

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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UNIFIED PATENTS INC.,  
Petitioner,

v.

AMERICAN VEHICULAR SCIENCES, LLC,  
Patent Owner.

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Case IPR2016-00364  
Patent 9,043,093 B2

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Before TREVOR M. JEFFERSON, JENNIFER MEYER CHAGNON, and  
SCOTT C. MOORE, *Administrative Patent Judges*.

CHAGNON, *Administrative Patent Judge*.

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

## I. INTRODUCTION

We have jurisdiction to hear this *inter partes* review under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons discussed herein, we determine that Petitioner has shown, by a preponderance of the evidence, that claims 1, 8, 10, 12, 17–19, 26, 27, and 36 of U.S. Patent No. 9,043,093 B2 (Ex. 1001, “the ’093 patent”) are unpatentable.

### A. Procedural History

Unified Patents Inc. (“Petitioner”) filed a Petition for *inter partes* review of claims 1, 8, 10, 12, 17–19, 26, 27, and 36 of the ’093 patent. Paper 2 (“Pet.”). Petitioner provided a Declaration of Priyaranjan Prasad, Ph.D. (Ex. 1005) to support its positions. American Vehicular Sciences, LLC (“Patent Owner”) filed a Preliminary Response (Paper 8, Paper 7 (redacted version)).

Pursuant to 35 U.S.C. § 314(a), on June 27, 2016, we instituted *inter partes* review to determine whether claims 1, 8, 10, 12, 17–19, 26, 27, and 36 are unpatentable under 35 U.S.C. § 103 as obvious in view of Leising<sup>1</sup> and Lau<sup>2</sup>; and whether claims 1, 10, 17–19, 26, 27, and 36 are unpatentable under 35 U.S.C. § 103 as obvious in view of Karlow<sup>3</sup> and Lau. *See* Paper 13 (“Inst. Dec.”). Subsequent to institution, Patent Owner filed a Patent Owner Response (Paper 22 (“PO Resp.”)), along with a Declaration of Michael Nranian P.E. (Ex. 2021) to support its positions. Petitioner filed a Reply (Paper 26 (“Pet. Reply”)) to the Patent Owner Response, along with a

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<sup>1</sup> U.S. Patent No. 3,897,961, issued Aug. 5, 1975 (Ex. 1002).

<sup>2</sup> U.S. Patent No. 5,273,309, issued Dec. 28, 1993 (Ex. 1003).

<sup>3</sup> U.S. Patent No. 5,588,672, issued Dec. 31, 1996 (Ex. 1004).

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Second Declaration of Dr. Prasad (Ex. 1021). An oral hearing was held on January 23, 2017. A transcript of the hearing is included in the record. Paper 34 (“Tr.”). We also have considered Patent Owner’s Observations on Cross-Examination (Paper 29) and Petitioner’s Response thereto (Paper 32).

