

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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VALEO NORTH AMERICA, INC., VALEO S.A.  
VALEO GmbH, VALEO SCHALTER UND SENSOREN GmbH,  
and CONNAUGHT ELECTRONICS LTD.,  
Petitioner,

v.

MAGNA ELECTRONICS, INC.,  
Patent Owner.

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Case IPR2014-01203  
Patent 7,859,565 B2

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Before JAMESON LEE, PHILLIP J. KAUFFMAN, and  
MATTHEW R. CLEMENTS, *Administrative Patent Judges*.

CLEMENTS, *Administrative Patent Judge*.

DECISION  
Institution of *Inter Partes* Review  
*37 C.F.R. § 42.108*

I. INTRODUCTION

Valeo, North America, Inc., Valeo S.A., Valeo GmbH, Valeo Schalter und Sensoren GmbH, and Connaught Electronics Ltd. (collectively, “Petitioner”) filed a Petition requesting *inter partes* review of claims 6, 14,

21–24, 33–38, 43–46, and 49 (“the challenged claims”) of U.S. Patent No. 7,859,565 B2 (Ex. 1001, “the ’565 patent”). Paper 1 (“Pet.”). Magna Electronics, Inc. (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). We have jurisdiction under 35 U.S.C. § 314, which provides that an *inter partes* review may only be authorized if “the information presented in the petition . . . and any [preliminary] response . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a). Upon consideration of the Petition and Preliminary Response, we determine that the information presented by Petitioner establishes a reasonable likelihood that Petitioner would prevail in showing the unpatentability of claims 6 and 33 of the ’565 patent, but does not establish a reasonable likelihood that Petitioner would prevail in showing the unpatentability of claims 14, 21–24, 34–38, 43–46, and 49. Accordingly, pursuant to 35 U.S.C. § 314, we institute *inter partes* review of claims 6 and 33 of the ’565 patent.

#### *A. Related Proceedings*

Petitioner and Patent Owner indicate that the ’565 patent is involved in *Magna Electronics Inc., v. Valeo, Inc.*, No. 2:13-cv-11376-DRG (filed on Mar. 28, 2013) (E.D. Mich.). Pet. 4; Paper 5, 3. The ’565 patent also is the subject of another *inter partes* review: IPR2014-00220 (the “220 IPR”). Pet 4. The Petition challenges claims that were challenged, but not instituted, in the 220 IPR.

Related U.S. Patent No. 7,877,175 B2 is the subject of *inter partes* reviews designated IPR2014-00227 and IPR2014-001206. Related U.S. Patent No. 8,386,114 B2 is the subject of *inter partes* reviews designated

IPR2014-00222 and IPR2014-001204. Related U.S. Patent No. 7,991,522 B2 is the subject of *inter partes* reviews designated IPR2014-00221 and IPR2014-01208.

### B. The '565 Patent

The '565 patent relates generally to vision systems for vehicles and, more particularly, to rearview vision systems that provide the vehicle operator with scenic information in the direction rearward of the vehicle. Ex. 1001, 1:18–21. The '565 patent discloses a rearview vision system having at least two image capture devices positioned on the vehicle and directed rearwardly with respect to the direction of travel of the vehicle. *Id.* at 1:27–31. The system includes a display, which combines the captured images into an image that would be achieved by a single rearward-looking camera having a view unobstructed by the vehicle. *Id.* at 1:31–35.

Figure 3 is reproduced below.

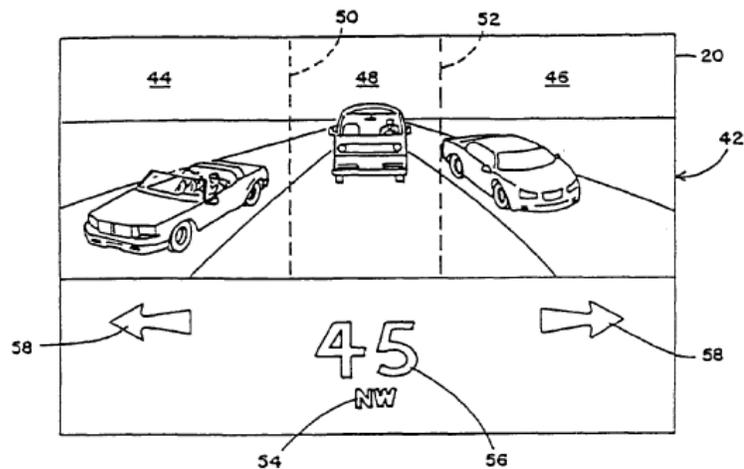


FIG. 3

Figure 3 depicts a display according to the invention. *Id.* at 3:25–26. As shown, image display device 20 displays a composite image 42 made up of a left image portion 44, a right image portion 46, and a center image portion

