

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
Patent 10,669,738

SECOND DECLARATION OF Wendy Reffeor, Ph.D.

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1. I, Wendy Reffeor, declare as follows:
2. I am making this declaration at the request of With-U E-Commerce.
3. I have been retained by With-U E-Commerce (Shanghai) Co., Ltd. (“With-U”) to provide an objective expert opinion in this matter.
4. I am being compensated for my work in this matter, and I am being reimbursed at cost for my expenses.
5. My compensation is not dependent on the contents of this declaration, any testimony I may give, or any outcome in this matter.
6. I understand that my prior declaration was submitted as Exhibit 2007. My experience and qualifications were discussed in that declaration. In addition to those credentials discussed in my prior declaration, I have recently been promoted to Interim Associate Dean of the newly formed Padnos College of Engineering.
7. In preparing this Second Declaration, I considered the following materials:

Exhibit No.	Description
1001	U.S. Patent No. 10,669,738 B2 (the ’738 Patent)
1003	U.S. Patent No. 6,345,639 B2 (“Rousselle”)
1005	U.K. Patent No. GB 2,321,913 A (“Tsai”)

1006	U.S. Patent No. US 8,066,300 B2 (“Ohnishi”)
1203	U.S. Patent No. US 3,611,513 (“Hoover”)
1204	U.S. Patent Pub. No 2005/0097829 (“Seo”)

I. LEGAL PRINCIPLES

8. I am an engineer by training and profession, not a lawyer. I have not researched the law that may relate to this proceeding. The opinions I provide in this report involve the application of my training and technical knowledge and experience to the evaluation of certain prior art with respect to the '738 patent.
9. Although I have not been involved as a technical expert in patent matters before and am not an expert in patent law, the attorneys from Schmeiser, Olsen and Watts, LLP have provided me with guidance as to the applicable patent law in this matter. The paragraphs below discuss my understanding of how I am to apply relevant legal principles in my analysis. These paragraphs are in addition to the legal principles presented in my prior declaration.
10. My prior declaration included my understanding of relevant legal principles regarding obviousness and that remains my understanding for this declaration.
11. I also understand that in order for a reference to be proper for use in an obviousness rejection, the reference must be analogous art to the claimed

invention.

12. I understand that a reference is analogous art to the claimed invention if:

- (1) the reference is from the same field of endeavor as the claimed invention (even if it addresses a different problem); or
- (2) the reference is reasonably pertinent to the problem faced by the inventor (even if it is not in the same field of endeavor as the claimed invention).

II. REVISED SUBSTITUTE CLAIMS

13. I understand Patent Owner has proposed five substitute claims in the event claims 1, 2, 4, 13, and/or 14 are found unpatentable. These substitute claims are listed below, with new elements underlined and deleted elements in strikethrough or double brackets.

14. Claim 15 (Revised Proposed Substitute for Claim 1)

A collapsible canopy frame, comprising:

- A. at least three supporting legs,
- B. a plurality of outer retractable units, each outer retractable unit connected between two adjacent supporting legs, each said outer retractable unit comprises a plurality of hinged X-shaped rod members, each X-shaped rod member comprises a first eave pipe and second eave pipe hinged to one another,
- C. a plurality of inner retractable units comprising inner ends, each inner retractable unit connected to a supporting leg, wherein said outer retractable units and said inner retractable units form a roof of said collapsible canopy frame, and
- D. a central lock, comprising:
 - 1. a center top cap,

2. a center bottom cap,

3. a center pole positioned between said center top cap and said center bottom cap, wherein said central lock is locked when said center pole is connected to both said center top cap and said center bottom cap, and wherein said center lock is unlocked when there is a disconnection between said center bottom cap and said center pole, wherein said central lock locks said collapsible canopy frame in an unfolded state when said central lock is locked and permits said collapsible canopy frame to be folded into a folded state when said central lock is unlocked, wherein said inner ends of said inner retractable units are connected through said central lock, and

4. a locking piece received in said center bottom cap, wherein said center bottom cap comprises a bottom cap seat and a bottom cap cover that are connected to one another, wherein said bottom cap seat is located between said bottom cap cover and said center top cap, wherein said bottom cap seat is provided with a bottom cap seat through hole through which said center pole can enter, a receiving chamber is provided in said center bottom cap at a junction between said bottom cap seat and said bottom cap cover, and wherein said locking piece is located within said receiving chamber and between said bottom cap cover and said bottom cap seat;

wherein a first connecting rod is hinged with a connection piece of said bottom cap seat;

wherein said collapsible canopy frame is moved to said unfolded state by pushing said center bottom cap upwards to drive said plurality of inner retractable units outwardly, which causes said plurality of outer retractable units and said at least three supporting legs to extend outwards, until said center bottom cap is connected with said center top cap.

