

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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.

Case IPR2014-01203
Patent 7,859,565 B2

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

CLEMENTS, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

Valeo North America, Inc., Valeo S.A., Valeo GmbH, Valeo Schalter und Sensoren GmbH, and Connaught Electronics Ltd. (collectively, “Petitioner”) filed a Corrected Petition requesting *inter partes* review of claims 6, 14, 21–24, 33–38, 43–46, and 49 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.”). On January 28, 2015, we instituted an *inter partes* review of claims 6 and 33 (“the instituted claims”) on certain grounds of unpatentability alleged in the Petition. Paper 13 (“Dec. to Inst.”).

After institution of trial, Patent Owner filed a Patent Owner Response (Paper 21, “PO Resp.”) to which Petitioner filed a Reply (Paper 22, “Pet. Reply”). No oral hearing was held.

The Board has jurisdiction under 35 U.S.C. § 6(c). This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73.

Petitioner has shown, by a preponderance of the evidence, that claims 6 and 33 of the ’565 patent are unpatentable.

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 was the subject of IPR2014-00220 (the “220 IPR”). Pet 4. In a Final Written Decision dated May 28, 2015, we determined that claims 1–5, 8–13, 15–20, 25–32, 39–42, 47, and 48 are unpatentable. *Valeo North America, Inc., et al. v. Magna Electronics, Inc.* (PTAB May 28, 2015) (Paper 59). On September 15, 2015, Patent Owner

filed a notice of appeal in the 220 IPR. Paper 62. The Petition challenges claims that were challenged in, but for which trial was not instituted, in the 220 IPR.

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. According to the '565 patent, a long-felt need in the art of vehicle rearview vision systems had been to eliminate exterior rearview mirrors by utilizing image capture devices, such as cameras, in combination with dashboard displays (*id.* at 1:24–27), but prior art camera-based rearview vision systems for vehicles had not obtained commercial acceptance in part because such systems present a large amount of visual information in a manner that is difficult to comprehend (*id.* at 1:41–45). According to the '565 patent, in order to reduce blind spots significantly, multiple image capture devices are positioned at various locations on the vehicle. *Id.* at 1:45–48. As a result, the image of an object behind the equipped vehicle may be captured by more than one image capture device and displayed in multiple images. *Id.* at 1:48–50. This may confuse the driver as to whether more than one object is present. *Id.* at 1:50–51. Also, when multiple image capture devices are positioned at different longitudinal locations on the vehicle, objects behind the vehicle are at different distances from the image capture devices, and therefore the same object may have a different size in each image. *Id.* at 1:51–56. Another difficulty can arise from the use of a wide-angle lens, which increases the field of view, but

introduces distortion of the scene and further impairs the driver's ability to judge distances of objects displayed. *Id.* at 2:6–19.

To address these issues, 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 2:27–31. 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 2:31–35. Specifically, the '565 patent discloses techniques for synthesizing images captured by individual, spatially separated, image capture devices into an ideal image displayed on the display device. *Id.* at 2:43–46.

Figure 3 of the '565 patent is reproduced below.

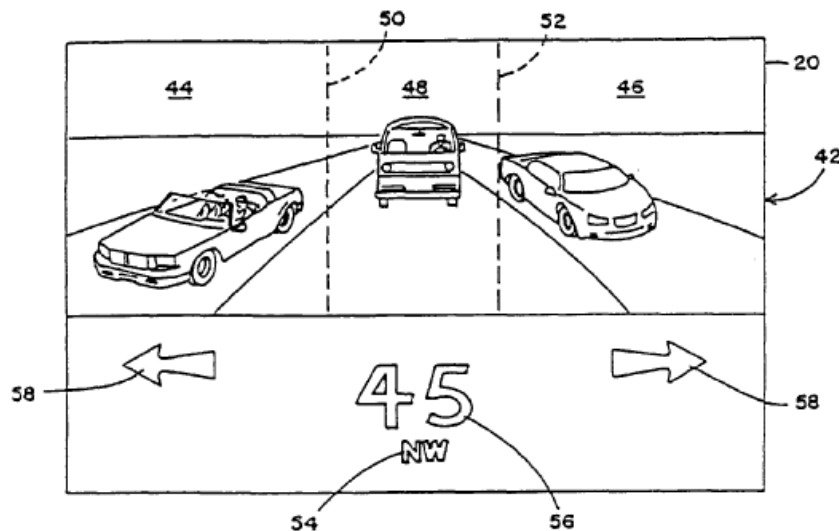


FIG. 3

Figure 3 depicts a display according to the invention. *Id.* at 3:25–26. As shown, image display device 20 displays composite image 42 made up of left image portion 44, right image portion 46, and 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 5:50–53. 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 directed 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 5:64–6:1. 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 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 Claim

