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On behalf of **Global Shade Corp.**

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GLOBAL SHADE CORPORATION,
Petitioner,

v.

WITH-U E-COMMERCE (SHANGHAI) CO., LTD.,
Patent Owner.

IPR2023-00580
U.S. Patent 10,669,738

PETITIONER'S REPLY TO PATENT OWNER'S RESPONSE

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EXHIBIT LIST

Exhibit No.	Description
1001	U.S. Patent No. 10,669,738 (“the ’738 patent”)
1002	Declaration of Jeffrey L. Stein, Ph.D.
1003	U.S. Patent No. 6,345,639 (“Rousselle”)
1004	International Patent Publication No. WO2000/023676 (“Chang”)
1005	UK Patent Application No. GB2321913A (“Tsai”)
1006	U.S. Patent No. 8,066,300 (“Ohnishi”)
1007	U.S. Patent Publication No. 2005/0241688 (“Wu”)
1008	U.S. Patent No. 6,929,017 (“Byun”)
1009	U.S. Patent No. 7,735,505 (“Carter”)
1010	U.S. Patent Publication No. 2005/0178419 (“Tseng”)
1011	U.S. Patent No. 3,335,815 (“Oakes”)
1012	U.S. Patent No. 5,944,040 (“Jang”)
1013	Excerpts from Thomas W. Barber, <i>The Engineer’s Sketch-Book of Mechanical Movements, Devices, Appliances, Contrivances and Details</i> (3d ed. 1897)
1014	Excerpts from the ’738 Patent File History
1015	CV of Jeffrey L. Stein, Ph.D.
1016	Final Written Decision in <i>Global Shade Corp. v. With-U E-Commerce (Shanghai) Co., Ltd.</i> , IPR2021-00365, Paper 36 (P.T.A.B. July 25, 2022) (“ <i>Global Shade</i> ”)
<i>Exhibit numbers 1017-1100 not used.</i>	
1101	Transcript of Jan. 24, 2024 Deposition of Wendy S. Reffeor, Ph.D.

Global Shade v. With-U E-Commerce
IPR Petition – Patent 10,669,738

Exhibit No.	Description
1102	Second Declaration of Jeffrey Stein, Ph.D.
1103	U.S. Patent No. 6,484,376 (“Khatchadourian”)
1104	U.S. Patent No. 8,544,489 (“Choi”)
1105	U.S. Patent Publication No. 2011/0061702 (“Lin”)
1106	U.S. Patent No. 4,607,656 (“Carter II”)

Patent Owner (“PO”) does not dispute that the prior art discloses each limitation of the challenged claims. Instead, PO mischaracterizes the references, ignores key disclosures, offers conclusory assertions from its expert, and fails to rebut Dr. Stein’s testimony, all to argue that the prior art references could not be combined. PO is incorrect, and for the reasons in the Petition and below, the Board should cancel the challenged claims.

I. THE “PRIMARY MODIFICATION” OF ROUSSELLE AND TSAI

PO first makes several arguments regarding the so-called “primary modification,” which combines certain features of Tsai’s canopy (e.g., outer and/or inner retractable units) with Rousselle’s canopy. These arguments are unavailing.

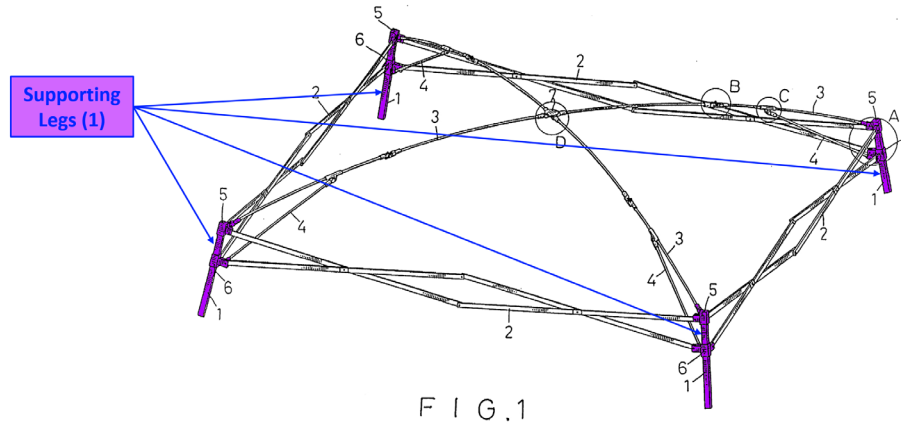
A. The “Primary Modification” Would Not Be Inoperable

PO first argues that the primary modification would result in an inoperable canopy that is incapable of folding or unfolding. POR, 16-18, 48-56. That is incorrect. PO fundamentally misunderstands the proposed combination.

First, PO’s argument rests on the assertion that “Rousselle’s legs are required to invert ... as part of the unfolding process.” *Id.*, 18 (emphasis omitted). But contrary to PO’s assertion, Rousselle’s canopy legs are not required to invert. While Rousselle discloses several canopy legs, it recognizes that “various leg segments, shapes, etc. can be varied extensively between embodiments, and that the illustrated and described embodiments are merely exemplary designs.” Ex.

