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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 SUR-REPLY TO
PATENT OWNER'S REVISED MOTION TO AMEND**

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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>	

Exhibit No.	Description
1101	Transcript of Jan. 24, 2024 Deposition of Wendy S. Reffeor, Ph.D.
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”)
<i>Exhibit numbers 1107-1201 not used.</i>	
1202	Third Declaration of Jeffrey Stein, Ph.D.
1203	U.S. Patent No. 3,611,513 (“Hoover”)
1204	U.S. Patent Publication No. 2005/0097829 (“Seo”)
<i>Exhibit numbers 1205-1300 not used.</i>	
1301	Transcript of May 28, 2024 Deposition of Wendy S. Reffeor, Ph.D.

Patent Owner's ("PO") Reply (Paper 28, "Reply") addresses for the first time the combinations of prior art asserted by Petitioner against PO's revised amended claims. In the Reply, PO maintains its pattern of attacking references individually rather than engaging with Petitioner's combinations; ignoring the creativity of a POSITA; and relying on arguments PO made against the original claims, which will have been rejected by the Board if PO's contingent motion to amend is reached. For these reasons, and for the reasons in Petitioner's Opposition (Paper 24, "Opp."), the Board should deny PO's motion to amend.

I. THE REVISED AMENDED CLAIMS WOULD HAVE BEEN OBVIOUS

PO's Reply does not meaningfully dispute the prior art's disclosure as presented by Petitioner's Opposition, nor does it engage with the combinations Petitioner presented as a whole. Instead, it attacks the references individually, asserting without evidence that a POSITA would not have been motivated to combine them while ignoring Petitioner's extensive evidence-supported arguments regarding why such a person would have been so motivated. PO's erroneous and conclusory arguments should be rejected.

A. Claim 15

PO makes several arguments regarding claim 15.¹ Reply, 2-11. Each is addressed below.

1. Petitioner’s Opposition Fully Addressed the Claims

PO first argues that Petitioner “has not proffered or even identified a complete combination” of references. Reply, 2. Not so. Petitioner’s Opposition stated that “[t]he Petition and Reply show how each of the limitations in [the] original claims ... are disclosed by Rousselle, Tsai, and/or Ohnishi.”² Opp., 1. Indeed, should the Board reach PO’s contingent motion to amend, the Board will have held that each of those limitations are disclosed by that prior art. Thus, Petitioner’s Opposition presented arguments that incorporate that potential finding from the Board and

¹ The testimony of Dr. Reffeor, PO’s expert, should be given little or no weight because Dr. Reffeor’s entire understanding of Petitioner’s prior art arguments comes from PO’s counsel. Ex. 1301, 16:16-17:7. Dr. Reffeor did not review the revised motion to amend, Petitioner’s opposition, or any of Dr. Stein’s testimony. *Id.*, 11:21-12:17, 25:5-15, 26:12-16, 30:12-16, 32:6-12.

² Because the Petition and Reply present both a “primary modification” and an “alternative modification,” Petitioner’s Opposition relies on both. Opp., 1.

address the new and/or different limitations of the revised substitute claims.³ Thus, Petitioner has met its burden to show unpatentability.

2. Hoover Is Analogous Art

PO correctly notes that for Hoover to be analogous art to the '738 patent, it must either be from the same field of endeavor as the '738 patent or reasonably pertinent to a problem faced by the '738 patent's inventors.⁴ Reply, 3 (citing *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004)). However, PO claims Hoover meets neither criterion. *Id.* PO is incorrect.

a. Field of Endeavor

PO argues that “Hoover is directed to the field of jewelry clasps and is therefore not from the same field.” Reply, 3. But, as both experts agree, jewelry clasps are locking mechanisms. Ex. 1202 ¶12; Ex. 1301, 23:22-24:4. Thus, just as Petitioner argued, Hoover is directed to the field of locking mechanisms, just like the '738 patent. Opp., 5 n.4.

³ PO complains that Petitioner's Opposition is “without any discussion of Tsai,” but that is merely because Tsai is not relevant to any of the additional limitations of revised substitute claim 15. Reply, 2.

⁴ Beyond stating this basic rule, PO's analysis is not supported by any citations to caselaw. Reply, 3-5.

