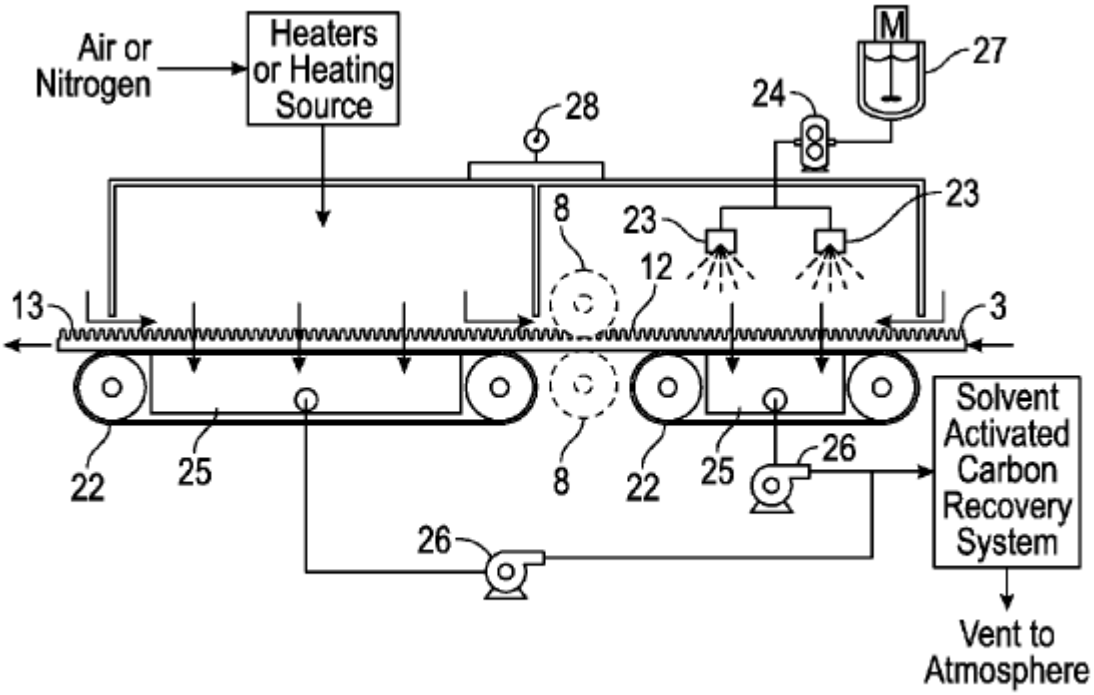

FIG. 27

(Exhibit 1011, Fig. 27). If you spray water onto an oily surface, it may be applied but the water is not going to stay at the surface. (Exhibit 1074, 129:1-11). Practically, Crawford would not function as intended if the gel is not infused and left on surface of the foam to drip, like mixing oil and water. There needs to be a mechanism to have the gel "substantively stay on [in] the block", i.e. infusion. (Exhibits 1074, 129:6-11; 2030, ¶¶ 85-89). Moreover, the "evaporating the solvent" stage in Crawford **does not** equate to curing. (Exhibit 2030, ¶¶ 212-215). Crawford is focused on infusing gel into the foam, while the '301 Patent focuses on applying PCM to the surface of the foam block.

[redacted]

D. Schneider Mischaracterizes Rossi Regarding Phase Change Gel

Dr. Brienza represented in his second declaration he reviewed the Rossi reference (Exhibit 1085) discussed within Schneider. (Exhibit 1075, ¶ 15). Dr. Brienza and Petitioner state Rossi **expressly** discloses a "phase change gel" when discussing Schneider. (Id; Paper 24, p.10). However, Dr. Brienza did not thoroughly read Rossi as there is **no** mention of phase change gel or phase change. Mr. Gross read Rossi and there is no mention of any phase change materials. (Exhibit 2030, ¶¶ 45-51). Rossi relates to a method to apply a gel on a substrate. (Id.).