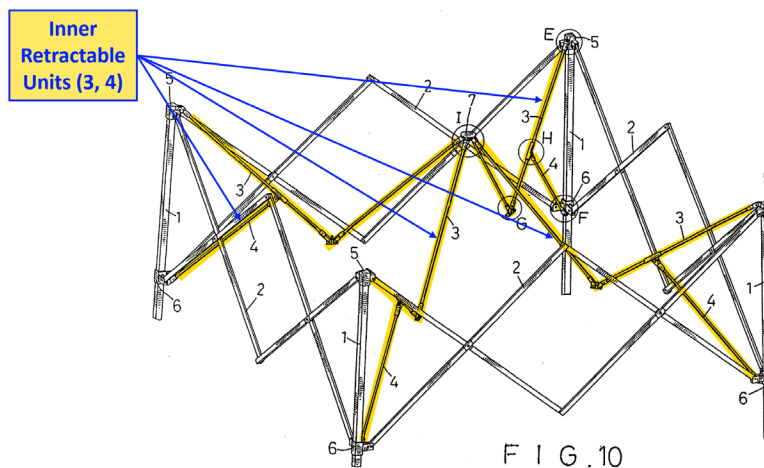
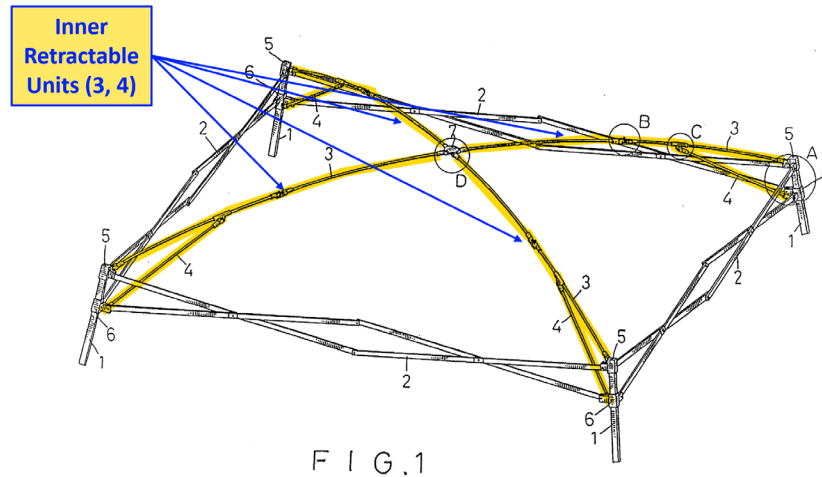
1003, 16:14-19. From this alone, a POSITA would have understood Rousselle’s disclosure to encompass legs that do not invert. Ex. 1102 ¶8. Furthermore, even the legs shown in Rousselle’s Figure 1(D), which, as shown, are capable of inverting, need not do so—one need only stop folding the canopy just before inverting the legs to be left with a slightly less compact, but still *collapsible*, canopy. *Id.* ¶9; *see, e.g.*, Ex. 1003, Fig. 1(D); Ex. 1101, 31:10-32:1 (PO’s expert admitting Rousselle “says you can, not you must” invert the legs). A canopy as shown in Rousselle’s Figure 1(D), modified to include Tsai’s outer retractable units, would still meet each limitation of challenged claim 1 in exactly the way described in the Petition even if one simply stopped collapsing the canopy before inverting the legs. *Id.*; Ex. 1101, 32:2-4, 33:6-20.

Furthermore, a POSITA’s understanding that Rousselle’s disclosure encompassed non-inverting legs would have been well-founded because such legs were well-known. Ex. 1102 ¶10. For example, Tsai also discloses canopy legs that do not invert:



Ex. 1005, Fig. 1; Pet., 12-14. Accordingly, even if Rousselle did not disclose such legs, a POSITA would have immediately recognized that any of the numerous well-known canopy leg designs could be used in the proposed combination, including those of Tsai or others that do not invert. Ex. 1102 ¶10 (citing Exs. 1005, 1007-1010, 1012).

Second, PO ignores that Petitioner’s primary combination is based on the “combin[ation of] Tsai’s outer *and/or inner retractable units* with Rousselle’s canopy.” Pet., 34 (emphasis added). As explained in the Petition, Tsai discloses *inner* retractable units and it would have been “obvious to a POSITA to combine Rousselle’s canopy with Tsai’s inner retractable units[.]” *Id.*, 23-28. Tsai’s inner retractable units each form a Y-shape; the lower arm of each Y-shape is “pivotally secured to respective sliding connectors 6” which move along the canopy’s leg when folding or unfolding. Ex. 1005, 7:15-8:5. These components are shown below:



Id., Figs. 1, 10; *see also id.*, Figs. 2, 11 (canopy support rod 3 connected to fixed connector 5), 12 (linking rod 4 connected to sliding connector 6). Thus, when combined with Rousselle, this Y-shaped outer section of Tsai's inner retractable units would allow the canopy to fold (e.g., the sliding connector would move down the canopy's leg while attached to the hinged linking rod of the inner retractable unit) and unfold (e.g., the sliding connector would move back up the canopy's leg) without the need for the canopy's legs to invert. Ex. 1102 ¶12.

PO's arguments assume a rigid adherence to the primary disclosure of the prior art references, but this ignores that a POSITA "is also a person of ordinary creativity, not an automaton." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007); *see also id.* (condemning "[r]igid preventative rules that deny [] recourse to common sense"); Ex. 1101, 60:8-21 (PO's expert admitting that she "wasn't ... asked to testify on" modifications to Rousselle and didn't consider potential modifications that would require "engineering work"). A POSITA would have had all the necessary knowledge and creativity to implement a working version of the primary modification, and would have been motivated to do so for the reasons discussed in the Petition. Pet., 20-22.

