

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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MERCEDES-BENZ USA, LLC,  
Petitioner,

v.

AMERICAN VEHICULAR SCIENCES LLC,  
Patent Owner.

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Case IPR2014-00647  
Patent 5,845,000

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Before JAMESON LEE, TREVOR M. JEFFERSON, and LYNNE E.  
PETTIGREW, *Administrative Patent Judges*.

JEFFERSON, *Administrative Patent Judge*.

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

## I. INTRODUCTION

Mercedes-Benz USA, LLC (“Petitioner”), filed a Petition (“Pet.”) requesting *inter partes* review of claims 10, 11, 15, 16, 17, 19, 20, and 23 of U.S. Patent No. 5,745,000 (Ex. 1001, “the ’000 patent”) pursuant to 35 U.S.C. §§ 311–319. Paper 1. American Vehicular Sciences LLC (“Patent Owner”) filed a Preliminary Response (“Prelim. Resp.”) substantively waiving its right to present a response on the merits. Paper 11, 2. We have jurisdiction under 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted “unless . . . the information presented in the petition . . . and any 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.”

Upon consideration of the Petition, we determine that the information presented shows there is a reasonable likelihood that Petitioner would prevail in showing the unpatentability of the challenged claims. Accordingly, pursuant to 35 U.S.C. § 314, the Board institutes an *inter partes* review as to claims 10, 11, 15, 16, 17, 19, 20, and 23 of the ’000 patent.

### A. *Related Proceedings*

Petitioner states that the ’000 patent was the subject of a Petition filed in *Toyota Co. v. American Vehicular Sciences LLC*, Case IPR2013-00424 (instituted January 14, 2014). *Id.* Petitioner also identifies *American Vehicular Sciences LLC v. Toyota Motor Corp.*, Civil Action No. 6:12-CV-406 (E.D. Tex.); and (2) *American Vehicular Sciences LLC v. BMW Grp.*,

IPR2014-00647  
Patent 5,845,000

Civil Action No. 6:12-CV-413 (E.D. Tex.) as involving the '000 patent. Pet. 1; Paper 5, 2.

*B. The '000 Patent*

The disclosed invention of the '000 patent is directed to a vehicle interior monitoring system that monitors, identifies, and locates occupants and other objects in the passenger compartment of a vehicle and objects outside of the vehicle. Ex. 1001, Abstract. Objects are illuminated with electromagnetic radiation, and a lens is used to focus the illuminated images onto the arrays of a charge coupled device (CCD). *Id.* at Abstract; 7:26-40. Computational means using trained pattern recognition analyzes the signals received at the CCD to classify, identify, or locate the contents of external objects, which, in turn, are used to affect the operation of other vehicular systems. *Id.* at Abstract. The '000 patent discloses that a vehicle computation system uses a “trainable or a trained pattern recognition system” which relies on pattern recognition to process signals and to “identify” an object exterior to the vehicle or an object within the vehicles interior. *Id.* at 3:21-44.

Figures 7 and 7A, reproduced below, illustrate portions of the sensor system that use transmitters, receivers, circuitry, and processors to perform pattern recognition of external objects in anticipation of a side-impact collision:

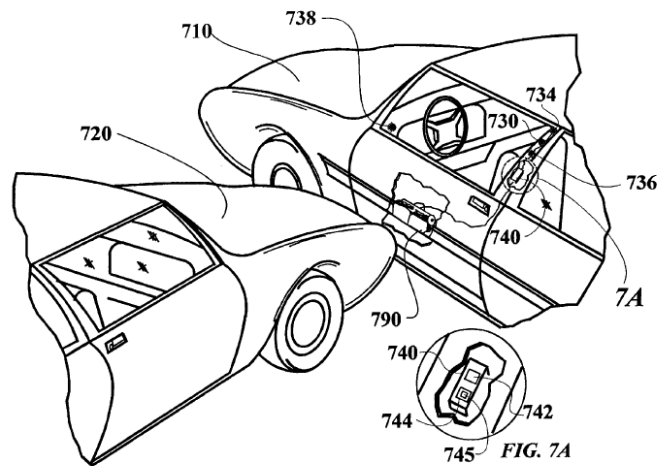


FIG. 7

Figure 7, with Figure 7A inset, depicts vehicle 720 approaching the side of another vehicle 710 and shows transmitter 730 and receivers 734 and 736. Ex. 1001, 9:48-52; 18:28-40. Figure 7A provides a detailed view of the electronics that drive transmitter 730 and circuitry 744 containing neural computer 745 to process signals reflected or received from the external object using pattern recognition. *Id.* at 18:33-40.

Figure 8 also illustrates an exterior monitoring system and is reproduced below:

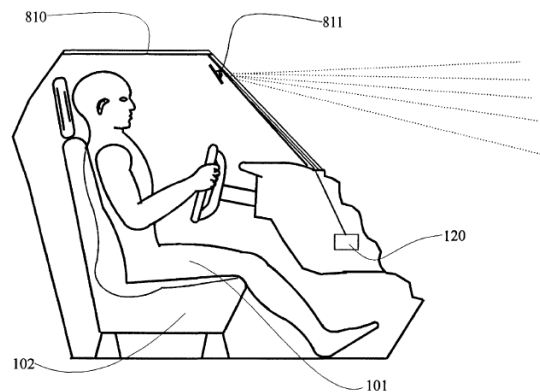


FIG. 8

Figure 8 depicts a system for detecting the headlights or taillights of other vehicles used in conjunction with an automatic headlight dimming system. Ex. 1001, 9:54-58. CCD array in Figure 8 is designed to be sensitive to visible light and does not use a separate source of illumination as depicted in Figure 7. *Id.*

The Summary of the Invention discusses an invention related to detection of objects in the interior of the vehicle and objects external to the vehicle. *Id.* at 7:25-30. Specifically, external objects are illuminated with “electromagnetic, and specifically infrared, radiation,” and lenses are used to focus images onto one or more CCDs arrays. *Id.* The disclosure further states that the invention provides (1) an “anticipatory sensor” located within the vehicle to “identify about-to-impact object[s] in the presence of snow and/or fog,” (2) “a smart headlight dimmer system” to sense and identify headlights and taillights and distinguish them from other reflective surfaces, and (3) blind spot detection. *Id.* at 8:37-53.

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