48. *Id.* at 5:48–50. Each image portion 44–48 is reversed from the image as captured by the respective image capture device 14, 16 utilizing conventional techniques. *Id.* at 5:40–43. As may be best seen in Figure 3, the image portions at boundaries 50 and 52 are continuous whereby composite image 42 is a seamless panoramic view rearwardly of the vehicle. *Id.* at 5:59–62. As also is apparent from Figure 3, central image portion 48 is narrower than either left image portion 44 or right image portion 46. *Id.* at 5:62–64. This is a result of reducing horizontal field of view 26 of center image capture device 16 sufficiently to move points P, and thus overlap zones 32 and 34, a sufficient distance behind vehicle 10 to reduce redundant and duplicative images between image portions 44–48. *Id.* at 5:64–6:6. Composite image 42 provides a clear image, which avoids confusion and simplifies the task of extracting information from the multiple image portions 44–48. *Id.* at 6:1–4. As may also be seen by reference to Figure 3, display 20 may additionally include indicia such as the readout of a compass 54, vehicle speed 56, turn signals 58, and the like as well as other graphical or video displays, such as a navigation display, a map display, and a forward-facing vision system. *Id.* at 6:4–9.

### *C. Illustrative Claims*

Claim 6 depends from independent claim 1 (not challenged). Claims 1 and 6 are reproduced below:

1. A vision system for a vehicle, comprising:  
a vehicle equipped with at least two image capture devices, said two image capture devices capturing images external of the vehicle, said two image capture devices having overlapping fields of view;  
said vehicle equipped with an image processor, wherein image data captured by said two image capture devices are

processed by said image processor, said image processor producing a synthesized image from said image data captured by said two image capture devices, and wherein said synthesized image comprises a composite image of said image data captured by said two image capture devices without duplication of image information;

said vehicle equipped with a display screen displaying said synthesized image, said synthesized image displayed as a single image on a single display screen that is viewable by a driver of said vehicle when the driver is normally operating said vehicle, wherein the displayed image displayed on said single display screen includes an image portion from an image captured by each of said two image capture devices; and

said image processor processing said image data by at least one technique chosen from luminant blending, chrominant blending, dynamic range extending, pixel group compensation, anti-blooming, multiple exposure, image morphing compensation and image warping compensation.

6. The vision system for a vehicle of claim 1, wherein said display screen is at least one of (a) positioned within the field of view of the driver without substantially obstructing the view through a windshield, (b) mounted to one of a dashboard, a facia, a header and a windshield of the vehicle, (c) mounted at a position conventionally occupied by an interior rearview mirror, (d) a display of one of a projected and a virtual image and (e) a heads-up display.

Ex. 1001, 12:49–13:9, 13:36-43.

#### *D. References Relied Upon*

Petitioner relies upon the following references:

Noso (“Nissan”)<sup>1</sup>                      JP H3-99952                      Apr. 25, 1991                      Ex. 1003

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<sup>1</sup> Nissan is a Japanese language document. Ex. 1003. Unless indicated otherwise, all citations to Nissan in this decision will refer to its certified

Nimura (“Aishin”) <sup>2</sup>	JP A64-14700	Jan. 18, 1989	Ex. 1005
G. Wang, et al., <i>CMOS Video Cameras</i> , EURO ASIC 1991, 100-03, May 27–31, 1991 (“Wang”)			Ex. 1007
Suzuki (“Niles”) <sup>3</sup>	JP 59-114139	July 2, 1984	Ex. 1009
Matsutani (“Hino”) <sup>4</sup>	JP S62-16073	April 10, 1987	Ex. 1012
Imai (“Honda”) <sup>5</sup>	JP H1-168538	July 4, 1989	Ex. 1014
Ozaki (“Fujitsu”) <sup>6</sup>	JP H5-213113	Aug. 24, 1993	Ex. 1016
Secor	U.S. 5,289,321	Feb. 22, 1994	Ex. 1020

*E. The Asserted Grounds of Unpatentability*

Petitioner argues that the challenged claims are unpatentable based on the following grounds:

<b>References</b>	<b>Basis</b>	<b>Claims Challenged</b>
Nissan alone or with Secor	§ 103	6
Nissan and Hino	§ 103	14, 43, 44, 46, and 49
Nissan, Hino, Aishin, and Wang	§ 103	21–24

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English language translation. Ex. 1004.

<sup>2</sup> Aishin is a Japanese language document. Ex. 1005. Unless indicated otherwise, all citations to Aishin in this decision will refer to its certified English language translation. Ex. 1006.

<sup>3</sup> Niles is a Japanese language document. Ex. 1009. Unless indicated otherwise, all citations to Niles in this decision will refer to its certified English language translation. Ex. 1010.

<sup>4</sup> Hino is a Japanese language document. Ex. 1012. Unless indicated otherwise, all citations to Hino in this decision will refer to its certified English language translation. Ex. 1013.

<sup>5</sup> Honda is a Japanese language document. Ex. 1014. Unless indicated otherwise, all citations to Honda in this decision will refer to its certified English language translation. Ex. 1015.

<sup>6</sup> Fujitsu is a Japanese language document. Ex. 1016. Unless indicated otherwise, all citations to Fujitsu in this decision will refer to its certified English language translation. Ex. 1017.