Thus, contrary to PO's assertions, the primary modification would result in an operable canopy capable of folding and unfolding.

B. A POSITA Would Have Combined Rousselle and Tsai

PO next makes several unsupported observations about the references in an attempt to argue that a POSITA would not have combined them. *E.g.*, POR, 20-29. These observations, to the extent they are relevant at all, mischaracterize and contradict the references.

First, PO argues that Rousselle uses lightweight and flexible components that rely on support from canopy material for stability. *Id.* For example, PO argues (without support) that Rousselle's "sheet material walls contribute to the

structural support for the umbrella tent, making it less likely one of skill in the art would look to add additional structural support with the X-shaped members of Tsai.” *Id.*, 20; *see also id.*, 21 (arguing that alleged benefits of Rousselle “would be reduced or lost by adding extra structural connections between the legs”), 21-26 (alleging that no background references cited by Rousselle include outer retractable units). These arguments are unavailing.¹

First, PO ignores that Rousselle expressly states that aspects of its canopy, including its central lock, “can be used with a variety of other frame structures” and are compatible with “multiple or different covers” including canopies “with or without one or more side[s.]” Ex. 1003, 12:22-39, 15:58-63. Accordingly, a POSITA would have understood that Rousselle’s disclosure is not limited to canopies that rely on sheet material for stability, but that Rousselle’s teachings were more broadly applicable, including to canopies with outer retractable units like Tsai’s. *Id.*; Ex. 1102 ¶19; Ex. 1101, 30:13-21.

¹ To the extent PO suggests Rousselle’s canopy frame is somehow too flexible to be operable when combined with Tsai, that is incorrect. Ex. 1102 ¶¶14-15, 18. And, even if Rousselle’s canopy frame were too flexible, it was well within the skill of a POSITA to modify it to work. *Id.* ¶¶16-17, 21.

Furthermore, even assuming PO is correct that Rousselle and its background references do not discuss canopies with outer retractable units, that does not prevent a POSITA from being motivated to add them. It is a fundamental principle that non-obviousness cannot be shown simply because one reference of a combination does not disclose certain elements of a challenged claim. *In re Keller*, 642 F.2d 413, 426 (C.C.P.A. 1981) (“attacking references individually” insufficient where “the rejections are based on a combination of references.”). Rousselle need not provide the disclosure of outer retractable units and the motivation to add them, because Tsai does.

Second, PO argues that “[o]ne of skill in the art would not apply Tsai’s X-shaped connections between the legs of an umbrella tent” because the “modification would come at the expense of the main principle of operation, namely, *the inversion and folding of the umbrella tent.*” POR, 28 (emphasis added). But Rousselle makes clear that the particular methods of folding shown in its figures are not critical, and certainly not Rousselle’s main principle of operation. *See, e.g.*, Ex. 1003, 16:14-19 (“various leg segments, shapes, etc., can be varied extensively between embodiments, and [] the illustrated and described embodiments are merely exemplary designs”). Indeed, Rousselle discloses that nothing about its canopy structure is critical: its central lock “can be used with a variety of other frame structures[.]” *Id.*, 15:58-63; Ex. 1102 ¶11; Ex. 1101, 10:13-

21. Instead, Rousselle’s focus is on the central lock, and Petitioner’s proposed combinations maintain the principle of operation of the central lock exactly. *E.g.*, Ex. 1003, 2:48-50; Pet., 33-48; Ex. 1102 ¶11. Furthermore, as discussed above, the inclusion of Tsai’s outer retractable units in Rousselle’s canopy makes the canopy no less collapsible within the meaning of the ’738 patent’s claims. *Supra* §I.A. Thus, PO’s argument is unavailing.

Finally, PO argues that Tsai’s “leg locks ... are not amenable to use with a centrally-activated umbrella tent.” POR, 28-29. But Petitioner never proposed including Tsai’s leg locks in the primary modification. Instead, Petitioner proposed adding Tsai’s outer and/or inner retractable units (which do not include the leg locks) to Rousselle’s canopy. Pet., 14-29. Moreover, even if the resulting combination did include Tsai’s leg locks, “claim 1 only requires that the collapsible canopy frame is permitted to be folded into a folded state when the central lock is unlocked and does not preclude needing to unlock other locks for the central lock to permit folding.” Paper 9 (Institution Decision), 31. Thus, this argument is not relevant.

C. Tsai Does Not Teach Away

PO argues that Tsai teaches away from “central activation” for several reasons. POR, 29-32. PO’s arguments are unavailing.

First, PO argues that Tsai teaches that “its shelter frame is folded/unfolded through user interaction with the legs” rather than a central lock. *Id.*, 29-30. But merely because a reference teaches accomplishing something one way does not constitute teaching away from all other ways of accomplishing the same goal. *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1327 (Fed. Cir. 2009) (“merely express[ing] a general preference for an alternative invention” is not teaching away); *UCB, Inc. v. Actavis Labs. UT, Inc.*, 65 F.4th 679, 692-93 (Fed. Cir. 2023). None of the disclosure PO cites from Tsai suggests Tsai’s canopy could not be unfolded using a central lock, as disclosed in Rousselle. *See* POR, 29-30; Ex. 1102 ¶31; *Keller*, 642 F.2d at 426.