Claim 6 depends from independent claim 1 (not challenged). Claim 33 depends indirectly from independent claim 30. Claims 1 and 6 are illustrative and 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. Prior Art Supporting the Instituted Challenges

Petitioner relies upon the following references:

Noso (“Nissan”) ¹	JP H3-99952	Apr. 25, 1991	Ex. 1003
Nimura (“Aishin”) ²	JP A64-14700	Jan. 18, 1989	Ex. 1005

¹ Nissan is a Japanese language document. Ex. 1003. Unless indicated otherwise, all citations to Nissan in this decision will refer to its certified English language translation. Ex. 1004.

Suzuki (“Niles”) ³	JP 59-114139	July 2, 1984	Ex. 1009
Imai (“Honda”) ⁴	JP H1-168538	July 4, 1989	Ex. 1014
Ozaki (“Fujitsu”) ⁵	JP H5-213113	Aug. 24, 1993	Ex. 1016

E. The Instituted Grounds of Unpatentability

We instituted *inter partes* review on the following grounds:

Reference(s)	Basis	Claims Challenged
Nissan	§ 103	6
Nissan, Aishin, Niles, Fujitsu, and Honda	§ 103	33

II. ANALYSIS

A. 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); *see also In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1275–79 (Fed. Cir. 2015). Under the broadest reasonable interpretation, claim terms are given their ordinary and customary meaning, as would be understood by one of

² 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.

³ 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.

⁴ 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.

⁵ 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.

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 from an image captured” (claims 1 and 30)

Independent claims 1 and 30 recite an “image portion from an image captured.” Petitioner does not propose a construction of this term. In the Decision on Institution, we declined to adopt Patent Owner’s proposed construction of “image portion” to mean “a derived part of a captured image that is less than the entire image.” Dec. to Inst. 12–13.

In its Patent Owner Response, Patent Owner argues again that “image portion” should be construed to mean “a derived part of a captured image that is less than the entire image.” PO Resp. 5–9. Patent Owner argues that its construction finds support in the plain meaning of the term and in Valeo’s concession during oral argument for the ’220 IPR. *Id.* at 5–8. Patent Owner also argues that the word “includes,” which precedes the disputed claim term, means that “the displayed image may include additional things, but not more of the captured image than the image portion, because as discussed above, that would destroy the meaning of the claim.” *Id.* at 9.

Petitioner counters that the ’565 patent does not define “image portion,” that Patent Owner’s understanding of “includes” is not supported by the Specification, and that the Board should construe this term as it did in the Final Written Decision for the ’220 IPR. Pet. Reply 1–3.

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. PO Resp. 5 (citing 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. *Id.* at 6.

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 from 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 capture devices 14, 16. 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. Specifically, independent claims 1 and 30 recite “the displayed [composite] image displayed on said single display screen *includes* an image portion” (emphasis added). These limitations require that the displayed image include an “image portion,” but do not preclude the displayed image from including more than a portion. The limitations do not, for example, require that the displayed image include no more than an image portion.

Patent Owner’s definition that a portion is “an often limited part of a whole” implies that a portion also can include the whole, and we discern nothing in the Specification inconsistent with that ordinary meaning. *See* Ex. 2002.

We determine that “image portion” does not require further express construction.

B. Claim 6 – Obviousness over Nissan

Petitioner argues that claim 6 is unpatentable under 35 U.S.C. § 103(a) as obvious over Nissan. Pet. 26–30. For the reasons explained below, Petitioner has established this assertion by a preponderance of the evidence.

1. 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 of Nissan is reproduced below:

Figure 1

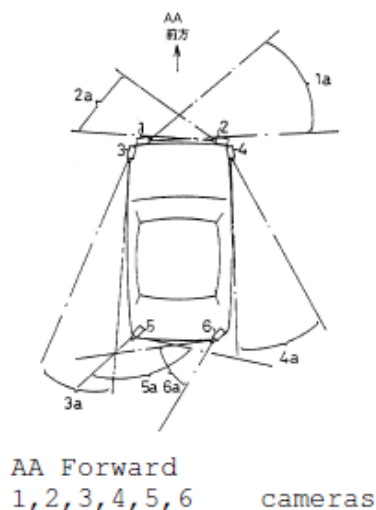


Figure 1 is an overhead view of a vehicle equipped with the system of Nissan. *Id.* at 3:34–35. As depicted in Figure 1, a plurality of cameras 1–6 are setup so that the respective fields of view, 1a–6a, cover the environment surrounding the vehicle. *Id.* at 3:36–38. Images from the cameras are input and converted to other coordinates by a perspective conversion. *Id.* at 4:15–17. The converted images are then combined into one image by image display unit 8 and displayed on monitor 9 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) of Nissan is reproduced below.