<b>References</b>	<b>Basis</b>	<b>Claims Challenged</b>
Nissan, Hino, Aishin, and Niles	§ 103	34–38
Nissan, Hino, and Aishin	§ 103	45
Nissan, Aishin, Niles, Fujitsu, and Honda	§ 103	33

## II. ANALYSIS

### A. *Real Parties-in-Interest*

The Petition identified five entities as the real parties-in-interest, including Valeo, Inc. and Valeo GmbH. Pet. 3. Patent Owner contends that Petitioner failed to identify all real parties-in-interest as required by 35 U.S.C. § 312(a)(2) because it included Valeo, Inc., instead of Valeo North America, Inc., and because “[i]t is unclear from the record whether ‘Valeo GmbH’ in the earlier petitions is the same entity as the ‘Valeo GmbH’ of the present Petition.” Prelim. Resp. 4–6. After Patent Owner filed its Preliminary Response, we authorized the parties to file additional briefing on the real party-in-interest issue. Papers 7, 11. Petitioner filed a brief (Paper 10) to which Patent Owner responded (Paper 12).

#### 1. *Valeo, Inc.*

Patent Owner contends that, at the time the Petition was filed, Petitioner knew or should have known that Valeo, Inc. had ceased to exist due to merger into Valeo North America, Inc. Prelim. Resp. 4–5; Paper 12, 1. Indeed, prior to filing of the Petition, Valeo, Inc. merged with another entity to become Valeo North America, Inc.<sup>7</sup> Paper 10, 1–2; Ex. 1022. However, Valeo North America, Inc. is the legal successor to the original

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<sup>7</sup> The merger was effective December 31, 2013, and the Petition was filed on July 25, 2014. Ex. 1022, 1-2; Paper 1.

entity (Valeo, Inc.). *See* Paper 10, 1–2; Ex. 1022, 1–2; Prelim. Resp. 4–5; Paper 12, 1. The Petition was technically in error insofar as it named Valeo, Inc. when, at that time, the correct name of the entity was Valeo North America, Inc. However, because Valeo North America, Inc. is the legal successor to Valeo, Inc., the Petition was correct substantively insofar as it identified the entity as a real party-in-interest.<sup>8</sup> We note, also, that Patent Owner articulates no prejudice suffered by it due to the use by Petitioner of “Valeo, Inc.” instead of “Valeo North America, Inc.” For example, Patent Owner does not argue that if the Petition listed correctly “Valeo North America, Inc.” instead of “Valeo, Inc.,” then Petitioners would lack standing, or the Petition would be barred under 35 U.S.C. § 315. Accordingly, we are not persuaded that the listing of “Valeo, Inc.” instead of “Valeo North America, Inc.” precludes us from considering the Petition.

## 2. *Valeo GmbH*

According to Patent Owner, prior to filing of the Petition, an entity named Valeo Holding Deutschland GmbH was renamed to, and possibly consolidated with, the original Valeo GmbH, so that it is unclear if the Valeo GmbH named in the Petition is the correct entity. Prelim. Resp. 5–6. Patent Owner’s Response to Petitioner’s Brief addresses only Valeo, Inc., and does not further address Valeo GmbH. *See* Paper 12. This suggests that Patent Owner no longer considers there to be an issue regarding identifying Valeo

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<sup>8</sup> Petitioner has since filed an updated mandatory notice to reflect that Valeo North America, Inc., previously Valeo, Inc., is a real party-in-interest. Paper 9.

GmbH as a real party-in-interest. Nevertheless, out of an abundance of caution, we address the issue.

Prior to the filing of the Petition, Valeo GmbH merged into and transferred assets to Valeo Holding Deutschland GmbH.<sup>9</sup> Paper 10, 1-2; Ex. 1023,<sup>10</sup> 4, 10. Valeo Holding Deutschland GmbH is the legal successor to Valeo GmbH, and continues to hold the name Valeo GmbH. *Id.* Therefore, the Petition correctly identified Valeo GmbH (which is the name of Valeo Holding Deutschland GmbH) as a real party-in-interest.

### 3. Conclusion

For the foregoing reasons, we find that the Petition identifies all real parties-in-interest as required by 35 U.S.C. § 312(a)(2).

#### B. 35 U.S.C. § 325(d)

The Decision to Institute in general, and determinations under 35 U.S.C. § 325(d) in particular, are discretionary decisions.<sup>11</sup>

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<sup>9</sup> The merger was effective January 1, 2013, and the Petition was filed on July 25, 2014. Paper 10, 1-2; Ex. 1023, 4, 10.

<sup>10</sup> Exhibit 1023 includes page numbers at the top center of the page and Petitioner added exhibit page numbers to the bottom right of each page. On the tenth page of the exhibit, the correct number is at the top, but the added number (i.e. "1023-011") is incorrect. We refer to the correct numbering sequence at the top of each page.