Moreover, whether the resulting canopy is unfolded using “central activation” or by pulling its legs apart is irrelevant. The challenged claims do not recite a particular method of unfolding the canopy, nor do they contain any limitation on how the claimed canopies are unfolded. Ex. 1001, claims 1, 2, 4, 13, 14; Ex. 1101, 33:4-11. Rather, they simply recite a canopy with structural components such as inner and outer units and a central lock. *Id.* PO cannot rely on unclaimed features to distinguish the claims from the prior art. *E.I. Du Pont de Nemours & Co. v. Phillips Petroleum Co.*, 849 F.2d 1430, 1433 (Fed. Cir. 1988); *Soverain Software LLC v. Newegg Inc.*, 705 F.3d 1333, 1339-40 (Fed. Cir. 2013).

Second, PO argues that Tsai disparages prior canopies that include a center strut.² POR, 30-32. PO argues, without support, that a POSITA “would recognize the similarity between this center strut ... and [Rousselle’s] central lock[.]” *Id.*, 31. But there are significant differences between the center-strut canopy shown in Tsai and Rousselle’s canopy, as detailed below. Ex. 1102 ¶¶24-27.

PO argues that Tsai disparages center-strut canopies because “an extra person is sometimes needed” for setup. POR, 31. But this has no relevance to Rousselle’s canopy, which, as PO recognizes, can be unfolded by a single person. *Id.*, 21 (Rousselle discloses “central activation ... by a single user”); Ex. 1003, 3:45-47, 13:59-67; Ex. 1102 ¶25.

PO also argues that Tsai disparages center-strut canopies because they can “reduce[] the headroom within the tent.” POR, 31. However, the canopies Tsai

² PO asserts that the center strut is “for activation/locking,” but Tsai does not include any suggestion that these prior art canopies used the center strut in that way. POR, 30; Ex. 1005, 1:26-2:22; Ex. 1101, 68:8-15; Ex. 1102 ¶25 n.3. Instead, Tsai suggests that the prior art canopies used leg locks. Ex. 1005, 2:26-3:8 (Carter II is a “marginal improvement” over Figs. 16-17 of Tsai); Ex. 1106, 2:58-3:6, Fig. 6 (Carter II disclosing use of leg locks); Ex. 1102 ¶25 n.3. PO’s expert failed to fully consider this portion of Tsai’s disclosure. Ex. 1101, 55:15-19.

references are of a different design than Rousselle’s canopy. *Compare, e.g.*, Ex. 1005, Fig. 17 *with* Ex. 1003, Fig. 1(A). For example, the canopies Tsai references include inner units made of large “scissors-type linkage[s]” that are located well below the canopy’s roof. Ex. 1005, 2:14-16, 3:1-8, Fig. 17. In contrast, both Tsai and Rousselle disclose inner units that form a roof frame of the canopy, thereby obviating any problem of reduced headroom. Pet., 22-33; Ex. 1003, 6:57-64, Figs. 1(A)-1(C); Ex. 1005, 8:34-9:28, Figs. 1, 20; Ex. 1102 ¶26; Ex. 1101, 56:19-57:12. Accordingly, any alleged disparagement in Tsai is inapplicable to Rousselle’s canopy.

PO’s arguments ignore key portions of the references and fall afoul of the law. Tsai does not teach away from a combination with Rousselle, and a POSITA would have been motivated to combine the two references with a reasonable expectation of success for the reasons discussed in the Petition.

For the reasons above and in the Petition, the “primary modification” of Rousselle and Tsai renders the challenged claims obvious, and they should be cancelled.

II. THE “ALTERNATIVE MODIFICATION” OF ROUSSELLE AND TSAI

PO also makes several arguments regarding the “alternative modification,” which combines Rousselle’s central lock with Tsai’s canopy. These arguments are likewise unavailing.

A. The “Alternative Modification” Would Not Be Inoperable

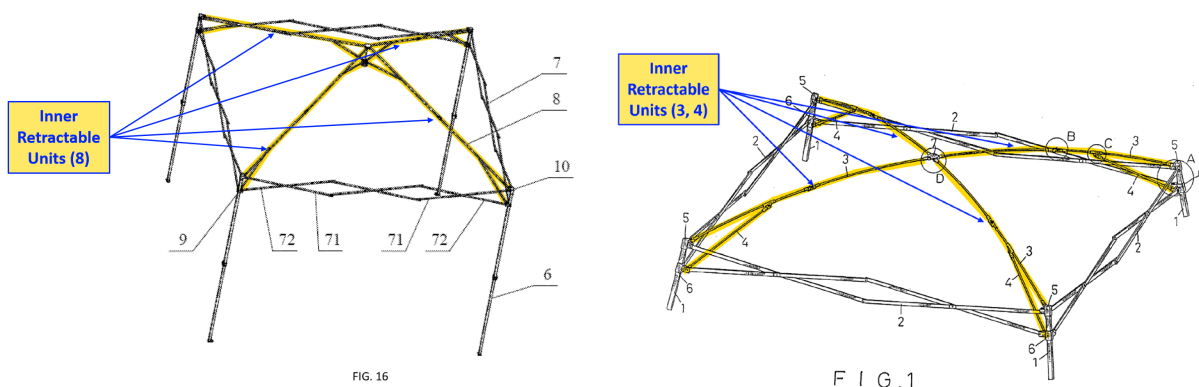
PO argues that the alternative modification would be inoperable because “Tsai’s heavy duty legs, leg locks, outer units, and X-shaped members are not capable of activation from a center lock.”³ POR, 36-38. Specifically, PO alleges that Tsai’s inner units are “lightweight and flexible” and would not be capable of driving the “larger and heavier” outer units and legs. *Id.*, 37-38.