Mr. Gross clarified the distinction between PCM and gel given the inappropriate equivalency. While it is possible to put PCM in gel, gel is not the same as PCM. (Exhibits 2030, ¶¶ 52-54; 2032). Petitioner is narrowly focused on phase change gel, which includes "extremely small capsules" of PCM. (Exhibit 2030, ¶ 57). Scheider's use of PCM inside the gel (as a carrier) teaches away from PCM combined with resin that binds to the surface of foam. (Id. ¶¶ 58-59).

E. A POSITA Would Not Combine Petitioner's Prior Art

1. Applying Phase Change Gel of Schneider Before/After the Lievestro Rollers Would Reak Havoc on the Process

A POSITA would not combine Schneider/Lievestro as neither enhance comfort. Lievestro discloses a continuous hole punch operation that compresses the foam. Schneider discloses a washable mattress assembly with an embodiment of "phase change gel."

[redacted]

There is no motivation to introduce gel with PCM (or PCM alone) into the Lievestro process given the constraints of a continuous roller punch process. Petitioner is rightly concerned about Patent Owner's argument of the heat impact on the foam and PCM material. Dr. Brienza's speculative engineering strategies to counter valid heat concerns of adding PCM to a continuous rolling process are not practical. Mr. Gross debunked each theory.

Cooling the Lievestro system may impact the underlying foam due to its glass transition temperature, which could stiffen the foam and negate a reason to combine. (Exhibit 2030, ¶¶ 117-119). Slowing down the continuous rolling process to decrease temperature buildup defeats the objective of Lievestro. (Id. ¶¶ 29-31, 120).

A POSITA would not be motivated to apply PCM before or after the continuous punch rollers. If PCM is applied prior to Lievestro's rollers on the continuous process, the PCM would not have time to cure before the rollers punched the foam and the wet PCM would mix with the cut (ejected) foam pieces. (Exhibit 2030, ¶¶ 136-138). If PCM was somehow cured prior to the roller operation, the force of the rollers would damage the PCM. (Exhibit 2023, ¶ 141). If the wet PCM is applied after the Lievestro rollers, the PCM would bleed into the foam holes. (Exhibit 2030, ¶¶ 150-152). This negatively impacts the pathway for air to flow through the foam, past the PCM surface, to provide a cool gust of air. (Id.). There would be efficiency issues trying to cure PCM over several hours on a continuous

process. (Id.). A POSITA would not be motivated to combine Lievestro in view of Schneider.

2. Combining Crawford in view of Lievestro Using Petitioner's Modifications Would Render the Process Inoperable

Crawford teaches infusing gel with PCM into foam, not applying PCM on a surface of a foam block. Lievestro's punching holes in foam negates mugginess, it does not provide an active cooling effect to the user. A POSITA would not look to combine Crawford in view of Lievestro as substantial modifications would wreak havoc on the Crawford process. Such unproven, unsupported modifications go against the enablement requirement of the specification and scope known to a POSITA without undue experimentation. *Trs. of Bos. Univ.*, 896 F.3d 1357 (Fed. Cir. 2018).

If Lievestro roller assembly is placed after Crawford's evaporating step, the PCM would be damaged by the Lievestro rollers. A non-uniform pressure from Lievestro's roller to foam infused with gel can damage the PCM. (Exhibit 2030, ¶ 174). The cut foam pieces will not eject properly from the roller. (Id. ¶ 176). Unlike the '301 Patent that applies PCM on the surface of a foam block, Crawford infuses gel into the foam block. (Exhibit 2030, ¶¶ 168, 169). PCM takes hours to cure and the evaporation time of Crawford's gel and PCM from the '301 Patent are not interchangeable. (Id. ¶ 170).

[redacted]

If the Lievestro roller assembly is placed before the foam block is processed with Crawford's laminator, the holes in the foam will clog from the gel spraying operation. (Id. ¶¶ 183-186). Plugging the holes with gel will inhibit air flow. (Id.). Dr. Brienza's speculation adjusting hole diameter to avoid clogging is unsupported and would impact the integrity of the foam block by making it more susceptible to tearing. (Id. ¶¶ 187-195). Changing hole diameter would affect the comfort of the foam as the firmness would change. (Id.). While more PCM on the surface of a foam block would improve cooling, random deposits of gel/PCM within the holes will restrict air flow. (Id.). There is no motivation to combine because of the reasons above.