15.Claim 16. (Revised Proposed Substitute for Claim 2)

The collapsible canopy frame according as in claim [[1]] 15, wherein: each said outer retractable unit comprises three hinged X-shaped rod members, each said supporting leg comprises a sliding sleeve that is moved for moving along a length direction of said respective supporting leg by said pushing of said center bottom cap, an upper end of each said supporting leg is fixed with a fixed joint, each said inner retractable unit comprises a first oblique top pipe and a second oblique top pipe hinged to one another, said first oblique top pipe is hinged with [[a]] said first connecting rod, said second oblique top pipe is hinged with a second connecting rod, an inner end of said first oblique top pipe is hinged with [[a]] said center top cap of said central lock, an inner end of said first connecting rod is disposed within a receiving groove formed by at least two connection pieces of said bottom cap seat ~~hinged with a center bottom cap of said central lock~~, and, in said unfolded state, said first connecting rod extends from said bottom cap seat to said first oblique top pipe to form a Y-shaped member, an outer end of a first eave pipe and an outer end of said second oblique top pipe are hinged with said fixed joint, an outer end of said second eave pipe and an outer end of said second connecting rod are hinged with said sliding sleeve.

16.Claim 17. (Revised Proposed Substitute for Claim 4)

The collapsible canopy frame as in claim [[1]] 15, where said central lock further comprises: [[a]] said locking piece, wherein said locking piece is capable of moving back and forth along a radial direction of said center pole, wherein said locking piece is received in said center bottom cap, a first through hole through which said center pole can pass through is provided in said locking piece, and an

end portion of said center pole is provided with a clamping groove and a clamp locking part located at the lower end of said clamping groove; when said central lock is in a locked state, part of an inner wall of said first through hole of said locking piece is clamped with said clamping groove of said center pole, [[and]] an upper end surface of said clamp locking part abuts against a lower end surface of said locking piece, and said first connecting rod is hinged with said connection piece at a location above said clamp locking part of said center pole; and when said central lock is in said unlocked state, said inner wall of said first through hole of said locking piece is separated from said clamping groove and said clamp locking part can pass through said first through hole.

17.Claim 18. (Proposed Substitute for Claim 13)

The collapsible canopy frame as in claim [[4]] 17, wherein: said first through hole comprises a clamping hole part and a through hole part arranged side by side, said clamping hole part has a diameter not smaller than that of said clamping groove, said through hole part has a diameter greater than that of said clamp locking part.

18.Claim 19. (Proposed Substitute for Claim 14)

The collapsible canopy frame as in claim [[4]] 17, wherein: said clamping groove is an annular groove, an end portion of said clamp locking part is provided with a guide part of a semispherical shape or a conical shape with a gradually decreased diameter.

III. ART RELIED ON BY PETITIONER

19. I understand that Petitioner has proposed combining Rousselle/Tsai as evaluated in my prior declaration, and has proposed further incorporation of Ohnishi, Hooper, and Seo for the Substitute Claims.

IV. ANALOGOUSNESS

20. I understand that the Petition characterized the field of endeavor as follows:

“collapsible tents or canopies.” I understand the Petition also uses the term:

“locking mechanisms for collapsible structures.”

21. I also understand that the Petition characterized the problem faced by the

inventor as follows: “constructing sturdy, resilient, easy-to-use collapsible canopies.” I understand the Petition also uses the term “reliable locking mechanisms for collapsible structures.”

22. The '738 Patent is directed to the field of collapsible canopy frames having central locks.

23. The '738 Patent provides a problem statement, expressly stating: “What is needed is collapsible canopy frame with a better locking mechanism.” in lines 45 – 47 of the Background of the Invention.

24. Hooper is not from the same field of endeavor. The reference is not directed to or related to “collapsible tents or canopies.” Likewise, the reference is not directed to or related to “locking mechanisms for collapsible structures.”

Instead, Hooper is directed to jewelry clasps.

