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MARK D. SARALINO ( SHARP ) RENNER, OTTO, BOISSELLE & SKLAR, LLP 1621 EUCLID AVENUE 19TH FLOOR CLEVELAND, OH 44115			ENGLISH, ALECIA DIANE	
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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* NATHAN JAMES SMITH

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Appeal 2019-001466  
Application 14/524,467  
Technology Center 2600

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BEFORE JOHNNY A. KUMAR, JAMES W. DEJMEK, and  
STEPHEN E. BELISLE, *Administrative Patent Judges*.

KUMAR, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant<sup>1</sup> appeals under 35 U.S.C. § 134(a) from the Examiner's Final Rejection of claims 1, 3–12, and 15–23. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

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<sup>1</sup> We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42 (2017). Appellant identifies the real party in interest as Sharp Kabushiki Kaisha. Appeal Br. 2.

*Invention*

The disclosed and claimed invention on appeal is directed to “a display system that has two displays and that has multiple display modes including a very low power consumption reflective display mode.” Spec. p. 1, ll. 4–6.

*Illustrative Claims*

1. A display system, comprising:  
a first pixelated image display;  
a second pixelated image display;  
a specular reflective polarizer disposed between the first image display and the second image display, with the second image display disposed on the viewing side of the display system; and  
an optical diffuser layer disposed between the first image display and reflective polarizer on a light emitting side of the first image display, wherein the optical diffuser maintains a polarisation state of light that passes through said optical diffuser.

19. A display system comprising:  
a first pixelated image display;  
a second pixelated image display;  
a specular reflective polarizer disposed between the first image display disposed on a viewing side of the second image display, with the second image display disposed on a viewing side of the display system;  
an optical diffuser layer disposed between the first image display and reflective polarizer on a light emitting side of the first image display, wherein the optical diffuser maintains a polarisation state of light that passes through said optical diffuser; and  
a controller;  
wherein the controller, the first image display and second image display are configured to selectively operate to pass  
light through the specular reflective polarizer and the optical diffuser in accordance with multiple display functions in which the first image display and the second image display have different viewing properties to a viewer;

and wherein:

the second image display has a liquid crystal layer, a first substrate disposed on a non-viewing side relative to the liquid crystal layer, and a second substrate disposed on the viewing side relative to the liquid crystal layer;

the second image display is a Zenithal Bistable Liquid Crystal Display (ZBD) that is switchable by the controller between a twisted nematic (TN) configuration of liquid crystal molecules and a hybrid aligned nematic (HAN) configuration of liquid crystal molecules;

the first image display emits light linearly polarized in a first direction, and a transmission axis of the reflective polarizer is arranged in the first direction;

when the ZBD is switched into the TN configuration, the alignment direction perpendicular to the first direction;

when the ZBD is switched into the TN configuration, the alignment direction of the liquid crystal molecules of the second substrate is in the first direction; and a polarizer that has a transmission axis in the second direction is disposed on the viewing side of the second image display.

Appeal Br. 1, 3–4 (Claims App.).

### *Rejections*

1. Claims 19–23 are rejected under 35 U.S.C. § 112(b) as being indefinite or failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor regards as the invention.<sup>2</sup>
2. Claims 1, 3, 5, and 8–11 are rejected under 35 U.S.C. § 103 as being

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<sup>2</sup> There appears to be some ambiguity with respect to whether this rejection is before us on appeal. We note the Examiner’s Answer does not contain a “WITHDRAWN REJECTIONS” section. The Examiner filed a proposed Amendment on April 3, 2018 to correct the language of claim 19 that was entered by the Examiner as indicated by the claim language addressed on page 11 of the Final Office Action. But the Advisory Action of May 14, 2018 indicates that

- unpatentable over Erinjippurath in view of Akiyama.
3. Claim 4 is rejected under 35 U.S.C. § 103 as being unpatentable over Erinjippurath and Akiyama in view of Kitagawa.
  4. Claims 6, 7, 19, 20, 22, and 23 are rejected under 35 U.S.C. § 103 as being unpatentable over Erinjippurath in view of Akiyama and further in view of Jones.
  5. Claims 12, 15, and 18 are rejected under 35 U.S.C. § 103 as unpatentable over Erinjippurath and Akiyama in view of Yang.
  6. Claims 16 and 17 are rejected under 35 U.S.C. § 103 as unpatentable over Erinjippurath, Akiyama, and Yang and in view of Mather.
  7. Claim 21 is rejected under 35 U.S.C. § 103 as unpatentable over Erinjippurath, Akiyama, Jones, and in view of Yang.
  8. Claims 1–20<sup>3</sup> are provisionally rejected on the ground of nonstatutory double patenting (OTDP) as being unpatentable over claims 1–17 of copending Application No. 14/524,446.<sup>4</sup>

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Appellant's amendment will not be entered although the continuation sheet to the Advisory Action indicates that the grammatical issue in the claims has been corrected. For purposes of this Appeal, we consider the rejection of claims 19–23 under 35 U.S.C. § 112(b) to have been overcome and do not address this rejection further in our analysis.