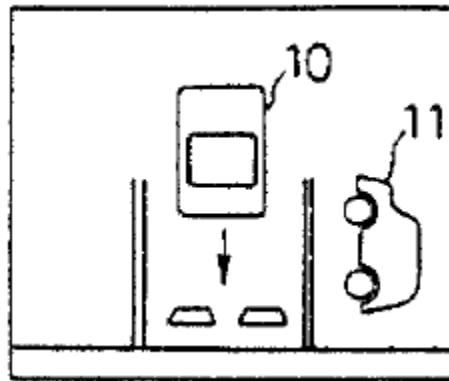


Figure 3(a) is an example of the display results on display when backing up. *Id.* at 4:29–31, 7:30–32. Specifically, Figure 3(a) shows backing up in the direction of the arrow and is a fixed display with vehicle 10 in the upper part in the center. *Id.* at 4:31–33. Neighboring vehicle 11 is displayed 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.

2. Petitioner's Contentions

Claim 6 depends from independent claim 1. Petitioner cites Nissan for teaching the limitations of independent claim 1. Pet. 28–30.

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. Petitioner explains that for a person of ordinary skill in the art, it would have been obvious and a matter of mere design choice to a person of ordinary skill in the relevant art to use alternate display types based on varying types of vehicle models and other vehicle parameters such as space constraints and aesthetics." Pet. 27 (citing Ex. 1011 ¶¶ 139–144). Notwithstanding Patent Owner's arguments, we are persuaded by Petitioner's contentions.

3. Patent Owner's Arguments

Patent Owner argues that: (1) Nissan does not teach a "composite image . . . without duplication of image information," as recited in independent claim 1 (PO Resp. 9–15); (2) Nissan does not teach an "image portion," as recited in independent claim 1 (*id.* at 15–17); (3) Petitioner fails to show that Nissan teaches "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,” as recited in independent claim 1 (*id.* at 18–21); and (4) the combination of Nissan, Aishin, Niles, Fujitsu, and Honda does not teach “indicia has a form that responds to the rate of turn of the vehicle,” as recited in claim 33 (*id.* at 22–24). We analyze these arguments in turn.

a. “composite image . . . without duplication of image information”

Claim 1, from which claim 6 depends, recites “a composite image . . . without duplication of image information.” Patent Owner argues that “[m]erely combining images, as Valeo alleges is disclosed in Nissan (with or without transformation), does not account for duplication of image information.” PO Resp. 11. Patent Owner argues that the alleged “composite image” in Nissan is not formed by merging, stitching, or blending. *See, e.g., id.* at 11 (“In contrast, the claimed composite image comprises a single merged or stitched or blended image, without duplication of image information.”), 13 (“There is no merging or blending of captured images in creating what is shown in [Nissan’s] Figure 3(a). . . . There is no disclosure in Nissan that the images from the cameras are merged or stitched or blended to provide a ‘composite image’”).

Petitioner replies that the Board already found claim 1 of the ’565 patent to be unpatentable as obvious over Nissan in the ’220 IPR. Pet. Reply 5.

The portion of Nissan relied upon by Petitioner teaches that “the images from cameras 1 to N are input and converted to other coordinates by a perspective conversion [and] are combined into one image by an image display unit 8.” Ex. 1004, 4:15–18. As shown in Figure 3(a), when backing up, Nissan combines the images from a rear-facing camera showing the area

behind the vehicle with images from a side-view camera to form one image that is displayed to the driver. *Id.* at Fig. 3(a), 4:29–35. With respect to the combined image being “without duplication of image information,”

Petitioner cites, on page 28 of the Petition, Dr. Wolberg for the following:

134. Nissan performs a perspective transformation to display a combined image from multiple cameras on a single display to a driver. See Pet. Ex. 1004 at p. 3, ll. 17-19; p. 5, ll. 12-30. The perspective transformation performed in Nissan geometrically aligns the images from the different cameras on the vehicle. A person of ordinary skill in the art would have appreciated that this process in Nissan inherently removes multiple exposure effects (duplication). Indeed, one of the primary purposes of geometric alignment is to remove redundancy in overlapping regions of images.