25. Hooper is not reasonably pertinent to the problem faced by the inventor. The reference is not directed to or related to “constructing sturdy, resilient, easy-to-use collapsible canopies.” Likewise, the reference is not directed to or related to “reliable locking mechanisms for collapsible structures.”
26. Hooper describes a jewelry clasp. In lines 19 - 21 of the Background of the Invention, Hooper states, “This invention relates to jewelry clasps, and more particularly to locking jewelry clasps for use in securing necklaces, bracelets, watchbands and the like.”
27. Jewelry clasps are not analogous to locking mechanisms for collapsible structures as jewelry is neither collapsible nor a structure. Jewelry does not need to support a grounded load (support structure) nor does it fold/unfold between a collapsed state and a deployed state (collapsible). None of the exemplary items listed by Hooper have these features. Further, Hooper expressly notes the “small size and fragile construction” of jewelry clasps generally, as well as their limited durability, in lines 23 - 26 of the Background of the Invention.
28. Based on these facts, Hooper is not an analogous reference to the claimed invention of a collapsible canopy frame having a central lock and a POSITA would not use the reference in combination with canopy references like Rousselle, Tsai, and Seo.

V. REVIEW OF THE PROPOSED COMBINATION

29. Again, I understand that Petitioner has proposed combining Rousselle/Tsai as I previously evaluated in my prior declaration, and has proposed further incorporation of Ohnishi, Hooper, and Seo for the Substitute Claims.

VI. A POSITA WOULD NOT COMBINE HOOBER WITH ROUSSELLE, TSAI, AND OHNISHI TO ARRIVE AT THE STRUCTURE OF SUBSTITUTE CLAIM 15

30. For several reasons, a POSITA would not start with Rousselle's umbrella tent, add features from Ohnishi, and add features from Hooper to create the structure of Substitute Claim 15. This analysis applies equally whether Rousselle is modified by Tsai or Tsai by Rousselle.

31. First, as discussed above, Hooper is a jewelry clasp and is not analogous art.

32. Second, a POSITA would not have any reason to divide the structure of Rousselle (or Rousselle with Ohnishi) into different bottom cap cover and bottom cap seat portions. Given that Hooper is directed to a jewelry clasp and not a collapsible canopy structure, a POSITA would not have any reason to expect this structure would be beneficial for a canopy.

33. Finally, both Rousselle and Ohnishi use an internal spring while Hooper uses an external flat spring 28 to engage the locking piece. Petitioner's proposed modifications would require a reworking of the Rousselle/Tsai/Ohnishi device

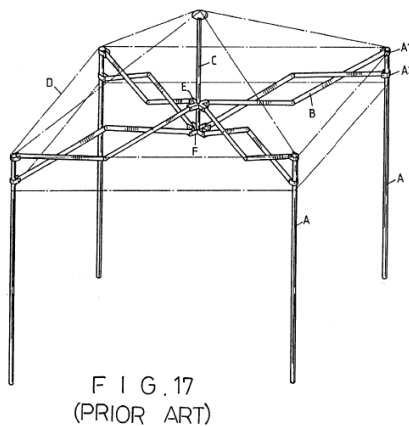
to include the external spring feature and/or a reworking of Hooper to incorporate the Rousselle/Tsai/Ohnishi device.

VII. A POSITA WOULD NOT COMBINE SEO WITH ROUSSELLE, TSAI, OHNISHI, AND HOOBER TO ARRIVE AT THE STRUCTURE OF SUBSTITUTE CLAIM 15

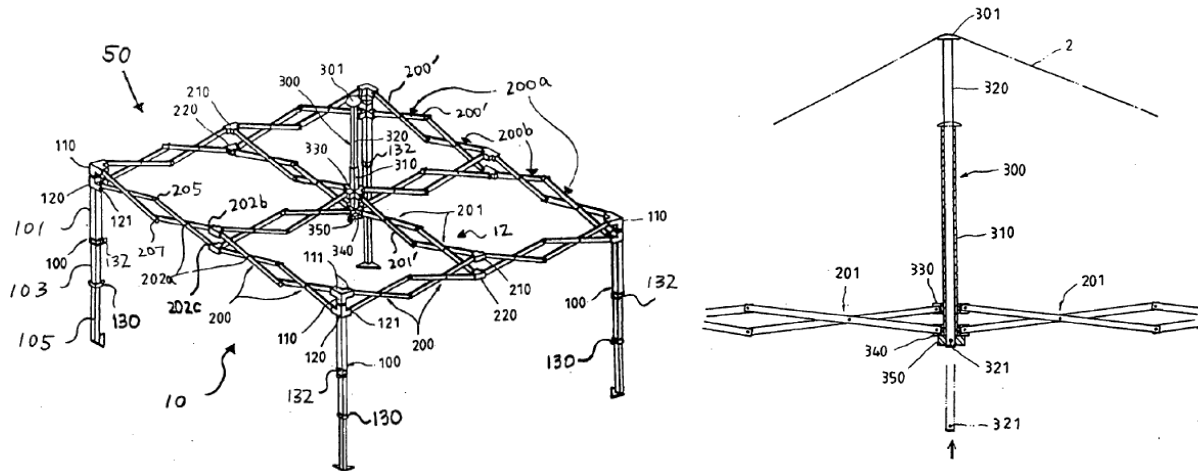
34. For several reasons, a POSITA would not start with Rousselle's umbrella tent, add features from Ohnishi, add features from Hooper, and add features from Seo to create the structure of Substitute Claim 15. This analysis applies equally whether Rousselle is modified by Tsai or Tsai by Rousselle.