<sup>11</sup> See 35 U.S.C. § 314(a); see generally *Intelligent Bio-Systems, Inc. v. Illumina Cambridge Ltd.*, Case IPR2013-00324, slip op. at 4 (PTAB Nov. 21, 2013) (Paper 19) ("Congress did not mandate that an *inter partes* review must be instituted under certain conditions. Rather, by stating that the Director—and by extension, the Board—*may not* institute review *unless* certain conditions are met, Congress made institution discretionary."); see also 35 U.S.C. § 325(d) (stating that the Director "may" take into account whether the same or substantially the same prior art or arguments previously

Patent Owner asks that the Board exercise its discretion under 35 U.S.C. § 325(d) to reject the Petition because it raises substantially the same arguments and prior art as raised in the 220 IPR. Prelim. Resp. 2, 7–12. In support of this argument, Patent Owner contends that the Board has held consistently that a petitioner must explain adequately why a follow-on petition is not redundant, and Petitioner has not done so in this case. Prelim. Resp. 7 (citing *Medtronic, Inc., v NuVasive, Inc.*, Case IPR2014-00487, slip op. at 7 (PTAB Sept. 11, 2014) (Paper 8)).

The citation of a single case does not demonstrate what the Board has consistently held. Also, the case cited is not precedential and does not set forth a “requirement” that a petitioner must explain adequately why a follow-on petition is not redundant. Contrary to what Patent Owner’s argument implies, there is no per se rule that a Petitioner must demonstrate how the Petition is not redundant to any prior art and argument presented to the Office. Rather, 35 U.S.C. § 325(d) is discretionary, stating only that the Board “may” consider whether the same or substantially the same prior art or arguments were previously presented to the Office.

Patent Owner also contends that that Board has held consistently that the addition of prior art and argument that are different and non-cumulative does not preclude rejecting a petition under § 325(d). Prelim. Resp. 8–9 (citing *Unilever, Inc., v. Procter & Gamble Co.*, Case IPR2014-00506, slip op. at 6 (PTAB July 7, 2014) (Paper 17)). However, such argument does little to demonstrate why we should exercise our discretion to reject the Petition at hand.

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were presented to the Office).

In support of the argument that we should reject the Petition, Patent Owner provides the following chart:<sup>12</sup>

Claims	220 IPR	Present Petition
6	Nissan	Nissan or Nissan, Secor
14, 43, 44, 46, 49	Nissan	Nissan, Hino
21–24	Nissan, Aishin, Wang	Nissan, Hino, Aishin, Wang
33	Nissan, Aishin, Niles	Nissan, Aishin, Niles, Fujitsu, Honda
34–38	Nissan, Aishin, Niles	Nissan, Hino, Aishin, Niles
45	Nissan, Aishin	Nissan, Hino, Aishin

We are not persuaded that the art and arguments presented in this Petition are the same or substantially the same prior art or arguments previously presented to the Office. For example, none of the grounds of unpatentability in the current Petition rely upon exactly the same combination of prior art as the grounds of unpatentability asserted against the same claims in the 220 IPR. For example, the Petition relies upon a combination of Nissan and Hino for disclosing “approximates a view from a single location,” as claimed, while in contrast the petition in the 220 IPR relied upon Nissan alone. 220 Decision to Institute, 21–22; Pet. 34. Similar distinctions are present for each ground of unpatentability in the Petition.

Consequently, we decline to exercise our discretion under 35 U.S.C. § 325(d) in this case.

### *C. Claim Construction*

In an *inter partes* review, claim terms in an unexpired patent are interpreted according to their “broadest reasonable construction in light of the specification of the patent” in which they appear. 37 C.F.R. § 42.100(b);

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<sup>12</sup> Prelim. Resp. 10.

Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,766 (Aug. 14, 2012). Also, claim terms are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

1. “*image portion*”

Independent claims 1, 11, 18, 25, 30, 41, 43, 46, and 47 recite “image portion.” Petitioner does not propose a construction of this term. Patent Owner proposes that this term be construed to mean “a derived part of a captured image that is less than the entire image.” Prelim. Resp. 14–16 (citing Ex. 1001, 7:22–25, 9:3–8; Ex. 2002 (defining “portion” as “a part of a larger amount, area, etc.” and “an often limited part of a whole.”)).

The ’565 patent does not define the term “image portion.” Patent Owner cites column 7, lines 22 to 25, but that disclosure is not determinative because it states only a preference. Ex. 1001, 7:22–25 (“However, the portion of the image displayed is *preferably* biased toward the downward portion of the captured image . . . .”) (emphasis added). Patent Owner also cites column 9, lines 3 to 8, but that disclosure does not inform us as to whether the described image portions—right image portion 46’, left image portion 44’, and central image portion 48’—are less than the entire image captured by image capture devices 14, 16.

Elsewhere in the ’565 patent, the terms “left image portion 44,” “right image portion 46,” and “center image portion 48” are used while describing Figure 3. *Id.* at 5:48–50. The ’565 patent states explicitly that “[e]ach image portion 44–48 is reversed form the image as captured by the respective image capture device 14, 16 utilizing conventional techniques.”

*Id.* at 5:50–53. The ’565 patent does not, however, describe each image portion 44, 46, and 48 as comprising *less* than the entire image captured by the respective image captures devices 14, 16. Based on our review, there is no such disclosure anywhere in the ’565 patent. Accordingly, we are not persuaded that Patent Owner’s proposed construction is the broadest reasonable interpretation.