PO further argues that because Petitioner’s analysis regarding other references such as Rousselle and Tsai defined the field of endeavor more narrowly, Hooper must fall outside it. Reply, 3-4. But PO’s argument ignores that “[t]he field of endeavor is ‘not limited to the specific point of novelty, the narrowest possible conception of the field, or the particular focus within a given field.’” *Netflix, Inc. v. DivX, LLC*, 80 F.4th 1352, 1359 (Fed. Cir. 2023) (quoting *Unwired Planet, LLC v. Google Inc.*, 841 F.3d 995, 1001 (Fed. Cir. 2016)). Instead, “courts generally take an expansive view of what constitutes analogous art.” *Id.* Petitioner’s highlighting of similarities between some references at issue in this proceeding cannot limit the field of endeavor to that degree of similarity, particularly when evidence supports a broader field. *See, e.g.*, Ex. 1202 ¶12.

Furthermore, PO’s argument that the field of endeavor must be defined identically for each reference amounts to a requirement that the references be in the same field of endeavor as each other. This falls afoul of settled Federal Circuit precedent. *See Sanofi-Aventis Deutschland GmbH v. Mylan Pharmas. Inc.*, 66 F.4th 1373, 1377-78 (Fed. Cir. 2023) (holding that references must be compared to the challenged patent, not to each other).

b. Problem Faced by the Inventors

PO claims “Hooper is not reasonably pertinent to the problem faced by the inventor” because, allegedly, it is not pertinent to various problem statements

contained in the '738 patent or presented by Dr. Stein in connection with other references. Reply, 4-5. But PO's argument incorrectly assumes that the challenged patent must be directed to a single problem. Instead, the Federal Circuit has held that "a reference must be reasonably pertinent only to '*one or more* of the particular problems to which the claimed inventions relate.'" *In re Asset Guard Prods., Inc.*, No. 2021-1902, 2022 WL 1097363, at *4 (Fed. Cir. April 13, 2022) (citing *CyWee Group Ltd. v. Google LLC*, 847 F. App'x 910, 913 (Fed. Cir. 2021)). Thus, as Dr. Stein pointed out, Hooper is relevant to the need for easy-to-use, reliable locking mechanisms, and is thus reasonably pertinent to one or more of the particular problems addressed by the '738 patent. Opp., 5 n.4; Ex. 1202 ¶12.

PO complains that "this newly-proposed recharacterized problem removes nearly all of the structural components, namely, the tent or canopy and collapsible structure[.]" Reply, 4-5. But requiring the problem to address such features is contrary to both the '738 patent's disclosure and Federal Circuit precedent.

First, as PO points out (albeit with a different emphasis), the '738 patent states that "[w]hat is needed is a collapsible canopy frame with a *better locking mechanism*." *Id.*, 4; Ex. 1001, 1:46-47 (emphasis changed). Thus, the '738 patent was focused on the problem of an easy-to-use, reliable locking mechanism, just as Dr. Stein testified, rather than the canopy frame, which was well-known in the art. *E.g.*, Ex. 1202 ¶12.

Second, requiring the problem to address the canopy frame and other structural components in addition to the locking mechanism (which is itself a structural component) would collapse PO's "particular problem" analysis into PO's "field of endeavor" analysis, which PO also argues requires a collapsible canopy frame. *See* Reply, 3-5. The Federal Circuit has rejected this approach. *Donner Tech., LLC v. Pro Stage Gear, LLC*, 979 F.3d 1353, 1360 (Fed. Cir. 2020) ("a PHOSITA—resigned to considering art outside her field of endeavor—would thus not identify the problems so narrowly so as to rule out all such art").

Because PO's contrary analysis is contradicted by evidence and precedent, and because substantial evidence supports that Hooper is within the same field of endeavor and addresses one or more of the same particular problems as the '738 patent, Hooper is analogous art.

3. A POSITA Would Have Been Motivated to Combine Hooper With Rousselle, Tsai, and Ohnishi

PO makes several arguments regarding why a POSITA would not have been motivated to combine Hooper with other prior art references. Reply, 5-6, 11. These arguments are unavailing.

