

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Hisense USA Corporation

Petitioner

v.

Brightplus Ventures LLC

Patent Owner

Case IPR2023-01385

U.S. Patent No. 7,690,812

PATENT OWNER'S RESPONSIVE CLAIM CONSTRUCTION BRIEF

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Pursuant to the Board's October 2, 2024, Order (Paper 17), Patent Owner submits this responsive brief regarding the correct construction of the claim term "conform" and, in support thereof, respectfully states as follows:

I. INTRODUCTION

Patent Owner's proposed construction is correct. In fact, Petitioner does not dispute Patent Owner's proposed construction, a "reflector sheet that provides cover and relief for a shape of a protruding feature." (See, Paper 19 at 1-2). Petitioner further agreed that Patent Owner's construction does not exclude the embodiments demonstrated in both Figs. 3 and 4. Therefore, Patent Owner's believes both Parties agree with respect to the issues initially raised by the board, namely whether the term 'conform' covers the embodiments disclosed in both Fig. 3 and 4.

Patent Owner and Petitioner also agree that the term 'conform' does not require the reflector to take the exact shape of the protruding feature (See, Paper 19 at 2). Patent Owner and Petitioner disagree, however, on the characterization of Patent Owner's proposed construction. Petitioner argues that "in the PG the Board appears to propose another construction of conform as 'adjusted or manipulated in any way to fit, accommodate, or be married in some shape to... Petitioner respectfully submits that this additional construction is unnecessarily narrow and... unsupported by the intrinsic record.'" (See, Paper 19 at 1). Patent Owner submits that the Board was not offering an alternative or separate construction of conform, but that the Board

was simply emphasizing the fact that term conform requires the reflector to provide relief for ‘a shape’ of a protruding feature. Indeed, the alternative proposed construction has two elements – a reflector that provides cover and relief. After all, the claim requires that the reflector sheet be “configured to conform.” There seems to be no disagreement about the term cover, which describes that the reflector covers the protruding feature, but there does seem to be a misunderstanding about the term relief. Patent Owner argues that the term relief requires the reflector to consider or accommodate a shape of the protruding feature. This is in line with the requirement that the reflector must be configured to conform. Thus, the alternative construction is consistent with the Board’s description of conform (See, Paper 18 at 17). Additionally, it does not appear that there is a dispute that the term ‘conform’, as drafted in the original claims, requires the reflector to accommodate a shape of the protruding feature.

The parties also disagree on whether the prior art discloses or renders obvious a reflector sheet as required by the claims under the proposed construction. As shown below, the prior art does not disclose or render obvious a reflector sheet that is configured to provide cover and relief for a shape of a protruding feature.

II. THE PRIOR ART DOES NOT DISCLOSE OR RENDER OBVIOUS THE CLAIMED REFLECTOR SHEET**A. The Claimed Reflector Sheet is Not Disclosed or Rendered Obvious by Chou**

Under Patent Owner's construction the reflector must be configured to provide cover and relief for a shape of a protruding feature on the tile. In Chou, the reflector covers the lead and the solder, but it does not provide relief for the shape of the protruding feature and is certainly not configured to do so. Chou explains angle θ of the reflector will change with the "amount" of solder, the "length" of the lead and the "height" of the spotlight source. None of these attributes describe the shape of the corresponding element and how the reflector provides relief for a particular shape of those elements. For example, the reflector of Chou does not include a configuration to conform to the lead 650 or spotlight source 600, or a configuration that would conform to the solder 800. It is simply a straight reflector that rests on the spotlight source 600. According to Chou, the reflector will only cover the elements at a specified angle, which is not the same as providing relief. And it does not appear to disclose a configuration to provide cover or relief at all.