<sup>3</sup> Although the Examiner identifies claims 1-20, Appellant has canceled claims 2, 13, and 14.

<sup>4</sup> We note Appellant filed a Terminal Disclaimer on November 15, 2016. The Terminal Disclaimer was entered into the record on November 15, 2016. Accordingly, this rejection is moot. Therefore, this rejection of these claims is not discussed further herein.

*References*

<b>Name</b>	<b>Reference</b>	<b>Date</b>
Jones	US 2004/0165135 A1	Aug. 26, 2004
Yang	US 2006/0023146 A1	Feb. 2, 2006
Kitagawa	US 2007/0242028 A1	Oct. 18, 2007
Akiyama	US 2008/0273145 A1	Nov. 6, 2008
Mather	US 7,813,042 B2	Oct. 12, 2010
Erinjippurath	US 2014/0049734 A1	Feb. 20, 2014

**ANALYSIS**

We have considered all of Appellant's arguments and any evidence presented. We have reviewed Appellant's arguments in the Briefs, the Examiner's obviousness rejections, and the Examiner's responses to Appellant's arguments. Appellant proffers sufficient argument and evidence to persuade us of error regarding the Examiner's underlying factual findings and ultimate legal conclusion of obviousness. In our analysis below, we highlight and address specific findings and arguments for emphasis.

**Issue:** Under 35 U.S.C. § 103, does the Examiner's proposed combination of modifying the structure of Erinjippurath with the teachings of Akiyama results in an inoperable combination?

The Examiner finds:

it would have been obvious to one having ordinary skill in the art at the time of the invention to allow the usage of a reflective polarizer similar to that which is taught by Akiyama to be included in a system similar to that which is taught by Erinjippurath to allow for a reflective viewing mode while reducing power consumption (see Akiyama; paragraph 11).

Final Act. 5.

Regarding the Examiner's proffered rationale to modify Erinjippurath, with the teachings of Akiyama, Appellant contends:

With reference to independent claims 1 and 19, the Examiner states that the reflective polarizer 30 of the claimed invention corresponds to polarizer 720 described in Erinjippurath. The structure and function of a reflective polarizer versus a conventional absorbing polarizer are very different. The polarizer 720 in Erinjippurath is not reflective, and thus Erinjippurath does not teach the claimed elements. Although a reflective polarizer 710 is described by Erinjippurath, the position of the reflective polarizer 710 is never between the laminated achromatic LCD stack and the laminated color LCD stack, and thus the configuration of Erinjippurath differs from the claimed configuration. As claimed, the reflective polarizer is positioned between the first (lowermost) pixelated image display 10 and the second (uppermost) pixelated image display 20, and more particularly between the second pixelated image display and the polarization preserving diffuser. In this regard, secondary reference Akiyama discloses a reflective polarizer positioned between the first LC panel 10 and second LC panel 20. However, there is no basis to incorporate a reflective polarizer into Erinjippurath. As Erinjippurath has no reflective mode, adding a reflective element internally into Erinjippurath would undermine Erinjippurath's operation for its intended purpose of using transmission properties such that the achromatic LCD stack is used to enhance the contrast ratio of the color LCD stack.

Appeal Br. 7.

Appellant further argues:

Referring to modified Erinjippurath, with addition of the reflective polariser 710 between the two image panels, Erinjippurath would be unsuitable for use as a reflective display because virtually no ambient light (light from the viewing side) will be reflected by the reflective polariser 710 to be viewed by a viewer. Ambient light from the viewing side must pass through the color LCD panel before reflecting back from the reflective polariser 710.

....

