

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, and⁴
CONNAUGHT ELECTRONICS LTD.,
Petitioner,

v.

MAGNA ELECTRONICS INC.,
Patent Owner.

Case IPR2015-01410¹
Patent 8,643,724 B2

Before JUSTIN T. ARBES, MICHAEL J. FITZPATRICK, and
ROBERT J. WEINSCHENK, *Administrative Patent Judges*.

ARBES, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318(a)

¹ Case IPR2015-01414 has been consolidated with this proceeding.

I. BACKGROUND

Petitioners Valeo North America, Inc., Valeo S.A., Valeo GmbH, Valeo Schalter und Sensoren GmbH, and Connaught Electronics Ltd. (collectively, “Petitioner”) filed two Petitions requesting *inter partes* review of claims 1–86 of U.S. Patent No. 8,643,724 B2 (Ex. 1001, “the ’724 patent”) pursuant to 35 U.S.C. §§ 311–19, as listed in the following chart.

Case Number	Challenged Claims	Petition
IPR2015-01410	1–6, 10–18, ² 23, 25, 29–32, 41–43, 46–56, 58, 61, 62, 64–71, 73, 75–82, 84, and 86	Paper 1 (“Pet.”)
IPR2015-01414	7–9, 19–22, 24, 26–28, 33–40, 44, 45, 57, 59, 60, 63, 72, 74, 83, and 85	Paper 1 (“-1414 Pet.”)

On December 28, 2015, we instituted an *inter partes* review of claims 1, 3–12, 14, 15, 17, 19–52, 54–67, 69–79, and 81–86 on 17 grounds of unpatentability and consolidated Case IPR2015-01414 with Case IPR2015-01410 (Paper 7, “Dec. on Inst.”). Patent Owner Magna Electronics Inc. filed a Patent Owner Response (Paper 14, “PO Resp.”), and Petitioner filed a Reply (Paper 17, “Reply”). The parties did not request oral argument, and no hearing was held. *See* Paper 22.

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a). For the reasons that follow, we determine that Petitioner has shown by a preponderance of the

² Petitioner lists claim 19 in its Petition in Case IPR2015-01410, but does not include claim 19 in any asserted ground of unpatentability. *See* Pet. 1, 6. Thus, we presume that the initial listing of claims was a typographical error.

evidence that claims 1, 3–12, 14, 15, 17, 19–52, 54–67, 69–79, and 81–86 are unpatentable.

A. The '724 Patent³

The '724 patent relates generally to “rearview vision systems which provide the vehicle operator with scenic information in the direction rearward of the vehicle.” Ex. 1001, col. 1, ll. 22–25. According to the '724 patent, there was a need in the art to “reduce the amount of time spent gathering information [about] the condition around the vehicle in order to safely carry out a vehicle maneuver, such as a turn or a lane change,” and also a need to “eliminate exterior rearview mirrors by utilizing image capture devices, such as cameras, in combination with dashboard displays.” *Id.* at col. 1, ll. 28–59. Prior art camera-based systems typically used more than one camera to reduce blind spots, but displayed multiple images, which could confuse the driver. *Id.* at col. 1, l. 60–col. 2, l. 3. Specifically, “[w]hen 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,” such that the same object would have a different size in each display. *Id.* at col. 2, ll. 3–8.

³ Petitioner previously filed petitions seeking *inter partes* review of the '724 patent in Cases IPR2015-00252 and IPR2015-00253. The petitions were denied. *See Valeo N. Am., Inc. v. Magna Elecs., Inc.*, Case IPR2015-00252 (PTAB May 13, 2015) (Paper 7); *Valeo N. Am., Inc. v. Magna Elecs., Inc.*, Case IPR2015-00253 (PTAB May 13, 2015) (Paper 7). U.S. Patent No. 7,859,565 B2 (“the '565 patent”), which has a similar specification to the '724 patent, also was challenged in Cases IPR2014-00220 and IPR2014-01203.

To address these issues, the '724 patent discloses a multi-camera vision system having two image capture devices on the sides of the vehicle and one at the rear of the vehicle, and a reconfigurable display device that displays a synthesized image from the image capture devices. *Id.* at col. 2, l. 59–col. 3, l. 25. Figure 1 of the '724 patent is reproduced below.