Additionally, with respect to Chou, Petitioner's expert offers no credible argument as to why a "deformable material" would "conform" to the solder, lead, or spotlight source in a way that is different than what is illustrate in Fig. 3A. Indeed, Petitioner's expert refers to Chou's description that the reflector sheet can be

deformable, but the section cited states the following, “reflector sheet 1700 adjacent to hole 1750 is deformed to form an angle θ between about 0 degree to about 90 degree with the circuit board 1500” (Ex. 1005 at 4:29-35). Thus, the “deformable material” would still deform as depicted in Fig. 3A, and Petitioner nor its expert offer any additional evidence as to how or why Chou’s deformable material provides relief for the shape of either elements 600, 650 or 800. The deformable material is certainly not configured as required by the claims.

Further, Petitioner provides a variety of arguments as to why the Board’s Preliminary guidance is incorrect with respect to its description of Chou (See, Paper 18 at 4-7). Petitioner argues that Chou’s deformable reflector does not teach away from not contacting the LED, that Chou’s stated goal is not an “absolute requirement” that the reflector sheet contact the LED, and that a POSITA reading Chou would understand that a reflector sheet could be designed to not contact the LED. (See, Paper 18 at 5, 6 and 7). Patent Owner submits that Chou discloses a reflector that touches an LED, that Chou’s key inventive concept is related to a reflector touching the LED, and that a POSITA would not be motivated to modify Chou’s reflector to not contact the LED.

Chou discloses one improvement over the prior art systems, improved lighting efficiency, specifically by improving the covering area of the reflector sheet (Chou at 1:58-60, 1:64-66, 3:52-57). Thus, Chou’s key, and only, inventive concept is

directly tied to improving the coverage of the reflector sheet. Chou teaches that increasing the reflective area is the primary concern of the invention and the emission efficiency of a spotlight source can be "improved by increasing the reflecting area from a proper design of the reflector sheet 700" (*Id.* Fig. 4 and 3:52-56). Chou distinguished the invention from the prior art by stating that "the hole 350 of the reflector sheet 300 must be enlarged to avoid the welding position and this also will result in reducing the covering area of the reflector sheet 300. Hence a method of improving the covering area of the reflector sheet as to improve the lighting efficiency of the backlight module is desirable." (*Id.* 1:44-60).

Petitioner is incorrect that Chou does not disclose or teach that the reflector touches the LED and this feature of Chou supports the key inventive concept discussed supra. As recognized by the Board, Chou teaches that the reflector sheet touches the LEDs (See, Chou Figs. 3A, 3B, 5, 8 and Prelim. Guidance at 23-25). Chou describes that the "aperture of the hole 750 is slightly smaller than the size of the spotlight source (LED 600)" and explains that the reflector sheet is deformable when placed over the spotlights (Chou at 4:29-36 and 4:48-54). In each of these embodiments, the reflector touches the LED and Chou does not provide an embodiment in which the reflector is not touching the LED. Petitioner's argument that "providing slit to form a hole slightly smaller than the size of the LED allows for the slits to rise upwards when contacting the solder 800/lead 650" (See, Paper 18 at 5)

is not disclosed by Chou and omits the fact that the reflector would contact the LED in said embodiment. In Chou the LED is taller than the solder 800/lead 650, and the reflector would first come into contact with the LED before contacting the solder 800/lead 650. Both Figs. 3A and 3B refer to both the deformable reflector and the reflector with slits and both embodiments demonstrate that the edges of the reflector rest on the spotlight (See, Chou Figs. 3A and 3B; 3:22-41; 4:18-36).

Modifying Chou to include a small gap as proposed by Petitioner is in direct opposition to the key inventive concept of Chou. Indeed, Petitioner does not present any meaningful reason as to why a POSITA would be motivated to increase the size of the area around the spotlight. Chou's improvement of the prior art systems (shown in Fig. 1A and 1B) was to increase the coverage of the reflector, which resulted in substantially improved lighting efficiency, while being a relatively insubstantial physical modification to the reflector. In other words, Chou discloses, and a POSITA would understand, that the length of an LED's solder and lead frame is incredibly small, and the improvement disclosed by Chou was to cover that small distance with the reflector. Accordingly, Chou disclosure is that small adjustments in the gap between the reflector and the solid state emitter have a large impact on light efficiency (see the comparison in Fig. 1A and 1B and Fig. 2 and 3A, as well as Fig. 4). Essentially the difference between Chou and the prior art disclosed therein is that Chou covered the "small gap." Adding a small gap back into Chou is in direct departure

from the disclosures made therein, and a POSITA would not find any meaningful motivation to make such a change. Contrary to Petitioner's argument, including a "small gap" would not only result in a large amount of light loss, but would also be a departure from Chou's key, and only, inventive concept. Thus, a POSITA would not be motivated to modify Chou as proposed by Petitioner.