PO first argues that "given that Hooper is directed to a jewelry clasp ... one of skill in the art would not have any reason to expect this structure would be beneficial for a canopy." Reply, 5-6. But as discussed above, Hooper is directed to a locking mechanism. *Supra* §I.A.2. A POSITA would have understood that

features of Hooper's locking mechanism could be useful in other locking mechanisms, including those for canopies, in the ways and for the reasons discussed by Petitioner and Dr. Stein. Opp., 3-8; Ex. 1202 ¶¶8-19. For example, Hooper uses a locking piece (16) that engages a grooved center pole (11), just like other prior art references (and just like the '738 patent). Opp., 5; Ex. 1202 ¶¶12-13. A POSITA would have recognized that by splitting, for example, Rousselle's bottom cap into two pieces where the locking piece is inserted, as Hooper does, would have benefits common to Hooper's mechanism and Rousselle's. Opp., 6-7; Ex. 1202 ¶15.

PO next points to certain differences between Hooper's spring and locking piece and the springs and locking pieces of Rousselle and Ohnishi to argue that the references would not be combined. Reply, 6. But Petitioner did not propose utilizing Hooper's spring or locking piece. Opp., 6-7. Instead, Petitioner proposed that "when modifying [Rousselle's center bottom cap] to include Ohnishi's locking piece," a POSITA would have incorporated "[t]he arrangement shown in Hooper, where the locking piece sits between a bottom cap seat and a removable bottom cap cover[.]" *Id.*

"The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference." *Allied Erecting & Dismantling Co. v. Genesis Attachments, LLC*, 825 F.3d 1373, 1381 (Fed. Cir. 2016). Rather than incorporating the structure of Hooper, as PO suggests

is required, a POSITA would simply incorporate the teaching of Hooper that a bottom cap may be divided, at a locking piece, into a bottom cap seat and bottom cap cover.⁵ *See* Opp., 6-7. Such a modification is well within a POSITA's creativity and skill. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007).

PO also argues that Hooper “does not perform any folding/unfolding, and would not be capable of driving any retractable units during an unfolding process.” Reply, 11. This is irrelevant because Petitioner has not relied on Hooper to teach these limitations.⁶ *See generally* Opp.

PO's arguments regarding Hooper are unavailing and should be rejected.

⁵ PO's argument, raised for the first time in its Reply, that “Ohnishi's lock could not be incorporated into Rousselle without significant redesign” lacks expert support and is contradicted by the record. Reply, 6. For example, Dr. Stein testified that “Ohnishi's locking piece would engage Rousselle's clamping groove in exactly the same way [and] would have been received in Rousselle's center bottom cap in exactly the same way[.]” Ex. 1002 ¶198.

⁶ PO's argument regarding Hooper is premised on PO's argument that references such as Rousselle and Tsai do not teach these limitations or are inoperable—an argument the Board will have rejected if it reaches PO's motion. *See* Reply, 11.

4. A POSITA Would Have Been Motivated to Combine Seo with Rousselle, Tsai, Ohnishi, and Hooper

PO makes several arguments regarding why a POSITA would not have been motivated to combine Seo with other prior art references. Reply, 7-11. These arguments are unavailing.

PO first argues that “Tsai expressly disparages prior art references that use a center strut” and “Seo is exactly such a reference.” Reply, 7-8. But Petitioner has not relied on Seo to teach a central strut, or indeed for Seo’s canopy structure in general. *See generally* Opp. Instead, Petitioner relied on Seo’s teachings of how and where to connect inner retractable units to a central locking structure. *Id.*, 9-13, 22-25. Because Seo’s central strut is irrelevant to the teachings relied on by Petitioner, a POSITA would not have been dissuaded by any alleged disparagement in Tsai, but would instead have been motivated to look to Seo for the reasons presented in Petitioner’s Opposition. Opp., 11-13; Ex. 1202 ¶¶27-32; Ex. 1301, 30:1-7.

PO’s argument that “Seo expressly teaches away from center driven unfolding” is likewise unavailing. Reply, 8-9. Petitioner has not relied on Seo for those features. *See generally* Opp. Moreover, PO continues to ignore that “merely express[ing] a general preference for an alternative invention” is not teaching away. *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1327 (Fed. Cir. 2009); *see also* *UCB, Inc. v. Actavis Labs. UT, Inc.*, 65 F.4th 679, 692-93 (Fed. Cir.