PO does not point to any evidence—from the reference, its expert, or anywhere else—that establishes that Tsai’s outer units and legs are “larger and heavier.” *Id.*; Ex. 2007 ¶¶53, 63-65. Tsai contains no such disclosure. *See generally* Ex. 1005; *see* Ex. 1101, 67:5-13 (PO’s expert did not consider how much Tsai’s outer units weigh). However, a POSITA would have recognized that it was well known that canopy frames like Tsai’s were strong and lightweight, and could easily be unfolded using a central lock as in Rousselle. Ex. 1102 ¶¶20, 30; *see also* Ex. 1009, 1:41-61 (well-known canopies used “lightweight material” and “reinforcing features”); Ex. 1007 ¶[0048].

³ PO also repeats its arguments that Tsai “teaches away from central activation” and “disparages solutions with center struts[.]” POR, 36-37. These arguments are incorrect for the reasons discussed above. *Supra* §I.C.

Nor does PO point to any evidence that establishes that Tsai’s inner units are “lightweight and flexible.” POR, 37-38. PO relies solely on the speculation of its expert. *See* Ex. 2007 ¶53. Tsai does not disclose that its inner units are too flexible to drive the unfolding of the canopy, and indeed suggests the opposite. *E.g.*, Ex. 1005, 4:19-22 (inner units “less likely to sag” than prior art canopies); Ex. 1102 ¶28. And a POSITA would have understood that Tsai’s inner units would be constructed from a material that is lightweight and strong. *Id.* (citing Exs. 1007, 1009). Indeed, it would have been well within a POSITA’s skill to select dimensions and materials for Tsai’s inner units that would allow for any needed flexibility while ensuring that the inner units were sufficiently strong to drive unfolding. *Id.*; Ex. 1101, 41:4-19 (PO’s expert admitting “[o]f course I can make anything more rigid or less rigid” because “[t]hat’s what engineers do all the time”).

Furthermore, the ’738 patent itself uses a similar structure to Tsai for its inner retractable units:



Compare Ex. 1001, Fig. 16 *with* Ex. 1005, Fig. 1. Like Tsai’s inner units, the ’738 patent’s inner units are generally formed from a single, thin rod or other member. Ex. 1001, 5:20-41; Ex. 1102 ¶29. The ’738 patent asserts that its inner units are capable of driving the unfolding of the canopy (*e.g.*, Ex. 1001, 5:56-66; *cf.* MTA, 7-8), but provides no disclosure on the shape, size, weight, strength, material, or any other characteristic of its inner units. *See generally* Ex. 1001; Ex. 1101, 48:6-17 (PO’s expert stating that the ’738 patent’s inner units are not “intended to be flexible”). PO cannot argue that the alternative modification would have been inoperable, while at the same time claiming that its alleged invention accomplishes the same result, without disclosing or claiming a novel solution to a problem to be overcome. *Smith & Nephew v. Rea*, 721 F.3d 1371, 1381 (Fed. Cir. 2013).

Once again, PO’s argument ignores that a POSITA “is also a person of ordinary creativity.” *KSR*, 550 U.S. at 421. As demonstrated above, a POSITA would have had all the necessary knowledge and creativity to implement a working version of the alternative modification, and would have been motivated to do so for the reasons discussed in the Petition. Pet., 34-37.

B. The “Alternative Modification” Is Supported by the References and by Petitioner’s Expert

PO’s next arguments mischaracterize the references and the testimony of Petitioner’s expert and ignore key elements of Petitioner’s arguments and the disclosure of the prior art. POR, 38-43. They are accordingly unavailing.

PO first alleges that some of Dr. Stein’s testimony is conclusory, but fails to identify which testimony it believes is conclusory. POR, 38-39. This improperly asks the Board to “play archaeologist with the record” and should be disregarded. *DeSilva v. DiLeonardi*, 181 F.3d 865, 867 (7th Cir. 1999); *see Novartis AG v. Torrent Pharms.*, 853 F.3d 1316, 1326 n.2 (Fed. Cir. 2017) (argument insufficient where it is “little more than a request that the Board peruse the cited evidence and piece together a coherent argument”). In any event, Dr. Stein’s testimony provides ample reasoning and is well-supported by—not inconsistent with—the prior art. *See generally* Exs. 1002, 1102.

PO next repeats its assertion that “Tsai teaches away from central activation and from any central structure” and that “activation is done at the legs[.]” POR, 40. This is unavailing for the reasons discussed above. *Supra* §I.C.