Regardless of how “image portion” is construed, we note that the independent claim limitations in which “image portion” is recited set a minimum—not a maximum—for what must be included in a displayed image. For example, independent claims 1, 30, 41, 46, and 47 recite “the displayed [composite] image displayed on said single display screen includes an image portion.” The other independent claims recite “image portion” in similar context. *See, e.g.*, Claims 11, 18, and 25 (“the displayed image including an image portion”); Claims 43 and 44 (“wherein the displayed image displayed on said single display screen comprises a left image portion”). These limitations require that the displayed [composite] image include an “image portion,” but do not preclude the displayed [composite] image from including more than a portion. The limitations do not, for example, require that the displayed [composite] image include *no more than* an image portion.

On this record, and for purposes of this Decision, we determine that “image portion” does not require further express construction.

*D. Claim 6 – Obviousness over Nissan alone or with Secor*

Petitioner argues that claim 6 is unpatentable under 35 U.S.C. § 103(a) as obvious over Nissan alone or with Secor. Pet. 26–30.

Nissan (Exhibit 1004)

Nissan describes a device for displaying the positions of other vehicles, the states of obstructions, the center line, and other information about the vehicle's surroundings to the driver by using cameras. Ex. 1004, 2:16–20. The system of Nissan includes a plurality of cameras installed in a vehicle, a means for performing a perspective conversion that converts the images from those cameras to other coordinates, a means for combining the converted images into one image related to an image of the vehicle itself, and a display for displaying the image to the occupants. *Id.* at 3:15–21.

Figure 1 is reproduced below:

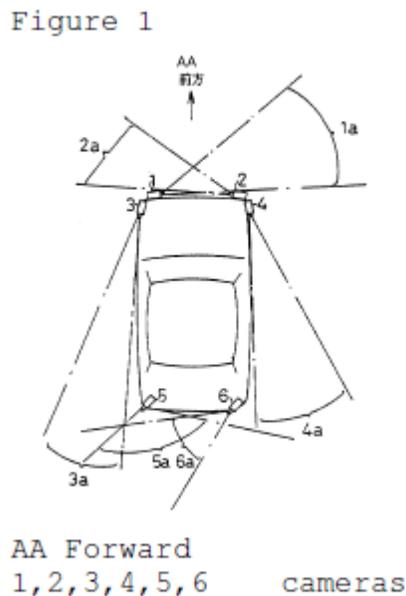


Figure 1 is an overhead view of a vehicle equipped with the system of Nissan. *Id.* at 3:34–35. As depicted in Figure 1, a plurality of cameras 1–6 are setup so that the respective fields of view, 1a–6a, cover the environment surrounding the vehicle. *Id.* at 3:36–38. Images from the cameras are input and converted to other coordinates by a perspective conversion. *Id.* at p. 4:15–17. The converted images are then combined into one image by an

image display unit and displayed on a monitor positioned at the driver's seat. *Id.* at 4:17–20. The vehicle's position is drawn simultaneously in a diagram. *Id.* at 4:22–24. The displayed position of the vehicle is offset from the center of the image screen depending on signals corresponding to the gear position, the vehicle speed, and the operation of the directional indicator. *Id.* at 4:24–27.

Figure 3(a) is reproduced below.

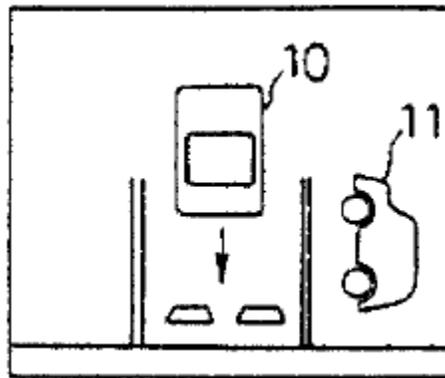


Figure 3(a) is an example of the display results on display when backing up. *Id.* at 4:29–31, 7:30–32. Specifically, Figure 3(a) shows backing up in the direction of the arrow and is a fixed display with vehicle 10 in the upper part in the center. *Id.* at 4:31–33. Neighboring vehicle 11 is displayed in a side view. *Id.* at 4:33–35. According to Nissan, by looking at the display device, the driver can behave appropriately when backing up. *Id.* at 6:23–25.

#### Secor (1020)

Secor describes a rearward viewing arrangement for a motor vehicle that permits an operator to view traffic conditions from the left and right sides of the vehicle and directly behind the vehicle. Ex. 1020, Abstract. Figures 3 and 4 show possible positions for in-dash rear view display assembly 36, and for alternative hybrid rear view display 38, the latter being

positioned at the usual location of a conventional center rear view mirror. *Id.* at 4:23–27. Figure 5 shows in-dash display 36 in combination with the digital instrument cluster. *Id.* at 4:28–31.

Analysis

In light of the arguments and evidence, Petitioner has established a reasonable likelihood that claim 6 is unpatentable as obvious over Nissan alone.

Claim 6 depends from independent claim 1. Petitioner cites Nissan for teaching the limitations of independent claim 1. Pet. 28–30. We are persuaded that Petitioner’s citations support Petitioner’s contentions.