Petitioner modifies Crawford's rollers (mid-process) to use Lievestro's cutting rollers. The modified rollers would cut foam with sprayed gel before the gel is infused into the foam. (Exhibit 2030, ¶¶ 196-200). There is no motivation to combine because the wet gel would exacerbate the issues of ejecting cut pieces of wet foam will stick to the cutting roller. (Id.). Petitioner's incompatible modifications fail to address practical manufacturing concerns when combining Crawford in view of Lievestro.

3. Appling the Phase Change Gel of Schneider Would Negate the Objective and Process in Ohta to Extricate the Punched Foam Pieces

A POSITA would not combine Ohta in view of Scheider to achieve the process of the '301 Patent. Dr. Brienza fails to provide the full context of Mr. Gross'

[redacted]

deposition testimony that nothing in the Ohta disclosure suggested adding the gel with PCM of Schneider would not be possible. (Exhibit 1075, ¶ 118). Mr. Gross' full comment included: "other than the fact that at the time [2005] of the [Ohta] patent that [PCM] wasn't a broadly available technology in these applications." (Exhibits 2030, ¶ 222; 1074, 156:7-13).

Petitioner agrees the "cracking said block" limitation of Claim 1 is not present in Ohta. If Schneider discloses a gel with PCM, such material will act differently in a manufacturing process compared to PCM. The deficiencies of punching holes into foam with gel (Crawford in view of Lievestro) is not the same as punching holes with PCM. Petitioner uses gel and PCM interchangeably, which is misleading. (Exhibit 2030, ¶¶ 52-54). It is speculation to presume Ohta, designed to efficiently eject punched portions of foam, would react similarly by ejecting foam coated with gel.

4. Petitioner Uses Flawed Logic Combining Ohta in view of Crawford

A POSITA would not combine Ohta in view of Crawford. Ohta discloses high density, closed cell foams may not be compatible with the gel infused in Crawford. (Exhibit 2030, ¶ 234). It is not clear if Crawford's gel can be applied to a product already fabricated into a pillow. (Id. ¶ 235). Dr. Brienza ignores the distinction of the clogging problem using gel with PCM. (Id. ¶ 238). Rossi confirms gels are inherently "sticky". (Id. ¶ 239). Mr. Gross raises a critical concern that

merely taking the gel in Crawford, without infusion, and applying it to the foam in Ohta does not mean the gel is going to stay on the Ohta foam (e.g., oil/water). (Exhibit 1074, 129:5-11). A POSITA would understand the constraints of cherry-picking gel from Crawford without infusing the gel.

V. PATENT OWNER PROVIDED TANGIBLE, OBJECTIVE EVIDENCE OF SECONDARY CONSIDERATIONS THAT HAVE A CLEAR NEXUS TO THE PATENTED PROCESSES

A patentee can overcome a prima facie showing of obviousness by presenting objective evidence of non-obviousness, i.e. secondary considerations. *Graham v. John Deere Co*., 383 U.S. 1 (1966). Patentee must establish a nexus between the challenged claims and the objective evidence.

Lectrosonics, Inc. v. Zaxcom, Inc. provided two provisions to establish such a nexus in the context of an IPR proceeding. Case IPR2018-01129, Paper 33 (PTAB Jan. 24, 2020). First, "a patentee is entitled to a presumption of nexus 'when the patentee shows that the asserted objective evidence is tied to a specific product and that product embodies the claimed features and is coextensive with them.'" *Lectrosonics, Inc. v. Zaxcom, Inc.,* IPR2018-01129, Paper 33 at p. 32, *quoting Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373 (Fed. Cir. 2019). Second, even if the patentee does not meet the bar for a presumption of a nexus, he "is still afforded an opportunity to prove nexus by showing that the evidence of secondary considerations is the 'direct result of the unique characteristics of the claimed

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invention.'" (*Id*. at p. 33). For example, a patentee may show "that it is the claimed combination as a whole that serves as a nexus for the objective evidence; proof of nexus is not limited to only when objective evidence is tied to the supposedly 'new' feature(s)." *Lectrosonics, Inc. v. Zaxcom, Inc.,* IPR2018-01129, Paper 33 at p. 32. Secondary considerations may include evidence of commercial success and unexpected results. *KSR Int'l Co. v. Teleflex Inc*., 550 U.S. 398 (2007).

