

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Hisense USA Corporation
Petitioner

v.

Brightplus Ventures LLC
Patent Owner

Patent No. 7,690,812
Filing Date: March 15, 2007
Issue Date: April 6, 2010
Title: APPARATUS AND METHODS FOR CONFORMABLE DIFFUSE
REFLECTORS FOR SOLID STATE LIGHTING DEVICES

Inter Partes Review No. IPR2023-01385

PETITIONER'S RESPONSIVE CLAIM CONSTRUCTION SUBMISSION

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LIST OF EXHIBITS

EXHIBIT	DESCRIPTION
1001	U.S. Patent No. 7,690,812 (“the ’812 Patent”)
1002	Prosecution History of U.S. Patent No. 7,690,812
1003	Declaration of P. Morgan Pattison, Ph.D.
1004	Curriculum Vitae of P. Morgan Pattison, Ph.D.
1005	US 7,497,592 to Chou (“Chou”)
1006	US 2006/0262310A1 to Starry (“Starry”)
1007	US 2007/0103908 to Tabito <i>et al.</i> (“Tabito”)
1008	Counterclaim filed by Patent Owner in <i>Hisense USA Corp. v. Brightplus Ventures LLC</i> , No. 1:22-cv-02774, Dkt. 9 (N.D. Ga. Sep. 16, 2022)
1009	Scheduling Order in <i>Hisense USA Corp. v. Brightplus Ventures LLC</i> , No. 1:22-cv-02774, Dkt. 35 (N.D. Ga.)
1010	Judicial Caseload Profile for the Northern District of Georgia
1011	Cover Pleading to Patent Owner’s Infringement Contentions in <i>Hisense USA Corp. v. Brightplus Ventures LLC</i> , No. 1:22-cv-02774 (N.D. Ga.)
1012	Cover Pleading to Patent Owner’s Supplemental Infringement Contentions in <i>Hisense USA Corp. v. Brightplus Ventures LLC</i> , No. 1:22-cv-02774 (N.D. Ga.) served June 21, 2023
1013	U.S. Pub. No. 2006/0187660 to Liu (“Liu”)
1014	U.S. Patent No. 7,324,174 to Tabito (“Tabito 174”)
1015	Declaration of P. Morgan Pattison, Ph.D.
1016	U.S. Patent No. 7,481,553 to Kim <i>et al.</i> (“Kim”)
1017	U.S. Pub. No. 2007/0064171 to Sharp (“Sharp”)
1018	U.S. Pub. No. 2003/0223249 to Lee <i>et al.</i> (“Lee”)
1019	Transcript of the September 10, 2024 Deposition of Mr. Bohannon

I. Introduction

The parties agree on the construction of “conform.” As stated in Petitioner’s submission, Petitioner does not dispute PO’s construction of “conform” to mean a reflector sheet that “provides cover and relief” for a shape of a protruding feature on the solid state lighting tile. Paper 19 at 1. This construction subsumes Petitioner’s original construction (“the reflector sheet overlays (e.g., by deformation), and has the same shape, outline, or contour of a protruding feature”) and the Board’s implicit construction (“adjusted or manipulated in any way to fit, accommodate, or be married in some shape to.”). Paper 18 at 17.

Additionally, Petitioner and PO both agree that that the proper construction of “conform” should, and that their agreed construction does, encompass FIG. 3 of the ’812 Patent. *See* Paper 19 at 1; Paper 20 at 6-7. The parties also both agree that conform does not require taking the exact shape. *See* Paper 19 at 2; Paper 20 at 6-7 (“The term ‘conform’, in light of the prosecution history and specification, does not require the reflector to take on the exact shape of the protruding feature.”). The parties diverge on whether Chou and other prior art meets this construction. They do.

II. PO's Arguments are Inconsistent and Ignore Chou's Disclosure

A. PO's Arguments Regarding "Relief" are Inconsistent with Its Claim Construction and Chou.

PO attempts to distinguish Chou by asserting that Chou's "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.*" Paper 20 at 7 (emphasis added). This analysis, however, is wrong. It is inconsistent with the construction agreed to by the parties and ignores Chou's express disclosure.

The term "relief" does not require any particular shape and does not require "a corresponding shape to conform to the lead 650 or spotlight source 600, or a circular shape that would conform to the solder 800" as PO alleges. *Id.* at 8. Indeed, FIG. 3 of the '812 Patent does not show the rectangular recess 14B having "a corresponding shape" to a curved shape of the protrusion LWI 18. PO made this exact point in its POR. *See* Paper 11 at 5-6 ("Figure 3 shows a 'recess' 14B formed in the reflector 'to provide relief for surface protrusions, such as LWI 18.' As shown in figure 3, the 'shape' of the reflector sheet does not conform to the shape of protrusion 18.").

Even if "provides cover and relief" were interpreted to require a corresponding shape to a shape of a protruding feature on the tile, Chou meets this

claim limitation. Accepting, *arguendo*, that Chou's reflector sheet is simply a "straight line," that straight line has a corresponding shape to a shape of the protrusions (e.g., solder, lead), because it has a specific angle θ that depends on the shape protrusions. The reflector sheet bent at angle θ is the "specific configuration of the reflector sheet to accommodate the shape of a protruding feature" that PO contends the claims require. Paper 20 at 7.

