

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TRW AUTOMOTIVE US LLC,
Petitioner,

v.

MAGNA ELECTRONICS INCORPORATED,
Patent Owner.

Case IPR2014-00255
Patent 7,423,248 B2

Before JUSTIN T. ARBES, PATRICK R. SCANLON, and
JO-ANNE M. KOKOSKI, *Administrative Patent Judges*.

KOKOSKI, *Administrative Patent Judge*.

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

I. INTRODUCTION

TRW Automotive US LLC (“Petitioner”) filed a Petition (Paper 1, “Pet.”) to institute an *inter partes* review of claims 1, 3–5, 8, 9, 11–13, 17–19, and 21 of U.S. Patent No. 7,423,248 B2 (Ex. 1002, “the ’248 patent”). On June 26, 2014, we instituted an *inter partes* review of claims 1, 3–5, 9, 11–13, 17–19, and 21 on four grounds of unpatentability (Paper 17, “Dec. on Inst.”).

Magna Electronics Inc. (“Patent Owner”) filed a Patent Owner Response (Paper 22, “PO Resp.”). Petitioner filed a Reply (Paper 25, “Reply”).

An oral hearing was held on February 18, 2015. A transcript of the hearing is included in the record. Paper 34 (“Tr.”).

We have jurisdiction under 35 U.S.C. § 6(b). This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons that follow, we determine that Petitioner has shown by a preponderance of the evidence that claims 1, 3–5, 9, 11–13, 17–19, and 21 of the ’248 patent are unpatentable.

A. *The ’248 Patent*

The ’248 patent, titled “Automatic Exterior Light Control for a Vehicle,” is directed to an automatic exterior light control that characterizes and analyzes light sources to identify headlights of oncoming vehicles and taillights of leading vehicles, and adjusts the state of the vehicle’s headlights based on the presence or absence of these light sources. Ex. 1002, 2:18–34. According to the ’248 patent, the disclosed light control “is exceptionally discriminating in identifying oncoming headlights and leading taillights” and “ignores other sources of light including streetlights and reflections of the

controlled vehicle's headlights off signs, road markers, and the like.” *Id.* at 3:20–25.

The '248 patent describes a vehicle headlight dimming control comprising an imaging sensor module that senses light from a scene forward of the vehicle, an imaging control circuit that receives data from the sensor module, and a vehicle lighting control logic module that exchanges data with the imaging control circuit and controls the headlights. *Id.* at 3:62–4:3. The imaging sensor module includes a spectral separation device for separating light from the scene forward of the vehicle, an optical device such as a lens, and a light-sensing array that includes “a plurality of photosensor elements . . . arranged in a matrix of columns and rows.” *Id.* at 4:42–55. In a disclosed embodiment, the light-sensing array is “an array of 512 rows and 512 columns of light-sensing pixels, each made up of a photosensor element.” *Id.* at 4:55–57. According to the '248 patent, the vehicle headlight dimming control can include an ambient light-sensing circuit, which “samples a subset of photosensor elements” that “detect portions of the forward-looking scene that are just above the earth's horizon” and supplies an indication of the ambient light level as an input to a lighting control module. *Id.* at 5:42–51.

The imaging sensor module can be mounted to, or near, the vehicle's windshield, “because the location within the interior of the vehicle substantially eliminates environmental dirt and moisture from fouling the light sensor module.” *Id.* at 4:22–30. The '248 patent also states that positioning the sensor behind the windshield, “which typically is kept relatively clear through the use of washers and wipers and the like, ensures a relatively clear view of the scene forward of [the] vehicle.” *Id.* at 4:30–36.

Claims 1, 9, and 17 of the '248 patent are independent. Claims 3–5 depend, directly or indirectly, from claim 1, which is reproduced below:

1. An automatic exterior light control, comprising:
an image array sensor, said image array sensor comprising an array of pixel sensors, wherein said image array sensor is configured and mounted such that a field of view of said image array sensor substantially passes through an associated windshield area that is wiped by a windshield wiper; and
a controller connected to said image array sensor and configured to receive at least a portion of at least one image from said image array sensor that is substantially free of windshield surface contamination, said controller, responsive to said image array sensor, generating an output for controlling at least one exterior light of the vehicle.

Ex. 1002, 13:12–25.

Claims 11–13 depend, directly or indirectly, from claim 9, which is reproduced below:

9. An automatic exterior light control, comprising:
an image array sensor, said image array sensor comprising an array of pixel sensors, wherein said image array sensor is configured and mounted such that a field of view of said image array sensor is adjustable electronically; and
a controller connected to said image array sensor configured to acquire pixel data from a subset of pixels associated with a desired field of view, said controller, responsive to said image array sensor, generating an output for controlling at least one exterior light of the vehicle.

Id. at 13:48–58.

Claims 18, 19, and 21 depend directly from claim 17, which is reproduced below:

17. An automatic exterior light control, comprising:
an image array sensor, said image array sensor comprising an array of pixel sensors; and
a controller configured with an ambient light input, said controller, responsive to said image array sensor, generating an output for controlling at least one exterior light of the vehicle, wherein automatic exterior light control is enabled when an ambient light level is below a threshold, wherein manual operation of exterior lights remains functional.

Id. at 14:24–33.

B. Prior Art

The pending grounds of unpatentability in this *inter partes* review are based on the following prior art:

Tadashi	Japanese Patent App. Pub. No. H04-12780	April 28, 1992	Ex. 1004
Yanagawa ¹	Japanese Unexamined Patent Pub. No. S62-131837	June 15, 1987	Ex. 1006
Meitzler	U.S. 4,645,975	Feb. 24, 1987	Ex. 1007

C. Pending Grounds of Unpatentability

This *inter partes* review involves the following grounds of unpatentability:

¹ We refer to “Tadashi” and “Yanagawa” as the English translations of the original references. Petitioner provided affidavits attesting to the accuracy of the translations. *See* Exs. 1004, 1006; 37 C.F.R. § 42.63(b).

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