As shown in Patent Owner's process (Exhibit 2022) to produce the GhostPillow (Exhibits 2003, 1055), the '301 Patent claims deliver the stated objective of creating a cooling pillow that creates a gust of cool air to the user. (Exhibit 1001, col. 12, lines 11-27). The '301 Patent process is used to create the GhostPillow and has the unique characteristics of creating its specific cooling effect, as well as the compression and cracking steps done to achieve a high level of comfort to the user. The objective evidence provided below is tied to the GhostPillow and embodies the claimed features. While Petitioner attempts to misdirect by focusing on the nexus to the compression and cracking steps, nexus is not limited to a single step in the process and must consider the entire claimed invention. *Lectrosonics, Inc. v. Zaxcom, Inc.,* IPR2018-01129, Paper 33 at p. 32.

A. <u>The GhostPillow Manufacturing Process Follows the '301 Patent</u>

The objective of the invention: "As the cooling pillow 100 compresses, a rush of air that is cooled by the cooling layer 203 passes through the pillow protector 300,

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through the uniform side 403, and onto the head and neck of the user." (Exhibit 1001, col. 12, lines 22-24). As shown in Exhibit 2022:

- 1: a solid, resilient, compressible foam block;
- 2: "polishing" operation passing the foam block through a roller press (i.e., cracking and/or compressing);
- 3: dry PCM mixed with polyester resin and blue pigment (colorant) (Exhibit 1033, No. 1);
- 4: liquid PCM applied to the surface of the foam block using a roller press (i.e., cracking and/or compressing);
- 5: foam with PCM curing on baker's racks;
- 6: forming holes in the foam block, the first picture shows the platen press and plate compressing the foam block prior to punching the holes.

At minimum, PCM takes hours to cure. (Exhibit 2030, ¶ 214). Patent Owner cures the PCM for 24 hours, which ensures a quality product deliverable to the consumer. (Exhibit 2023, ¶¶ 26, 27). Petitioner's haphazard approach in combining prior art fails to take into account the practical considerations in curing PCM.

B. Mr. Shiroff is Not a Credible POSITA: His Declaration & Testimony Should be Impeached

Mr. Shiroff's understanding of secondary considerations is limited. He had difficulty addressing Patent Owner's secondary considerations and lacks

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understanding secondary considerations are only raised upon a finding of obviousness. (Exhibit 2029, 173:2-22; 186:19-187:4).

Mr. Shiroff's experience focuses on the retail side of the bedding industry. He's not knowledgeable about specific processes in the '301 Patent, namely applying PCM to a surface of a foam block and forming holes. Mr. Shiroff did not know how long it took PCM to cure in production. (Exhibit 2029, 37:1-10). Mr. Shiroff is unaware of the implications of mold in PCM if not cured properly. (Exhibits 2029, 48:2-13; 2033, ¶ 25). Mr. Shiroff did not recall witnessing holes being punched in foam. (Exhibit 2029, 76:24-77:13). Mr. Shiroff learned about compressing foam to form holes preparing for his declaration; he did not have prior knowledge. (Exhibit 2029, 77:14-79).

Mr. Shiroff testified Mr. Quinn was wrong about drilling by pointing to Boers Tecknik drilling machines to form holes without compression. (Exhibit 1076, ¶¶ 48-49). Mr. Shiroff omitted he contacted Boers Tecknik and was advised the foam is compressed during the drilling operation. (Exhibit 1076, 72:14-74:9). Mr. Shiroff avoided admitting compression by saying Boers Tecknik held the foam in place by "pushing down 1cm." (Id.) Mr. Shiroff agreed a "push" of 1cm would reduce a 10cm height foam block down to 9cm. (Exhibit 2029, 74:4-9). Mr. Shiroff confirmed Mr. Quinn's practical statement at his deposition drilling holes into **uncompressed** foam would be "highly unlikely" as "bad things happen" when you put a drill in a

piece of foam; the drill would tear the foam in inconsistent/ineffective ways. (Exhibit 1078, 81:19-82:9). Mr. Shiroff has not seen the Boers Tecknik machine in operation and is not aware of any companies using the machine. (Exhibit 2029, 74:21-75:10). Mr. Shiroff testified he crossed paths with Alan Hirschhorn, EVP of Patent Owner. (Exhibit 2029, 11:23-15:22). Mr. Hirschhorn declared **his many** interactions over 20 years with Mr. Shiroff. (Exhibit 2036).