Further, Petitioner offers three examples of why a POSITA would be motivated to include a small gap between the reflector and LED, all of which are incorrect and in opposition to the arguments presented above. First, Petitioner's Expert simply states that "the motivation is to avoid mechanical friction between the reflector 700 and the LED 600" (Ex. 1003 at 47), and states that the reflector or LED could be damaged. Petitioner's expert has not explained how this modification would reduce mechanical friction. If the angled portion of the reflector did not contact the spotlight, then the result would be less structural support for that part of the reflector. Indeed, if that system were to move or experience external forces, there is a higher likelihood that the reflector would move, adjust, or break. Thus, Petitioner's purported "improving" modification would likely introduce more mechanical friction or a higher chance of mechanical failure into the system. Further, Petitioner doesn't clarify what damage the friction would cause in Chou's current system, as Chou doesn't include any disclosure of issues caused by the reflector being in contact with either the LED, the solder or the lead.

Second, Petitioner's expert argues that the reflector sheet would be adjusted so that the reflector does not block any of the LED light output (Ex. 1003 at 48). Chou explicitly anticipates this problem and explains that “the hole 750 is slightly smaller than the size of the spot light source (LED 600)” and that the reflector does not cover the emission surface of the spotlight source (3:34-38). Fig. 3A of Chou illustrates that the reflector can rest on the spotlight source without blocking any of the LED light output. Chou already addressed this particular concern, and there is no substantial evidence as to why a POSITA would ignore Chou's disclosed solution, while ignoring Chou's key inventive concept.

Third, Petitioner's Expert state that “such a modification would reduce the risk of a short circuit based on contact between a reflector sheet made of a conductive material... and the lead 650 or solder 800” (Ex. 1003 at 50). This argument is misguided for a number of reasons, first Chou never discloses the reflector sheet as a conductive material. This argument is taken from thin air, as the "resin film" in Chou is never disclosed as a conductive or metal; a POSITA wouldn't be concerned with addressing a nonexistent problem. Additionally, the reason for making the modification, according to Petitioner, is that the conductive material shouldn't contact the lead 650 or solder 800. However, as shown in Fig. 3A of Chou, the reflector is already in contact with the lead 650 or solder 800. There is no valid reason for a POSITA to make an unnecessary, unknown improvement that departs from Chou's

key inventive concept. Additionally, Petitioner's argument here directly contradicts its argument that the reflector sheet would contact the solder 800/lead 650 (See, Paper 18 at 5).

B. None of the Other Cited Prior Art is Invalidating

Tabito and Liu both disclose a flat, rigid reflective plate. As recognized by the Board, neither reference describes a reflective layer that "conforms" or provides cover or relief for a protruding feature. (Prelim. Guidance at 16-20). Additionally, none of the prior art discloses configuration of the reflector sheet to accommodate the shape of a protruding feature. Similar to Chou, none of Tabit, Liu, Kim or Lee discloses an configuration of the reflector sheet that provides cover or relief for a protruding feature.

III. CONCLUSION

For the forgoing reasons, Patent Owner's proposed construction should be adopted.

Respectfully submitted,

/Neal Massand/

Neal Massand

Counsel for Petitioner

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e), the undersigned certifies that the above-captioned Mandatory Notice was served on counsel of record for the Petitioner by filing this document through the Patent Review Processing System as well as by delivering a copy via electronic mail to:

MFerrario@kilpatricktownsend.com (Lead Counsel)
MMorlock@kilpatricktownsend.com (Back-Up Counsel)

Dated: October 22, 2024

/s/ Neal Massand
Neal Massand (Reg. No. 54,296)