35. First, as explained in my prior declaration, Tsai disparages canopies using a center strut because: 1. It often requires a second person to push upward at the center of the structure; and 2. It reduces head space within the structure. Seo is a center strut canopy and suffers from these same deficiencies.

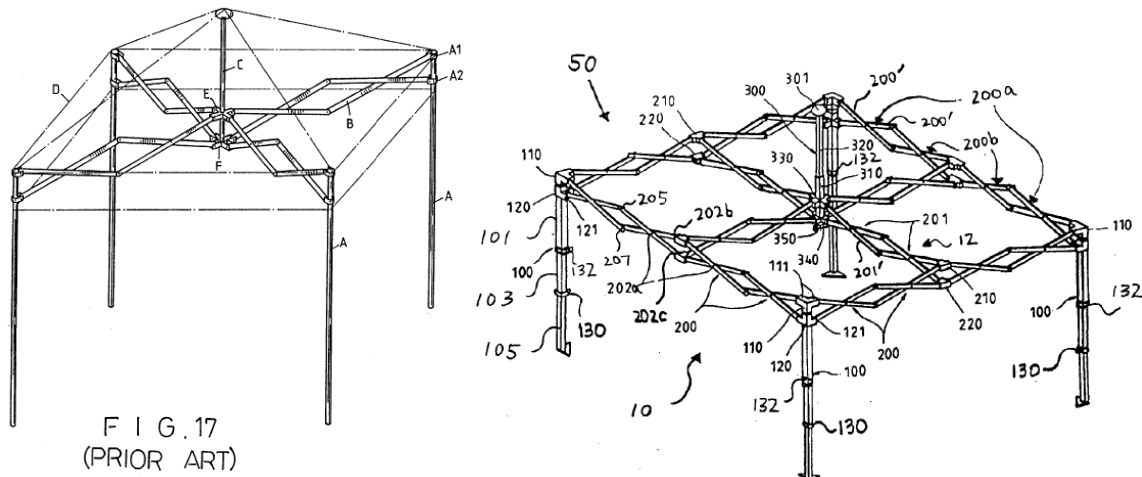
36. For example, Tsai provides an example of such a center strut solution in its Figure 17:

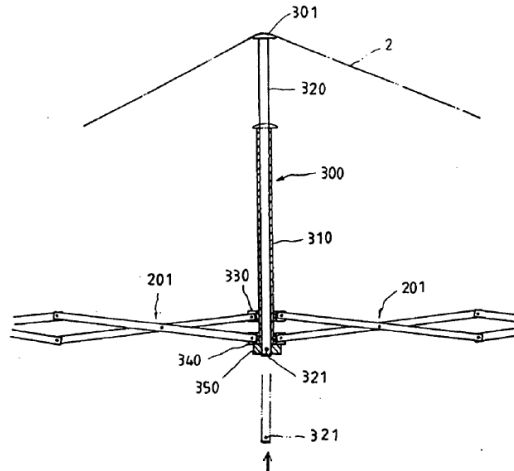
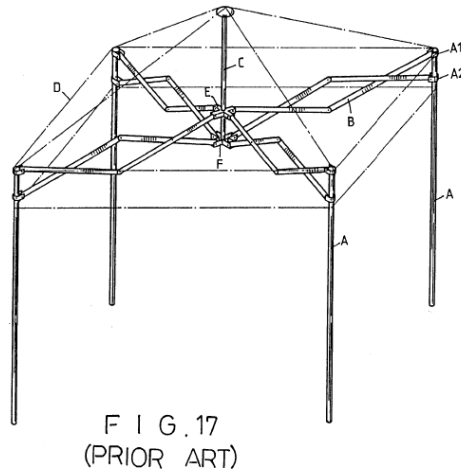


37. Seo is exactly such a center strut solution, as can be seen in at least Figures 1 and 6 of Seo:



38. When placed side by side, the similarities are clear—both the disparaged prior art reference and Seo use a center strut that extends upward from the inner units.