Mr. Shiroff, after first learning about testing from Dr. Brienza in this IPR (hearsay), adopted Dr. Brienza's findings about the Element testing. (Exhibit 2029, 19:19-21:3; 199:12-200:7).

C. Patent Owner Defined a Market Share Focused on Products with a Nexus to the '301 Patent Process

Patent Owner properly defined the market as "Molded Gel Memory Foam PCM pillows with punched holes", the product resulting from the '301 Patent, to demonstrate the nexus between the market and claimed process. Mr. Shiroff testified the market study "should have been memory foam pillows ... with cooling features should have been subjected to cracking, claim 1, and should have been with holes punched during – before and during compression." (Exhibit 2029, 107:17-108). Mr. Shiroff agrees with Mr. Quinn the market is defined by products manufactured with features tied to '301 Patent processes.

Petitioner arbitrarily redefines the market category as "memory foam with cooling." (Exhibit 1076, ¶ 62; Paper 24, p. 23). Mr. Shiroff failed to identify the

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range of products in his arbitrary market category. Mr. Shiroff discussed three categories of pillows: polyester, memory foam, and down. (Exhibit 2029, 94:6-9; 101:15-23). Instead of a market of memory foam pillows, Mr. Shiroff narrowed the market to "memory foam with cooling." (Exhibit 1076, ¶ 62). Mr. Shiroff conceded he narrowed the category of "memory foam" pillows to "memory foam with cooling" to reduce the thousands/hundreds of pillows in the market "to produce a population that has any chance of producing meaningful results." (Exhibit 2029, 102:6-16).

Under Mr. Shiroff's logic, it is acceptable to define the market as products implicated by the '301 Patent process, as opposed to "memory foam with cooling" that includes a broader range of products that do not have a nexus to the '301 Patent, particularly PCM on the surface, holes in the foam block, and cracking/compression. Tellingly, when asked if the method of production was important, Mr. Shiroff agreed the "**method of manufacturing in a market share analysis in a case like this, I think it was <u>imperative</u>**". (Exhibit 2029, 106:2-9) (emphasis added).

Petitioner failed to expand Patent Owner's defined market using a generic Amazon search designed to present a wide arrangement of pillows to consumers for sale. (Exhibit 1043). Mr. Shiroff did not conduct the Amazon search, he "just did a fairly quick review, sort of a flip through the pages and take a quick glance at it." Exhibit 2029, 109:5-16; 110:7-23. Exhibit 1043 is incomplete; it merely contains

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the first page summary of 48 listings, not the additional three pages of the search results showing all 184 results. (Exhibits 2029, 1043). Mr. Shiroff confirmed Exhibit 1043 was deficient. (Exhibit 2029, 120:2-10). A review of the 48 product summaries demonstrates Petitioner's cavalier approach preparing the Amazon search. Most of the product pictures are covered pillows, making it impossible to see the core foam block to assess if the foam block contained holes or PCM on the surface. Mr. Shiroff conceded the Amazon search "produced some results that were outside of what the search was trying to achieve." (Exhibit 2029, 118:24-119:13; 121:8-122:6). This contradicts Mr. Shiroff's declaration saying Mr. Quinn committed a "fatal error" not to consider the 184 products. (Exhibit 1076, ¶ 61).