2023). Merely because Seo teaches one method of unfolding (e.g., at the legs) or locking (e.g., using leg locks) does not constitute teaching away from other methods like those taught by Rousselle. *Id.* Nor would differences between other features of Seo dissuade a POSITA from looking to Seo for features relevant to the combination presented by Petitioner, particularly where the POSITA had a strong motivation to do so like the ones presented by Petitioner and Dr. Stein. *Id.*; Opp., 11-13; Ex. 1202 ¶¶27-32.

PO's argument that "Seo expressly teaches a single component design" rather than a two-piece bottom cap like the one taught by Hooper fails for the same reasons. Reply, 9-11. Petitioner did not rely on Seo to teach a two-piece bottom cap; Hooper provides that teaching and a POSITA would have been motivated to use that teaching for the reasons Dr. Stein discussed, which are not disputed by PO. Opp., 3-8; Ex. 1202 ¶¶15-18. Moreover, Seo's teaching of an alternative design does not teach away from Hooper's two-piece design. *DePuy*, 567 F.3d at 1327.

PO next argues that "one of skill in the art would either replace Rousselle's bottom cap with Seo's lower central hub, retaining the single piece design, or would attach Seo's connecting members on Rousselle's bottom cap, again retaining the single piece design." Reply, 10. But this ignores Hooper's disclosure entirely. *See* Ex. 1301, 35:10-15. PO suggests that "since Rousselle and Seo both use a lower portion of a central lock and have locking pieces there is no reason why one of skill

in the art would be motivated to modify these using the jewelry clasp of Hooper[.]” *Id.*, 10-11. Here, PO ignores the motivations identified by Petitioner and Dr. Stein, including that the arrangement would allow for easy manufacturing and maintenance. Opp., 6-8; Ex. 1202 ¶¶15-18.

PO also argues that Seo fails to teach the folding/unfolding limitations. Reply, 11. As with Hooper, this is irrelevant because Petitioner has not relied on Seo to teach these limitations and because the Board will have rejected PO’s argument if it reaches this motion. *See generally* Opp.

PO’s arguments regarding Seo are thus unavailing and should be rejected.

B. Claims 16 and 17

In discussing claims 16 and 17, PO relies primarily on its flawed arguments discussed above for claim 15. Reply, 11-12. PO suggests in conclusory fashion that the “receiving groove” limitation of claim 16 and the “connecting rod hinged to connection piece above clamp locking part” limitation of claim 17 are not taught by the prior art, but appears to rely only on its arguments that limitations in claim 15 are not taught. *Id.* This is incorrect, as discussed above. *Supra* §I.A.4. PO’s expert adds nothing more. *Id.*; Ex. 2021 ¶¶52-57; Ex. 1301, 38:14-39:2.

PO’s argument that because, allegedly, “the locking mechanism of Seo ... only holds the center poles and does not lock the rest of the canopy structure,” “Seo does not teach any relationship between the clamp locking part of a center lock for

the canopy and the location of a connection piece of a bottom cap seat” is emblematic of PO’s erroneous approach throughout this proceeding. Reply, 12. PO’s argument implicitly requires a single reference (Seo) to contain all features recited in the claim, rather than recognizing that a POSITA’s creativity would allow such a person to realize just what Petitioner argued: that in reading Seo, a POSITA would have found it advantageous to connect the connecting rods at a location above the locking mechanism using Seo’s connection pieces, and that in the structure of Rousselle’s central lock as modified by Ohnishi and Hooper, that connection would be formed as part of a bottom cap seat. *Id.*; Opp., 9-13, 24-25; *KSR*, 550 U.S. at 421.

Because PO fails to present any meaningfully distinct arguments for claims 16 and 17, and for the reasons discussed in Petitioner’s Opposition, claims 16 and 17 are unpatentable.

C. Claims 18 and 19

PO does not address revised substitute claims 18 and 19, and it is unclear whether PO has abandoned its motion regarding those claims. *See* Reply at 12; Ex. 1301, 13:16-14:3.

II. CONCLUSION

For the reasons presented above and in Petitioner’s Opposition, the Board should deny PO’s motion to amend.

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

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 SUR-REPLY TO PATENT OWNER’S REVISED MOTION TO AMEND** is being served on May 31, 2024, via email on the parties listed below:

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