135. Further, a person of ordinary skill in the art would have found it obvious prior to May 1995 to produce a composite image without any duplication of image information. In order to reduce duplication in a composite image, one must bring the images captured by various cameras into geometric alignment. This is known in the art as image registration, a concept that was well-known prior to May 1995. See *e.g.*, Pet. Ex. 1004. Nissan performs such geometric alignment by performing a perspective conversion among the images. Specifically, Nissan brings all the images into a single coordinate system, from the independent camera screen coordinates to the road surface plane. Pet. Ex. 1004 at p. 5, ll. 25-30. *Whenever such a perspective transformation is performed, duplication of image information in overlapping regions of the camera fields of view would be minimized because the duplicate image portions are overlaid upon each other such as to reduce multiple exposure effect.*

Ex. 1011 ¶¶ 134–35 (emphases added). We are persuaded by the above-quoted analysis of Dr. Wolberg.

b. “image portion”

Patent Owner argues that Nissan does not disclose an “image portion,” as recited by independent claim 1, from which claim 6 depends. PO Resp. 15–17. Specifically, Patent Owner argues that Nissan averages *entire* camera images, not just a *portion* of those images. *Id.* at 16–17.

Petitioner replies that the Board already found claim 1 of the ’565 patent to be unpatentable as obvious over Nissan in the ’220 IPR, and that in doing so, the Board addressed this very argument by Patent Owner and determined that Nissan teaches the recited “image portion.” Pet. Reply 5–6.

Independent claim 1 recites the open-ended language “includes,” and does not, therefore, preclude the displayed image from having *more* than the recited “image portion.” Accordingly, even assuming that Patent Owner’s characterization of Nissan is accurate, we are not persuaded that Nissan does not teach this limitation.

c. “by at least one technique chosen from...”

Independent claim 1 recites, “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.”

We are not persuaded by Patent Owner’s argument that the “Petition does not clearly set forth its rationale and reasoning as to how Nissan discloses this feature.” PO Resp. 18; *see also id.* at 18–21. Petitioner relies upon Nissan’s teaching of processing color images and displaying in color, and of processing infrared images for nighttime recognition of obstacles.

Pet. 29–30 (citing Ex. 1004, Fig. 4, 7:6–7, 7:9–11, 7:35). Petitioner also cites, at page 28 of the Petition, Dr. Wolberg for the following:

Nissan contemplates use of a color TV monitor to display color images. Pet. Ex. 1004 at p. 7, ll. 6-7. Chrominant blending must be used to average color images, which typically consists of three color components. See my state of the art discussion, ¶62, *supra*. Nissan also contemplates use of infrared cameras for night vision. Pet. Ex. 1004 at p. 7, ll. 9-11. Luminant blending is used to average the infrared data, which consists of a single value per pixel.

Ex. 1011 ¶ 99. We are persuaded by the above-quoted analysis of Dr. Wolberg that a person of ordinary skill in the art would have understood Nissan’s use of a color TV monitor for displaying color images to teach, at the very least, the use of chrominant blending.

4. Conclusion

For the foregoing reasons, we conclude that Petitioner has demonstrated, by a preponderance of the evidence, that claim 6 is unpatentable as obvious over Nissan.

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

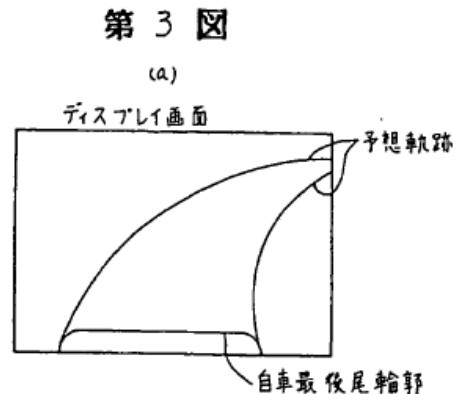
Petitioner argues that claim 33 is unpatentable under 35 U.S.C. § 103(a) as obvious over Nissan, Aishin, Niles, Fujitsu, and Honda. Pet. 47–52. For the reasons explained below, Petitioner has established this assertion by a preponderance of the evidence.

1. 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.

2. 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.