Mr. Shiroff confirmed some of the 48 product listings were not pillows, but merely "foam fill" used in pillows. (Exhibit 2029, 118:14-23; 120:11-14). Mr. Shiroff confirmed several product listings included covered pillows, which did not permit him to see the underlying foam block. (Exhibit 2029, 114:25-115:13; 119:15-120:1; 120:11-25; 121:1-17). Despite being presented with numerous admitted errors within the Amazon search, Mr. Shiroff maintained it was a "fatal error" not to include the 184 Amazon results, 136 of which he had never seen. (Exhibit 2029, 125:18-21). Mr. Quinn's approach evaluating the features of each product before including it in the defined market cements the nexus to the '301 Patent, excluding Petitioner's pillow recently removed holes. (Exhibits 2043-2045).

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Despite saying Mr. Quinn should have secured brick and mortar sales numbers, Mr. Shiroff testified at Metro Mattress he provided sales data to third party aggregators under the cover of a non-disclosure agreement. (Exhibit 2029, 87:17-88:25; 141:22-146:1). The information was not public.

D. Patent Owner's Market Survey Confirms the Nexus of the Cooling Features Created by the '301 Patent and Customer Views of the GhostPillow

Patent Owner's market survey provided consumer responses (objective evidence) tied to specific features of the GhostPillow that influenced their purchase. Patent Owner is entitled to a presumption of a nexus. Unlike Mr. Quinn, who developed Patent Owner's survey questions (Exhibit 1076, 168:22-169:5), Mr. Shiroff's experience was limited to hiring a professional survey company to secure focus groups. (Exhibit 2029, 156:9-16; 158:12-25). These pre-selected focus groups provided 100% feedback. (Id.). Mr. Shiroff did not know what an adequate response rate would be for a market survey (Exhibit 2029, 159:3-9), unlike a favorable 2.5% response rate. (Exhibit 2013, ¶ 37). Mr. Shiroff never heard of a Likert scale until he read Mr. Quinn's declaration. (Exhibits 2029, 156:17-21; 2013, ¶ 38; 2039).

Mr. Shiroff's desire to ask consumers about specific manufacturing processes used to create the GhostPillow defies logic. Mr. Shiroff conceded "most consumers wouldn't understand it [the manufacturing processes involved in manufacturing a pillow]." (Exhibit 2029, 176:18-25). Mr. Shiroff, refusing to retract from his

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declaration about asking cracking and compression survey questions to consumers (Exhibit 1076, ¶ 74), maintained Patent Owner's survey should have asked consumers about manufacturing processes covered by the '301 Patent. (Exhibit 2029, 177:18-178:9; 181:2-18). Consumers are concerned with the product benefits, not the manufacturing process. (Exhibit 2033, ¶ 68).

Mr. Shiroff testified Mr. Quinn did not prove a nexus between the claims of the '301 Patent and the market survey. (Exhibit 2029, 166:19-170:12). However, when asked how Mr. Shiroff would have established the nexus, he only discussed the compressing/cracking elements of the '301 Patent and completely neglected the PCM step (Exhibit 2029, 177:1-178:9). Even if the patentee does not meet the bar for a presumption of a nexus, he "is still afforded an opportunity to prove nexus by showing that the evidence of secondary considerations is the 'direct result of the unique characteristics of the claimed invention.'" *Fox Factory, Inc. v. SRAM, LLC* at p. 33. A patentee may show "it is the claimed combination as a whole that serves as a nexus for the objective evidence; proof of nexus is not limited to only when objective evidence is tied to the supposedly 'new' feature(s)." The entire claim has to be considered in the nexus argument.

Patent Owner has established a nexus between the market survey and the claims of the '301 Patent, which is evidence of commercial success. *Aikin Industries, Ltd. V. Chemours Company FC*, LLC, No. 20-1616 (Fed. Cir. 2021)

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(unique combination of disclosed features in a claim is crucial to proving a nexus with commercial success, and ultimately non-obviousness). Mr. Quinn's declarations objectively confirm the marketing questions/answers showed consumers purchased the GhostPillow because of its cooling properties, which maps to the process claims of the '301 Patent and ranked at the top. The comfort features claimed in the '301 Patent maps to the cracking and compressing elements, were also ranked high on the customer survey. (Exhibits 2016, p.3; 2033, ¶¶ 79-88). Patent Owner, through objective market survey evidence, has shown the claimed process serves as a nexus to GhostPillow's commercial success.