Third, PO argues that an advantage of Tsai’s canopy is that its inner units do not need to be pushed into the unfolded position, and that combining Tsai’s canopy with Rousselle’s central lock requires pushing the inner units. POR, 40. But, as PO recognizes elsewhere, Tsai discloses that the alleged advantage of not requiring the inner units to be pushed into their unfolded position is simply the advantage of one person being able to unfold the canopy on their own. *See* POR, 31; Ex. 1005, 2:19-22. That advantage is preserved in the combination with Rousselle, since the combined canopy likewise requires only a single person to unfold. *See* Ex. 1003,

3:45-47, 13:59-67; Ex. 1102 ¶25. Furthermore, even if PO is correct that the combination would remove an advantage of Tsai, this does not constitute a teaching away and a POSITA would still have been motivated to make the combination for the reasons presented in the Petition. *DePuy*, 567 F.3d at 1327; *UCB*, 65 F.4th at 692-93; Pet., 34-37.

PO next repeats its arguments regarding alleged differences between Rousselle’s so-called “umbrella tent” and Tsai’s canopy. POR, 41. These arguments are unavailing for the reasons discussed above, which were fully considered by Dr. Stein. *Supra* §I.B.

PO argues that Tsai discloses that “its leg locks are preferable to the locking assemblies already known at the time[.]” POR, 41-42. But this does not show that Tsai’s leg locks are preferable to Rousselle’s center lock. PO ignores that Rousselle, filed in 2001, came well after Tsai, filed in 1997. *See* Exs. 1003, 1005. Thus, Tsai could not have disclosed that its leg locks were preferable to Rousselle’s center lock, which did not yet exist.

PO presents several arguments that all hinge on the premise that Tsai contradicts the benefits Dr. Stein presented of the combination between Tsai and Rousselle, including that Tsai allegedly discloses that an extra person would be needed to unfold the canopy, that folding would be accomplished by pulling the legs apart, or that a user would have to manually push the inner units to unfold

them. POR, 42-43. These arguments are unavailing for the reasons discussed above. *Supra* §I.C. Furthermore, they ignore the combination that Petitioner presented. PO cannot argue that characteristics of Tsai’s canopy that would be changed or eliminated by the proposed combination would somehow prevent a POSITA from attempting the combination. *Keller*, 642 F.2d at 426. Tsai’s disclosure about how Tsai’s canopy works describes Tsai’s canopy, not the canopy formed from the combination of Tsai with Rousselle, which would enable a different method of unfolding. Pet., 34-37; Ex. 1002 ¶¶101-08.

C. PO’s Arguments Regarding Tsai’s Leg Locks Are Incorrect

PO makes several arguments regarding Tsai’s leg locks that misstate Tsai’s disclosure and ignore Petitioner’s arguments. POR, 43-45. PO’s arguments should be rejected.

PO again asserts that Tsai teaches away from central activation and disparages Rousselle’s central lock. *Id.*, 44. This is incorrect as discussed above. *Supra* §I.C.

PO also argues that removing Tsai’s leg locks “would completely obviate Tsai as the primary reference” and “disrupts [Tsai’s] contribution to the art[.]” POR, 44-45. Not so. Tsai is not directed to leg locks and leg locks do not form Tsai’s main principle of operation; instead, Tsai is directed to a canopy that “is relatively easy to fold and unfold, stable, and still compact when folded” at least in

part by including outer retractable units. Ex. 1005, 3:11-4:10; Ex. 1101, 50:7-9 (PO's expert admitting Tsai did not invent leg locks); Ex. 1102 ¶23. These characteristics are still present in the modifications proposed by Petitioner, whether Tsai's leg locks are maintained or not.

Furthermore, PO criticizes Petitioner and Dr. Stein for allegedly failing to point to “any teaching, suggestion, or motivation in either reference” to replace Tsai's leg locks with Rousselle's center lock. But PO apparently ignores the voluminous disclosure Petitioner cited from Rousselle, which provides the benefits of a central lock. *See, e.g.,* Pet., 35. These benefits provide support for Petitioner's argument, and Dr. Stein's opinion, that a POSITA would have been motivated to replace Tsai's leg locks with an improved center lock from Rousselle. Such benefits outweigh any alleged disadvantage of removing Tsai's leg locks. Ex. 1102 ¶27; *In re Urbanski*, 809 F.3d 1237, 1243-44 (Fed. Cir. 2016) (POSITA may be motivated to pursue desirable properties of one reference even at expense of foregoing a benefit of another); *Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1165 (Fed. Cir. 2006).

Finally, PO's arguments ignore that Petitioner did not exclusively propose removing Tsai's leg locks and replacing them with Rousselle's center lock. Petitioner *also* proposed “using Rousselle's central lock while retaining Tsai's individual-leg locks” and provided reasons why a POSITA would have been

motivated to do so. Pet., 36. Accordingly, even if PO's arguments are correct, Petitioner has still shown that a POSITA would be motivated to combine Rousselle's central lock with Tsai's canopy and achieve each limitation of the challenged claims.

For the reasons above and in the Petition, the "alternative modification" of Rousselle and Tsai renders the challenged claims obvious, and they should be cancelled.

III. PO DOES NOT MAKE MEANINGFUL ARGUMENTS REGARDING THE DEPENDENT CLAIMS

In Ground 1, PO's arguments regarding claim 2 are based on the same faulty assertions PO made regarding claim 1. For example, PO argues that, in the primary modification, Tsai's sliding sleeves would prevent Rousselle's canopy legs from inverting, but this argument is unavailing for the reasons discussed above. POR, 46-47; *supra* §I.A. PO then merely repeats its flawed arguments regarding the alternative modification, which are incorrect for the reasons discussed above. POR, 47; *supra* §II. Thus, PO makes no new arguments regarding claim 2. Likewise, PO offers no additional arguments regarding claims 4 and 14 in Ground 1. POR, 48; Ex. 1101, 7:19-8:3, 16:21-17:4 (PO's expert did not opine on the dependent claims).