B. PO's Arguments Ignore Chou's Alternative Ways to Conform

Chou discloses two ways to accommodate or conform a reflector to protruding features. The first way is using a reflector sheet wherein slits are created so that the reflector sheet will deflect away from the circuit board upon encountering a protrusion. This is the first embodiment in Chou, shown in FIGs. 3A and 6. *See* Ex. 1005, 3:4-4:7. Notably, with respect to the slit embodiments, Chou states that "[t]he angle θ will change with the height of the spot light source (LED 600), the length of lead 650 of the spot light source (LED 600), and the amount of the solder 800." *Id.*, 3:45-48. The slit embodiment is also preferred for a "top-emission" light source. *See id.*, 3:36-41 ("The reflector sheet 700 disposed on the circuit board 500 doesn't shield the emission surface of the spot light source (LED 600) which is better. In one embodiment, the spot light source (LED 600) has a top-emission surface and the reflector sheet 700 doesn't shield the emission surface of the spot light source (LED

600).”); *id.*, 3:48-49 (“As shown in the figure, only the emission surface of the spot light source (LED 600) is exposed.”).

Contrary to PO’s assertion that the slits do not “accommodate the shape of” the lead 650 or solder 800, the entire purpose of Chou’s embodiment with slits is to accommodate the lead 650/solder 800 while leaving the top-emission surface exposed. As Chou explains, the reflector sheet 700 contains slits 760 extending from the holes 750 that allows the edges of the hole to deflect to form an angle when placed over the solder/leads on the circuit board, as shown in FIGs. 3A and 3B. *See also* Chou, 3:25-45. As stated above, the slits in Chou and the ability of the reflector sheet to deflect at angle θ are a “specific configuration of the reflector sheet to accommodate the shape of a protruding feature,” i.e., the solder/leads. Paper 20 at 7.

Chou also discloses that the slits can be omitted. Ex. 1005, 4:18-54. The reflector sheet without slits also accommodates or conforms to protruding features by its use of a deformable reflector sheet. Ex. 1003, ¶ 43. In fact, just as the ’812 Patent discloses a thin reflector sheet with a “deformation characteristic” to provide conformance, Chou discloses its deformable reflector can accommodate protrusions. *Compare* Ex. 1001, 6:33-36 *with* Ex. 1005, 4:31-50. And unlike Chou’s slit embodiments, Chou’s deformable embodiments do not have an angle θ that is dependent on the height of the LED, the length of the lead, or the amount of solder.

Compare Ex. 1005, 3:42-47 (slit embodiment) to 4:29-36 and 4:47-54 (deformable embodiments).

Rather, one of skill in the art would understand that Chou's deformable embodiment conforms by (a) providing cover and relief (for same/similar reasons as FIG. 3A does), but also, (b) as having the same shape, outline, or contour as the solder, lead, or other protruding feature, and (c) as adjusted or manipulated to fit, accommodate, or be married in some shape to the protruding features. And the ability of the reflector sheet to deform is a "specific configuration of the reflector sheet to accommodate the shape of a protruding feature," i.e., the solder/leads as PO contends. Paper 20 at 7.

Thus, the reflector sheet in Chou conforms under any construction and renders the original and the substitute claims obvious.

III. Other Prior Art Discloses a Reflector Sheet as Claimed

The Board "authorize[d] the parties to address the effect of the aforementioned construction on the unpatentability issues before" the Board. Paper 17 at 4. In Section VI of its claim construction submission, PO only addresses Chou and fails to address any other prior art. *See* Paper 20, 7-9. Accordingly, PO has waived any argument that Kim, Tabito, Liu, or Lee do not disclose a reflector sheet that conforms under the agreed construction. Nonetheless, to the extent PO attempts

to apply a similar analysis to the other prior art relied on by Petitioner, PO's logic is likewise faulty and inconsistent with PO's claim construction.

As explained in Petitioner's Claim Construction Submission, Kim shows the same type of conformance as Figure 3 of the '812 Patent. Kim describes and shows the reflector as providing cover and relief, and further a "corresponding shape" in a similar concave shape, outline or contour that matches the curved, convex protruding shape of the curved electrical line. And this electrical line is positioned separate and apart from the LED. *See* Paper 19 at 2-3.

Further, Tabito shows a set screw 39 protruding from the substrate 17 and a reflecting plate 26 that provides cover and relief for the set screw 39. *See id.* at 10-11. Tabito's reflector sheet 26 is configured to provide cover and relief by having a specific (i.e., flat) configuration that intentionally "does not extend down into the area containing Tabito's set screw 39 or interfere with the set screw 39." Ex. 1015, ¶19.

Liu's reflective board is similarly configured to provide cover and relief for the bolts 241 by having a specific (i.e., flat) configuration "without any aspect that extends down into the volume containing the rigid metal board 23 or bolts 241." Paper 19 at 9-10.

Finally, Lee shows a reflector sheet that completely covers a protrusion separate from the LED, which provides cover and relief including by having a

“corresponding shape,” takes on the same general shape, outline or contour, as the protrusion, and is adjusted or manipulated to fit, accommodate, or be married in some shape to the protruding features. *See id.* at 7-8.

As such, the prior art grounds satisfy the claim elements under the agreed construction—or any reasonable understanding—of “conform.”

IV. Conclusion

For all of the reasons stated in Petitioner’s papers and above, the prior art discloses this limitation under any reasonable interpretation of the word “conform.”

Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that on the date below a copy of this
PETITIONER'S RESPONSIVE CLAIM CONSTRUCTION SUBMISSION
has been served via email on the following:

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Dated: October 22, 2024

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