E. <u>Copying of '301 Patent and Market Share</u>

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F. The Element Testing is Third Party Objective Evidence of the Cooling Effect of the '301 Patent Process, which Includes Unexpected Results

Secondary considerations may be presented as evidence of non-obviousness. In particular, secondary considerations may include unexpected results. *Graham v. John Deere Co.,* 383 U.S. 1 (1966). Applicants must show that differences in properties between the claimed invention and the cited prior art differ to such an extent the difference is really unexpected. (MPEP § 716.02). The showing of unexpected results must be based on evidence, not argument or speculation. MPEP § 2145.

Recognized testing facility, Element, used standard testing procedures. (Exhibit 2029, 201:8-12). Dr. Brienza's declaration to the contrary regarding Qmax is a red herring. Element itself defines Qmax in their test results as the "peak heat flow (Q) value registered by the hot plate device". (Exhibits 2017, p. 5.; 2033 ¶ 91).

Qmax test results show the amount of energy required by the hot plate to bring the solid specimen back to the base line was almost double the amount of energy needed for the punched foam with PCM. Qmax of the Patent Owner's product significantly outperformed the solid piece of foam related to regulating surface temperatures. (Exhibits 2013, ¶¶ 81-83; 2033 ¶ 92). For Patent Owner's tested specimen, Qmax was 90% better with PCM and holes than without, which was an unexpected result. (Exhibit 2013, ¶ 87).

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Despite the test samples being an apples-to-apples comparison of solid foam versus solid foam with PCM and holes, Dr. Brienza attempts to distinguish the tested samples from the production GhostPillow. Mr. Werner debunks Dr. Brienza's misguided concerns in Exhibit 2042.

G. There is Objective Evidence of Non-Obviousness due to the Length of Intervening Time Between Publications

Ex Parte Whirlpool Corporation states "[t]he length of the intervening time between the publication dates of the prior art and the claimed invention can also qualify as an objective indicator of non-obviousness." (Exhibit 2012, p. 17).

The priority date of the '301 Patent is September 28, 2017. The publication dates of the cited prior art:

- Lievestro: December 12, 2003;
- Ohta: March 8, 2007;
- Crawford: May 22, 2014; and
- Schneider: June 9, 2016

Petitioner's combinations of prior art center on Lievestro or Ohta combined with Crawford or Schneider. In any combination, the prior art is a combination of hole punching from over a decade before Patent Owner's priority date, paired with gel with PCM references years before the '301 Patent. Despite the knowledge of hole punching technology for over a decade, inventors in Crawford and Schneider did not

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discover/disclose the benefits of applying gel with PCM on punched foam; whether on the surface or infused in foam with holes. As gel with PCM emerged in the bedding industry, Patent Owner was first to apply non-gel PCM to the surface of a foam block with holes. Mr. Gross testified first experience using PCM in products dating back to 2011. (Exhibit 1074, 94:14-23; 150:4-7). The length of time between the cited prior art and Patent Owner's priority date is an objective indicator of non-obviousness.

CONCLUSION

Patent Owner respectfully requests this Board deny the Petition and hold Claims 1 and 2 of the '301 Patent valid.

CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. § 42.24(d), Patent Owner hereby certifies with reliance on the word count provided by the word-processing system used to prepare this Sur-Reply to Petitioner's Reply, that the number of words in this paper is 5,556. This word count excludes the table of contents, table of authorities, mandatory notices under § 42.8, certificate of service, certificate of word count, and claim listing.

Date: December 6, 2024

/Greg M. Popowitz/
Greg M. Popowitz

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CERTIFICATE OF SERVICE

The undersigned certifies that, in accordance with 37 C.F.R. § 42.6(e) and 37 C.F.R. § 42.205, service was made on Petitioner as detailed below.

Date of Service	December 6, 2024
Manner of Service	P-TACTS and E-Mail
Documents Served	- This Sur-Reply - Exhibits 2028-2045
Persons Served	Mark I. Koffsky mkoffsky@koffskyschwalb.com Gary Serbin gserbin@koffskyschwalb.com Koffsky Schwalb LLC 500 7th Ave, 8th Floor New York, NY 10018

Date: December 6, 2024

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