In Ground 2, PO primarily argues that “Ground 2 would be deficient and inoperable for the same reasons discussed with respect to Ground 1.” POR, 57. For the reasons discussed above, PO is incorrect. *Supra* §§I-II.

PO also states that it “does not admit [Ohnishi] teaches the recited limitations of the locking piece” and that Ohnishi does not relate to canopies, although PO does not provide any support for these conclusory statements or dispute any disclosure relied on by Petitioner.⁴ POR, 57-58. The Petition explained how Rousselle and Ohnishi together disclose and render obvious the claimed limitations. Pet., 74-90. Additionally, PO does not dispute that Ohnishi is analogous art because, as presented in the Petition, it “relates to the same type of locking mechanisms for collapsible structures discussed in the ’738 patent,” that “[i]t is reasonably pertinent to a particular problem addressed by the ’738 patent,” namely “the need for easy-to-use, reliable locking mechanisms for collapsible structures,” that it is in the same field of endeavor of “locking mechanisms for

⁴ PO incorrectly states that, in a related IPR, “Petitioner failed to show that Ohnishi discloses or suggests the pertinent structure.” POR, 57 n.1. Instead, the Board found that Ohnishi “does not meet the rigorous demands of anticipating” a claim at issue in that proceeding (Ex. 1016, 77) but nevertheless rendered obvious a claim containing each of the limitations relevant here (*id.*, 89-92).

collapsible structures,” or that it “uses similar technology (e.g., locking onto a grooved central pole) as the ’738 patent.” *Id.*; Pet., 9.

Because PO fails to meaningfully dispute any element of the dependent claims, and for the reasons discussed above and in the Petition, claims 2, 4, 13, and 14 are unpatentable and should be canceled.

IV. COLLATERAL ESTOPPEL FORECLOSES PO’S ARGUMENTS

PO’s contention that collateral estoppel does not apply in this case rests solely on PO’s belief that the issues here are different from the issues in IPR2021-00365 (“*Global Shade*”).⁵ POR, 58-64. But the issues are the same, and collateral estoppel applies.

In the collateral estoppel analysis, both parties agree that the issue is the same when the claim in both the prior case and the instant case claims “substantially the same invention,” even if it uses “different words” to do so. *Ohio Willow Wood Co. v. Alps S., LLC*, 735 F.3d 1333, 1342-43 (Fed. Cir. 2013); POR, 61. The claim may include minor additional features so long as they do not change the invalidity analysis. *Soverain Software LLC v. Victoria’s Secret Direct Brand*

⁵ PO does not dispute that the other requirements are satisfied other than by arguing that “[w]here the issues are not the same, the other factors cannot be met[.]” POR, 64.

Mgmt., LLC, 778 F.3d 1311, 1319 (Fed. Cir. 2015); POR, 61. These cases support Petitioner because that is the case here.⁶

PO argues that “additional limitations” render the issues in this case different from *Global Shade*, but does not specifically identify any limitation it contends presents a different issue. POR, 62; *id.*, 58-64. PO misrepresents Petitioner’s position, claiming that Petitioner “admits that the claims at issue in this proceeding include several material differences.” *Id.*, 62. Instead, Petitioner stated that there are *no* material differences. Pet., 91-96 (“any differences between the claims are not substantive and do not materially affect the invalidity determination”). Petitioner discussed in detail in the Petition how each non-substantive difference between the claims here and the claims in *Global Shade* is not material and/or was addressed in the prior proceeding, and does not change the invalidity analysis. *Id.*

PO argues that the addition of “specific outer retractable units” to the claims “prompted the Examiner to ... allow the ’738 Patent,” and thus the limitations are

⁶ PO’s citation to *Rimfrost AS v. Aker Biomarine Antarctic AS*, IPR2020-01534, Paper 25 at 14-19 (P.T.A.B. May 18, 2022) is not to the contrary. There, the petitioner failed to make *any* statement of whether the claims recited substantially the same invention, and the Board identified at least one limitation that was not materially addressed in the prior case. *Id.* No such limitation exists here.

“material to the analysis[.]” POR, 62. But PO improperly confuses the invalidity analysis performed by the Examiner with the invalidity analysis performed in *Global Shade*. The question is whether the invalidity analysis performed in *Global Shade* is materially different from the invalidity analysis in this proceeding. See *Ohio Willow Wood*, 735 F.3d at 1342. That an Examiner’s rejection based on a prior art reference not at issue here was withdrawn following an amendment introducing a particular limitation is entirely unrelated to the invalidity issues common to this proceeding and *Global Shade*. Rather, collateral estoppel applies here because “issues that have been fully and fairly tried in [*Global Shade*] and adversely resolved against [PO]” need not be relitigated. *Id.*

Furthermore, any issue involving “specific outer retractable units” cannot provide a material difference in the invalidity analysis because any such issue was fully and fairly tried in *Global Shade*. There, the Board addressed the limitation when it agreed with Petitioner that Tsai discloses such outer retractable units because it discloses a canopy with “four pairs of scissors-type (or x-type) linkages” and that these x-type linkages form linking assemblies which each “comprise[] an outer retractable unit connected between every two adjacent supporting legs.” Ex. 1016 (*Global Shade*, Paper 36), 36-37, 42. PO’s conclusory assertion that there is some difference between the issues fails to adequately explain “*how* the ... limitation is patentably significant in view of the obviousness determination” and

thus cannot show that the issues are not the same.⁷ *Ohio Willow Wood*, 735 F.3d at 1343.