With reference to the diagram above [shown on page 5 of the Reply Brief] for modified Erinjippurath, "white" light paths are shown

by solid lines, with filtered light paths being shown by the dashed lines. The color filters of the color LCD panel described by Erinjippurath will transmit approximately 1/3 of light incident on the color filters. Light path 1 (LP1) shows the possible paths for light incident on a color filter, for example the red filter. First, the green and blue light rays will be absorbed → reducing reflection by at least 2/3. Secondly, only red rays that are reflected back through a red filter will exit the display, as shown by LP1. By contrast, although LP2 and LP3 are reflected by the reflective polariser 710, this red light is absorbed by the green filter (LP2) and blue filter (LP3). Similar light paths occur for ambient light incident on the green filter and blue filter. In summary, therefore, virtually no light will be reflected back through the color LCD panel, and therefore a specular reflective display function is not possible in Erinjippurath as claimed. Conversely, the ZBD panel would not work in the configuration of Erinjippurath on the viewing side because a ZBD panel as known to those of ordinary skill in the art is black and white (no color) and does not have TFTs.

Reply Br. 5–6.

We agree with Appellant because prior art must be evaluated for what the reference would have fairly suggested to one of ordinary skill in the art at the time of the invention. *Merck & Co., Inc. v. Biocraft Labs., Inc.*, 874 F.2d 804, 807–808 (Fed. Cir. 1989). “If references taken in combination would produce a ‘seemingly inoperative device,’ . . . such references teach away from the combination and thus cannot serve as predicates for a prima facie case of obviousness.” *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1354 (Fed. Cir. 2001) (citation omitted); *see also Tec Air, Inc. v. Denso Mfg. Michigan Inc.*, 192 F.3d 1353, 1360 (Fed. Cir. 1999) (“If when combined, the references ‘would produce a seemingly inoperative device,’ then they teach away from their combination.”) (quoting *In re Spinnoble*, 405 F.2d 578, 587 (CCPA 1969); *also citing In re Gordon*, 733 F.2d

900, 902 (Fed. Cir. 1984) (where the court concluded that, essentially, “French teaches away from the board’s proposed modification” because “if the French apparatus were turned upside down, it would be rendered inoperable for its intended purpose”).

Moreover, although one of ordinary skill in the art may understand that two references *could be* combined as reasoned by the Examiner, this does not imply a motivation to combine the references. *Personal Web Techs., LLC v. Apple, Inc.*, 848 F.3d 987, 993–94 (Fed. Cir. 2017); *see also Belden Inc. v. Berk–Tek LLC*, 805 F.3d 1064, 1073 (Fed. Cir. 2015) (“[O]bviousness concerns whether a skilled artisan not only *could have made* but *would have been motivated to make* the combinations or modifications of prior art to arrive at the claimed invention.”); *InTouch Techs., Inc. v. VGO Communications, Inc.*, 751 F.3d 1327, 1352 (Fed. Cir. 2014). “Obviousness requires more than a mere showing that the prior art includes separate references covering each separate limitation in a claim under examination.” *Unigene Labs., Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1360 (Fed. Cir. 2011). Additionally, we are mindful “of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning.” *KSR*, 550 U.S. at 421 (citing *Graham v. Deere*, 383 U.S. 1, 36 (1966)).

Here, the Examiner has not set forth sufficient evidence or technical reasoning persuasive to rebut Appellant’s arguments that the proffered combination would result in an inoperable device. Accordingly, we are persuaded by Appellant’s arguments that the ordinarily skilled artisan would not have been motivated to combine the references as suggested by the Examiner.

Thus, constrained by the present record, we reverse the Examiner’s obviousness rejection of independent claim 1 over the cited combination of Erinjippurath and Akiyama. For the same reasons, we also reverse the Examiner’s obviousness rejections of independent claim 19 and each dependent claim on appeal.

Accordingly, as discussed above, we reverse the Examiner’s obviousness rejections of all claims 1, 3–12, and 15–23 on appeal.

### CONCLUSION

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1, 3, 5, 8–11	103	Erinjippurath, Akiyama		1, 3, 5, 8–11
4	103	Erinjippurath, Akiyama, Kitagawa		4
6, 7, 19, 20, 22, 23	103	Erinjippurath, Akiyama, Jones		6–7, 19, 20, 22, 23
12, 15, 18	103	Erinjippurath, Akiyama, Yang		12, 15, 18
16, 17	103	Erinjippurath, Akiyama, Yang, Mather		16, 17
21	103	Erinjippurath, Akiyama, Jones, Yang		21
19–23	112(b)	Indefiniteness <sup>5</sup>		
1–20		Provisional Non-statutory OTDP <sup>6</sup>		

<sup>5</sup> The Indefiniteness Rejection is dismissed as moot, *supra* (footnote 2).

<sup>6</sup> The Provisional OTDP Rejection is dismissed as moot, *supra* (footnote 4).

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<b>Claims Rejected</b>	<b>35 U.S.C. §</b>	<b>Reference(s)/Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
<b>Overall Outcome</b>				1, 3-12, 15-23

REVERSED