Claim 6 recites:

wherein said display screen is at least one of (a) positioned within the field of view of the driver without substantially obstructing the view through a windshield, (b) mounted to one of a dashboard, a facia, a header and a windshield of the vehicle, (c) mounted at a position conventionally occupied by an interior rearview mirror, (d) a display of one of a projected and a virtual image and (e) a heads-up display.

Petitioner contends that Nissan teaches limitations (a) and (b). Pet. 30 (citing Ex. 1004, 4:19). Nissan teaches that TV monitor 9 is positioned at the driver’s seat. Ex. 1004, 4:19. On this record, we are persuaded that Nissan supports Petitioner’s contention.

We are not persuaded by Patent Owner’s sole argument that Nissan does not teach an “image portion” because its “displayed image is created using the *entire* image captured by each camera.” Prelim. Resp. 24–27 (emphasis original). We declined to adopt Patent Owner’s construction of “image portion.” As we noted above, the independent claims require at least

a portion of an image, but do not preclude the displayed image from including the entirety of the image captured.

Conclusion

On this record, we are persuaded that Petitioner has established a reasonable likelihood that it would prevail in showing that claim 6 is unpatentable as obvious over Nissan alone.

*E. Claims 14, 21–24, 34–38, 43–46, and 49 –  
Obviousness based upon Nissan and Hino*

Petitioner argues that (1) claims 14, 43, 44, 46, and 49 are unpatentable under 35 U.S.C. § 103(a) as obvious over Nissan and Hino; (2) claims 21–24 are unpatentable under 35 U.S.C. § 103(a) as obvious over Nissan, Hino, Aishin, and Wang; (3) claims 34–38 are unpatentable under 35 U.S.C. § 103(a) as obvious over Nissan, Hino, Aishin, and Niles; and (4) claim 45 is unpatentable under 35 U.S.C. § 103(a) as obvious over Nissan, Hino, and Aishin. Pet. 30–46, 52–58.

Hino (1013)

Hino describes a road-surface view display device that displays at a driver's seat the road surface surrounding the automobile. Ex. 1013, 1. Figure 1 is reproduced below.

Fig. 1

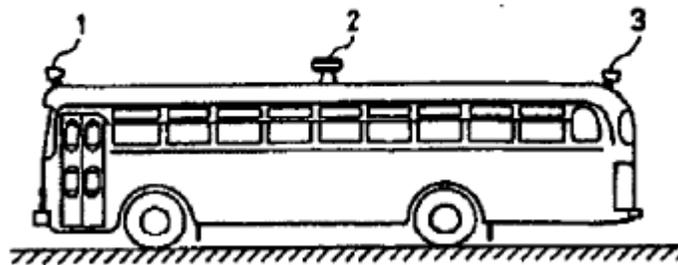


Figure 1 depicts a side view of an automobile equipped with the invention of Hino. *Id.* at 2. Television camera 1 is mounted to the roof of the automobile at the front end, television camera 2 is mounted to the roof at a center portion of the automobile, and television camera 3 is mounted to the roof at the rear end. *Id.* Each television camera has a wide-angle lens to obtain a wide view of the road surface in the vicinity of the automobile. *Id.* CPU 18 synthesizes the video signals from television cameras 1–3 into a video signal that shows the vicinity of the automobile as seen from directly above the automobile. *Id.* Figure 3 is reproduced below.

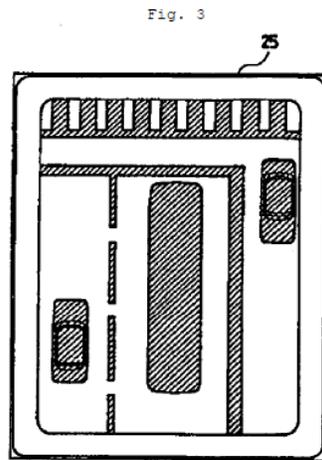


Figure 3 is an example of the synthesized video signal showing the road surface in the vicinity of the automobile. *Id.* at 3.

### Analysis

In light of the arguments and evidence, Petitioner has not established a reasonable likelihood that claims 14, 21–24, 34–38, 43–46, and 49 are unpatentable as obvious over Nissan, Hino, and various other references.

Dependent claim 14 depends from independent claim 11. Dependent claims 21–24 depend from independent claim 18. Dependent claims 34–38 depend, indirectly, from independent claim 30. Dependent claim 45 depends

from independent claim 44. Dependent claim 49 depends from independent claim 47.

Each of the independent claims requires that the recited image capture devices are directed generally rearwardly. *See, e.g.*, claim 11 (“directed rearwardly”), claim 18 (“having a respective generally rearward field of view,”), claim 30 (“directed rearwardly”), claim 44 (“directed generally rearwardly and sidewardly”), and claim 47 (“directed generally rearwardly and sidewardly”). Petitioner relies upon Nissan’s cameras 3, 4, 5, and 6 each directed rearwardly of the equipped vehicle as teaching these limitations. *See, e.g.*, Pet. 33.