PO's assertion that "the details of the central lock's operation with respect to the folded and unfolded state have been raised for the first time" in this proceeding (POR, 62) likewise fails to adequately explain how the limitation is patentably significant. *Ohio Willow Wood*, 735 F.3d at 1343. Petitioner explained in the Petition how each limitation of claims 1 and 4 is the same as, or not materially different from, limitations addressed in *Global Shade*. Pet., 91-96. Thus, PO's conclusory argument cannot show that the issues are not the same.

Finally, PO argues that new issues of invalidity are raised by (1) its inoperability arguments and (2) Petitioner's reliance on the "alternative modification." POR, 62-63. But neither of these create a new issue of invalidity.

PO asserts that its inoperability arguments arise somehow from "additional structural limitations" that were "absent from the patent challenged in the prior proceedings" and thus create a new issue of invalidity. POR, 63. But PO is unable to identify any such "additional structural limitations[.]" *Id.* Nor can it, because

⁷ The Examiner's double-patenting rejection of the '738 patent over the '710 patent at issue in *Global Shade*, and PO's filing of a terminal disclaimer, further confirms this. Ex. 1014, 152, 182.

its inoperability arguments are based solely on limitations that were fully and fairly tried in *Global Shade*.

PO's first inoperability argument rests on Rousselle's canopy (which was asserted as prior art in *Global Shade*) being incompatible with the addition of Tsai's outer retractable units (also asserted in *Global Shade*). POR, 17-19, 48-56; Ex. 1016, 52 ("Petitioner asserts that a [POSITA] would have been motivated to include Tsai's outer retractable units in Rousselle's canopy[.]"). PO's second inoperability argument rests on Tsai's canopy (asserted as prior art in *Global Shade*) being inoperable when combined with a center lock like Rousselle's (also asserted in *Global Shade*). POR, 36-38; *Global Shade*, Paper 1 at 87-93 (arguing in Ground 3 that "a POSITA would have been motivated to combine the center lock from ... Rousselle with the canopy from Tsai"); Ex. 1016, 66 (Petitioner established that challenged claims were "unpatentable based on the assertions in Ground 3"), 95. Thus, PO's inoperability arguments are based solely on limitations that were at issue in *Global Shade*.

Furthermore, PO's assertion that the Board in *Global Shade* "relied solely on Rousselle in view of Tsai, i.e., applying Tsai's outer/inner units to Rousselle's canopy" and that the "new, alternative modification is being adjudicated for the first time" here is simply incorrect. POR, 62-63. Petitioner presented the exact "alternative modification" in *Global Shade*. *Global Shade*, Paper 1 at 87-93

(Ground 3). Furthermore, the Board addressed, and relied on, Petitioner’s arguments. Ex. 1016, 66, 95. PO had a full and fair opportunity to make arguments against the “alternative modification” in *Global Shade* and failed to do so.

Indeed, PO’s failure to make its new inoperability argument and to argue against the “alternative modification” in *Global Shade* is exactly why collateral estoppel should apply here. PO does not dispute that it “had a full and fair opportunity” to litigate the invalidity issues shared between this proceeding and *Global Shade*, including by raising its inoperability argument (which is based on limitations completely common to the two proceedings) or arguments against the “alternative modification” (which was asserted in *Global Shade*) earlier. *Soverain v. Victoria’s Secret*, 778 F.3d at 1319 (applying collateral estoppel despite “[t]he fact that Soverain had arguments which it did not make” in the earlier proceeding).

Instead, PO attempts to force Petitioner to relitigate the invalidity issues that were “fully and fairly tried in [*Global Shade*] and adversely resolved against [PO].” *Ohio Willow Wood*, 735 F.3d at 1342. Collateral estoppel exists to prevent exactly this type of gamesmanship so that “[o]nce a court has decided an issue, it is ‘forever settled as between the parties,’ thereby ... ‘conserving judicial resources, and fostering reliance on judicial action by minimizing the possibility of inconsistent verdicts.’” *B&B Hardware, Inc. v. Hargis Indus., Inc.*, 575 U.S. 138,

147 (2015). Accordingly, there are no new issues of validity here with respect to claims 1 and 4 of the '738 patent and collateral estoppel applies.

V. CONCLUSION

For the above reasons and those set forth in the Petition, Petitioner requests the Board cancel the challenged claims.

Respectfully submitted,

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Dated: January 31, 2024

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CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. §42.24(d), the undersigned certifies that the foregoing **PETITIONER’S REPLY TO PATENT OWNER’S RESPONSE**, exclusive of the parts exempted as provided in 37 C.F.R. §42.24(a), contains 5,598 words and therefore complies with the type-volume limitations of 37 C.F.R. §42.24(a).

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that, pursuant to 37 C.F.R. §42.105, a true and correct copy of the foregoing **PETITIONER’S REPLY TO PATENT OWNER’S RESPONSE** is being served on January 31, 2024, via email on the parties listed below:

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