

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. 8,177,382
Filing Date: March 11, 2008
Issue Date: May 15, 2012
Title: APPARATUS AND METHODS FOR MULTIPLANAR OPTICAL
DIFFUSERS AND DISPLAY PANELS FOR USING THE SAME

Inter Partes Review No. IPR2023-01311

**PETITIONER'S OPPOSITION TO PATENT OWNER'S REVISED
CONTINGENT MOTION TO AMEND UNDER 37 C.F.R. § 42.121**

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1022	Chao-Heng Chien & Zhi-Peng Chen, <u>Fabrication of concentric light guiding plate with SiO₂ reflective film</u> , 6376 Proc. of SPIE 63760E-1 (2006).

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1023	Ji-Young Lee, Kie-Bong Nahm, Jae-Hyeon Ko, & Joong Hyun Kim, <u>Effects of Reshaping Micro-pyramids and Prisms on the Optical Performances of Light Collimating Films in the Field of LCD Backlight</u> (2006).
1024	US 7,072,096 to Holman (“Holman ’096”)
1025	Ching-Cherng Sun, Ivan Moreno, Shih-Hsun Chung, Wei-Ting Chien, Chih-To Hsieh, Tsung-Hsun Yang, <u>Brightness Management in a Direct LED Backlight for LCD TVs</u> (2007)
1026	Intentionally Omitted
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I. Introduction

Patent Owner's (PO's) revised motion to amend proposes substitute claims that are aimed at well-known designs for a lighting panel. Further, PO's revised substitute claims are nearly identical to those presented in PO's prior motion to amend, which the Board's Preliminary Guidance found were unpatentable over the prior art. The same result follows here. PO's revised substitute claims are not patentable, and PO's motion should be denied.

II. PO Has Not Complied with 35 U.S.C. § 316(d) or 37 C.F.R. § 42.121

As stated in the Scheduling Order for a related proceeding, "A revised motion to amend must provide amendments, arguments, and/or evidence in a manner that is responsive to issues raised in the preliminary guidance and/or Petitioner's opposition." IPR2023-01168, Paper 8 at 5. However, Patent Owner's amendments are not responsive to the Board's Preliminary Guidance or Petitioner's Opposition to the Motion to Amend, as the revised substitute claims are almost the exact same as PO's prior substitute claims, which the Preliminary Guidance properly found to be unpatentable. *See* Paper 20 at 14.

For example, substitute claim 21 now includes the limitation "the second distance comprises a distance in a range between the third distance and 1.5 times the third distance," rather than "the second distance comprises a distance in greater than the third distance and less than 1.5 times the third distance" in PO's original

substitute claim 21. There is no real difference between these two claim limitations, other than to fix the apparent clerical error. And with respect to PO's previous substitute claims, the Preliminary Guidance found that "each of Petitioner's challenges renders the respective proposed substitute claims unpatentable." Paper 20 at 14.

PO's proposed revised substitute claims are nearly identical to PO's previously presented substitute claims, which were found to be unpatentable, the amendments are not responsive to the Board's Guidance or Petitioner's opposition and are improper. *C.f. Apple Inc. v. Lbt Ip I LLC*, No. IPR2020-01193, 2022 WL 685082, at *23 (P.T.A.B. Mar. 2, 2022) (excluding, in an analogous context, arguments that were outside the scope of issues raised in the Board's preliminary guidance or petitioner's opposition). The revised substitute claims should be rejected for this reason alone.

III. Proposed Substitute Claims 21-22 Are Not Patentable in View of the Prior Art that is Already Part of the Grounds

A. Substitute Claim 21: Prior Art Involved in the Grounds Already Discloses and Renders Obvious a Second Distance in a Range Between the Third Distance and 1.5 the Third Distance

Kobayashi teaches a second distance "a" that is measured from "the light emitting surface of the diffusing plate at the most exiting side" and "is 10 mm or more." Ex. 1006, [1019]-[0020]. Kobayashi further teaches a third distance "b" that "is 10 to 100 mm." *Id.* Thus, as already recognized by the Board, Kobayashi teaches

at least where a is 10 and b is 10 and thus discloses a second distance in a range between the third distance and 1.5 times the third distance. Paper 20 at 15 (“...Kobayashi envisions that the ratio of a/b may be 1.0, that is, $a=b$.”); *see also* Paper 18 at 8-9. And although Patent Owner relies on characterizing Kobayashi by subtracting the thickness of the diffuser (*see* Paper 23 at 5), the Board already found that doing so was not required. Paper 20 at 15 (“we do not find it necessary [] to subtract the thickness of Kobayashi’s diffusing plate 5 from Kobayashi’s distance a in order to obtain the claimed second distance”). Thus, Kobayashi discloses a second distance in the range between the third distance and 1.5 times the third distance.