39. Accordingly, a POSITA using Tsai (either as in the primary modification or as a starting point as in the alternative modification) would be expressly taught not to use the structure of Seo.

40. Second, Seo teaches away from center activation. Seo is clear that pushing the center pole is independent from, and not connected to, the unfolding (paragraphs 46 - 48). Seo teaches that the inner pole 320 is pushed up to engage the lock and then unfolding is accomplished by pulling the legs (side poles 100) apart (paragraph 48).

41. In fact, Seo expressly teaches that the scissor assemblies 200/201 and the side poles 100 can be collapsed even while the locking pin 352 is still engaged (paragraph 51). The paragraph further goes on to clearly define the locking pin as being separate from the motion of the legs, “In other embodiments, the locking pin may be disengaged either before, during or after bringing all the side poles to the center.”

46. Thus, if POSITA did incorporate Seo, he or she 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.

47. Further, since Rousselle and Seo both use a lower portion of a central lock and have locking pieces there is no reason why a POSITA would be motivated to modify these using the jewelry clasp of Hooper (even if Hooper is assumed to be analogous).

IX. NEITHER HOOBER NOR SEO WOULD BE USED WITH UNFOLDING DRIVEN BY A CENTRAL LOCK

48. As discussed in my prior declaration, Tsai clearly teaches against incorporating a central locking mechanism such as that found in Rousselle. Likewise, a POSITA would not use such a central lock to control or drive locking of Tsai's frame.

49. Hooper is a jewelry clasp, does not perform any folding/unfolding, and would not be capable of driving any retractable units during an unfolding process.

50. Likewise, Seo teaches activation at the legs and not any unfolding driven through the center.

51. Accordingly, POSITA would not use these references to arrive at the structure of Substitute Claim 15 having the limitations wherein said collapsible canopy frame is moved to said unfolded state by pushing said center bottom cap upwards to drive said plurality of inner retractable units outwardly, which causes said plurality of outer retractable units and said at least three supporting legs to extend outwards, until said center bottom cap is connected with said center top cap.

X. SUBSTITUTE CLAIMS 16 AND 17

52. I understand that amended portions of Substitute Claim 16 add further structural detail regarding the central activation by pushing of said center bottom cap as well as further structural detail wherein an inner end of said first connecting rod is disposed within a receiving groove formed by at least two connection pieces of said bottom cap seat, and, in said unfolded state, said first connecting rod extends from said bottom cap seat to said first oblique top pipe to form a Y-shaped member.

53. As discussed above, a POSITA would not start with Rousselle's umbrella tent, add features from Ohnishi, add features from Hooper, and add features from Seo to create the structure of Substitute Claim 15. This analysis applies equally whether Rousselle is modified by Tsai or Tsai by Rousselle.

54. Because a POSITA would not start with Rousselle's umbrella tent, add features from Ohnishi, add features from Hooper, and add features from Seo to create the structure of Substitute Claim 15, he or she would also not combine the references to create the more detailed structure of Substitute Claim 16.

55. I understand that amended portions of Substitute Claim 17 add further structural detail wherein the first connecting rod is hinged with said connection piece at a location above the clamp locking part of said center pole.

56. As discussed above, a POSITA would not start with Rousselle's umbrella tent, add features from Ohnishi, add features from Hooper, and add features from Seo to create the structure of Substitute Claim 15. This analysis applies equally whether Rousselle is modified by Tsai or Tsai by Rousselle.

57. Because POSITA would not start with Rousselle's umbrella tent, add features from Ohnishi, add features from Hooper, and add features from Seo to create the structure of Substitute Claim 15, he or she would also not combine the references to create the more detailed structure of Substitute Claim 17.

XI. CONCLUSION

58. In conclusion, it is my view that Substitute Claim 15 would not have been obvious to a POSITA at the time of the invention, whether from Rousselle combined with Tsai, Ohnishi, Hooper, and Seo or from Tsai combined with Rousselle, Ohnishi, Hooper, and Seo. For the reasons stated above, the

combination relies on a non-analogous reference, there would not have been a motivation to combine the references, and even if the references were combined, the result would not be the structure of Substitute Claim 15.

59. Likewise, it is my view that Substitute Claims 16 and 17 would not have been obvious to a POSITA at the time of the invention, whether from Rousselle combined with Tsai, Ohnishi, Hooper, and Seo or from Tsai combined with Rousselle, Ohnishi, Hooper, and Seo.

60. All statements made herein of my own knowledge are true, all statements made herein on information and belief are believed to be true, and these statements were made with the knowledge that willful false statements and the like are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001.

Dated: May 10, 2024



Wendy S. Reffeor,
Ph.D.