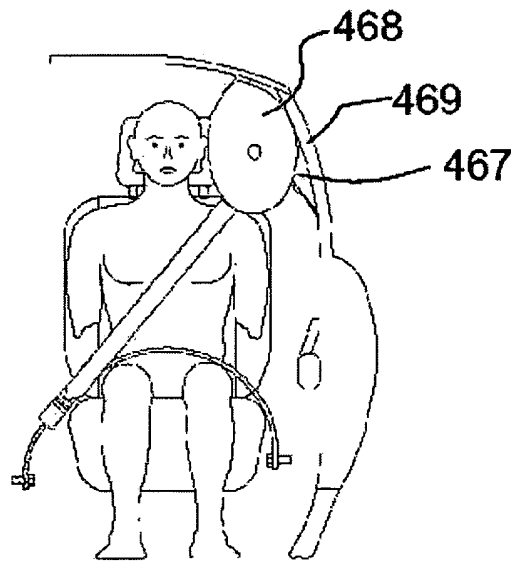
*B. Related Proceedings*

The parties indicate that the ’093 patent is the subject of the following ongoing district court proceedings: *Am. Vehicular Scis. LLC v. Hyundai Motor Co.*, No. 5:16-cv-11529-JEL-APP (E.D. Mich.); *Am. Vehicular Scis. LLC v. Nissan Motor Co.*, No. 5:16-cv-11530-JEL-APP (E.D. Mich.); *Am. Vehicular Scis. LLC v. Toyota Motor Corp.*, No. 5:16-cv-11531-JEL-APP (E.D. Mich.); and *Am. Vehicular Scis. LLC v. Am. Honda Motor Co.*, No. 5:16-cv-11532-JEL-APP (E.D. Mich.). See Paper 19, 1.

*C. The ’093 Patent*

The ’093 patent is titled “Single Side Curtain Airbag for Vehicles,” and was filed as U.S. application No. 11/930,330 on October 31, 2007. Ex. 1001, at [21], [22], [54]. The ’093 patent claims priority, via a chain of continuation-in-part and divisional applications, to U.S. application No. 08/571,247, filed on December 12, 1995. *Id.* at [60]. The ’093 patent relates to an airbag system for a vehicle, in which “the airbag for the front and rear seats are combined, i.e., the airbag deploys along substantially the entire side of the vehicle alongside both the front seat and the rear seat.” *Id.* at 65:29–32.

Figure 56 of the '093 patent is reproduced below.



**FIG. 56**

Figure 56, reproduced above, shows an exemplary embodiment of a side curtain airbag. *Id.* at 6:4–8. According to the '093 patent, the side curtain arrangement “results in significantly greater protection in side impacts when the windows are broken.” *Id.* at 65:32–34.

The airbag system of the '093 patent utilizes a single gas-providing system with only one inflator to inflate the airbag. *Id.* at 187:4–6. The airbag includes a plurality of compartments in flow communication with each other. *See, e.g., id.* at 169:27–33. An example of an airbag having such compartments is shown in Figure 84 of the '093 patent, reproduced below.

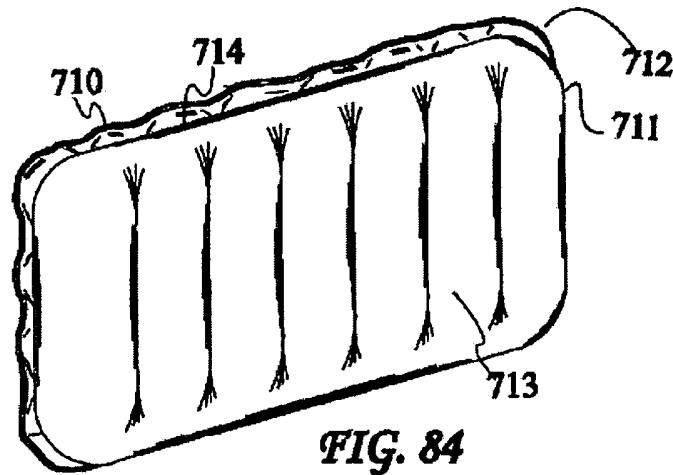


Figure 84, reproduced above, shows exemplary airbag 710 formed of “long tubular shaped mini-airbags 713” (also referred to in the ’093 patent as “compartments”). *Id.* at 93:21–26. As described in the ’093 patent, the compartments allow the airbag to be formed of the desired shape, while minimizing stress concentrations, as well as the weight of the airbag. *Id.* at 81:14–19.

*D. Illustrative Claim*

Of the challenged claims, claims 1, 26, and 36 are independent. Claims 8, 10, 12, and 17–19 depend from claim 1; and claim 27 depends from claim 26. Claim 1 of the ’093 patent, reproduced below, is illustrative of the challenged claims.

1. An airbag system of a vehicle, the airbag system comprising:
  - a single airbag extending across at least two seating positions of a passenger compartment of a vehicle, the single airbag arranged to deploy into the passenger compartment along a lateral side of the vehicle and adjacent each of the at least two seating positions;

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