Additionally, Kobayashi’s system objectively discloses distances that result in ratios that are greater than 1. For example, even at Kobayashi’s preferred ratio of 1—even assuming that measurement is from the top of the LED—would still need to account for the height of the LED. Paper 19 at 15-16. And, as Dr. Pattison testified, “In direct backlight operations [like that of Kobayashi] one of skill in the art would typically employ low-profile solid state emitters, typically in the range of 1 to 4 mm to allow other optical components to be placed within the system, and thus reduce the thickness of the panel.” Ex. 1019, ¶44. In other words, a POSITA would have found it obvious to use such low-profile LEDs and accounting for the height differential, the second distance “ a ” if measured from the bottom of the LED would

necessarily be greater than 10 mm (e.g., 11~14 mm) and is in a range between the third distance and 1.5 times the third distance (e.g., 10 mm).

Further, as the Board explained in its Preliminary Guidance, “Kobayashi teaches, or at least suggests, *a second diffusion plane* (e.g., the plane of Kobayashi’s diffusing plate 5) *that is a second distance* (Kobayashi’s distance “a” plus height “H” of LED 1) *from the plurality of solid state emitters* (in fact, from the bottom of the plurality of LEDs 1 in Kobayashi), *wherein the second distance* ($a+H$ in Kobayashi) *comprises a distance that is greater than the third distance* (Kobayashi’s distance b.” Paper 20 at 15. The Preliminary Guidance also found that Kobayashi teaches or at least suggests a second distance that is “less than 1.5 times the third distance.” *Id.*, at 17. Thus, the Board found that Kobayashi teaches a second distance in a range between the third distance and 1.5 times the third distance.

Finally, Patent Owner raises an already rejected argument that Kobayashi teaches away from the claimed range. Paper 23 at 5. However, under the proper understanding of the claim language, where the thickness of the diffuser is not subtracted, Kobayashi teaches a ratio of 1, which falls directly in the claimed range. Additionally, as already explained, a POSITA would not understand Kobayashi’s disclosure of a single preferred embodiment with an upper ratio of 1 as teaching away from other ratios greater than 1. Paper 18 at 9; Paper 19 at 11-15.

B. Substitute Claim 22: Prior Art Involved in the Grounds Discloses the First and Second Distances Defined from the Bottom of the Solid State Emitters

The Board has already found that Kobayashi teaches a first and second distance defined from the bottom of the solid state light emitters. Indeed, the Preliminary Guidance explains:

Kobayashi illustrates, in Figure 1, a multiplane light diffuser that includes a first diffusion plane (Kobayashi's diffusing plate 4) that is *a first distance from the bottom* of the plurality of solid state emitters (e.g., a distance $c + \text{height of LED 1}$ in Fig. 1), and a second diffusion plane (Kobayashi's diffusing plate 5) that is *a second distance from the bottom* of the plurality of solid state emitters (e.g., distance $a + \text{height of LED 1}$ in Fig. 1), and the second distance is different from the first distance (*distance $a + \text{height of LED}$ is different from $c + \text{height of LED}$, see Fig. 1*). Thus, Kobayashi appears to teach (or at least suggest) 'a multiplane light diffuser' that includes 'a first diffusion plane that is a first distance from the bottom of the plurality of solid state emitters and a second diffusion plane that is a second distance from the bottom of the plurality of solid state emitters....

Paper 20, at 18. Thus, the Board has already found that Kobayashi teaches a first and second distance defined from the bottom of the solid state light emitters.

Further, PO's attempt to render its claims patentable by defining a point of measurement from the bottom of the LEDs should fail because simply specifying a starting point of measurement is not a patentable distinction, especially given that

the prior art already discloses the same distances measured from the same reference points.

Kobayashi teaches first and second distances as contemplated by the '382 Patent specification, and thus discloses substitute claim 22. *See*, Paper 19 at 15-16 and 18-19. PO cannot render its claims patentable by merely amending to state that the first and second distances must be measured from the “bottom of” the LEDs, rather than just the LEDs in general, based off of a single, not-to scale drawing. In any event, the prior art already objectively discloses first and second distances defined by the bottom of the LEDs. *Id.* (“The claim simply claims a distance from ‘X’ to ‘Y’ and says nothing about measuring. Kobayashi objectively discloses and explicitly shows such distances (e.g., in Figures 1 and 2) as one of skill in the art would readily appreciate. Ex. 1019, ¶¶41-42.”).

IV. Substitute Claims 21 and 22 Are Not Patentable in View of Other Prior Art

A. The Prior Art Discloses a Second Distance in a Range Between the Third Distance and 1.5 the Third Distance

A second distance in a range between the third distance and 1.5 the third distance is disclosed by Lim in combination with Kobayashi as well.