Petitioner proposes to modify Nissan in view of Hino “to obtain a more ideal area view, as shown in Hino” (Pet. 32) and “a more accurate bird’s eye view as described in Hino.” Petitioner’s expert, Dr. George Wolberg, testifies as follows:

[A] person of ordinary skill in the art would have found it obvious to improve the picture that is shown to the driver of Nissan to depict the ideal aerial view that is shown in Fig. 3 of Hino, which is clearly what Nissan is attempting to show the driver, based on the calculations performed in Hino (via [incorporation] of the JP Handbook, Pet. Ex. 1019) to transform the images from the multiple cameras shown mounted on the vehicle in Nissan such that the images are mapped to the ground/floor.”

Ex. 1011 ¶ 168. The techniques taught in Hino, however, relate to downward-facing cameras with wide angle lenses to obtain a wide view of the road surface in the vicinity of the automobile. Ex. 1013, Fig. 1, 2. Nissan’s cameras, in contrast, are rear-facing. Ex. 1004, Fig. 1. Petitioner does not address whether or how a person of ordinary skill in the art would have modified the orientation of Nissan’s rear-facing cameras in view of

Hino. To the extent that Nissan's cameras remained rear-facing, Petitioner does not explain adequately how the images captured by Nissan's rear-facing cameras can be mapped to the ground/floor using the calculations taught by Hino, which are intended for downward-facing cameras. To the extent that Nissan's cameras were modified to face downward, they would no longer teach the claim limitations discussed above requiring the recited image capture devices to be directed rearwardly.

Conclusion

On this record, we are not persuaded that Petitioner has established a reasonable likelihood that it would prevail in showing that claims 14, 21–24, 34–38, 43–46, and 49 are unpatentable as obvious over Nissan, Hino, and various other references.

*F. Claim 33 – Obviousness over Nissan, Aishin, Niles, Fujitsu, and Honda*

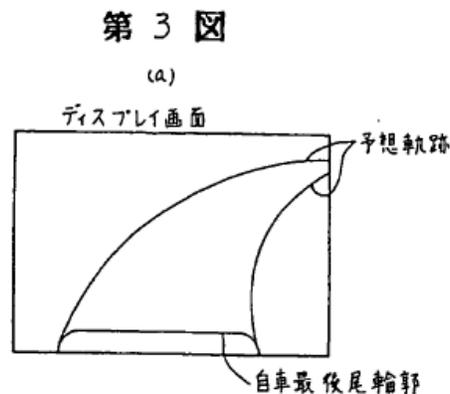
Petitioner argues that claim 33 is unpatentable under 35 U.S.C. § 103(a) as obvious over Nissan, Aishin, Niles, Fujitsu, and Honda. Pet. 47–52.

Aishin (1006)

Aishin describes a display apparatus for displaying, as a projected image by a video camera, a field of rear vision at the time of reverse travel of a vehicle, in which a predicted path of the vehicle is superimposed on the projected image. Ex. 1006, 2–3. Aishin describes a camera for photographing a field of rear vision, a steering sensor for detecting a steering angle of a steering wheel, an image processing device for storing an image of a predicted path corresponding to a steering angle of the steering wheel and for reading an image of a predicted path based on the signal from the steering sensor at the time of reverse travel, and a display device for

superimposing and displaying a projected image from the camera and the image of a predicted path from the image processing device. *Id.* at 4–5. Specifically, path superposition device 6 takes as input (1) the image of a field of rear or lateral vision from video camera 7 on the vehicle; and (2) the predicted locus ready by computer 2 for locus calculation, to superimpose and display the image and the predicted locus on display 8. *Id.* at 6.

Figure 3 is reproduced below.



Ex. 1005, Fig. 3. Figure 3 shows an exemplary display of a predicted path obtained by the predicted path display device of the vehicle. Ex. 1006, 6.

Niles (1010)

Niles describes rearward view monitoring system that includes a monitor at the driver's seat that displays plural pairs of distance markers corresponding to a vehicle width. Ex. 1010, 1–3. The system includes a camera, a monitor mounted at the driver's seat, a sensor for sensing distance between the vehicle and a rearwardly positioned obstacle, vehicle speed, direction of vehicle rearward travel, and a marker signal generating circuit, which receives as inputs signals from the sensor and which generates a marker signal as necessary. *Id.* at 3. The markers are superimposed on the displayed image. *Id.* For example, a single marker may be displayed every

one meter. *Id.* When a tire direction sensor is applied, an anticipated rearward path of travel can be displayed with the markers. *Id.* at 4.

Figure 6 is reproduced below.

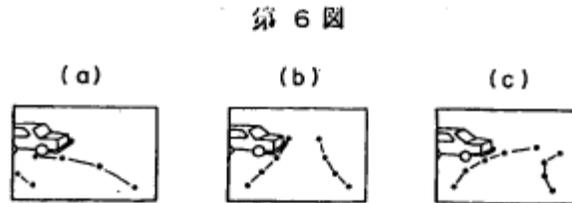
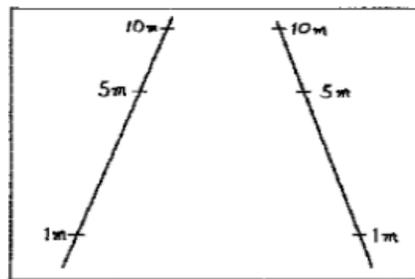


Figure 6 is an exemplary view of the monitor television when a tire direction sensor is applied as a sensor. Ex. 1009, Fig. 6; Ex. 1010, 5. As shown in Figure 6, markers 4 can be displayed curving along the anticipated rearward path of travel of the vehicle, and thus the monitor can display the vehicle's rearward direction more clearly. Ex. 1010, 4.