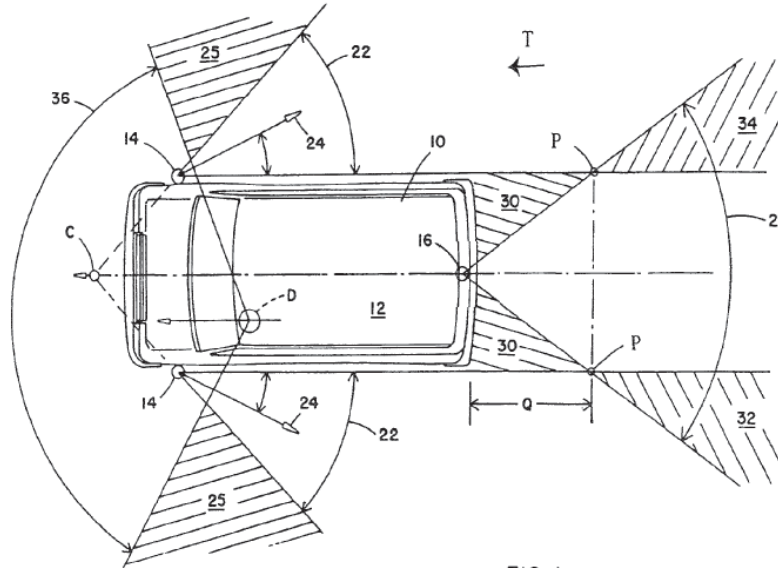


FIG. 1

Figure 1 depicts vehicle 10 traveling in direction T and comprising side image capture devices 14 each with field of view 22 and center image capture device 16 with field of view 26. *Id.* at col. 5, l. 47–col. 6, l. 21. The three captured images are processed and

juxtaposed on display 20 by image processor 18 in a manner which approximates the view from a single virtual image capture device positioned forwardly of the vehicle at a location C and facing rearwardly of the vehicle, with the vehicle being transparent to the view of the virtual image capture device.

Id. at col. 5, l. 63–col. 6, l. 2. The resulting display provides a “substantially seamless panoramic view rearwardly of the vehicle without duplicate or redundant images of objects.” *Id.* at col. 6, ll. 2–5.

Figure 3 of the '724 patent is reproduced below.

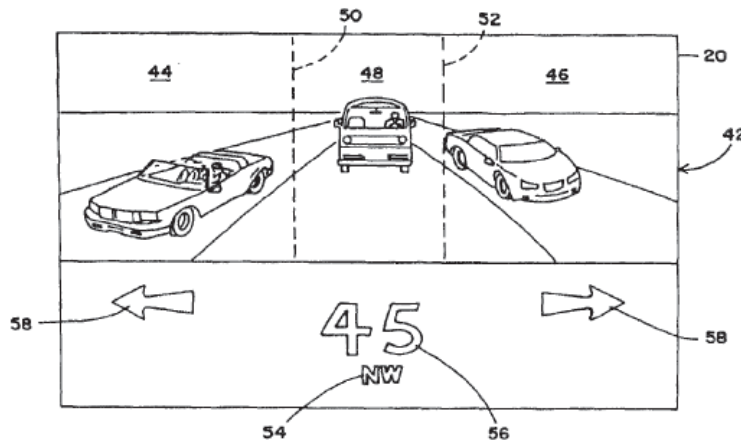


FIG. 3

Figure 3 depicts composite image 42 comprising left image portion 44, right image portion 46, and center image portion 48, reversed from the images captured by the image capture devices, as well as compass readout 54, vehicle speed 56, and turn signals 58. *Id.* at col. 7, l. 44–col. 8, l. 7. Due to the different positioning of side image capture devices 14 and center image capture device 16, the system may process side images differently from the central images (e.g., by vertically compressing the central images) to avoid the appearance of disjointed objects. *Id.* at col. 14, l. 52–col. 16, l. 14.

B. Illustrative Claim

Claim 1 of the '724 patent recites:

1. A multi-camera vision system for a vehicle, said vehicular multi-camera vision system comprising:

at least three image capture devices disposed at a vehicle equipped with said vehicular multi-camera vision system;

said at least three image capture devices comprising a first image capture device disposed at a driver-side portion of the equipped vehicle at a first location;

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