Lim discloses that a “distance between an LED lamp (or chip) and a diffusion plate is designed to be *within* 5 mm, inclusive” which is a second distance. Ex. 1013, [0047] (emphasis added). Lim further discloses that “a distance between the respective lamps or chips is designed to be *within* 10 mm, inclusive” which is a third

distance. *Id.* (emphasis added); *see also* Paper 20 at 20. Thus, Lim at least describes two **ranges** of the second distance and third distance, for example:

1. a second distance that is in a range of 0-5 mm, and
2. a third distance that is in a range of 0-10 mm.

Ex. 1013, [0047].¹ The preliminary guidance appeared to focus only on the endpoints of the ranges of values disclosed by Lim. *See* Paper 20 at 20 (“The values of 5 mm from a light emitter to a diffusion plate, and 10 mm between adjacent light emitters in Lim, produce a ratio between the distance from the diffuser plane to the light emitters ... of 0.5, which is outside the range of 1 to 1.5 required by proposed substitute claim 21.”). However, because Lim expressly discloses ranges, “**within** 5 mm, inclusive” and “**within** 10 mm, inclusive,” the single example calculated at the two end points does not negate that Lim discloses a full range of values that can meet the claim limitation. *See, e.g., Atofina v. Great Lakes Chem. Corp.*, 441 F.3d 991, 1000 (Fed. Cir. 2006) (“the disclosure of a range is no more a disclosure of the end points of the range than it is of each of the intermediate points.”); *AK Steel Corp. v. Sollac and Ugine*, 344 F.3d 1234, 1241 (Fed. Cir. 2003) (finding that a claim including the phrase “up to about 10%” included 10% and preceding percentages);

¹ Lim also discloses a range of the first distance that is, for example, 0-5 mm. *See* Petition, § VII.C.

In re Fenofibrate Pat. Litig., 910 F. Supp. 2d 708, 712 (S.D.N.Y. 2012), *aff'd*, 499 F. App'x 974 (Fed. Cir. 2013) (similar).

For example, Lim discloses the second distance is “***within*** 5 mm, inclusive,” which could be, for example, 5 mm, and a third distance between adjacent light emitters is “***within*** 10 mm, inclusive,” which could be less than 5 mm, for example, 4 mm because one advantage of Lim’s system is that “the layout of the present invention shows that ***an interval between the lamps realizing the same color is shorter.***” Ex. 1013, [0054] (emphasis added). Such distances would be beneficial because, not only does Lim make it explicit that it is desirable to have a “closer [] interval between the lamps” such that “the total thickness of the backlight unit becomes thinner,” but also, as Dr. Pattison testified, closer spacing between solid state light emitters can lead to better brightness and uniformity. Ex. 1013, [0059], [0019]-[0021], [0024]; Ex. 1003, ¶41, 115-116; Ex. 1019, ¶48-50, 58. Thus, a POSA would readily select a combination using the largest second distance to allow enough space in the chamber for good light mixing (e.g. 5 mm) with a smaller third distance (e.g. 4 mm) to increase brightness and minimize “hot spots.” *See, e.g.*, Ex. 1019, ¶38-40, 48-50. Further, Lim does not disclose any preferred ratio between the two distances to discriminate or teach away the ratio being between 1 and 1.5 as required by the claim. In the above example, a ratio of 1.25 is within the ranges expressly disclosed by Lim, which is within the claimed range of 1-1.5.

Lim’s example is sufficient to show the obviousness of substitute claim 22, as “[a] prior art reference that discloses an overlapping but different range than the claimed range can be anticipatory, even where the prior art range only partially or slightly overlaps with the claimed range.” *Genentech, Inc. v. Hospira, Inc.*, 946 F.3d 1333, 1338 (Fed. Cir. 2020) (citation omitted).

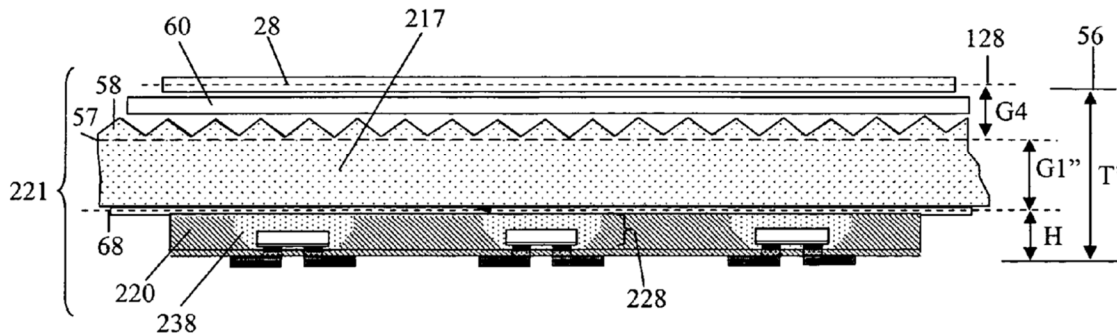
Indeed, the Federal Circuit has even held that “a prima facie case of obviousness exists when the claimed range and the prior art range do not overlap but are close enough such that one skilled in the art would have expected them to have the same properties.” *In re Peterson*, 315 F.3d 1325, 1329 (Fed. Cir. 2003). Thus Lim, which explicitly discloses values that do overlap with those in substitute claim 22, rather than merely being “close” to the values in substitute claim 22 demonstrates the claim’s obviousness as well.