Fujitsu (1017)

Fujitsu describes a display device that displays a rear video image combined with distance scale markers. Ex. 1017 ¶¶ 34–38. Figure 4(b) is reproduced below.



(b)

Figure 4(b) depicts an exemplary display with distance scale marks. *Id.* ¶¶ 52, 53.

Honda (1015)

Honda describes a rear visual field display device for a vehicle. Ex. 1015, 265. A monitor screen near the driver's seat displays a rear visual field captured by a camera. *Id.* at 266. A predicted rearward trajectory corresponding to a steering angle detected by a steering angle sensor is overlaid on the rear visual field captured by the camera. *Id.* Figure 4 is reproduced below.

FIG. 4

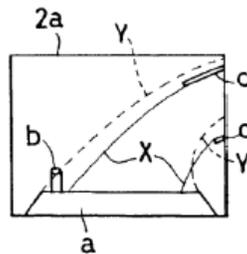


Figure 4 shows what is displayed on a monitor screen of the device of the invention in Honda. *Id.* at 267. In this manner, the rearward trajectory X along the ground of the rear portion of the vehicle body and the rearward trajectory Y of the top end of the rear portion of the vehicle body are overlaid on the monitor screen (2a) as the predicted rearward trajectory corresponding to the actual steering angle. *Id.*

Analysis

Claim 33 depends from dependent claim 32, which depends from independent claim 30. Petitioner contends that Nissan and Aishin teach the limitations of claim 30, and that Nissan, Aishin, and Niles teach the limitations of claim 32. Pet. 50–52. We are persuaded that Petitioner's citations support Petitioner's contentions

Claim 33 recites “wherein at least one of (a) said indicia has a form that responds to the rate of turn of the vehicle, and (b) said indicia has a form that responds to at least one of the vehicle's steering system, the vehicle's differential system and a compass.” Petitioner cites Honda for disclosing overlay of “a predicted rearward trajectory corresponding to a steering angle detected by a steering angle sensor.” Pet. 52 (quoting Ex. 1015, 266). We are persuaded that Petitioner’s citation supports Petitioner’s contention.

We are not persuaded by Patent Owner that Petitioner fails to identify the specific references relied upon for this ground. Prelim. Resp. 43–45.

The Petition states:

[G]iven Niles’ explicit commentary on having the distance markers change direction “as needed” and being “dynamically adjustable” in response to various parameters, it would have been obvious to modify the vision system of Nissan with the superimposed image of the predicted path to include the vehicle trajectories as taught by Aishin, where the trajectories and distance markers (Niles and Fujitsu) respond to the vehicle’s steering system as taught by Honda, to provide the driver with the maximum amount of information when reversing the vehicle, as reversing the vehicle is the maneuver that is most dangerous and prone to accidents when operating a vehicle.

Pet. 48–49. On this record, it is sufficiently clear that Petitioner is proposing to modify Nissan in view of Aishin (for trajectories), Niles or Fujitsu (for the distance markers), and Honda (for responding to the vehicle’s steering system). For the same reason, we also are not persuaded by Patent Owner’s argument that the combination does not disclose said *indicia* having “a form that responds to the rate of turn of the vehicle or to at least one of the vehicle’s steering system, the vehicle’s differential system and a compass.” Prelim. Resp. 45–46. Patent Owner is attacking the references individually

when the proposed ground is based upon a combination. Nonobviousness cannot be established by attacking references individually where, as here, the ground of unpatentability is based upon the teachings of a combination of references. *In re Keller*, 642 F.2d 413,426 (CCPA 1981). Rather, the test for obviousness is whether the combination of references, taken as a whole, would have suggested the patentee's invention to a person having ordinary skill in the art. *In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986).

### Conclusion

On this record, we are persuaded that Petitioner has established a reasonable likelihood that it would prevail in showing that claim 33 is unpatentable as obvious over Nissan, Aishin, Niles, Fujitsu, and Honda.

### III. CONCLUSION

For the foregoing reasons, we determine that Petitioner has established that there is a reasonable likelihood that it would prevail in establishing the unpatentability of claims 6 and 33 of the '565 patent.

The Board has not made a final determination on the patentability of any challenged claims.

### IV. ORDER

Accordingly, it is

ORDERED that pursuant to 35 U.S.C. § 314, an *inter partes* review is hereby instituted for:

- (1) Claim 6 under 35 U.S.C. § 103 as obvious over Nissan; and
- (2) Claim 33 under 35 U.S.C. § 103 as obvious over Nissan, Aishin, Niles, Fujitsu, and Honda; and

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FURTHER ORDERED that no other grounds raised in the Petition are authorized for *inter partes* review;

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial on the grounds of unpatentability authorized above; the trial commences on the entry date of this Decision.

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