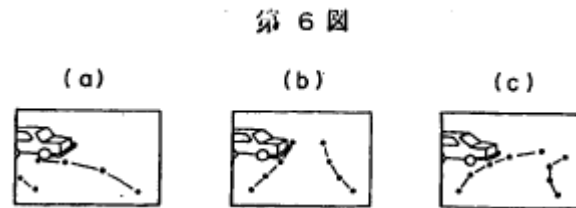
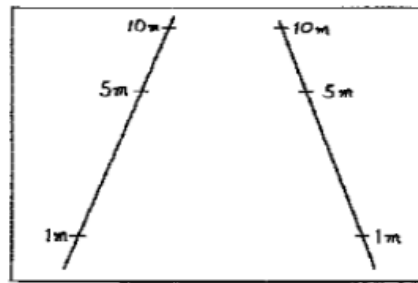


Figure 6 is an exemplary view of the monitor television when a tire direction sensor is applied as a sensor. Ex. 1009, Fig. 6; Ex. 1010, 5. As shown in Figure 6, markers 4 can be displayed curving along the anticipated rearward path of travel of the vehicle, and thus the monitor can display the vehicle's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

3. 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.* at ¶¶ 52, 53.

4. 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

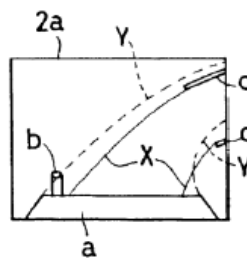


Figure 4 shows what is displayed on a monitor screen of the device of the invention in Honda. *Id.* at 267. In this manner, the rearward trajectory X along the ground of the rear portion of the vehicle body and the rearward trajectory Y of the top end of the rear portion of the vehicle body are

overlaid on the monitor screen (2a) as the predicted rearward trajectory corresponding to the actual steering angle. *Id.*

5. Petitioner's Contentions

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. 47–52. Notwithstanding Patent Owner's arguments, we are persuaded by 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). With respect to combining the references, Petitioner argues:

[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. The combination of Nissan, Aishin, Niles, Fujitsu, and Honda allows the driver to be provided with a vehicle box of the vehicle body at a certain position according to the path of the front and rear wheels as taught by Aishin, one or more predicted path trajectories when reversing the vehicle as taught

by Aishin and Niles, and distance markers that respond to the vehicle's steering system, as taught by Fujitsu and Honda. Ex. 1011 at ¶¶ 195-202.

Pet. 48–49. Notwithstanding Patent Owner's arguments, we are persuaded by Petitioner's contentions.

6. Patent Owner's Arguments

Patent Owner argues that: (1) Nissan does not teach a “composite image . . . without duplication of image information,” as recited in independent claim 30 (PO Resp. 9–15); (2) Nissan does not teach an “image portion,” as recited in independent claim 30 (*id.* at 21–22); and (3) the combination of Nissan, Aishin, Niles, Fujitsu, and Honda does not teach “indicia has a form that responds to the rate of turn of the vehicle,” as recited in claim 33 (*id.* at 22–24).

Patent Owner's arguments about “composite image” or “image portion” are substantially the same for claim 33 as they are for claim 6. We are not persuaded by those arguments for the same reasons discussed above with respect to claim 6.

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.” PO Resp. 22–24. Patent Owner argues that Petitioner “has not established how the distance indicia, now purportedly of Fujitsu, would respond to the rate of turn of the vehicle.” *Id.* at 22; *see also id.* at 33 (“Even if Honda discloses a predicted trajectory that changes according to a steering angle, there is no disclosure or suggestion in any of the references for the distance indicia to have ‘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,' as required by claim 33). Petitioner argues that Patent Owner's argument

ignores the combination of the references, and the PHOSITA's ability to take a parameter taught by one reference (predicted path that responds to steering angle as taught by Honda) and predictably display a different parameter taught by another reference (distance indicia as taught by Niles and Fujitsu) as responsive to the same type of sensor output.

Pet. Reply 9.

We agree with Petitioner. 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 (C.C.P.A. 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).

7. Conclusion

Petitioner has demonstrated, by a preponderance of the evidence, that claim 33 is unpatentable as obvious over Nissan, Aishin, Niles, Fujitsu, and Honda.

III. CONCLUSION

Petitioner has shown, by a preponderance of the evidence, that claims 6 and 33 of the '565 patent are unpatentable under 35 U.S.C. § 103(a).

IV. ORDER

Accordingly, it is
ORDERED that claims 6 and 33 of the '565 patent are unpatentable;
and

FURTHER ORDERED that, because this is a Final Written Decision,
the parties to the proceeding seeking judicial review of the decision must
comply with the notice and service requirements of 37 C.F.R. § 90.2.

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Patent 7,859,565 B2

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