B. Prior Art Discloses First and Second Distances from the Bottom of the Solid State Emitters

A first and a second distance defined from the bottom of the solid state light emitters is disclosed by the combination of Kobayashi and Holman ’096, as found by the Board’s Preliminary Guidance. *See* Paper 20 at 19 (“Petitioner has shown a reasonable likelihood that proposed substitute claim 22 is rendered obvious by Kobayashi (alone or in combination with Holman ’096).”).

Holman ’096 states that “the total system 10 thickness 56, T, in FIG. 1 ... is made the smallest possible commensurate with suppressing visibility of the

discontinuous nature of the light source 1.” Ex. 1024, 15:55-58. As shown in a number of figures, the system thickness T includes H, which is the height of the LEDs. *See, e.g. id.*, Figs. 7, 8A, 13A, 14, 15A-15D.



Id., Fig. 15B.

Thus, Holman '096 discloses distances that include the entire thickness of the LEDs, and therefore meets the claim limitation of a distance defined from the bottom of the LEDs.

In any event, whether a distance is measured from the LEDs in general or specifically the bottom of the LEDs would make no substantive difference because, as Dr. Pattison has explained, LEDs at the time were typically very thin components, for example 1 mm in thickness. Ex. 1019, ¶44. This is supported by a number of prior art references showing that common, off-the shelf LEDs as of the priority date of the patent were very thin, for example 1 mm or 0.5 mm in thickness. *See, e.g.* Ex. 1028, Ex. 1029, Ex. 1019, ¶44. Whether or not the entire thickness of the LEDs, which may be under 1 mm, are included in a measurement, is such a minor difference

from measuring from the LEDs in general that any distinction cannot confer patentability. *See, e.g. PlaSmart, Inc. v. Kappos*, 482 F. App'x 568, 574 (Fed. Cir. 2012) (holding that “minor, predictable variations” to a claim that was obvious over prior art were also not patentable).

V. One of Skill in the Art Would Have Been Motivated to Combine the Features of the Prior Art with Ground I

To the extent PO argues that the features disclosed by the existing art or new art would not be combined with the current grounds, PO is wrong.

First, as to existing art, no additional motivation or modifications are necessary as Kobayashi discloses the elements. And as previously explained, to the extent that PO argues Kobayashi teaches away from using its less preferred distances and ranges, PO's arguments fail. *See, e.g., Paper 19*, at 11-13, 22-24. This is supported by the Preliminary Guidance's finding that Kobayashi renders obvious a second distance greater than the third distance and less than 1.5 the third distance. *Paper 20* at 16-17.

A POSITA would also be motivated to combine Lim and/or Holman '096 with Kobayashi for at least the same reasons previously set forth in Petitioner's opposition to PO's first motion to amend. *See, e.g., Paper 19*, at 24-25. Indeed, each of Kobayashi, Lim, and Holman '096 are directed to backlighting systems utilizing similar components, such as LEDs and optical films. *See, e.g., Ex. 1006*, Abstract, [0003]; *Ex. 1013*, [0057-0058], [0068-0069]); *Ex. 1024*, Abstract, 1:56-64; *Ex.*

1019, ¶57-59. And all three references seek to create brighter, more uniform lighting by modifying the configurations of the LEDs and optical films. *See, e.g.*, Ex. 1006, [0010]-[0011]; Ex. 1013, [0069]-[0070]; Ex. 1024, 5:14-22. Thus, Kobayashi is readily combinable with Lim and/or Holman, and a POSITA would have been motivated to create these combinations to create brighter, more uniform lighting. Ex. 1019, ¶57-59.

VI. Conclusion

The proposed substitute claims are improper and should not be entered.

Respectfully submitted,

By: /s/ Matias Ferrario
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CERTIFICATE OF SERVICE

The undersigned hereby certifies that on the date below a copy of this
PETITIONER’S OPPOSITION TO PATENT OWNER’S REVISED
MOTION TO AMEND has been served via email on the following:

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Dated: November 22, 2024

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